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термінів з цитології, генетики, селекції і насінництва

НАВЧАЛЬНИЙ ПОСІБНИК

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ПЕРЕДМОВА

Сучасна аграрна наука розвивається стрімкими темпами: щороку з'являються нові методи цитологічних, генетичних і селекційних досліджень, тому володіння фаховою термінологією є не лише професійною компетентністю, а й необхідною передумовою успішного опанування спеціальних дисциплін та проведення наукових досліджень.

Пропонований глосарій укладено з метою систематизації та уніфікації основних понять і термінів, що використовуються при вивченні дисциплін «Генетика», «Селекція і насінництво польових культур», «Первинне насінництво польових культур», «Спеціальна селекція і насінництво с.-г. культур», «Генетичні ресурси в моделюванні сортів і гібридів с.-г. культур», «Екологічна генетика і селекція рослин», «Селекція польових культур на макроознаки» та «Спеціальна генетика». Навчальний посібник буде довідником, який допоможе викладачам, науковим співробітникам і здобувачам вищої освіти орієнтуватися у великому масиві наукової інформації, та точно розуміти зміст матеріалів і вільно оперувати термінологічним інструментарієм.

В основу глосарію покладені вітчизняні та зарубіжні підручники, монографії, наукові статті, міжнародні стандарти та нормативні документи у сфері насінництва й охорони сортів рослин. Також видання відображає багаторічний досвід науково-педагогічної діяльності кафедри генетики, селекції і насінництва сільськогосподарських культур Білоцерківського національного аграрного університету.

Терміни і визначення розміщено в алфавітному порядку, що забезпечує зручність користування глосарієм. Формулювання дефініцій здійснювалося з прагненням поєднати наукову точність із доступністю викладу, аби видання було корисним для викладачів, наукових співробітників і здобувачів вищої освіти.

Автори висловлюють щиру подяку рецензентам: Ю. О. ЛАВРИНЕНКУ – доктору с.-г. наук, професору, академіку НААН України, головному науковому співробітнику відділу селекції сільськогосподарських культур Інституту кліматично орієнтованого сільського господарства НААН України; В. М. ТИЩЕНКУ – доктору с.-г. наук, професору, професору кафедри селекції, насінництва і генетики Полтавського державного аграрного університету МОН України; М. Б. ГРАБОВСЬКОМУ – доктору с.-г. наук, професору, професору кафедри рослинництва та цифрових технологій в агрономії Білоцерківського національного аграрного університету МОН України, чиї поради та зауваження сприяли вдосконаленню цього видання і щиро сподіваються, що глосарій стане надійним помічником у навчальній та науковій роботі.

Термін українською	Термін англійською	Визначення англійською
А		
А-хромосоми	A-chromosomes	the standard autosomes characteristic of a given species, as distinguished from B-chromosomes (supernumerary or accessory chromosomes).
Аберація	Aberration	in the broad sense, individual deviations from the norm. Chromosomal aberrations are various structural alterations of chromosomes or chromatids resulting from breakage and rejoining in novel configurations, arising spontaneously or induced by mutagenic agents.
Абіогенез	Abiogenesis	the development of living organisms from inanimate matter.
Абіотичне середовище	Abiotic environment	the physical (inorganic) substrate of the environment.
Абіотичні фактори	Abiotic factors	the totality of inorganic conditions of the external environment in which an organism develops. Abiotic factors are classified as chemical (atmospheric and water composition), climatic (temperature, precipitation, light, solar radiation, etc.), geographical (relief, slope gradient, aspect), and edaphic, or soil-related (physical and chemical composition of soil, acidity or salinity, etc.).
Аборигенні рослини	Indigenous plants	plants that originated and evolved in a given locality; indigenous species
Абортивність	Abortiveness	the arrest of development of any process.
Абсолютна авто стерильність	Absolute self-sterility	the complete inability of plants to undergo self-fertilisation.
Абсолютна швидкість росту	Absolute growth rate	the magnitude of increment per unit time.

Термін українською	Термін англійською	Визначення англійською
Абсолютно характерні види	Absolutely characteristic species	species adapted to specific conditions of natural existence.
Абсорбент	Absorbent	a substance capable of absorbing other materials.
Абсорбція	Absorption	the uptake of substances from a gaseous mixture or liquid by absorbents.
Авірулентність	Avirulence	the inability of a pathogenic organism to parasitise certain host plant genotypes.
Автогамія	Autogamy	one of the forms of self-pollination and self-fertilisation in higher plants; the fusion of gametes belonging to one and the same individual.
Автогенез	Autogenesis	an erroneous doctrine according to which the historical development of organisms proceeds independently of environmental conditions, driven solely by special internal forces or an inherent tendency toward perfection.
Автодуплікація	Autoduplication	the capacity of a living organism or its constituent parts (chromosomes, plastids, mitochondria, cells) to synthesise from the surrounding environment substances identical to those of the original structure; self-replication of DNA molecules.
Автоліз	Autolysis	the disintegration of organismal tissues under the action of hydrolytic enzymes.
Автоматизм	Automatism	the rhythmic activity of cells, tissues, and organs in response to a stimulus, conditioned by the cyclicity of metabolic processes or the periodicity of stimulation.
Автоміксис	Automixis	self-fertilisation; the fusion of gametes from a single individual.

Термін українською	Термін англійською	Визначення англійською
Автомутагени	Automutagens	substances arising within a cell or organism in the course of vital activity that induce heritable changes. Automutagens most commonly arise under conditions of metabolic disruption and organismal ageing, and may give rise to both chromosomal rearrangements and gene mutations.
Автополіплоїд	Autopolyploid	an organism containing more than two haploid chromosome sets within a single species.
Автополіплоїдія	Autopolyploidy	a heritable change consisting in a multiple increase in the number of chromosome sets within the cells of one and the same biological species. Autopolyploidy leads to alterations in the genomic structure of the nucleus, metabolism, and phenotype. It arises through disruption of chromosome segregation during mitosis, less commonly during meiosis, as a result of physical and chemical mutagenic agents, and constitutes one of the evolutionary mechanisms in plants.
Автор сорту	Variety author	the natural person who directly bred, discovered, or developed a variety
Авторадіографія (метод «мічених атомів»)	Autoradiography (the "labelled atoms" method)	an investigative technique enabling precise determination of the content and distribution of chemical substances within cells and tissues. It is based on the study of substance localisation in the object under investigation by applying a photographic emulsion sensitive to radioactive emissions (with subsequent development). Radioactive substances present in the object effectively self-photograph by means of their own radiation. It is widely employed in physics, biology, and medicine.

Термін українською	Термін англійською	Визначення англійською
Авторська винагорода	Breeder's remuneration	payment to the variety author for the breeding, invention, or improvement of a variety, disbursed in accordance with contractual terms.
Автосиндез (самокон'югація)	Autosyndesis (self-conjugation)	a disturbance of normal conjugation of homologous chromosomes. It may induce genetic instability in artificially obtained allopolyploids, such as triticale. Autosyndesis denotes the conjugation of chromosomes derived from a single parental form, occurring in alloploidy and wide hybridisation.
Автостерильність (самостерильність)	Self-sterility	the inability of flowering plants to set seed when the stigma is pollinated with pollen from the same flower.
Автотрансплантація	Autotransplantation	the natural grafting of crossed or approximated branches of the same tree.
Автотропізм	Autotropism	the capacity of plant organs to restore their previous direction of growth and spatial orientation following cessation of a stimulus.
Автотрофи	Autotrophs	organisms capable of independently synthesising organic substances from carbon dioxide, water, and mineral salts through solar energy (photosynthesis) or chemical transformations (chemosynthesis).
Автотрофізм	Autotrophism	the capacity of plants to independently assimilate inorganic substances from air, soil, and water via photosynthesis or chemosynthesis.
Автотрофність	Autotrophy	the capacity of a plant organism to produce organic substances from inorganic compounds (carbon dioxide, water, mineral salts).
Автофагія (аутофагія)	Autophagy	a cellular mechanism for the disposal of surplus or damaged proteins, protein complexes, and cellular organelles, executed by cellular lysosomes. It fulfils critical functions including

Термін українською	Термін англійською	Визначення англійською
		nutrient acquisition during starvation, maintenance of cellular homeostasis and cellular immunity, and execution of apoptosis.
Автофагосома (аутофагосома)	Autophagosome	a lysosome in which degradation of aged or damaged endogenous cellular structures takes place.
Автофертильність (самофертильність)	Self-fertility	the capacity of flowering plants to set seed when the stigma is pollinated with pollen from the same flower.
Автохори	Autochores	plants that disperse without the action of external factors.
Автохорія	Autochory	the dispersal of fruits, seeds, spores, and vegetative plant parts by means of the plants own adaptations, without the agency of external factors.
Агамета	Agamete	a non-sexual germ cell incapable of fertilisation, developing without activation by a male gamete (in lower plants).
Агамія	Agamy	the absence of a sexual process.
Агамний	Agamous	asexual; reproducing by asexual means.
Агамогонія	Agamogony	reproduction by simple nuclear division followed by cell division or by budding.
Агамонт	Agamont	an asexual plant or generation that produces agametes.
Агамоспермія	Agamospermy	reproduction by seeds formed without fertilisation.
Агломерація	Agglomeration	an assemblage of plants of various species that are ecologically homogeneous.
Аглютинація хроматину	Chromatin agglutination	the adhesion of chromosomes during metaphase or anaphase when concentrated at one pole, or of sister chromatids during anaphase (stickiness effect), resulting from matrix agglutination. It is classified as (1)

Термін українською	Термін англійською	Визначення англійською
		spontaneous chromatin agglutination, arising autonomously in the meristem of plants with disrupted gene balance; (2) functional chromatin agglutination, induced by hormonal changes during development and leading to endopolyploidy, mixoploidy (polysomaty), and chromosomal structural alterations; (3) induced chromatin agglutination, produced experimentally by various agents (temperature, radiation, ultrasound, chemical substances, specific gene malfunctions, ageing phenomena, etc.). It may give rise to gene and chromosomal mutations and the formation of pseudobridges during anaphase.
Агрегація	Aggregation	a grouping of plants of a single population within a phytocoenosis; a single-species phytocoenosis.
Агресивність	Aggressiveness	a quantitative measure of pathogenicity, the degree of which is determined by the rate of development, spread, and multiplication of the pathogen in the tissues of a susceptible host plant; it determines the capacity of the pathogenic organism to cause epiphytotics.
Агробіоценоз	Agrobiocoenosis	an assemblage of organisms in crops and plantings of cultivated plants.
Агроекологічний моніторинг (АЕМ)	Agroecological monitoring (AEM)	systematic monitoring of the condition of soils and surface and groundwaters.
Агроекосистема	Agroecosystem	an unstable system of agrocenopopulations of cultivated plants on cultivated soils, possessing a defined composition, structure, and regime maintained and regulated by humans. In the absence of human management, it gradually loses its properties.

Термін українською	Термін англійською	Визначення англійською
Агронеофіти	Agroneophytes	plants that have recently adapted to cultivated conditions of life (e.g., weeds).
Агросфера	Agrosphere	the part of the biosphere constituted by cultivated plants, animals, and cultivated soils; agricultural lands.
Агротип	Agrotype	a race of a cultivated plant.
Агрофіти	Agrophytes	plants cultivated by humans for the purpose of producing crop products.
Агрофітоценоз	Agrophytocoenosis	an artificially created plant community in the form of crops or plantings, subject to change under the influence of external conditions and the vital activity of organisms comprising the phytocoenosis, or as a result of the penetration of new species into the community.
Агрохімічне обстеження ґрунтів	Agrochemical soil survey	a survey during which composite soil samples are collected according to a specific methodology and used to determine pH, soil nitrogen, available phosphorus, exchangeable potassium, humus content, etc.
Агроценоз	Agrocoenosis	an agroecological community artificially created for the production of agricultural output and regularly maintained by humans, based on a plant species cultivated by humans. It is characterised by low ecological stability but high yield (productivity).
Агроценологія	Agrocoenology	the scientific discipline concerned with agrophytocoenoses.
Адаптаціогенез	Adaptatiogenesis	the process of origin of adaptations; regarded as evolution, i.e., a continuous and global process of emergence of ever new forms of adaptation to perpetually changing environmental conditions.
Адаптація	Adaptation	the mobilisation by an organism, variety, or population of traits and properties acquired as a

Термін українською	Термін англійською	Визначення англійською
		result of structural and functional changes that ensure existence under specific environmental conditions.
Адаптація генетична	Genetic adaptation	the ability of plants to form ecotypes and varieties adapted to local conditions.
Адаптація генотипова	Genotypic adaptation	hereditarily determined changes in the genotype that bring about the formation of a new norm of reaction and ensure the normal functioning of an organism or variety under specific environmental conditions.
Адаптація онтогенетична	Ontogenetic adaptation	adaptive changes occurring during the individual development of an organism, realised primarily through mechanisms of regulation of genotypic gene functions.
Адаптація філогенетична	Phylogenetic adaptation	the outcome of natural selection acting over numerous generations since the formation of a species.
Адаптер	Adapter	single- or double-stranded oligonucleotides designed for joining DNA molecules with incompatible ends. In duplexes the termini are dissimilar one blunt and one cohesive, or both cohesive. Adapters are employed when the ends of vector and cloned molecules have been generated by different restriction enzymes, and also when the cloned DNA fragments contain restriction sites used in the procedure. Single-stranded adapters are applied for joining DNA molecules with protruding 5′ and 3′ ends. Double-stranded adapters are obtained by combining two single-stranded adapters, two linkers, or an adapter and a linker. Double-stranded adapters with different protruding ends are capable of converting the protruding ends of DNA; such adapters are termed conversion adapters.

Термін українською	Термін англійською	Визначення англійською
Адаптивна здатність	Adaptive capacity	the ability to adjust to variable environmental conditions.
Адаптивна зона	Adaptive zone	a complex of ecological environmental conditions defining the type of adaptations of a group of organisms.
Адаптивна норма	Adaptive norm	the state (property) of adaptedness of organisms characterised by a given phenotype to existence under specific external environmental conditions; also the genetic structure of a particular population under given conditions that ensures its competitiveness; the totality of traits (organismal properties) ensuring its survival under specific environmental conditions.
Адаптивна реакція	Adaptive radiation	the divergence during evolution of representatives of a single phyleticlineage across numerous distinct niches or adaptive zones.
Адаптивна селекція	Adaptive breeding	the totality of methods employed in the breeding process aimed at developing varieties and hybrids capable of realising a high productivity potential under the ecological conditions of a region with existing cultivation technologies.
Адаптивна цінність	Adaptive value (relative fitness)	an index of the intensity of natural selection reflecting the reproductive efficiency of a particular genotype.
Адаптивна цінність гена	Adaptive value of a gene	the degree of advantage of a gene in population reproduction and under the action of selection.
Адаптивний потенціал	Adaptive potential	the measure of the adaptive properties of a species with respect to environmental conditions.
Адаптивний тип	Adaptive type	the norm of biological response to a complex of environmental conditions that ensures an

Термін українською	Термін англійською	Визначення англійською
		equilibrium state of a genotype or population with its environment, expressed in the morphofunctional characteristics of the population genotype.
Адаптивні ферменти	Adaptive enzymes	enzymes synthesised within a cell upon the appearance of the corresponding substrate.
Адаптивність	Adaptability	the capacity of an organism, variety, or population to adapt to environmental conditions.
Адаптогенез	Adaptogenesis	the origin, development, and transformation of adaptations in the course of organismal evolution.
Адвентивна ембріонія	Adventive embryony	one of the forms of apomixis, in which a diploid embryo develops from a somatic cell of the nucellus or integuments that penetrates into the embryo sac. Such embryos are invariably diploid and may develop alongside primary embryos formed within the embryo sac (resulting in a seed containing multiple embryos). Adventive embryony is widespread in citrus plants.
Адвентивні органи	Adventitious organs	plant organs that develop from aged parts in atypical positions within the plant organism.
Адвентивні рослини	Adventive plants	plants whose appearance in a given locality is not attributable to natural florogenesis but to human introduction from their primary range to other floristic regions or continents in the course of economic activity.
Адгезія	Adhesion	the capacity of cells to interact by contact (e.g., to adhere) with other cells, intercellular substance, or substrates of non-biological origin.

Термін українською	Термін англійською	Визначення англійською
Адекватні зміни	Adequate changes	changes in a living organism corresponding to the influence of external environmental conditions.
Адельфогамія	Adelphogamy	pollination by pollen from another plant of the same genotype.
Аденілаткіназа	Adenylate kinase	an enzyme of the transferase class, with a phosphate group serving as the acceptor.
Аденілатциклаза	Adenylate cyclase	an enzyme of the lyase class that catalyses the cleavage of pyrophosphate.
Аденін	Adenine (6-aminopurine; purine base)	a constituent of nucleic acids (DNA and RNA) and a structural component of adenosine phosphoric acids, which play an important role in cellular bioenergetics.
Аденозин	Adenosine	a nucleoside consisting of the purine base adenine and the the sugar ribose, found in all living cells as a component of RNA and certain coenzymes (NAD, NADP, CoA, FAD). The phosphoric esters of adenosine – adenosine phosphoric acids – play a critically important role in cellular metabolism and energy exchange.
Аденозиндифосфат (АДФ)	Adenosine diphosphate (ADP)	a nucleotide consisting of adenine, ribose, and two phosphoric acid residues. In living cells it is found predominantly in complex with Mg^{2+} ions. It is formed by phosphorylation of adenosine monophosphate (AMP) or by dephosphorylation of adenosine triphosphate (ATP).
Аденозинмоно-фосфат (АМФ)	Adenosine monophosphate (AMP)	a nucleotide composed of adenine, ribose, and a single phosphate group, serving as an important component of RNA and as the terminal product of energy metabolism (ATP degradation). It plays a key role in metabolism, signalling processes, and serves as a

Термін українською	Термін англійською	Визначення англійською
		component of coenzymes regulating oxidation-reduction reactions in cells.
Аденозинтри-фосфат (АТФ)	Adenosine triphosphate (ATP) (adenyl pyrophosphoric acid)	a nucleotide containing adenine, ribose, and three phosphoric acid residues. It is the universal carrier and principal accumulator of chemical energy in living cells, released during electron transfer in the respiratory chain upon oxidation and degradation of organic substances. ATP serves as a substrate for RNA synthesis.
Аденозинтрифосфатна кислота	Adenosine triphosphoric acid (ATP)	a high-energy compound present in all living cells, meeting the energy requirements of the organism (muscle contraction, nerve impulse transmission, and cell reproduction). It is produced in large quantities in mitochondria and chloroplasts. Green plants utilise light energy to produce ATP in the process of photosynthesis (photophosphorylation).
Аденозинфосфорні кислоти	Adenosine phosphoric acids	are complex organic compounds belonging to the class of mononucleotides and representing esters of adenosine. The structural composition of adenosine phosphoric acid includes a purine base – adenine, the the sugar ribose, and residues of phosphoric acid. Depending on the number of phosphate residues, the following compounds are distinguished: adenosine monophosphate – AMP (one phosphate residue); adenosine diphosphate – ADP (two residues); and adenosine triphosphate – ATP (three residues). Adenosine phosphates are present in the cells of all living organisms and play a critical role in metabolic processes and energy transduction. Within cells, interconversion between AMP and ADP occurs continuously.

Термін українською	Термін англійською	Визначення англійською
		The conversion of AMP to ATP results in the accumulation of chemical energy, whereas the hydrolysis of ATP to ADP and AMP is accompanied by its release.
Адитивна дія генів	Additive gene action	the combined influence of additive (cumulative, polymeric, multiple) genes on a trait.
Адитивне успадкування	Additive inheritance (cumulative polymery)	gene interaction by summation; the cumulative action of polymeric genes on the development of a single trait.
Адитивний ефект	Additive effect (additive gene action)	the cumulative action of genes on the expression of a specific trait, or the aggregate expression of polymeric genes in a single trait; also the cumulative action of all loci controlling the dominance of a given quantitative trait.
Адитивні гени	Additive genes	a system of genes exerting identical effects (synonymous with polygenes); genes that interact without exhibiting dominance (if allelic) or epistasis (if non-allelic). The cumulative action of all loci controlling the dominance of a given quantitative trait.
Адитивність	Additivity	the aggregate expression of the action of individual components (e.g., polymeric genes).
Адитори	Aditors	plants incapable of dominance even under favourable conditions.
«Адресована» ПЛР (полімеразна ланцюгова реакція)	Targeted PCR (polymerase chain reaction)	a method in which a known sequence homologous to specific genomic regions or to any highly repetitive DNA fragment is employed as a primer. In this approach, the nature of the fragment whose polymorphism is under investigation is known, thereby eliminating the ambiguity characteristic of fragments detected by RAPD and AFLP

Термін українською	Термін англійською	Визначення англійською
		methods or random RFLP probes. One variant of this method involves the use of ISSR markers, which are widely applied in gene pool studies of various organismal species.
Адсорбція	Adsorption	the uptake of a substance from the environment by the surface layer of a liquid or solid (biological membranes).
Аероби	Aerobes	organisms capable of normal functioning only in the presence of free oxygen.
Аерофіти	Aerophytes	plants that obtain nutrients from the atmosphere.
Азональна рослинність	Azonal vegetation	plant communities that do not form independent latitudinal zones, but occur in various climatic zones, being associated with specific conditions (soil, relief).
Азотистий обмін	Nitrogen metabolism	the totality of transformations of nitrogen-containing compounds in the organism.
Азотисті основи	Nitrogenous bases	chemical compounds that constitute nucleic acids. In the DNA molecule they are represented by two purine bases – adenine and guanine – and two pyrimidine bases – thymine and cytosine. In the RNA molecule, uracil is present instead of thymine.
Азотфіксація	Nitrogen fixation	the process of binding atmospheric molecular nitrogen into nitrogenous compounds by nitrogen-fixing microorganisms.
Азотфіксуючі організми	Nitrogen-fixing organisms	microorganisms capable of assimilating molecular atmospheric nitrogen.
Азур	Azure	a group of basic organic nuclear dyes (azure-1, azure-2, azure A, B, C, and others), obtained by treating methylene blue with alkaline solutions.
Азурофілія	Azurophilia	the capacity of the nucleus and certain cellular inclusions to be stained with azure.

Термін українською	Термін англійською	Визначення англійською
Акліматизація	Acclimatisation	a form of adaptation of organisms to new and unfamiliar conditions of existence based on heritable change, in which they pass through all developmental stages and produce viable offspring. One of the forms of plant introduction.
Аклімація	Acclimation	a short-term change in the physiological functions of an organism in response to placement in a different constellation of living conditions, typically associated with relocation to a different area.
Акросиндез	Acrosynapsis	incomplete conjugation of two chromosomes during meiosis, in which the chromosomes pair only at one end.
Акрофіти	Acrophytes	plants of high-mountain regions.
Акроцентрична хромосома	Acrocentric chromosome	a chromosome in which the centromere is located near one of its ends, resulting in one long arm and one short arm.
Активатор	Activator	proteins that activate a promoter and carry out positive regulation of transcription.
Активація в гібридних клітинах	Activation in hybrid cells	the expression of genes not expressed in the original parental cells.
Активація гена	Gene activation	the process of induction (switching on of expression) of a gene, accompanied by transcription and translation of the synthesised mRNA.
Активація насіння	Seed activation	the treatment of seeds with various activating agents.
Активність наклювування насіння	Seed germination activity (chitting rate)	the percentage proportion of seeds in which the radicle has emerged, indicating the onset of germination. It constitutes an important sowing quality characteristic (for wheat, for instance, it commonly exceeds 75–90%), reflecting the rate of seedling emergence. Seed germination

Термін українською	Термін англійською	Визначення англійською
		activity is dependent on variety, storage conditions, pre-sowing treatment (soaking, dressing), and soil moisture content.
Акумуляція	Accumulation	the gradual build-up of certain organismal traits under the influence of morphogenetic factors.
Акцептор	Acceptor	a molecule, cell, or organism that receives certain substances, energy, electrons, or genetic material from another object (donor). Acceptors play an important role in metabolic processes and information transfer.
Акцепторна точка сплайсингу	Acceptor splice site	the region between the right end of an intron and the left end of an exon.
Акцепторні або регуляторні ділянки (цис-активні послідовності ДНК)	Acceptor or regulatory regions (cis-acting DNA sequences)	sequences that form part of the genome and are capable of binding the products of regulatory genes, thereby influencing the intensity of expression of structural genes.
Алейронові зерна	Aleurone grains	solid storage proteins found in the cells of the endosperm of cereals or in the cotyledons of other plants.
Алелі множинні	Multiple alleles	different mutant states of one and the same gene occupying a specific locus in the chromosome.
Алелі, алеломорфи (від грец. allelos	Alleles, allelomorphs	different (alternative) structural forms (states) of one and the same gene, located at identical loci of homologous chromosomes and determining the development of a single trait while conditioning phenotypic differences. Any alterations to the gene structure resulting from mutations or intragenic recombinations in heterozygotes carrying two mutant alleles lead to the emergence of new alleles of that gene. Alleles distributed in natural populations that control the development of species-typical

Термін українською	Термін англійською	Визначення англійською
		traits are referred to as «wild-type» alleles, while those derived from them are called mutant alleles.
Алелізм множинний	Multiple allelism	the occurrence of a given gene in a population in the form of structural variants.
Алелізм ступінчастий або ступінчастий алелеморфізм (псевдоалелізм)	Stepwise allelism (pseudoallelism)	mutations of the scute gene (sc_1, sc_2 and others) on the X chromosome of Drosophila melanogaster, leading to reduction of bristles and certain other phenotypic effects.
Алеломорфізм, алелізм	Allelomorphism, allelism	the pairing of traits.
Алеломорфна пара	Allelomorphic pair	a pair of factors determining paired, alternative traits. In 1926, the Danish biologist W. Johannsen proposed the term «allelism».
Алелопатія	Allelopathy	the interaction of plants mediated by biologically active substances (phytoncides, antibiotics, colins, etc.) released into the surrounding environment. Allelopathy may be negative or positive.
Алель	Allele	one of two or more alternative forms of a gene, each possessing a unique nucleotide sequence; alleles typically differ in their nucleotide sequences.
Алель дикого типу (нормальний)	Wild-type (normal) allele	the nucleotide sequence of a gene that ensures its normal functioning.
Алель домінантний	Dominant allele	an allele that is expressed in the phenotype of a heterozygous organism.
Алель мікросателітного локуса	Microsatellite locus allele	a variant of a DNA region with a specific number of repeats, characterised by considerable length polymorphism but not functional polymorphism. Such alleles are inherited codominantly and are used as markers in genetic analysis.

Термін українською	Термін англійською	Визначення англійською
Алель мутантний	Mutant allele	a mutation resulting in alteration of the wild-type allele sequence.
Алель рецесивний	Recessive allele	an allele that is expressed in the phenotype only in the homozygous state and is not expressed in the presence of a dominant allele.
Алельна серія	Allelic series	different alleles of a single gene, differing from one another in the nature of their expression.
Алельні гени	Allelic genes	forms of one and the same gene located at homologous regions (loci) of homologous chromosomes and controlling alternative (opposing) traits.
Алкалоїди	Alkaloids	organic nitrogen-containing substances of plant origin.
Алкалоїдне насіння	Alkaloid-containing seeds	seeds containing organic nitrogen-containing substances of an alkaline nature (morphine, strychnine, atropine, anabasine, etc.). Nearly all alkaloids exert a considerable physiological effect on the human and animal organism.
Аллогенез	Allogensis	the formation of sexual and asexual forms during the reproductive process.
Аллополіплоїд	Allopolyploid	an organism possessing more than two sets of chromosomes derived from two or more source species or genera.
Аллотетраплоїд (амфідиплоїд)	Allotetraploid (amphidiploid)	a hybrid organism combining in its genome the diploid genomes of two species; an interspecific hybrid with a doubled chromosome number.
Алогамія	Allogamy	the process of cross-pollination in which the egg cell of one individual is fertilised by the pollen of another, genetically distinct individual of the same species. Allogamy promotes increased genetic diversity and offspring viability, in contrast to self-fertilisation (autogamy).

Термін українською	Термін англійською	Визначення англійською
Алодиплоїд (амфігаплоїд)	Allodiploid (amphihaploid)	an interspecific hybrid combining genomes present in single copies.
Алозими (алоферменти)	Allozymes (alloenzymes)	alternative forms of an enzyme encoded by different alleles of one and the same gene.
Алопатрична гібридизація	Allopatric hybridisation	hybridisation between two isolated populations or species within a contact zone.
Алопатричні популяції	Allopatric populations	populations of a single species inhabiting different geographic regions and having no contact with one another (complete geographic isolation).
Алопатрія, алопатричне видоутворення	Allopatry, allopatric speciation	a mode of speciation in which new species arise in populations occupying isolated ranges. Selection acting upon isolated portions may operate differently, accumulating genetic differences that ensure reliable reproductive isolation and distinctive external characteristics.
Алоплазма	Alloplasm	non-living formations of the cell (e.g., flagella, cell wall).
Алоплоїд геномний	Genomic alloploid	an alloploid form whose parental genomes were sufficiently divergent that they do not conjugate in diploid hybrids (interspecific and intergeneric hybrids). In allotetraploids (amphidiploids), only bivalents are formed during meiosis.
Алоплоїд сегментний	Segmental alloploid	an allopolyploid form whose parental genomes share a considerable number of homologous chromosomal segments and whose sterility in the diploid state is low. In allotetraploid forms, a greater or lesser number of multivalents are formed during meiosis, depending on the relatedness of the parental genomes.
Алополіплоїд геномний	Genomic allopolyploid	an allopolyploid form whose parental genomes were sufficiently divergent that they do not

Термін українською	Термін англійською	Визначення англійською
		conjugate in diploid hybrids (interspecific and intergeneric hybrids). In allotetraploids (amphidiploids), only bivalents are formed during meiosis.
Алополіплоїд сегментний	Segmental allopolyploid	an allopolyploid form whose parental genomes share a considerable number of homologous chromosomal segments and whose sterility in the diploid state is low. In allotetraploid forms, a greater or lesser number of multivalents are formed during meiosis, depending on the relatedness of the parental genomes.
Алополіплоїд, алоплоїд	Allopolyploid, alloploid	an organism containing more than two sets of chromosomes. The chromosome sets differ from one another and arise through hybridisation of different species.
Алополіплоїдія (гібридна поліплоїдія)	Allopolyploidy (hybrid polyploidy)	the combination and multiplication of two or more genomes belonging to different species or genera (e.g., AABBCC, where A, B, and C represent genomes of different species or genera); allopolyploidy constitutes one of the pathways of sympatric speciation.
Алосиндез	Allosyndesis	the conjugation of homologous chromosomes during meiosis. It provides evidence that the genomes combined within an allopolyploid may have shared a common ancestor in the distant past. Occasionally, chromosome pairing and bivalent formation occur even within a haploid chromosome set. Allosyndesis can significantly affect the course of meiosis by disrupting normal conjugation of homologous chromosomes (i.e. autosyndesis), which may account for the genetic instability of certain artificially obtained allopolyploids, such as triticale.
Алосоми	Allosomes	sex chromosomes.

Термін українською	Термін англійською	Визначення англійською
Алостеричний центр (регуляторний центр)	Allosteric centre (regulatory centre)	a region on an enzyme or protein molecule spatially remote from the active site, designated for binding regulatory molecules (effectors, modulators). Attachment of a regulator alters the protein's conformation, either activating or inhibiting its activity, which constitutes a key mechanism for the control of metabolic processes.
Алотип	Allotype	the form of the other sexual type in dioecious plants.
Алотриплоїд	Allotriploid	an alloploid with three haploid chromosome sets.
Алотрофні рослини	Allotrophic plants	plants that feed on ready-made organic compounds.
Алохори	Allochores	plants that are dispersed by means of external factors (water, wind, animals, etc.).
Алохронне видоутворення	Allochronic speciation	the splitting of one species into two as a result of a shift in their reproductive seasons.
Алохтони	Allochthons	plants occupying a given range but having originated in a different locality in the course of evolution.
Альбінізм	Albinism	the congenital absence of pigmentation of the integuments and iris of the eye in animals and humans. In higher plants, the absence of green colouration in the entire plant or in its individual parts. Albinism is a heritable trait dependent on the presence of a recessive gene which, in the homozygous state, blocks the synthesis of pigments (melanin, chlorophyll). In plants, albinism may also be caused by heritable changes in the chloroplasts.
Альбуміни	Albumins	simple globular proteins soluble in water, weak salt solutions, acids and alkalis. Found in milk (lactalbumin), egg white (ovalbumin), plant

Термін українською	Термін англійською	Визначення англійською
		seeds, etc. The main reserve proteins of the organism.
Альвеографія	Alveography	the determination of gluten elasticity and flour strength by the capacity of dough prepared from the flour to stretch under the action of air, using an alveograph instrument.
Альвіоли	Alveoli	spaces between the dense substance of the cellular protoplasm, filled with a more fluid content (according to the foam-structure theory of plasma).
Альтерація	Alteration	a change in the structure and function of cells, tissues, and organs under the influence of harmful factors.
Альтернативний сплайсинг	Alternative splicing	a process based on the utilisation of different exons (and sometimes introns) in the formation of mature RNA. In some cases, a particular nucleotide sequence within a gene functions as an exon in one splicing variant and as an intron in another. Consequently, different modes of expression of the same gene can give rise to different polypeptides, known as isotypes or isoforms.
Альтернативний стан ознаки	Alternative state of a trait	the expression or absence of a trait.
Альтернативні ознаки	Alternative traits	opposing qualitative traits determined by allelic genes and mutually exclusive of one another.
Амбер-кодон	Amber codon	the triplet UAG (uracil, adenine, guanine), one of the three nonsense codons that cause termination of protein synthesis.
Амбер-мутація	Amber mutation	any change in DNA resulting in the appearance of amber codons in place of an amino acid-encoding triplet.
Аменсалізм	Amensalism	a form of relationship between organisms (populations) in a phytocoenosis in which one

Термін українською	Термін англійською	Визначення англійською
		suppresses the other without any negative reciprocal effect and without detriment to itself.
Амідування	Amidation	the formation of acid amides.
Аміктичне розмноження	Amictic reproduction	a mode of vegetative reproduction by means of parts of the organism or specialised structures – tubers, bulbs.
Амілази	Amylases	enzymes of the hydrolase class that catalyze the hydrolysis of reserve polysaccharides (starch, glycogen). Found in germinated plant grains. Depending on the mode of action on the substrate α-amylases (cleave internal bonds in the polysaccharide molecule); β-amylases (cleave maltose residues); and glucoamylases (cleave polysaccharides to form glucose). α-amylase plays a major role in grain germination during ripening.
Амілоза	Amylose	a linear-chain polysaccharide component of starch, a low-molecular-weight polysaccharide (molecular weight up to 200,000) whose molecules are built from residues of α-D-glucose. In iodine solution, amylose turns blue.
Амілопектин	Amylopectin	a major component of starch with a high molecular weight (up to several million). In iodine solution, it turns red.
Амілопласти	Amyloplasts	a type of leucoplast in which the synthesis and storage of starch grains takes place.
Амілофільні рослини	Amylophilous plants	plants in which the end product of photosynthesis is starch.
Аміноацил-тРНК	Aminoacyl-tRNA	an amino acid derivative that serves as the source for ribosomal biosynthesis of a polypeptide chain on messenger RNA; a complex ester of an amino acid and transfer ribonucleic acid (tRNA).

Термін українською	Термін англійською	Визначення англійською
Аміноацил-тРНК-синтетази	Aminoacyl-tRNA synthetases	enzymes that effect the covalent attachment of amino acids to the 2'- or 3'-OH termini of tRNA.
Амінокислоти	Amino acids	organic (carboxylic) acids containing one or two amino (-NH_2) and carboxyl (-COOH) groups. Approximately 20 amino acids participate in the construction of protein molecules. The specific sequence of amino acids in the peptide chain is determined by the genetic code and defines the primary structure of the protein. More than 100 amino acids that do not form part of proteins are also found in the tissues of living organisms.
Амінотрансферази	Aminotransferases	enzymes that catalyse the transfer of amino groups from a donor to an acceptor.
Амітоз	Amitosis	direct division of the interphase cell nucleus by formation of a nuclear septum, without chromosomal spiralisation or formation of a metaphase plate.
Амоніфікація	Ammonification	the decomposition of organic nitrogenous substances with the formation of ammonia.
Аморфи	Amorphs	alleles arising as a result of gene mutations that have completely lost the capacity to influence trait development. The nature of the mutations leading to the appearance of amorphs is attributable either to gene inactivation or to its loss from the chromosome. In most cases, loss of a gene results in the emergence of a recessive lethal allele. Gene inactivation is exemplified by the emergence of recessive albinism. Amorphs are complete recessives.
Амплікон	Amplicon	any DNA sequence that is amplified during additional cycles of replication. It may contain up to 1 kb of DNA and include a short sequence

Термін українською	Термін англійською	Визначення англійською
		functioning as an origin of amplification, i.e. an element controlling the amplification process.
Ампліфікація	Amplification	the process of generating additional copies of chromosomal DNA regions (extra copies) containing certain genes or segments of structural heterochromatin. In plants, amplification is particularly characteristic of ribosomal RNA genes. Also refers to the accumulation of copies of a specific nucleotide sequence during the polymerase chain reaction.
Амфіапомікти	Amphiapomicts	plants capable of reproducing both sexually and apomictically.
Амфігаплоїд	Amphihaploid	a hybrid organism containing complete haploid chromosome sets derived from different species; arising through distant hybridisation or through haploidisation of an amphidiploid organism.
Амфідиплоїд (алотетраплоїд)	Amphidiploid (allotetraploid)	an organism possessing a diploid chromosome set from each of two species or genera. It arises as a result of distant hybridisation. The phenomenon of amphidiploidy underlies speciation and is widespread in plants the cultivated plum contains a double set of chromosomes from the cherry plum and a double set from the blackthorn; triticale is an analogous hybrid of wheat and rye.
Амфіміксис	Amphimixis	a type of sexual reproduction in plants and animals in which a new organism is formed through the fusion of male and female gametes. In flowering plants, amphimixis is accomplished in the form of double fertilisation.

Термін українською	Термін англійською	Визначення англійською
Амфіпатичні (амфіфільні) сполуки	Amphipathic (amphiphilic) compounds	compounds capable of exhibiting simultaneously hydrophilic (water-soluble) and hydrophobic (water-insoluble) properties, owing to the presence in their molecules of both charged or polar and non-polar moieties. The hydrophilic portion is typically a large organic cationic or anionic group, while the hydrophobic portion is a long hydrocarbon chain. Amphiphilic substances exhibit surface activity at the interface between aqueous and hydrophobic phases. Phospholipids of cell membranes serve as a prime example.
Амфіплікація	Amphiplication	the propagation of a gene of interest, accomplished by increasing the copy number of the recombinant plasmid harbouring that gene, or by propagation and large-scale recovery of cells containing the hybrid plasmids. The gene of interest is subsequently excised from the recombinant plasmid using restriction enzymes for use in genetic engineering research.
Амфіплоїдія	Amphiploidy	a general term for all types of hybrid polyploidy arising from the crossing of two or more diploid species originally isolated from one another by hybrid sterility. The concept also encompasses segmental allopolyploidy, true or genomic allopolyploidy, and aneuploidy arising from the crossing of species belonging to an aneuploid series.
Анабіоз	Anabiosis	a state of the organism in which vital processes are effectively suspended or so markedly slowed that no signs of life are apparent.
Анаболізм клітини	Cellular anabolism	a process of cellular vital activity constituting the totality of metabolic reactions leading to the assimilation (uptake, accumulation, synthesis) of organic substances within the cell. These

Термін українською	Термін англійською	Визначення англійською
		reactions are accompanied by the absorption of energy and are endothermic in nature.
Анагенез	Anagenesis	a type of evolutionary progress closely related to biological progress, characterised by the increasing complexity of organs and the improvement of their functioning, accompanied by simultaneous autonomisation.
Анаероби	Anaerobes	organisms capable of living and developing in the absence of free oxygen.
Аналіз генетичний, гібридологічний метод	Genetic analysis, hybridological method	a method that studies the pattern of trait inheritance in offspring across hybrid generations.
Аналіз ризику	Risk analysis	a process comprising three interrelated components GMO risk assessment, risk management, and risk communication.
Аналізуюче схрещування	Test cross	a method of detecting possible heterozygosity in individuals exhibiting dominant traits by crossing them with individuals homozygous for the corresponding recessive allele.
Аналітична селекція	Analytical breeding	breeding based on the selection of founder elite plants from natural populations and local varieties by means of their resolution (analysis) into individual lines.
Аналоги відновлювачі	Restorer analogues	lines, varieties, or hybrids that resemble the original forms in their complex of traits but, unlike them, carry fertility-restorer genes in their genotype. Restorer analogues are developed for the paternal forms of heterotic hybrids whose maternal form is sterile and whose paternal form does not restore fertility and must therefore be endowed with this property.
Аналоги стерильності	Sterility analogues	maternal forms (lines, varieties, hybrids) of heterozygous hybrids that are entirely similar

Термін українською	Термін англійською	Визначення англійською
		in their complex of traits to the original fertile maternal forms but, unlike them, are sterile.
Аналоги фертильні	Fertile analogues	original lines or varieties for which sterile analogues are developed.
Аналогія	Analogy	external similarity of organisms or their parts.
Анаплазія	Anaplasia	the reversion of cells and tissues to an undifferentiated state.
Анафаза	Anaphase	one of the stages of cell division, during which the chromosome centromeres separate, the chromatids migrate to opposite poles, and become independent chromosomes.
Ангій	Angium	a structure in which reproductive elements (spores, gametes, etc.) are formed.
Ангстрем (Å)	Angstrom (Å)	a unit of length equal to 10^{-8} cm, used to measure submicroscopic cellular structures examined by means of electron microscopy.
Андрогенез	Androgenesis	a form of parthenogenesis in which an embryo develops from the nucleus of a male gamete introduced into the embryo sac by the pollen tube and sperm cell, without fusion of male and female gametes. Androgenesis gives rise to a haploid embryo carrying chromosomes exclusively of the male form (the pollen donor).
Андрогіни	Androgynes	plants bearing hermaphrodite (bisexual) flowers
Андроцей	Androecium	the totality of the male organs (stamens) of a flower, constituting its male generative organ.
Анемогамія	Anemogamy	pollination of plants by wind.
Анеуплоїд	Aneuploid	a cell or organism whose chromosome complement (karyotype) contains a number of chromosomes that is not a multiple of the

Термін українською	Термін англійською	Визначення англійською
		haploid (single) number; an organism with 2n−1, 3n+1, 3n−1, etc.
Анеуплоїдія	Aneuploidy	a phenomenon in which a cell contains an altered number of chromosomes that is not a multiple of the haploid set. The absence of one chromosome from the diploid complement is termed monosomy, and the absence of both homologous chromosomes is termed nullisomy. The presence of an additional homologous chromosome is termed trisomy. The primary mechanism underlying aneuploidy is the non-disjunction and loss of individual chromosomes during mitosis and meiosis. Chromosomal imbalance leads to reduced viability and frequently to the death of aneuploid organisms.
Анізогамія	Anisogamy	a type of sexual process in which two morphologically distinct gametes differing in size, form, and behaviour fuse.
Аномалія генетична	Genetic anomaly	a deviation from the phenotype normal for a given species or population, determined by heredity.
Антагонізм	Antagonism	a type of interorganismal relationship in which one organism retards the growth, suppresses the development, or causes the death of another (unilateral antagonism), or in which mutual suppression of both partners occurs (bilateral antagonism).
Антибіоз	Antibiosis	one manifestation of biological antagonistic relationships between organisms, expressed in the suppression of the vital activity of one species under the influence of the metabolites of another; specifically, the adverse effect of plants on phytophages, manifested following

Термін українською	Термін англійською	Визначення англійською
		the establishment of close and relatively prolonged contact between them.
Антибіотики	Antibiotics	substances of biological origin capable of inhibiting microbial growth or destroying microorganisms. Antibiotics are produced by mould fungi (penicillin), actinomycetes (streptomycin), bacteria (gramicidin), and also by higher plants in the form of phytoncides. In genetics, antibiotics are employed as powerful tools for the selection of genetically modified organisms (GMOs), serving as resistance markers, as well as for studying the mechanisms of mutagenesis and the spread of resistance genes in bacterial populations.
Антиген	Antigen	a molecule or part of a molecule of foreign origin that elicits an immune response.
Антигени	Antigens	substances perceived by the organism as foreign that elicit a specific immune response and are capable of interacting with the products of that response – antibodies (immunoglobulins) and immunocytes – both in vitro and in vivo. Macromolecular components of all living organisms possess antigenic properties.
Антигенна детермінанта	Antigenic determinant	a portion of a protein or polysaccharide molecule capable of eliciting the formation of antibodies of a particular specificity.
Антикодон	Anticodon	a region of the transfer RNA molecule consisting of three nucleotides that recognises the corresponding three-nucleotide region (codon) of the messenger RNA molecule and interacts with it by complementary base pairing. The specific codon–anticodon interaction occurring on ribosomes during

Термін українською	Термін англійською	Визначення англійською
		translation ensures the correct positioning of amino acids in the polypeptide chain.
Антимутагенез	Antimutagenesis	the process of preventing the fixation (establishment) of a mutation, i.e. the reversion of a primarily damaged chromosome or gene to its original state.
Антимутагени	Antimutagens	agents or factors that reduce the spontaneous or induced mutation frequency of mutations and suppress the mutagenic action of chemical and physical agents. Among the antimutagens that maintain a certain level of spontaneous mutations are the enzyme systems effecting repair of genetic material, as well as natural cellular metabolites that block the action of mutagens (e.g. catalase destroys hydrogen peroxide, which exerts a mutagenic effect). Specific mutagen-antimutagen relationships have been identified for chemical mutagens.
Антиоксиданти	Antioxidants	oxidation inhibitors, natural or synthetic substances that prevent or slow the oxidation of organic compounds. They also have radioprotective properties, allowing antioxidants to be used to increase the radioresistance of organisms (cysteine, thiourea, citric and ascorbic acid, carotenoids, etc.).
Антиподи	Antipodal cells	cells located at the pole of the fully formed embryo sac of angiosperms opposite to the egg apparatus. Antipodal cells do not participate in fertilisation and degenerate following fertilisation.
Антитермінація	Antitermination	the capacity of certain phage proteins to block the function of specific terminators. This phenomenon is characteristic of phage genomes (viruses).

Термін українською	Термін англійською	Визначення англійською
Антитіла	Antibodies	globular proteins possessing the capacity to bind specifically to antigens, thereby promoting the development of immunity in the organism.
Антоціани	Anthocyanins	pigments present in the cell sap of the vacuoles of flower, fruit, and leaf cells that impart red, blue, and violet colouration to plant tissues.
Антропогенетика	Anthropogenetics	human genetics, the branch of science that studies the heredity and variability of the most complex representatives of the living world.
Антропогенне навантаження	Anthropogenic load	the level of human impact on nature as a whole or on its individual components.
Антропогенний вплив	Anthropogenic impact	the influence of human activity on nature in a historical context.
Антропогенні фактори	Anthropogenic factors	changes introduced into nature by human activity that affect the organic world. Human impact on nature may be direct or indirect. Direct impact includes the collection and mowing of plants, forest felling, and recreational pressures. Indirect impact consists of human alteration of the natural environment through industrial pollution and the creation of specific ecosystems with particular conditions of existence for plants. Direct and indirect impacts are closely intertwined, and their delineation is largely conventional.
Антропохорія	Anthropochory	the dispersal of plants and other organisms by humans.
Апекс	Apex	the growth cone, the tip of a stem or root.
Апогаметія	Apogamety	the elimination of the gamete (egg cell) in the embryo sac of angiosperms and the development of an embryo from other cells of the female gametophyte – potential gametes such as synergids (synergid apogamety) or

Термін українською	Термін англійською	Визначення англійською
		antipodal cells (antipodal apogamy) – possessing either a haploid (haploid or reduced apogamy) or a diploid (diploid or unreduced apogamy) chromosome set.
Апогамія	Apogamy	one of the forms of apomixis in plants, consisting in the development of an embryo without fertilisation from any cell of the gametophyte or sporophyte (in angiosperms, from cells of the embryo sac).
Апоміксис	Apomixis	the formation of seed without fertilisation of the egg cell and without a reductive process, in which the embryo develops from cells of the gametophyte under various disruptions of sporogenesis; also termed asexual seed reproduction. The phenomenon of apomixis is extraordinarily complex. Numerous forms are known, including haploid and autonomous apomixis, apomictic pseudogamy, automictic pseudogamy, and adventive embryony. Apomictic reproduction and the associated possibilities for fixing heterosis may be of considerable importance for improving breeding methods and developing new cultivars, particularly in cross-pollinating crop plants.
Апоміkти	Apomicts	plants that reproduce by apomixis. This phenomenon is widespread among cross-pollinating plants of various species, genera, and families.
Апоптоз	Apoptosis	the process of genetically programmed cell death occurring during differentiation and tissue remodelling; regulated by hormones and inducible artificially.

Термін українською	Термін англійською	Визначення англійською
Апорогамія	Aporogamy	the penetration of the pollen tube into the embryo sac of angiospermous plants by a route other than through the micropyle.
Апоспорія	Apospory	a mode of reproduction in which the gametophyte develops from vegetative cells of the sporophyte without meiotic spore formation.
Апробація (від лат. aprobacio	Variety inspection	one of the principal forms of variety quality control.
Апробація комірна	Granary appraisal	quality control of the variety characteristics of certain crops, carried out in seed stores. Granary appraisal supplements field appraisal and field survey and consists of checking seeds for varietal purity or typicality, disease infection, and pest damage.
Апробація польова	Field appraisal	the principal method of variety quality control, establishing the conformity of seed crops with the variety specified in the documentation for the sown seed. It involves the determination of the suitability of variety and hybrid crops (varietal purity or typicality, disease and pest infection, weed contamination) for use as seed material. All variety crops whose yield is intended for use as seed are subject to field appraisal.
Апстрим	Upstream	sequences in a linear DNA or protein molecule that occupy a position in the direction opposite to that of DNA transcription or protein synthesis respectively (e.g. at the 5′ end relative to any given site in DNA or RNA).
Апуринові сайти	Apurinic sites	sites from which purine bases have been removed.
Арбітражне (експертне)	Arbitration (expert)	a procedure conducted by analysis of samples taken from a seed lot and/or planting material,

Термін українською	Термін англійською	Визначення англійською
визначення посівних якостей насіння і товарних якостей садивного матеріалу	determination of seed sowing quality and planting	establishing the conformity of seed sowing quality and planting material commercial quality with the requirements of legislation in the field of seed production and nursery growing.
Арбітражний аналіз насіння	Arbitration seed analysis	the analysis of seed for the purpose of resolving disputes between farms and institutions concerning its sowing quality, conducted by seed control establishments.
Арбітражний зразок насіння	Arbitration seed sample	a seed sample taken for arbitration analysis.
Арбітражні випробування ГМО	Arbitration GMO testing	laboratory investigations conducted at the request of a person contesting the results of a prior laboratory examination.
Ареал	Range (area of distribution)	the portion of the Earth's surface (land or water) within which a particular taxon (species, genus, family, etc.) is distributed and completes its full developmental cycle. The range is specific to each species and constitutes an inseparable component of the characterisation of any taxon, together with its morphological and ecological features. The space within which a species originates is termed its primary range.
АРП	ARS (autonomously replicating sequence)	a sequence or fragment that replicates autonomously.
Архетип	Archetype	a primary structure possessing the most general ancestral properties.
Асиміляція	Assimilation	the totality of processes of synthesis of complex substances from simpler ones, providing for the growth, development, and energetic needs of the organism.

Термін українською	Термін англійською	Визначення англійською
Асинапсис (асиндез)	Asynapsis (asynapsis)	the complete absence or reduced activity of chromosome conjugation during meiosis, evidenced by the appearance of univalents in metaphase I of meiosis, the number of which may vary.
Асортативні схрещування	Assortative mating	a departure from random mating in which individuals with certain genotypes (similar or dissimilar) mate with one another more frequently than would be expected on the basis of probability theory. Assortative mating does not alter gene frequencies but does alter genotype frequencies. An important form of assortative mating is inbreeding, in which mating between related individuals occurs considerably more frequently than probability theory would predict.
Асоціація	Association	the basic elementary (lowest) classificatory unit of plant cover, comprising a set of similar phytocoenoses that are relatively homogeneous but not identical in species composition, structure, and plant-environment interactions.
Атавізм	Atavism	the manifestation in individual organisms of a given species of traits possessed by their distant ancestors but lost in the course of evolution. The occurrence of atavism in the ontogeny of an individual is explained by the fact that the genes (and morphogenetic systems) responsible for a given trait are conserved in the evolution of the species, but their action during normal development is blocked by other genes (repressors). After many generations, the blocking action of the repressor may, for various reasons, cease in the ontogeny of an individual, and the trait re-emerges.

Термін українською	Термін англійською	Визначення англійською
Атенуатор	Attenuator	a special regulatory region within the leader DNA that closely resembles a rho-independent terminator in its structure. The attenuator acts as a transcriptional barrier in the presence of tryptophan.
Атракція	Attraction	the outflow of assimilates from vegetative organs of a plant into generative ones.
Атрофія клітин	Cell atrophy	a reduction in cell volume resulting from the action of harmful factors.
АТФ-синтетаза	ATP synthase	an enzyme complex compartmentalised to the inner mitochondrial membrane that catalyses the synthesis of ATP from ADP and inorganic phosphate during oxidative phosphorylation.
Аудитор із сертифікації (агроном-інспектор)	Certification auditor (agronomist-inspector)	a natural person who has received a certification auditor (agronomist-inspector) certificate and has been entered in the Register of Certification Auditors (Agronomists-Inspectors).
Ауксини	Auxins	plant hormones that are indole derivatives, formed in apical meristems and stimulating growth processes. One of the most widely distributed auxins is β-indole-3-acetic acid (IAA), or heteroauxin, whose biochemical precursor is tryptophan. At low concentrations, auxins accelerate plant growth; at higher concentrations they inhibit it. Auxins also stimulate cell proliferation in callus cultures, and in combination with cytokinins they promote cell differentiation and induce root formation in tissue culture.
Ауксотрофи	Auxotrophs	microorganism mutants that have lost the ability to synthesise compounds essential for vital activity (amino acids, nucleotides, vitamins).

Термін українською	Термін англійською	Визначення англійською
Аутбридинг (ауткросинг)	Outbreeding (outcrossing)	non-related crossing of organisms, including those belonging to different breeds, varieties, or species. Outbreeding maintains the heterozygosity of the organism and population, and thereby its viability, and is the opposite of inbreeding.
Аутекологія	Autecology	the branch of ecology that studies species-specific responses of organisms (individuals or populations) to environmental factors.
Аутополіплоїд	Autopolyploid	an organism possessing more than two sets of homologous chromosomes of a single species.
Аутополіплоїдія	Autopolyploidy	a multiple increase in chromosome number within a single species, giving rise to autotriploids, autotetraploids, autopentaploids, etc.
Аутосоми	Autosomes	all chromosomes in the cells of gonochoristic animals and plants, with the exception of the sex chromosomes.
Аутохорія	Autochory	the active independent dispersal of plants, fungi, and bacteria. Plants exhibiting autochory are divided into two groups according to their mode of dispersal ballists, which actively propel their seeds (e.g. legumes), and plants with creeping diaspores.
Афлотоксин	Aflatoxin	a product of the mould fungus Aspergillus flavus; it undergoes metabolic activation within the organism to yield a potent mutagen
Ахроматин	Achromatin	a substance of the cell nucleus that, unlike chromatin, does not stain with dyes characteristic of chromosomes.
Ахроматинове веретено поділу	Achromatic spindle	the mitotic apparatus of the cell that effects the migration of chromatids to the cell poles during anaphase. It comprises two types of fibres kinetochore (chromosomal) and polar fibres.

Термін українською	Термін англійською	Визначення англійською
Ацидофілія (оксифілія)	Acidophilia (oxyphilia)	the capacity of structural elements of cells and tissues (cytoplasm, organelles) to be stained with acidic dyes; such structures possess basic properties.
Б		
Багатонасінне насіння	Multi-seeded seed	a multiple fruit containing two or more embryos.
Багаторічні рослини	Perennial plants	plants whose development extends over more than two growing seasons.
Багаторосткове насіння	Multi-germ seed	seed that upon germination produces two or more seedlings (sugar beet, fodder beet, beetroot).
Багаторостковість	Multi-germination rate	the ratio of the number of beet seeds that produce two or more seedlings upon germination to the total number of germinated seeds, expressed as a percentage.
База даних Міжнародного союзу з охорони нових сортів рослин (UPOV)	UPOV database	information on plant variety applications provided by the contracting parties to the Convention and published on the official website of the International Union for the Protection of New Varieties of Plants.
База даних сортів	Variety database	an automated information system comprising a set of interrelated electronic resources and/or registers, containing information on varieties, actions, and application status as defined by law, and providing the technical capacity for storing and accessing available information and conducting the procedure for state registration of a variety and rights thereto by means of electronic services.
Базальна клітина	Basal cell	one of the two cells formed as a result of the first division of the zygote in angiosperms, located closer to the micropyle; it gives rise to the suspensor.

Термін українською	Термін англійською	Визначення англійською
Базиген	Basal allele	the normal allele (A, wild-type allele) of a multiple allele series.
Базидіоміцети	Basidiomycetes	basidial fungi, a class of higher fungi in which sexual reproduction is effected by basidiospores developing on specialised cylindrical cells known as basidia.
Базидія	Basidium	the sporogenous organ of basidiomycete fungi, which may be unicellular (holobasidium) or four-celled (phragmobasidium); each basidium bears four basidiospores.
Базифільні організми	Basiphilic organisms	organisms that develop in an alkaline environment.
Базове насіння	Basic seed	seed generations obtained from the successive propagation of pre-basic seed.
Базовий садивний матеріал багаторічних рослин	Basic planting material of perennial plants	virus-free plants or plant parts of varieties and clones obtained from successive propagation of initial planting material and intended for the establishment of mother plantations.
Базофілія	Basophilia	the capacity of structures to be stained with basic dyes; such structures possess acidic properties.
Бактерицидність	Bactericidal activity	the property of various substances – including blood serum, the juices of many plants, and certain inorganic and organic compounds – to kill microorganisms.
Бактеріальна ризосфера	Bacterial rhizosphere	the totality of bacteria inhabiting the rhizosphere of plants and utilising root exudates. It is of great importance to plant life, as bacteria in the course of their vital activity produce substances that serve as nutrients for higher plants.
Бактеріальний препарат	Bacterial preparation	a preparation in which the active substance consists of bacteria or their metabolic products.

Термін українською	Термін англійською	Визначення англійською
Бактерії	Bacteria	microscopic, chlorophyll-free, unicellular prokaryotic organisms, widespread in soil, water, air, and in the bodies of humans, animals, and plants. They play an important role in nature, participating in the cycling of matter and in various geological processes.
Бактерії лізогенні (від грец. bacterion	Lysogenic bacteria	bacterial cells into whose DNA the DNA of bacteriophages has been integrated, transforming into a prophage. Upon subsequent division of such bacterial cells, the cellular DNA is replicated, and the prophage DNA is replicated along with it. The daughter cells of lysogenic bacterial cells will likewise be lysogenic.
Бактеріоз рослин	Bacterial disease of plants	a plant disease caused by bacteria.
Бактеріотрофізм	Bacteriotrophism	a form of nutrition in higher plants during symbiosis effected by means of symbiotic bacteria, such as nodule bacteria.
Бактеріофаги	Bacteriophages	bacterial viruses that cause lysis (dissolution) of bacteria and other microorganisms. Bacteriophages are divided into virulent phages, which cause cell lysis with the production of new particles, and temperate (symbiotic) phages, which are adsorbed by the cell, penetrate it, and remain therein in a latent non-infectious form (prophage) without causing lysis. Bacteria harbouring a temperate phage are termed lysogenic. Bacteriophages play an important role in the variability and evolution of microbes and are widely employed in genetics and molecular biology research.
Балансована модель популяції	Balanced population model	a model developed through the research of S.S. Chetverikov, D. Jones, E. East, R. Fisher, S. Wright, M.P. Dubinin, D.D. Romashov, S.M.

Термін українською	Термін англійською	Визначення англійською
		Gershenson, and others. According to this model, there are no standard wild-type genes in a population. The majority, or possibly all, gene loci in the chromosomes of individuals are occupied by genes belonging to series of multiple alleles. Evolutionary shifts in a population proceed not through selection for a single gene, but through selection for many genes whose alleles exist in a specific ratio (balance) relative to one another.
Балансуюча хромосома	Balancer chromosome	a chromosome carrying several overlapping inversions that prevent recombination with the homologous chromosome, and additionally bearing a dominant marker mutation.
Балова шкала пошкодження рослин	Plant damage scoring scale	a scale for the visual assessment of plant damage.
Банк генів	Gene bank	a collection of cellular genes comprising all fragments of foreign DNA or a set of genes of a given organism incorporated into recombinant DNA constructs. In plant breeding, a gene bank includes various genotypes (forms, varieties, species) maintained in national collections and repositories that may be used as source material.
Бар'єрна стійкість	Barrier resistance	a type of plant disease response in which infection of the plant does not constitute a source of infection (e.g. in potato varieties that rapidly perish upon viral infection and do not form tubers).
Барботування	Hydropriming (aerated water treatment)	a method of stimulating seed germination by pre-sowing treatment in water continuously aerated with oxygen or air.

Термін українською	Термін англійською	Визначення англійською
Барвники гістологічні (цитологічні)	Histological (cytological) dyes	chemical substances that selectively bind to cellular and tissue structures, increasing their contrast and thereby rendering them more visible and accessible for microscopic examination.
Батьківський (материнський) компонент	Maternal (female) component	a self-pollinating line or sterile hybrid (A).
Батьківський (чоловічий) компонент	Paternal (male) component	the form whose pollen fertilises the maternal form (B or C).
Батьківські компоненти	Parental components	plant varieties constituting the component parts of a first-generation hybrid (inbred line, hybrid) used for its development or reproduction.
Батьківські пари	Parental pairs	two original forms or two varieties selected for crossing.
Безвисадковий спосіб	Non-transplant method	a method of seed production (from seed to seed) in which plants from summer mother-plant sowings of sugar beet overwinter in the soil, re-sprout in spring, form reproductive organs, and bear fruit.
Безглуздий кодон	Nonsense codon	any of the three triplets UAG, UAA, or UGA that cause termination of protein synthesis (UAG is known as the amber codon; UAA as the ochre codon; UGA as the opal codon).
Безстатеве розмноження	Asexual reproduction	any form of reproduction that does not involve the fusion of gametes.
Бекрос або зворотне схрещування	Backcross	the crossing of a hybrid with one of its parental forms. In genetics, it is used to determine the genotype of individuals (test cross); in plant breeding, it forms the basis of the backcrossing method for enhancing the expression of one parent in hybrids, overcoming the sterility of

Термін українською	Термін англійською	Визначення англійською
		distant hybrids, and fixing heterosis in subsequent generations.
Бер	Rem (roentgen equivalent man)	rem (roentgen equivalent man) – the unit of radiation dose equivalent, numerically equal to the absorbed dose in rad multiplied by the appropriate quality factor
Бібліотека геному	Genomic library	is a collection of cloned DNA fragments collectively representing the entire genome of an organism. It is generated by fractionation of total genomic DNA using restriction endonucleases, followed by ligation and cloning of the resulting restriction fragments into appropriate vector systems.
Бібліотека кДНК	cDNA library	a library prepared from mRNA templates of various sources, containing primarily unique sequences of actively expressed structural genes or portions thereof, as well as DNA sequences from their immediate flanking regions. These libraries are used to identify the corresponding genes in chromosomes.
Бівалент	Bivalent	a pair of homologous chromosomes joined (conjugated) during meiosis. Bivalents are formed at the zygotene stage by means of a specialised protein complex and are maintained until anaphase I of meiosis. Under normal conditions, the number of bivalents equals the haploid (single) chromosome number.
Біла гниль	White rot	a fungal disease affecting the majority of vegetable and field crops, caused by fungi of the genera Sclerotinia and Libertiana of the class Ascomycetes.
Білатеральність	Bilaterality	bilateral symmetry in an organism.

Термін українською	Термін англійською	Визначення англійською
Білки	Proteins	naturally occurring high-molecular-weight substances (polymers) composed of amino acid residues.
Білки хроматину	Chromatin proteins	comprising histones and non-histone proteins. Histones – proteins rich in basic amino acids (lysine and arginine) – play an important role in the structural organisation of chromatin. Non-histone chromatin proteins are acidic and neutral proteins that include DNA replication enzymes, transcription enzymes, and regulatory proteins.
Білки-біополімери	Protein biopolymers	the molecular foundation of organismal vital activity, playing a leading role in the molecular mechanisms of all life processes. The information encoded in protein biopolymers is recorded in the form of long sequences of amino acid residues and is derived from the genetic apparatus during protein biosynthesis. The structural elements of proteins are amino acids, represented as residues joined by –CO–NH– bonds into polypeptide chains, each consisting of tens to hundreds of units.
Білки-шокові (стресові білки, білки теплового шоку)	Shock proteins (stress proteins, heat shock proteins)	proteins synthesised in the giant chromosomes of Drosophila in response to brief heat shock (37°C). The new shock proteins account for up to 10% of total cellular protein, while synthesis of conventional proteins is simultaneously suppressed. Shock proteins represent one example of a universal genetic non-specific mechanism of adaptive modifications in animals and plants in response to elevated temperature, the essence of which lies in precisely regulated processes of repression of certain genes and induction of others.

Термін українською	Термін англійською	Визначення англійською
Білок	Protein	the most important component of the living cell, constituting a polyamino acid chain composed of 20 types of amino acids. Proteins differ from one another in their amino acid sequence.
Білок-активатор	Activator protein	a protein that activates a promoter and effects positive regulation of transcription.
Білок-репресор	Repressor protein	a protein capable of binding to an operator on DNA or RNA, thereby blocking transcription or translation respectively.
Білоколосиця	White ear (head blight)	sterility of the ear caused by infection of cereals with fungi of the genus Fusarium, or by drought during the heading period, or by pest damage.
Біогенеалогія	Biogenealogy	the science of the historical development of organisms.
Біогенетичний закон	Biogenetic law	the law according to which the individual development of an organism (ontogeny) is a brief and modified recapitulation of the most important stages of the historical development (phylogeny) of the species. The biogenetic law was formulated by E. Haeckel in 1866.
Біогенні елементи	Biogenic elements	the essential chemical components of organisms without which their existence is impossible (oxygen, nitrogen, hydrogen, carbon, calcium, phosphorus, sulphur, etc.).
Біогеоценоз	Biogeocoenosis	an interdependent complex of components occupying a defined area of the Earth’s surface, united by the exchange of matter and energy; a rank of ecosystem whose boundaries coincide with those of the phytocoenosis.
Біогеоценотичний покрив землі	Biogeocoenotic cover of the Earth	the totality of all biogeocoenoses of the Earth's surface.
Біоелектричні потенціали	Bioelectric potentials	electrical potentials arising in living cells, tissues, and organs.

Термін українською	Термін англійською	Визначення англійською
Біоіндикатори	Bioindicators	organisms whose presence serves as an indicator of environmental conditions or certain natural processes.
Біокібернетика	Biocybernetics	the science that studies the structural and functional organisation of biological systems and the patterns of acquisition, transformation, and utilisation of information within them.
Біологічна безпека	Biological safety	a state of the human living environment in which there is no adverse effect of its factors (biological, chemical, physical) on the biological structure and function of the human individual in present and future generations, and no irreversible adverse effect on biological objects of the natural environment (the biosphere) or on agricultural plants and animals.
Біологічна довговічність насіння	Biological seed longevity	the property of seeds maintained under optimal storage conditions not to lose their germinability, characterised by the duration of the period over which this property is retained.
Біологічна продуктивність	Biological productivity	the capacity of living organisms to produce, transform, and accumulate organic matter in ecosystems (biocoenoses).
Біологічна система	Biological system	a set of interacting heterogeneous elements constituting a biological object a cell, organ, organism, or biological community.
Біологічна спеціалізація фітопатогена	Biological specialisation of a phytopathogen	the capacity to parasitise specific host plant species.
Біологічна стиглість	Biological maturity	the state of an organism in which the reproductive organs have completed their developmental cycle and represent fully formed embryos of the new plant generation.

Термін українською	Термін англійською	Визначення англійською
Біологічна урожайність	Biological yield	the sum of daily increments over the course of the growing season.
Біологічне засмічення сорту	Biological variety contamination	contamination caused by the appearance of plants atypical for a given variety as a result of natural cross-pollination or mutation.
Біологічне окиснення	Biological oxidation	the totality of oxidation-reduction reactions occurring in cells; the enzymatic oxidation of organic substances in living systems. The principal function of this process is to supply the organism with energy in a form available for use – predominantly as ATP.
Біологічне різноманіття	Biological diversity	the totality of all species of living organisms in a given territory. Biological diversity is distinguished as genetic, species, population, coenotic, and ecosystem diversity.
Біологічний годинник	Biological clock	a general term for internal organs or regulators by means of which organisms orientate themselves in time of day, season of the year, etc. This capacity of organisms arose in the course of their evolutionary adaptation to periodically changing living conditions and is explained by the established periodicity of physiological processes.
Біологічний спектр	Biological spectrum	the composition of biological life forms of plants in a given territory, vegetation type, formation, etc., expressed as a percentage.
Біологічні властивості насіння	Biological properties of seed	the physiological, biochemical, and genetic characteristics of seed that define the process of its germination (sowing properties) and its capacity to ensure a certain productivity of the progeny (yield properties).
Біологічні ознаки	Biological traits	morphological, anatomical, and coenotic characteristics of an organism.

Термін українською	Термін англійською	Визначення англійською
Біологічні ритми	Biological rhythms	cyclic oscillations in the intensity and nature of biological processes and phenomena.
Біологічні цикли	Biological cycles	rhythmic recurrences of biological phenomena in communities of organisms (populations, biocoenoses), constituting adaptations to cyclically changing conditions of existence.
Біологічно активні речовини	Biologically active substances	organic substances of various chemical origins that exhibit activity at very low concentrations and have specific effects. They are used in biological plant protection and include pheromones, hormones, enzymes, and antibiotics.
Біом	Biome	a natural community of organisms occupying a sufficiently large territory and regulated by the local microclimate.
Біомаса	Biomass	the quantity of substance of living organisms accumulated in a population, biocoenosis, or biosphere at any given point in time.
Біометрична генетика	Biometric genetics	a branch of modern genetics that studies the mechanisms and patterns of heredity and variability in organisms. Its principal objectives are determining the degree of phenotypic and genotypic variability of traits; revealing the characteristics of variability of quantitative and qualitative (morphological) traits and determining the distribution pattern of individuals with differing levels of trait expression; establishing phenotypic and genotypic correlational relationships between traits; and determining the contribution of various factors to phenotypic and genotypic variability using analysis of variance and factor analysis.

Термін українською	Термін англійською	Визначення англійською
Біометрія	Biometry	biological variational statistics, used for the processing of experimental data and observations, as well as for the planning of quantitative experiments in biological research. Biometry is also defined as the science of change in group information in populations.
Біоритми	Biorhythms	cyclic oscillations of biological processes and phenomena.
Біосинтез	Biosynthesis	the process of formation of organic substances from simpler compounds, effected in living organisms under the action of biocatalysts – enzymes. The nature of biosynthesis occurring in the cell is determined by the hereditary information encoded in its genetic apparatus.
Біосинтез білка	Protein biosynthesis	one of the central processes of cellular metabolism, linked to the exchange of matter, energy, and hereditary information. It occurs in the cells of living organisms. Information on the primary structure of each protein is encoded in DNA, from which it is transcribed onto mRNA (transcription). The mRNA then proceeds to the ribosomes, where synthesis of the polypeptide chain on the mRNA template is effected (translation). The nucleotide sequence of the mRNA determines the amino acid sequence of the polypeptide chain.
Біостазис	Biostasis	the capacity of living organisms to resist environmental changes and remain unaltered (e.g. to maintain immunity, capacity for acclimation, etc.).
Біосфера	Biosphere	one of the Earth's shells (geospheres), comprising the inhabited portions of the Earth's crust, the hydrosphere, and the lower layer of the atmosphere. The upper boundary of the biosphere is delimited by the ozone layer and

Термін українською	Термін англійською	Визначення англійською
		ultraviolet radiation, and the lower boundary by the thermal barrier. The total thickness of the biosphere may reach 40 km.
Біота	Biota	a historically determined complex of living organisms united by a common territory of distribution. Unlike a biocoenosis, the species comprising a biota do not necessarily share ecological connections.
Біотехнологія	Biotechnology	a scientific discipline that studies biological processes with a view to their practical application.
Біотип	Biotype	a group of individuals of a species or variety characterised by genetic homogeneity with respect to one or several traits. A set of biotypes related in their biological and physiological characteristics within a species constitutes a distinct ecotype thereof.
Біотичне середовище (біосередовище)	Biotic environment	all living organisms of the surrounding environment.
Біотичний потенціал	Biotic potential	the intrinsic capacity of a population to increase in numbers under a stable age structure and optimal environmental conditions.
Біотичні взаємини	Biotic relationships	the various forms of interactions between organisms in a biocoenosis.
Біотичні фактори	Biotic factors	factors of the organic world (microflora, pests, diseases, allelopathic interactions, etc.) that determine the conditions of existence of organisms in a given locality. Biotic factors are manifested in the form of mutual influences of various species of living organisms upon one another.
Біотоп	Biotope	the site occupied by a biocoenosis (the habitat of a community), typically a characteristic

Термін українською	Термін англійською	Визначення англійською
		landscape fragment inhabited by a given species.
Біотрофія	Biotrophy	the feeding of organisms (biotrophs) on the biomass of other organisms; a form of biotic interaction ensuring the transfer of energy and matter from one biocoenotic component to another. Biotrophy takes the form of predation, parasitism, and symbiosis.
Біохімічний метод визначення життєздатності насіння	Biochemical method for determining seed viability	a method based on the reaction of embryonic organs to treatment with dye solutions.
Біохімічні ознаки	Biochemical traits	the content of protein, oil, sugar, and other components in grain or in the plant as a whole.
Біоценоз	Biocoenosis	a historically formed assemblage of populations of various species inhabiting a given territory or water body and characterised by specific interrelationships.
Біоценологія	Biocoenology	the science concerned with the origin, development, structure, spatial distribution, and other aspects of biocoenoses.
Біоценотичний добір	Biocoenotic selection	the selection of species for coexistence, continuously occurring during the formation and existence of biocoenoses. It is accompanied by significant mortality of individuals and promotes the establishment of well-adapted coenopopulations, thereby conditioning the stability of biocoenoses.
Біоценотичні зв'язки	Biocoenotic relationships	connections arising in the course of interspecific relationships and interactions with the environment. They determine the associatedness of species and serve as channels for signal transmission during self-regulation of biocoenoses.

Термін українською	Термін англійською	Визначення англійською
Бісексуальність	Bisexuality	the presence of both male and female sexes in a species.
Блок	Block	a group of plots on which varieties are placed.
Блок у сортовипробуванні	Block in variety trials	a group of varieties of similar growing season duration, plant height, etc., constituting part of a replicate in variety trials. A replicate consists of blocks when more than 50 varieties of a single crop are being tested, in which case the standard variety is sown as many times as there are blocks, i.e. in each block.
Блок-генів	Gene block	closely linked genes in a chromosome that control the same trait.
Блот-гібридизація	Blot hybridisation	a method consisting of the preparation of restriction fragments of the test DNA, their electrophoretic separation, denaturation of the fragments (conversion to single-stranded form), transfer to a filter (nitrocellulose, nylon, etc.) by means of filter paper, and hybridisation with a specific polynucleotide probe.
Бонітування ґрунтів	Soil quality assessment (soil bonitation)	a comparative evaluation of soil quality based on its principal inherent properties that are of a stable character and exert a significant influence on the yield of agricultural crops grown under specific natural and climatic conditions.
Борошнисте насіння	Mealy seed	seed with an opaque consistency and a loosely mealy structure at the point of fracture.
Ботанічний таксон	Botanical taxon	a taxonomic category established for a distinct group of plants related by shared characteristics and properties.
Ботом-крос	Bottom cross	the crossing of a population or variety (♀) with an inbred line (♂). The reciprocal cross (♀ line / ♂ variety or population) is termed a top cross.

Термін українською	Термін англійською	Визначення англійською
Брунька	Bud	the primordium of a shoot in a state of relative dormancy.
Брунькування	Budding	a mode of vegetative reproduction.
Бульба материнська	Mother tuber	the progenitor of a potato hill, comprising an assemblage of daughter plants (stems) united by their common origin from the mother tuber. The number of stems depends on the genotype, the mass of the mother tuber, and growing conditions.
Бульба садивна	Seed tuber	an organ of vegetative reproduction in tuberous crops used for planting.
Бульби мікро	Microtubers	tubers produced on plants under in vitro conditions (in test tubes).
Бульби міні	Minitubers	small-sized tubers obtained from in vitro plants transplanted to a greenhouse or open ground.
Бульбова апробація	Tuber appraisal	an appraisal conducted in stores according to a specific methodology to determine the varietal purity and disease status of a given lot following sorting, with a view to assigning the variety to a higher category.
Бульбове потомство	Tuber progeny	progeny derived from a seedling obtained from true seed in tuberous crops. From the first tuber progeny, a second tuber progeny is obtained in the following year.
Бульбовий аналіз	Tuber analysis	quality control of tubers during storage, involving determination of varietal purity, disease and pest infection, natural losses, sprouting, physiological condition, etc.
Бульбочкові бактерії	Nodule bacteria	bacteria of the genus Rhizobium capable of fixing atmospheric nitrogen.
В		

Термін українською	Термін англійською	Визначення англійською
В'язкість біологічного середовища	Viscosity of the biological medium	the property of a liquid biological medium to resist displacement of its various parts and to oppose rupture.
Вакуолі	Vacuoles	small cavities enclosed by a membrane (tonoplast) within the protoplasm, filled with cell sap. They perform functions of secretion, excretion, osmoregulation, and storage of reserve nutrients. Vacuoles are clearly visible in the cells of plants and fungi.
Вакуолярна система	Vacuolar system	the membrane-transport system of the cytoplasm, comprising the Golgi apparatus, the endoplasmic reticulum with its granular and agranular portions, lysosomes, endosomes, and transport vesicles.
Вакуом	Vacuome	the system of vacuoles of a cell.
Валентність екологічна	Ecological valence	the degree to which a species is capable of tolerating changes in any given environmental factor. Species with broad ecological valence are termed eurybionts; those with narrow valence are termed stenobionts.
Варіабельність пенетрантності	Penetrance variability	variable ratios of phenotypic classes depending on external environmental or genotypic conditions.
Варіанса або дисперсія (S^2)	Variance (S^2)	the sum of squared deviations of individual values from the mean, divided by the number of deviations minus one (degrees of freedom); used in research as a statistical measure of variability.
Варіант	Variant	an individual plant, variety, agronomic technique, growing condition, or combination thereof under study in an experiment.
Варіанта	Variate	an individually obtained value of a variable trait; the value of any member of a variation

Термін українською	Термін англійською	Визначення англійською
		series constructed with respect to a quantitative trait.
Варіації	Variations	the appearance of phenotypic differences in cellular structures or between individuals; mutations in facultative elements of the genome; modificational or genotypic differences between the units comprising a complete population.
Варіації сомаклональні	Somaclonal variations	genetic and epigenetic heterogeneity of populations of cells or plants arising upon cloning of somatic cells of a single organism. Somaclonal variations reflect both the genetic heterogeneity inherent in a given plant tissue and variability associated with culture conditions.
Варіаційний ряд	Variation series	variants of a sample population arranged in ascending or descending order of a given quantitative trait.
Варіація	Variation	modificational or genotypic differences between the variants of a variation series.
Введення в обіг насіння і садивного матеріалу	Placing seed and planting material into circulation	the sale and any other transfer of ownership of seed and planting material for commercial use, storage, or with a view to subsequent sale; the offer for sale or any commercial use thereof; the paid or gratuitous supply or transfer of seed and planting material to third parties for commercial use.
Вегетативна апікальна меристема	Vegetative apical meristem	the meristem of the root and shoot apex that gives rise to the vegetative organs.
Вегетативна апогамія	Vegetative apogamy	the development of an embryo from a vegetative (somatic) cell (nucellus or integument).

Термін українською	Термін англійською	Визначення англійською
Вегетативне ділення	Vegetative division	reproduction by cell division or budding.
Вегетативне поновлення	Vegetative renewal	the emergence of new plant individuals through the formation of shoots from dormant or adventitious buds on stumps, root suckers from adventitious buds on roots, or layering from mother trees.
Вегетативне розмноження	Vegetative reproduction	reproduction by plant parts – shoots, roots, tubers, leaves, or groups of somatic cells of these organs. Vegetative reproduction is one of the adaptations for producing offspring where conditions for sexual reproduction are unfavourable.
Вегетативні органи	Vegetative organs	plant organs that ensure its vital activity and vegetative reproduction (stem, leaves, root, tuber). Vegetative organs perform the principal functions of nutrition and exchange of matter with the surrounding environment, serve to maintain individual life, and do not directly participate in sporulation or sexual reproduction.
Вегетаційний будиночок	Vegetation house	a specialised structure with a transparent roof and walls and an adjacent area for growing plants under natural lighting with controlled humidity and nutrition.
Вегетаційний період	Growing season	the period from seed emergence (tuber sprouting) to full maturity, during which the plant completes its full developmental cycle. The duration of the growing season is an important indicator of the agronomic and biological characteristics of a variety or breeding material. The duration of individual phases of vegetation is of considerable importance in the selection of crossing pairs.

Термін українською	Термін англійською	Визначення англійською
Вегетаційний цикл	Vegetative cycle	the period during which a plant completes its full developmental cycle – from sowing to crop maturity. For annual botanical taxa, the growing season coincides with the vegetative cycle.
Вегетація	Vegetation	the period during which a plant passes through its full developmental cycle (period of active vital activity).
Ведучий ланцюг	Leading strand	the DNA strand synthesised continuously in the 5′→3′ direction.
Вектор	Vector	an autonomous DNA molecule derived from a plasmid or bacteriophage into which fragments of foreign DNA may be inserted and cloned. It contains one or more unique restriction sites for the insertion of foreign DNA, and is capable of transferring an inserted gene (or genes, cloned DNA fragments) from a donor organism to a recipient organism (cell), where the vectors may replicate autonomously or in a state integrated into the genome, and may support other stages of the realisation of genetic information.
Величина (розмір) геному	Genome size	the number of base pairs of DNA (nucleotides) calculated per haploid genome.
Величина кросинговеру	Crossover value	the ratio of the number of crossover (recombinant) individuals to the total number of progeny from a test cross, expressed as a percentage.
Величина популяції	Population size	the number or density of a population in a given territory or ecological niche.
Величина C	C-value	a measure of the genome size of various eukaryotes – the quantity of DNA per single genome.

Термін українською	Термін англійською	Визначення англійською
Веретено поділу	Division spindle	a system of microtubules in a dividing cell, formed between the two cell poles and visible during metaphase, ensuring the movement of chromosomes to the poles during cell division.
Вертикальна (моногенна, олігогенна, расоспецифічна) стійкість	Vertical (monogenic, oligogenic, race-specific) resistance	resistance conditioned by one or a small number of major genes (with a high degree of trait expression); evolutionarily established against specific races of highly specialised pathogens and rapidly overcome upon the appearance of new virulent races in pathogen populations.
Взаємодія «генотип-середовище»	Genotype-environment interaction	the differential response of genotypes to varying environmental conditions
Взаємодія генів	Gene interaction	any interaction of non-allelic genes within a genome (genotype) that is reflected in the phenotype and in particular leads to the inheritance of traits in violation of Mendel's laws. Various forms of gene interaction are distinguished complementarity, epistasis, intergenic suppression, and the action of modifier genes. The complete complex of gene interactions determines gene balance.
Взаємодія генів епістатична	Epistatic gene interaction	a type of gene interaction in which one gene (epistatic) suppresses the action of another, non-allelic gene pair (hypostatic). The epistatic action of gene A over genes B and b is manifested in that plants with genotypes AABB, AABb, and AAbb are phenotypically indistinguishable.
Взаємодія генів комплементарна	Complementary gene interaction	the combined action of two or more non-allelic genes that determines the expression of a novel trait absent in the parental forms.

Термін українською	Термін англійською	Визначення англійською
Взаємодія генів модифікуюча	Modifying gene interaction	the enhancement or attenuation of the action of major genes by other, non-allelic genes (modifier genes).
Взаємодія генів полімерна	Polymeric gene interaction	the equivalent additive action of a series of non-allelic genes on the development of one and the same trait. Such genes are termed polymeric or multiple. The majority of agronomically valuable quantitative traits in plants are determined polymerically. The intensity of trait expression depends on the number of dominant genes in the genotype $A_1A_1A_2A_2 > A_1A_1A_2a_2 > A_1A_1a_2a_2 > A_1a_1a_2a_2 > a_1a_1a_2a_2$.
Вибіркова реплікація	Selective replication	auxiliary (additional) replication resulting in the production of a large number of copies of a given nucleic acid sequence.
Вибіркова селекція	Selective breeding	the process of selecting and propagating organisms with traits desirable to humans, with the aim of developing new varieties.
Вибухова еволюція	Explosive evolution	a sharp increase in the number of species in a given group of organisms, associated with its adaptive radiation. Explosive evolution is typically associated with the early stages of taxon evolution and is sometimes accompanied by entry into a new adaptive zone and the formation of a higher-ranking taxon.
Вивільнення ГМО у навколишнє середовище	Release of GMOs into the environment	an act (action or omission) resulting in the introduction of GMOs into the environment.
Вид	Species	an assemblage of organisms at the population level sharing a common genetic programme, characterised by similarity of morphophysiological and ecological traits.
Вид адвентивний	Adventive species	a plant species introduced by humans into a phytocoenosis.

Термін українською	Термін англійською	Визначення англійською
Вид біологічний	Biological species	the principal systematic unit that exists in nature and occupies a defined range. It constitutes an assemblage of individuals similar in morphological traits, related by origin and by a complex of heritable traits. Individuals of the same species readily cross with one another and produce fertile offspring. In nature, species isolated from one another practically do not interbreed, and each species therefore has its own evolutionary history. A biological species comprises a considerable number of individuals capable of self-reproduction and maintenance of their numbers – it is a discrete biological unit, to some degree isolated from other forms of life, characterised by relative stability over a given span of geological time but capable of evolutionary development.
Вид індикатор	Indicator species	a species serving as an indicator of the environmental characteristics of a given biocoenosis or ecosystem, distinguishing one community from another.
Вид місцевий (аборигенний)	Native (indigenous) species	an original inhabitant of a given locality that originated in the course of evolution and currently inhabits it.
Вид реліктовий	Relict species	a species preserved in a given locality as a remnant of the flora or fauna of a past geological epoch; frequently also a rare and endangered species.
Вид рідкісний	Rare species	a species occurring in small numbers of individuals or populations within a restricted territory in highly specific habitats, liable to rapid disappearance.
Види-двійники	Sibling species	populations that are morphologically similar or identical but reproductively isolated.

Термін українською	Термін англійською	Визначення англійською
Видів ресинтез	Species resynthesis	the experimental reconstitution of species already existing in nature, based on the recombination of genomes of other species followed by polyploidisation of distant hybrids. The resynthesis process involves crossing the putative parental forms of a given allopolyploid and subsequently inducing or allowing natural chromosome doubling in the resulting hybrids. In the course of species resynthesis, possible pathways in the evolution of species systems are reconstructed.
Видів синтез	Species synthesis	the experimental production of new plant species unknown in nature. Through hybridisation of various species and genera and the use of polyploidy (amphidiploidy), triticale, hybrids between radish and cabbage, between durum and common wheat, and wheat-couch grass hybrids have been synthesised, among others.
Видова насиченість	Species richness	the number of plant species per unit area.
Видова програма розвитку	Species developmental programme	the ontogenetic features common to all individuals of a species.
Видова прополка	Species weeding	the removal from a crop of a given variety of admixtures belonging to other plant species.
Видовий склад	Species composition	the plant species present in a given coenosis.
Видоутворення	Speciation	a microevolutionary process of the emergence and establishment of new species, conditioned by a complex of evolutionary factors. It occurs at the population level both through the gradual transformation of the original species and through its differentiation into several species. The elementary material of speciation is

Термін українською	Термін англійською	Визначення англійською
		mutations, whose rate of spread and concentration depends on periodic fluctuations in individual numbers within populations. Through gene exchange and mutations under the action of directional, stabilising, and disruptive natural selection, directed changes in the gene pool and the emergence of new adaptations occur. Substantial differences in reaction norm and adaptive transformations of populations form the basis for the formation of new species.
Виду критерії	Species criteria	characteristics of a species by means of which one species may be distinguished from another. Seven general species criteria are most commonly applied morphological (based on the external and internal similarity of individuals of the same species); physiological (similarity of life processes, primarily the capacity for crossing between individuals of the same species to produce fertile offspring); geographical (the geographical definiteness of a species, based on the fact that each species occupies a given territory or water body); ecological (based on the fact that each species can exist only under specific conditions, performing a functional role in a given biogeocoenosis, i.e. each species occupies a specific ecological niche); genetic (based on differences between species in karyotype, i.e. in chromosome number and morphology); biochemical (permitting species to be distinguished by the composition and structure of specific proteins, nucleic acids, and other substances); and molecular-genetic or DNA criterion (the nucleotide sequence in homologous regions of DNA). No single

Термін українською	Термін англійською	Визначення англійською
		criterion is sufficient to define a species, with the exception (with certain reservations) of criteria.
Виживаність	Survival rate	the mean probability of survival of individuals of a given species or population, expressed as the ratio of the number of individuals of a given age to the number of individuals born, or to the number of eggs or spawn deposited. Survival rate is determined by the genetic (hereditary) characteristics of organisms and their interaction with the external environment. In the course of progressive evolution, survival rate increases as a result of ever-increasing adaptive capacity.
Визначення стійкості рослин до хвороб чи шкідників	Determination of plant resistance to diseases or pests	a set of methods for establishing the capacity of plants to withstand infection (disease development) or damage.
Використання сорту	Use of a variety	the performance of one or more of the following acts with respect to seed and/or planting material of a variety production, reproduction, and/or conditioning for the purpose of propagation; offering for sale; sale and/or other commercial transaction; export from or import into the customs territory of Ukraine; and storage for any of the aforementioned purposes.
Вилка реплікації або точка росту	Replication fork (growth point)	the point at which replication is effected. The replication fork moves sequentially along the DNA from its starting point (i.e. the replication initiation point) to the termination point.
Вимерзання	Freezing injury	the death of plants at sub-zero external temperatures as a result of the formation of ice crystals within the cell.

Термін українською	Термін англійською	Визначення англійською
Вимирання видів	Species extinction	the disappearance of any taxon (at species level and above) as a result of anthropogenic factors or evolutionary processes.
Вимокання	Waterlogging injury	the death of plants resulting from oxygen deficiency during respiration under conditions of excessive moisture or water accumulation on the soil surface.
Вимушений спокій	Forced dormancy	a state of dormancy in plants caused by the absence of conditions necessary for growth (lack of oxygen, drought, low temperatures, nutrient deficiency, etc.). It ceases when environmental conditions become favourable.
Випадіння (делеції)	Deletion	a gene mutation caused by the loss of one or more nucleotides.
Випирання	Crown pushing	the displacement of the tillering node to the soil surface as a result of the mechanical pressure of an ice crust on plant tissues.
Виповнене насіння	Well-filled seed	seed that has attained, upon full maturity, the form with maximum expression of all structures characteristic of the variety, line, or hybrid.
Випрівання рослин	Snow mould injury	the death of plants as a result of prolonged burial under a thick snow cover.
Випуклий плазмоліз	Convex plasmolysis	the uniform retraction of the protoplast from the cell walls.
Вирівнювальні посіви	Uniformity sowings	sowings of any crops and the totality of agronomic measures aimed at reducing the heterogeneity of soil fertility in fields designated for the establishment of qualification examination trials.
Виробники	Producers	persons who carry out the production of seed and/or planting material for its sale.

Термін українською	Термін англійською	Визначення англійською
Виродженість генетичного коду	Degeneracy of the genetic code	the correspondence of several codons to a single amino acid. A change in the third base of a codon does not always result in an amino acid substitution.
Вироджження картоплі (дегенерація)	Potato degeneration	the process of declining plant productivity that intensifies with each successive vegetative reproduction, manifesting externally as leaf wrinkling, mosaic patterning, or leaf roll, as well as other anomalous changes. Several theories of potato degeneration exist production, reproduction, and/or conditioning for the purpose of propagation; offering for sale; sale and/or other commercial transaction; export from or import into the customs territory of Ukraine; and storage for any of the aforementioned purposes. the ageing theory – degeneration as a consequence of prolonged vegetative propagation; the toxin accumulation theory; the ecological theory – the mismatch between growing conditions and the biological requirements of the crop; and the viral theory – under the influence of viruses, viroids, and mycoplasmas, deep physiological changes and functional metabolic disturbances occur in plants, leading to reduced productivity and deterioration of the biochemical composition of tubers. Individual viruses, viroids, and mycoplasmas and their combinations cause various viral diseases – rugose and striped mosaic, leaf roll and leaf curl, gothic, etc. The principal vectors of viruses are aphids.
Вироджження сорту	Variety degeneration	the decline in varietal quality in the course of variety cultivation, caused by the accumulation of negative mutations, biological contamination, and reduced plant resistance to

Термін українською	Термін англійською	Визначення англійською
		diseases, pests, and other adverse environmental factors.
Висадки	Planting stock	plants or roots of biennial vegetable crops, fodder, or industrial root vegetables selected from mother crop stands and planted in the field in the second year of their life to obtain seed.
Висадковий спосіб	Transplant method	a method of seed production from beet root vegetables excavated in autumn and transplanted into the soil in spring.
Високоповторювана ДНК	Highly repetitive DNA	nucleotide sequences present in the genome in hundreds of thousands or millions of copies that are the first to reassociate during renaturation of total DNA; they form part of heterochromatin and satellite DNA. The unit (motif) of highly repetitive DNA consists of a small number of nucleotides.
Витіснення	Competitive displacement	the replacement of one ecologically similar species by another as a result of conditions favourable to the expansion of one of the species, which may lead to the extinction of the displaced species.
Витривалість (толерантність)	Tolerance	the capacity of a plant genotype to sustain only a slight reduction in productivity upon infection or damage by a pathogenic organism.
Вихідний садивний матеріал багаторічних рослин	Initial planting material of perennial plants	virus-free plants or plant parts of varieties and clones produced through breeding work for subsequent propagation.
Відбір	Selection	the process of survival of organisms whose genotypes confer the greatest fitness to environmental conditions. The likelihood that an organism will survive and produce offspring depends on the degree of its adaptation to the environment. Selection may be natural or

Термін українською	Термін англійською	Визначення англійською
		artificial. Types of selection include directional, stabilising, disruptive, individual, group, mass, clonal, for general combining ability (GCA), and for specific combining ability (SCA).
Відбір індивідуальний	Individual selection	selection based on the evaluation of the progeny of selected and individually propagated superior plants.
Відбір індивідуально-безперервний	Continuous individual selection	individual selection in the breeding and seed production of cross-pollinating plants aimed at maintaining specified traits in a variety throughout its period of commercial use.
Відбір індивідуально-сімейний	Individual-family selection	selection in cross-pollinating plants in which the seed of each elite plant is sown as a family on a separate isolated plot for subsequent family-based selection.
Відбір клітинний	Cell selection	selection of cells during mitosis.
Відбір клоновий	Clonal selection	individual selection in vegetatively propagated plants.
Відбір лінійний	Linear selection	selection in which, upon propagation, forms arise with trait deviations in a specific direction from the population mean type.
Відбір масовий	Mass selection	selection in which a substantial number of plants with certain agronomically valuable traits are selected from the original population, with their yields subsequently pooled for sowing in the following year on a single plot.
Відбір негативний	Negative selection	a form of mass selection involving the removal of inferior plants.
Відбір періодичний (рекурентна селекція)	Recurrent selection	a method aimed at the progressive increase in concentration of required complexes of heritable factors through periodic alternation of inbreeding and crossing.

Термін українською	Термін англійською	Визначення англійською
Відбір природний	Natural selection	the preservation of organisms with individually advantageous modifications under given conditions and the elimination of forms not adapted to the conditions of existence.
Відбір рушійний	Directional selection	natural selection resulting in the incorporation of new mutations and combinations into the population that acquire positive significance upon a change in conditions of existence.
Відбір сімейно-груповий	Family-group selection	selection in which parental elite plants are divided into groups according to relatively similar agronomically valuable traits, with subsequent sowing on isolated plots.
Відбір штучний	Artificial selection	the choice of organisms most valuable from an agronomic standpoint, aimed at improving existing or creating new varieties.
Віддалена гібридизація	Distant hybridisation	the crossing of organisms belonging to different species or genera.
Віддалені гібриди	Distant hybrids	hybrids obtained from the crossing of different species and genera.
Віддалені еколого-географічні форми	Distant ecological-geographical forms	forms developed and adapted by natural and artificial selection to different soil and climatic conditions.
Відкрита популяція	Open population	a population subject to gene flow and receiving a large influx of foreign genes through immigration.
Відновлювачі фертильності	Fertility restorers	individual plants, lines, or varieties that, upon crossing with sterile forms, produce progeny forming viable pollen, thereby restoring fertility in forms with cytoplasmic male sterility (CMS). The capacity to restore fertility is conditioned by the presence of dominant fertility-restorer genes in the genotype (Rf in maize, Ms in sorghum). Homozygous (RFRF) forms restore fertility in all progeny; forms

Термін українською	Термін англійською	Визначення англійською
		heterozygous for the fertility-restorer gene (RFrf) restore it in half the progeny.
Відновник фертильності пилку	Pollen fertility restorer	the paternal (male) component whose use in pollination of the sterile analogue results in restoration of pollen fertility in the subsequent generation (B).
Відповідальний виконавець	Responsible investigator	a specialist at a research station who, pursuant to an order, conducted the investigation (carried out work on a specific trial) and prepared the report.
Відхід насіння	Seed waste	the totality of extraneous impurities and defective seeds of a given crop separated from the seed sample under analysis.
Вікаруючі види	Vicarious species	systematically related, biologically similar species that replace one another geographically and have contiguous ranges (geographical vicariance), or occur within the same range but under different ecological conditions (ecological vicariance).
Вікова структура популяції	Age structure of a population	a form of adaptation of living organisms to changing environmental conditions in the struggle for existence, shaped on the basis of the biological properties of the species but always reflecting the nature of environmental resistance. Its heterogeneity substantially increases the chances of survival of those individuals in the population capable of continuing the existence of the species when conditions deviate from the norm.
Віріон	Virion	a fully formed viral particle consisting of a nucleic acid and a protein coat (capsid). It preserves and transfers the genetic material of the virus from one cell to another. The term

Термін українською	Термін англійською	Визначення англійською
		«virion» is generally used to denote a virus in its resting state (i.e. outside the host cell).
Віроз рослин	Plant virosis	a disease caused by viruses.
Віроїди	Viroids	infectious agents consisting of a low-molecular-weight (250–370 nucleotides) circular single-stranded (+) RNA that are causative agents of plant diseases. Viroids are not viral in nature.
Вірулентність	Virulence	the degree of pathogenicity of a given strain of bacteria, viruses, or a lower microorganism with respect to a given animal or plant species. Virulence is conditioned by species-specific and individual genetic characteristics of both the pathogen and the infected organism, depending on the properties of the causative agent and the degree of susceptibility of the organism being infected.
Віруси	Viruses	parasitic living systems of pre-cellular organisation, classified as a distinct kingdom Vira. They constitute a complex of nucleic acid (DNA or RNA) and protein, possessing infectivity and the capacity for self-replication in an intact host cell, redirecting its metabolism towards the synthesis of viral particles. Outside the host cell, the virus exists in a non-replicating state (virion).
Вірусні РНК-геноми	Viral RNA genomes	single-stranded genomes of positive polarity, or (+) RNA genomes, whose nucleotide sequence corresponds to that of mRNA and can be directly translated (e.g. the genomes of phage Qβ, tobacco mosaic virus (TMV), coronaviruses, poliovirus, etc.); single-stranded (−) RNA genomes, whose nucleotide sequence is complementary to the coding (+) RNA strand (e.g. the genomes of influenza,

Термін українською	Термін англійською	Визначення англійською
		rabies, and vesicular stomatitis viruses); and double-stranded genomes (e.g. of reoviruses and insect cytoplasmic polyhedrosis viruses).
Віталізм	Vitalism	an idealistic concept according to which all biological processes occurring in an organism are directed and regulated by immaterial forces.
Вітрифікація	Vitrification	the transition of the cytoplasm to a glassy state upon rapid temperature reduction, without the formation of intracellular ice.
Включення алельне	Allelic silencing	the non-expression of allelic genes of the other homologous chromosome.
Включення клітин	Cellular inclusions	transient formations of the cell arising in the course of its vital activity.
Включення цитоплазматичні	Cytoplasmic inclusions	non-permanent structures of the cytoplasm lacking a definitive organisation. They represent products of cellular vital activity and form during specific periods of the cell's life. Depending on their functional role, they are grouped into trophic inclusions, secretory products, pigments, excretory products, and others.
Властивість	Property	the physiological, biochemical, and technological characteristics of plants.
Внутрішній супресор	Intragenic suppressor	any mutation that suppresses the phenotypic manifestation of another mutation in the same gene.
Внутрішньовидова диференціація	Intraspecific differentiation	the formation of heritable differences between distinct populations of a species.
Внутрішньогосподарський насіннєвий контроль	On-farm seed control	control over the propagation of variety seed, its condition, varietal and sowing qualities, and the documentation maintained by farms or organisations engaged in seed procurement.

Термін українською	Термін англійською	Визначення англійською
Внутрішньопопуляційна структура	Intrapopulation structure	the existence and formation within a population of structural-functional groups ensuring its stable potential reproduction in a given territory or water body.
Внутрішньосортова мінливість	Intravariety variability	deviation from varietal traits occurring under the influence of growing conditions, mutations, and recombinations.
Внутрішньосортове схрещування	Intravariety crossing	a method of artificial crossing of plants within a single variety of a self-pollinating crop.
Внутрішня петля	Internal loop	a loop-like structure formed by the insertion of one or more non-complementary nucleotides of the antiparallel strand into one strand of a double-stranded nucleic acid molecule.
Водневий показник (pH)	Hydrogen ion index (pH)	an indicator of the concentration (activity) of hydrogen ions in solutions.
Водний режим ґрунту	Soil water regime	the totality of phenomena determining the origin, movement, expenditure, and utilisation of soil moisture by plants. It is an important factor of soil formation and soil fertility.
Водний режим рослин	Plant water regime	the continuous water exchange between plants and the surrounding environment.
Вологість насіння	Seed moisture content	the content of hygroscopic water in seed, expressed as a percentage.
Вологолюбність	Hygrophily	the requirement of plants for adequate moisture supply.
Волокна	Fibres	elements of the mechanical tissue of plants (sclerenchyma) with thickened lignified walls.
Волоски	Trichomes	outgrowths of cells on the epidermis of plants.
Волоть	Panicle	a compound inflorescence.

Термін українською	Термін англійською	Визначення англійською
Врожайні якості насіння	Yield quality of seed	the totality of properties and characteristics capable of influencing in a specific manner the formation of a crop as a photosynthesising system, its structure, growth, and development, thereby determining the biological and commercial yield.
Вставка (транспозиція)	Insertion (transposition)	a chromosomal aberration of the unilateral translocation type, in which a segment produced by two breaks in one chromosome is transferred (translocated) to the site of a break in another, non-homologous chromosome. The first chromosome thus carries a deletion and the second an insertion.
Вставки (інсерції)	Insertions	gene mutations caused by the insertion of one or more nucleotides.
Вторинна структура ДНК і РНК	Secondary structure of DNA and RNA	determined by the interaction of adjacent nucleotides in the polynucleotide chain, and in the case of double-stranded molecules (or a spatially folded chain of a single molecule) also by the interaction of nucleotide residues positioned opposite one another in the double helix.
Вторинна тканина	Secondary tissue	plant tissue formed as a result of the activity of meristems arising upon dedifferentiation (reversion to the meristematic state) of previously differentiated cells and tissues.
Вторинне ядро	Secondary nucleus	the diploid nucleus at the centre of the embryo sac, formed as a result of the fusion of two haploid nuclei.
Вторинний археспорій	Secondary archespore	the inner layer of the meristem of the sporangium (anther).
Вторинний рух протоплазми	Secondary movement of protoplasm	movement of the protoplasm under the action of external stimuli.

Термін українською	Термін англійською	Визначення англійською
Вуглеводи	Carbohydrates	a group of organic compounds consisting of carbon, hydrogen, and oxygen that constitute an important component of living organisms.
Г		
Габітус	Habitus	the external appearance of a plant organism, determined by a set of morphological characteristics.
Гали	Galls	outgrowths, «tumors», and swellings formed as a result of tissue proliferation under the influence of a parasitic organism – insects, fungi, bacteria, etc. (e.g., outgrowths on cabbage roots caused by the clubroot pathogen, or on potato tubers caused by the potato wart disease pathogen).
Галоіндикація	Haloindication	the determination of soil salinity by means of plants with high salt requirements (halophytes).
Галоксерофіти	Haloxerophytes	plants tolerant to both salinity and drought conditions.
Галофіти	Halophytes	plants of saline habitats, adapted to utilizing water from soil solutions saturated with chloride and sulfate salts.
Гамети	Gametes	sexual or reproductive cells of animals and plants. Gametes carry a single haploid set of chromosomes, formed during gametogenesis. During fertilization, two gametes (male and female) fuse to produce a zygote with a diploid chromosome set, which gives rise to a new organism. Gametes ensure the transmission of hereditary information from parents to offspring.
Гамети рекомбінантні	Recombinant gametes	gametes formed during crossing-over of homologous chromosomes and the reciprocal exchange of DNA segments between them.

Термін українською	Термін англійською	Визначення англійською
Гаметогенез	Gametogenesis	the process of formation of mature sexual cells (gametes).
Гаметофіт	Gametophyte	the haploid sexual generation that produces gametes in plants characterized by alternation of haploid (sexual) and diploid (vegetative) developmental phases.
Гаметофітна несумісність	Gametophytic incompatibility	manifested during pollen tube germination in the style and conditioned by the independent action of two incompatibility alleles (S-alleles) in the pollen and style of diploids. Gametophytic incompatibility is controlled by a series of multiple alleles (S_1, S_2, S_3, S_4, S_5, etc.). It has been identified in tobacco, beet, potato, rye, and other species.
Гаметофітні гени	Gametophytic genes	genes expressed in the year of crossing from the side of the pollen male form (shape and color of the cotyledon in pea and grass pea, maize endosperm, etc.).
Гаметоциди	Gametocides	selectively acting substances used in plant breeding for chemical castration of flowers. They disrupt the normal development of anthers and pollen, thereby inducing male sterility, without affecting the viability of egg cells.
Гаметоцити	Gametocytes	cells from which gametes are produced during gametogenesis.
Гаплоїд подвоєний	Doubled haploid	a diploid organism obtained by doubling the chromosome number in the cells of a haploid. In plants, doubled haploids are most commonly produced through in vitro culture.
Гаплоїди	Haploids	organisms whose somatic cells contain half the gametic chromosome number (n instead of 2n). Depending on the ploidy level of the source individual, haploids are divided into two main

Термін українською	Термін англійською	Визначення англійською
		groups 1) monohaploids – derived from individuals with a diploid chromosome number; 2) polyhaploids – derived from polyploid individuals. Depending on the genome structure of the source polyploid, polyhaploids are subdivided into autohaploids and allohaploids.
Гаплоїдія (моноплоїдія)	Haploidy (monoploidy)	a genomic mutation in organisms with higher ploidy levels.
Гаплоїдний набір	Haploid set	the number of chromosomes corresponding to the chromosome number in gametes (n).
Гаплотип	Haplotype	a combination of alleles at closely linked loci, or specific nucleotide sequences within a given DNA molecule.
Гаплофаза	Haplophase	the developmental phase of an organism during which cell nuclei contain a single (haploid) set of homologous chromosomes.
Гаряча точка	Hot spot	a region of a DNA molecule that is substantially more susceptible to mutations compared to other regions of identical size.
ГАТ-селекція	HAT selection	one of the selective methods that enables the isolation of stable hybrid cell lines carrying genes and chromosomes of interest from the entire hybrid cell population.
Гаусторії	Haustoria	branch-like suckers in plant parasites, by means of which they penetrate into the cells or tissues of the host plant and extract nutrients and water. Haustoria are present in many parasitic fungi with endogenous mycelium (Peronosporales, rusts, smuts). In exogenous parasites with external mycelium, haustoria typically develop from appressoria (powdery mildew fungi).

Термін українською	Термін англійською	Визначення англійською
Гейтопогамія, гейтогамія	Geitonogamy	neighboring pollination, in which pollen is transferred from one flower to the stigma of another flower on the same plant; a form of idiogamy.
Гексаплоїд	Hexaploid	an organism whose cells contain six basic sets of chromosomes (6×).
Геліказа	Helicase	an enzyme operating at the replication fork, responsible for breaking hydrogen bonds and unwinding the strands of a DNA molecule.
Геліотропізм	Heliotropism	the ability of plants to assume a specific spatial orientation in response to sunlight; particularly pronounced in young sunflower plants, whose growing stems track the sun.
Геліофіли	Heliophiles	light-demanding (sun-loving) plants.
Гельмінтоспоріози	Helminthosporioses	plant diseases caused by fungi of the genus Helminthosporium, order Hyphomycetes, class Deuteromycetes.
Гемізиготність	Hemizygosity	the condition of an organism in which a particular gene in the diploid chromosome set is represented by only a single copy, i.e., the allelic (paired) copy of that gene is absent. This commonly occurs with genes located on sex chromosomes in the heterogametic sex (e.g., the X chromosome in males).
Ген	Gene	the structural, functionally indivisible unit of hereditary information, representing a segment of a DNA molecule (rarely RNA) that encodes the synthesis of a single macromolecule (polypeptide, tRNA, or rRNA). The majority of genes have a fixed chromosomal localization; however, migrating (mobile) genes are also known.
Ген антимутатор	Antimutator gene	genes that reduce the mutation frequency of other genes.

Термін українською	Термін англійською	Визначення англійською
Ген вірулентності	Virulence gene	a pathogen gene responsible for the infection of a specific plant or cultivar.
Ген гемізиготний	Hemizygous gene	a gene represented in the genotype by a single copy only.
Ген гіпостатичний	Hypostatic gene	a gene whose expression is suppressed by another non-allelic gene.
Ген головний або сильний	Major (strong) gene	a gene of quantitative traits that predominantly determines a particular trait. However, the action of such genes may be supplemented and modified by a considerable number of minor determinants of the trait.
Ген доза	Gene dosage	the number of copies of a gene.
Ген домінантний	Dominant gene	a gene that suppresses the action of another allelic gene.
Ген епістатичний	Epistatic gene	a gene that suppresses the action of a non-allelic gene, such that only one trait is expressed.
Ген інтенсифікатор	Intensifier gene	genes that stimulate the function of other genes.
Ген кодомінантний	Codominant gene	alleles of a gene that are equivalent in their capacity for phenotypic expression.
Ген маркерний	Marker gene	a gene of known localization and effect that enables the localization of other genes.
Ген мозаїчний	Mosaic (split) gene	genes composed of a defined sequence of exons and introns.
Ген мутатор	Mutator gene	genes that increase the mutation frequency of other genes.
Ген однозначний	Unidirectional gene	genes (two non-allelic gene pairs) that, under non-cumulative polymery, act in the same direction – for example, determining the triangular shape of siliques in shepherd’s purse (Capsella bursa-pastoris).

Термін українською	Термін англійською	Визначення англійською
Ген репортерний, маркерний	Reporter (marker) gene	a non-inducible cloned gene whose protein product is readily detectable experimentally; used in the creation of transgenic organisms.
Ген рецесивний	Recessive gene	a gene whose action is suppressed by a dominant allelic gene.
Ген слабкий	Minor (weak) gene	genes that supplement and modify the action of major genes.
Ген стійкості	Resistance gene	a gene responsible for plant insusceptibility to a specific organism (race) of a pathogen.
Ген структурний	Structural gene	a gene encoding information for the synthesis of specific proteins – enzymes, structural proteins, ribosomal proteins, histones – as well as rRNA and tRNA.
Ген тканинноспецифічний	Tissue-specific gene	a gene expressed at specific stages of ontogenesis in specific tissues.
Ген химерний	Chimeric gene	a gene constructed from DNA fragments of different origins.
Ген-інгібітор	Inhibitor gene	acts as an epistatic gene that suppresses the expression of a non-allelic gene.
Ген-модифікатор	Modifier gene	when interacting with other genes, alters their phenotypic expression. A modifier gene does not manifest independently (with respect to the development of a given trait), but either enhances (intensifier gene) or attenuates (suppressor gene) the action of the primary gene.
Ген-на-ген теорія	Gene-for-gene theory	a theory explaining the natural mechanisms of resistance-virulence each resistance gene of the host plant corresponds to a virulence gene of the parasite.
Ген-оператор	Operator gene	a region of a DNA molecule that functions to switch structural genes on and off within a

Термін українською	Термін англійською	Визначення англійською
		given operon. It is located at the beginning of the operon and remains in the active state (structural genes of the operon are expressed) until a repressor molecule binds to it.
Ген-регулятор	Regulator gene	a region of a DNA molecule that encodes the synthesis of a repressor molecule, whose function is to control transcription of an operon. Upon binding to the operator gene, the repressor inactivates it, thereby halting the activity of the structural gene. The activity of the regulator gene is determined by the concentration of corresponding metabolites in the cytoplasm and by external conditions. Mutations in the regulator gene that inactivate the repressor lead to constitutive (i.e., effector-independent) transcription of the operon and, consequently, to constitutive synthesis of the enzymes encoded by the operon. Such mutations are generally recessive, in contrast to analogous mutations of the operon. Additionally, a regulator gene is defined as a gene whose product participates in the regulation of another gene's expression; a gene that continuously encodes the synthesis of regulatory proteins (active and inactive). Through the phenomena of induction and repression, the synthesis of enzyme proteins and structural proteins is regulated.
Ген-сайленсинг	Gene silencing	transcriptional (see TGS) and post-transcriptional (see PTGS) regulation of gene expression by means of oligonucleotides that induce sequence-specific degradation of messenger RNA (mRNA). Such oligonucleotides are termed «antisense»; their derivatives are employed for blocking target

Термін українською	Термін англійською	Визначення англійською
		protein synthesis, directed mutagenesis, inactivation of specific mRNAs, as therapeutic agents, and as tools in molecular genetic research and technologies; they are also implicated in heterochromatin silencing, also includes RNA interference (RNAi)-mediated mechanisms.
Ген-супресор	Suppressor gene	a gene that suppresses the expression of a non-allelic mutant gene.
Ген-трансген	Transgene	a foreign gene artificially introduced into a cell.
Гена синтез	Gene synthesis	a multistage process of synthesizing an artificial gene under laboratory conditions.
Генеалогічний метод	Genealogical method	one variant of genetic analysis, in which the inheritance of a trait is studied by analyzing its transmission to offspring across entire families or family groups.
Генеалогія	Genealogy	the science that investigates the origin of species and the phylogenetic relationships of existing forms with their ancestors.
Генез	Genesis	a component of compound terms denoting origin or the process of formation; e.g., ontogenesis, phylogenesis, histogenesis, oogenesis.
Генезис	Genezis	the origin of species, communities, or any other taxonomic and coenotic units. In the broader sense, the inception and subsequent developmental process of a phenomenon or object that has led to a particular state or form.
Генеративні органи	Generative organs	sexual organs in which sexual cells (gametes) are formed and develop, ensuring sexual reproduction of organisms.
Генерація	Generation	a cohort of organisms; a group of individuals equidistant from common ancestors.

Термін українською	Термін англійською	Визначення англійською
Генерація насіння	Seed generation	the seed-derived generation within a defined category.
Генетика	Genetics	the science that studies two inseparable properties of organisms – heredity and variability – and the principles of storage, transmission, and realization of genetic information. As a discipline, it originated in 1900, following the rediscovery of the laws of trait inheritance – originally established by G. Mendel in 1865 – by Dutch scientist H. de Vries, German scientist C. Correns, and Austrian scientist E. Tschermak. The term «genetics» was introduced in 1906 by British scientist W. Bateson, who proposed a new science of «the Physiology of Heredity and Variation». Modern genetics investigates problems of heredity and variability in living organisms at various levels molecular, cellular, organismal, and populational.
Генетика екологічна	Ecological genetics	the science that investigates the interactions of organisms and populations with environmental factors, particularly mutagenic ones. A constituent of ecological genetics is genetic technology, which studies the action of chemical mutagens and develops methods and approaches for assessing the genetic activity of the numerous xenobiotics continuously produced by humans for the purposes of medicine and the national economy.
Генетика імунітету	Genetics of immunity	a branch of genetics that studies the genetic mechanisms of relationships between parasites and host plants; identifies plant resistance genes and pathogen virulence genes; and establishes the patterns of inheritance of resistance and virulence traits, the

Термін українською	Термін англійською	Визначення англійською
		understanding of which forms the basis for breeding cultivars resistant to infectious diseases.
Генетика розвитку	Developmental genetics	a field of genetics that studies the genetic and molecular-genetic mechanisms of the process of individual development.
Генетична безпека	Genetic safety	a state of the human living environment in which there is no unnatural influence on the human genome, no unnatural influence on the genomes of biosphere organisms, and no uncontrolled influence on the genomes of agricultural plants and animals or industrial microorganisms that would lead to the emergence of negative and/or undesirable properties in them.
Генетична відстань (генетична дистанція)	Genetic distance	a measure of gene (genomic) differences between species or populations, quantified by any numerical method. Most commonly, it is a quantitative characteristic of compared objects (populations, species, etc.) that determines the average number of nucleotide substitutions per locus that have occurred during the independent evolution of two groups of organisms; the method for calculating genetic distance according to Nei is currently the most widely applied.
Генетична диференціація	Genetic differentiation	the increase in differences between fully or partially isolated populations with respect to allele frequencies at multiple loci, resulting from the action of evolutionary factors such as selection, genetic drift, gene flow (migration), and others.
Генетична ерозія	Genetic erosion	any process, driven by natural phenomena or human activity, that over time leads to the loss of genetic diversity within a population, the

Термін українською	Термін англійською	Визначення англійською
		narrowing of the genetic base of a species, or the loss of a species.
Генетична інженерія рослин	Plant genetic engineering	a subdivision of plant molecular genetics; a system of experimental techniques for gene manipulation and the construction of transgenic plants. The objective of plant genetic engineering is the construction of organisms with predetermined properties and the resolution of problems of a complexity level inaccessible to conventional plant breeding.
Генетична інформація	Genetic information	information about the properties of an organism, encoded in the nucleotide sequence of nucleic acid molecules (DNA, or RNA in certain viruses) and localized in the hereditary structures of the organism (chromosomes, cytoplasm, cellular organelles). Genetic information is transmitted from generation to generation via sexual cells – gametes – and is realized during the individual development (ontogenesis) of the organism as a chain of interrelated processes controlled by genes.
Генетична карта хромосоми	Genetic map of a chromosome	a diagram of the relative positions of genes on a chromosome, reflecting the actual linear order of gene arrangement within a linkage group. Distances between genes on a genetic chromosome map are determined by the frequency of crossing-over between them. The unit of distance between genes on a genetic chromosome map is the centimorgan (cM). One centimorgan equals 1% crossing-over frequency.
Генетична модифікація	Genetic modification	the process of altering the genetic structure of a population, organism, or cell; it arises as a result of genetic recombination, protoplast fusion, hybridization, mutagen treatment, and

Термін українською	Термін англійською	Визначення англійською
		other mechanisms. It may also result from the redistribution of mobile (transposable) genetic elements.
Генетична нестабільність	Genetic instability	a high-frequency change in the position, localization, structure, or copy number of genes or their parts within the genome during the lifetime of an organism. It is most commonly associated with the activity of mobile genetic elements (MGEs).
Генетична несумісність	Genetic incompatibility	the inability of functionally normal gametes to fuse in higher plants, or of both gametes and vegetative cells in fungi and algae. Genetic incompatibility represents one form of reproductive isolation.
Генетична предетермінація цитоплазми	Cytoplasmic genetic predetermination	the phenomenon of restructuring of egg cytoplasm properties (and consequently those of the zygote) under the influence of maternal nuclear genes.
Генетична рекомбінація	Genetic recombination	variability resulting from the transfer and exchange of genetic material between different chromosomes or between distinct regions of the same chromosome.
Генетична рухливість	Genetic mobility	the genetically determined capacity of an organism to change its habitat, including the ability to disperse its offspring (seeds in plants, etc.), as well as the specific morphological form and structure of these organisms that facilitates their dispersal over considerable distances.
Генетичне зрушення	Genetic shift	a change in the genetic composition of a population as a result of natural or artificial selection.
Генетичне картування	Genetic mapping	the determination of gene positions on a genetic map, based on empirical estimation of

Термін українською	Термін англійською	Визначення англійською
		recombination frequencies between genes as well as between genes and marker loci. It also refers to the construction of diagrams in which genes are arranged in linear order with indication of relative distances between them.
Генетичний аналіз	Genetic analysis	the totality of methods used to study the hereditary properties of organisms (their genotypes). The principal methods of genetic analysis include hybridological analysis, cytogenetic, populational, and molecular-genetic methods, among others.
Генетичний гомеостаз	Genetic homeostasis	the ability of populations to maintain their genetic structure in response to environmental factors. The mechanisms underlying genetic homeostasis include hybridological analysis, cytogenetic, populational, and molecular-genetic methods, among others. maintenance of the equilibrium state of population structure in accordance with the Hardy-Weinberg formula; maintenance of heterozygosity and polymorphism; and preservation of a specific rate and direction of the mutational process.
Генетичний код	Genetic code	the system for «recording» genetic information in nucleic acids as nucleotide sequences. The «letters» of the genetic alphabet are purine and pyrimidine bases in DNA – adenine (A), cytosine (C), guanine (G), thymine (T); in RNA, thymine is replaced by uracil (U), while the remaining bases are identical to those in DNA. A single universal genetic code exists in all contemporary organisms (universality of the code). Realization of the genetic code proceeds in two stages the first – transcription – occurs in the nucleus, and the second – translation – takes place in the cytoplasm on ribosomes.

Термін українською	Термін англійською	Визначення англійською
Генетичний матеріал	Genetic material	the cellular components whose structural and functional unity ensures the storage, realization, and transmission of hereditary information during both vegetative and sexual reproduction. Genetic material possesses qualities universal to all living systems discreteness, continuity, linearity, and relative stability.
Генетичний поліморфізм	Genetic polymorphism	the coexistence within a population of two or more distinct heritable forms maintained in dynamic equilibrium over several or even many generations. It is most commonly determined by the simultaneous presence in a population of several genetic factors with discrete phenotypic effects. Several forms of genetic polymorphism are distinguished, the analysis of which enables assessment of the action of natural selection.
Генетичний тягар	Genetic load	the presence within a population of lethal, semi-lethal, and sub-lethal mutations which, upon transitioning to the homozygous state, lead to the death of their carriers.
Генетичні нуклеїнові кислоти (ГНК)	Genetic nucleic acids (GNA)	carriers of genetic information encoding all properties and characteristics of an organism – its structure, physiological features, and developmental processes. The discrete unit of heredity, the gene, is nothing other than a fragment of a GNA molecule. Not all nucleic acids present in a cell are genetic; consequently, not all of them store and transmit information to descendants.
Генетично модифікований організм (ГМО)	Genetically modified organism (GMO)	any organism in which the genetic material has been altered by artificial gene transfer techniques that do not occur under natural conditions.

Термін українською	Термін англійською	Визначення англійською
Генетично модифіковані рослини (сорти)	Genetically modified plants (cultivars)	plants into whose genome genes controlling properties atypical for them have been introduced via gene therapy (e.g., potato – resistance to pests, fungal and viral pathogens, high starch content; sugar beet – resistance to non-selective herbicides, alterations in macronutrient composition; soybean – resistance to non-selective herbicides, insects, viral pathogens, improved oil composition, increased vitamin E content, improved flavor, etc.).
Генетично-інженерна діяльність	Genetic engineering activity	the practical sphere of activity associated with the creation, testing, and introduction of GMOs into circulation.
Гени гомеотичні	Homeotic genes	genes whose alterations in expression or sequence disrupt organismal homeosis through disruption of organ specification (so-called homeotic transformation).
Гени позахромосомні у прокаріотів	Extrachromosomal genes in prokaryotes	components of autonomously replicating DNA molecules in the cytoplasm – plasmids; in eukaryotes – constituents of mitochondria, plastids, or symbionts, controlling cytoplasmic inheritance.
Гени полімерні	Polymeric genes	non-allelic genes that act equally and cumulatively (additively) upon the same trait. Polymeric genes govern the development of quantitative, and in some cases qualitative, traits.
Гени розвитку	Developmental genes	genes that determine development, including genes encoding hormone receptors and environmental sensors, as well as regulatory genes governing changes in cell growth and differentiation in space and time; they generally form functionally significant clusters.

Термін українською	Термін англійською	Визначення англійською
Гени-супресори	Suppressor genes	genes that suppress the function of other genes.
Гени, зчеплені зі статтю	Sex-linked genes	genes localized on sex chromosomes.
Гени конститутивні	Constitutive genes	are genes whose products are essential for the maintenance of vital functions in all cell types of an organism. These genes ensure the execution of fundamental biological processes, including cellular metabolism, enzymatic activity, cell cycle progression, and cytoskeletal structural integrity.
Генів моделі	Gene models	genes and their structures predicted by gene-finding computer programs; sometimes corroborated by cDNA or peptide sequence data.
Генів потік	Gene flow	the exchange of genes between different populations of the same species via migrants, leading to a transient change in the allele frequencies at multiple loci in the overall gene pool of the recipient population.
Генна мережа (ГМ)	Gene network (GN)	a group of coordinately functioning genes that control the formation of a specific phenotypic trait of an organism (molecular-genetic, biochemical, physiological, morphological, behavioral, etc.). The functioning of a gene network is based on a set of elementary genome structures – genes, their RNAs, proteins, etc. – and elementary events, i.e., interactions between these elementary structures (biochemical reactions, regulatory and transport events).
Генна чоловіча стерильність (ГЧС)	Genic male sterility (GMS)	sterility conditioned by chromosomal genes.

Термін українською	Термін англійською	Визначення англійською
Генокопії	Genocopies	mutations whose phenotypic expression mimics modifications (generally adaptive ones).
Геном	Genome	the totality of genes localized in the haploid chromosome set of a given species. The genome characterizes species rather than individual organisms.
Геномна мутація	Genomic mutation	a change in the chromosome number of an individual, leading to polyploidy (euploidy) – a multiple increase in the number of genomes – or to heterohaploid (aneuploidy) – a non-multiple increase or decrease in chromosome number.
Геномний аналіз	Genomic analysis	a subdivision of genetics that includes investigations supplemented by cytological methods – the study of meiosis and chromosome conjugation – for the purpose of determining the genomic formulas of wild and cultivated plants and elucidating the similarities and differences both among genomes themselves and among individual chromosomes in allopolyploids. This thereby reconstructs the possible pathway of evolutionary development of a species at the genome level.
Генотип	Genotype	the totality of all material structures of the cell that carry hereditary information. These structures include nuclear (genomic) and extranuclear, extrachromosomal (cytoplasmic and plastid) hereditary factors. The term «genotype» was proposed by W. Johannsen in 1909. The genotype is the carrier of genetic information transmitted from generation to generation and controls the totality of all

Термін українською	Термін англійською	Визначення англійською
		internal and external traits and properties of the organism.
Генотипи «забуферені»	Buffered genotypes	gene combinations that have arisen through natural selection and confer upon the organism resistance to environmental influences and the capacity to compensate for such influences. Various authors refer to different aspects of this capacity of the genotype for self-regulation during development and reproduction as plasticity, canalized development, existential adaptation, stability, or phenotypic plasticity.
Генотипна варіанса, дисперсія	Genotypic variance	the portion of phenotypic variance attributable to differences in the genetic structure of individuals within a population.
Генотипне середовище, генетичний фон	Genotypic environment, genetic background	the totality of genes comprising a given genome that hereditarily influence the expression of a particular gene in the phenotype. Since the genotypic environment for each gene is characterized by individual variation, the same trait may be expressed differently in individuals carrying identical genes conditioning that trait.
Генотрофи	Genotrophs	plants with directed (canalized) genotypic changes, generally adaptive in nature, arising under the influence of environmental conditions.
Генофонд	Gene pool	the totality of genes of individuals comprising a population or a collection of cultivar accessions. The gene pool of a species or population is labile as a result of spontaneous mutations, recombinations, and natural selection. These changes within a population constitute the basis of evolution. Sexually reproducing populations are characterized by a relative stability of their gene pool.

Термін українською	Термін англійською	Визначення англійською
Географічна мінливість	Geographic variability	the manifestation of differences between geographically distant population groups of a species, conditioned by genetic interpopulation differences that are historically formed through interaction with differing environmental conditions.
Географічна раса	Geographic race	a geographically restricted race; a subspecies.
Гермафродити	Hermaphrodites	bisexual organisms in which both male and female gametes are produced. All monoecious plant species are hermaphrodites.
Гетероантагонізм	Heteroantagonism	the suppression or destruction of one organism by the metabolic products of another.
Гетерогаметна стать	Heterogametic sex	the sex determined by two distinct (non-identical) sex chromosomes.
Гетерогаметність	Heterogamety	the genetic non-uniformity of gametes of one sex (male or female) in animals and dioecious plants. It consists in the fact that the heterogametic sex produces two types of gametes differing in their sex chromosome (A+X and A+Y).
Гетерогамія	Heterogamy	the difference between male and female gametes of a hybrid with respect to one or a group of genes.
Гетерогамне схрещування	Heterogamous crossing	the crossing of individuals from different populations or species.
Гетерогенна ядерна РНК (гяРНК)	Heterogeneous nuclear RNA (hnRNA)	a mixture of transcripts of several nuclear genes (the transcriptome).
Гетерогенність	Heterogeneity	the presence within a population of individuals differing in a certain number of alleles. Heterogeneity serves as the basis for natural and artificial selection.

Термін українською	Термін англійською	Визначення англійською
Гетерогенність популяції	Population heterogeneity	the maintenance by a population of a substantial reserve of genetic diversity while simultaneously preserving integrity and resistance to diverse environmental changes.
Гетерозигота	Heterozygote	an organism (cell) in which homologous chromosomes carry different alleles of a given gene. For example, Aa denotes an individual heterozygous for gene A. When heterozygous organisms are crossed, segregation for traits controlled by genes in the heterozygous state occurs as early as F_1.
Гетерозиготність популяції	Population heterozygosity	the mean frequency of individuals in a population that are heterozygous at specific loci; an indicator of genetic variability.
Гетерозис	Heterosis	an increase in growth vigor, viability, productivity, etc. of first-generation hybrids compared to the parental forms. The term «heterosis» was proposed by G.H. Shull in 1914. A distinction is made between somatic heterosis – more intensive development of vegetative organs in hybrids; reproductive heterosis – manifested in greater yield of fruits and seeds; and adaptive heterosis – an increase in adaptive capacity to specific environmental factors.
Гетерозис моногібридний, одногенний	Monohybrid (single-gene) heterosis	heterosis manifested upon crossing two homozygous lines differing from each other in the allelic state of only one allelic pair AA BB CC DD / aa BB CC DD → Aa BB CC DD. In this case AA--- < Aa--- > aa---, which constitutes substantial evidence in support of the explanation of heterosis by overdominance of the heterozygote.
Гетерокаріон	Heterokaryon	in certain fungi (aspergilli), a state referred to as the parasexual cycle, which also provides

Термін українською	Термін англійською	Визначення англійською
		recombination of hereditary factors. As a rule, mycelial hyphae are multinucleate, with the majority of nuclei in the haploid state. Upon co-cultivation of two different mutant mycelia, cytoplasmic anastomoses form between their hyphae through which nuclear exchange occurs, giving rise to a heterokaryon – a mycelium with haploid nuclei of different genotypes.
Гетероморфна несумісність	Heteromorphic incompatibility	known in heterostylous plants such as buckwheat, flax, and primrose. Normal seed set in buckwheat occurs when pollen from long-styled flowers (genotype SS) lands on the stigma of short-styled flowers (genotype Ss), or in the genotype combination Ss / ss.
Гетеромультер	Heteromultimer	many proteins (multimers) are composed of several subunits. When the subunits of a protein differ in primary structure, such a protein is termed a heteromultimer.
Гетеросперматологія	Heterospermatology	is a branch of biological science concerned with the study of heterospermy and its exogenous and endogenous determinants. The discipline provides a theoretical foundation for methods of obtaining source material for plant breeding and primary seed production, for the cultivation of sowing material, and for the preservation and improvement of seed quality following harvest and post-harvest processing.
Гетероспермія	Heterospermy	is the variation among seeds with respect to morphological characteristics, biochemical composition, and physiological state, as well as with regard to germination capacity and the ability to ensure a defined level of plant productivity in the progeny.

Термін українською	Термін англійською	Визначення англійською
Гетероспермія генотипна	Genotypic heterospermy	is seed variability arising from the recombination of heritable traits of parental forms or induced by mutagenic factors.
Гетероспермія екологічна	Ecological heterospermy	seed variability caused by changes in environmental conditions.
Гетероспермія енантіоморфна	Enantiomorphic heterospermy	seed variability associated with the phenomenon of symmetry or dissymmetry.
Гетероспермія ізолокусна	Isolocus heterospermy	conditioned by variability in the properties of individual seeds within a fruit or inflorescence as a result of the influence of various endogenous and exogenous factors on the process of their formation. It is associated with the developmental characteristics of seed coats, as well as with the processes of gameto-, zygoto-, embryo-, and endospermogenesis in a given flower.
Гетероспермія матрикальна	Matromorphic heterospermy	seed variability conditioned by the differing position of fruits and seeds on the maternal plant.
Гетероспермія популяційна	Population heterospermy	differences among seeds of identical origin grown under different conditions.
Гетероспермія трофічна	Trophic heterospermy	seed variability due to the influence of nutritional conditions
Гетероспермія фаміліальна, або родинна	Familial (family) heterospermy	caused by variability in the progeny of one and the same individual, referred to in plant breeding as a family or clone.
Гетеростилія	Heterostyly	the difference in the length of pistil styles and stamens (anthers)
Гетерофілія	Heterophylly	the occurrence on a single plant of leaves of differing form.
Гетерохроматин	Heterochromatin	chromosome regions that possess a dense, compact structure during telophase, interphase, and early prophase and stain more intensely

Термін українською	Термін англійською	Визначення англійською
		with cytological dyes. This property of heterochromatic regions is attributable to their higher DNA concentration. A distinction is made between structural (constitutive) heterochromatin, which is permanently present in the chromosome, and facultative heterochromatin, which disappears depending on the stage of the cell cycle and the physiological state of the cell. Constitutive heterochromatin is localized principally in the pericentromeric and telomeric regions of the chromosome, where the bulk of so-called satellite DNA – which does not contain meaningful sequences (genes) – is concentrated.
Гетерохромосоми	Heterochromosomes	the chromosome pair designated X and Y, so named on account of their distinctive behavior during prophase and their incomplete homology, in contrast to autosomes.
Гіалоплазма	Hyaloplasm	a homogeneous, unstructured, transparent mass in which the cell organelles are embedded.
Гібрид	Hybrid	a heterozygous organism obtained from the crossing of two parental forms that differ in genotype. In the broad sense, every heterozygote constitutes a hybrid.
Гібрид внутрішньо-видовий	Intraspecific hybrid	hybrids obtained by crossing forms that differ in genotype but belong to the same species.
Гібрид гетерозисний	Heterotic hybrid	obtained by crossing two or more self-pollinated lines or cultivars; as a result of heterosis, a heterotic hybrid surpasses the better parental form in productivity or in some quantitative trait.

Термін українською	Термін англійською	Визначення англійською
Гібрид лінійно-сортовий	Line-cultivar hybrid	obtained from the crossing of a line with a cultivar.
Гібрид міжвидовий	Interspecific hybrid	obtained from the crossing of forms belonging to different species. The incompatibility of the genomes united in the hybrid zygote is in most cases the cause of their sterility.
Гібрид міжродовий	Intergeneric hybrid	hybrids obtained by crossing forms belonging to different genera (wheat-wheatgrass hybrids, triticale).
Гібрид міжсортовий	Intervarietal hybrid	obtained from the crossing of two cultivars.
Гібрид модифікований	Modified hybrid	hybrids obtained using sister self-pollinated lines.
Гібрид на ЦЧС основі	CMS-based hybrid	the first generation obtained from crossing a maternal cytoplasmic male-sterile component with a paternal fertile pollinator.
Гібрид подвійний міжлінійний	Double cross hybrid	obtained from the crossing of two single cross hybrids
Гібрид простий	Single cross hybrid	obtained from the crossing of two lines A / B.
Гібрид складний	Complex hybrid	obtained from the crossing of a three-way hybrid with a single cross (five-line), two three-way hybrids with each other, or a double cross with a single cross (six-line), etc.
Гібрид сорто-лінійний	Cultivar-line hybrid	obtained from the crossing of a cultivar with a line.
Гібрид трилінійний	Three-way cross hybrid	obtained from the crossing of three lines (A / B) / C or A / (B / C).
Гібридизація	Hybridization	the process of formation or production of hybrids, based on the unification of genetic material from different cells (organisms) in a single cell (organism) as a result of crossing.

Термін українською	Термін англійською	Визначення англійською
Гібридизація (ренатурація) ДНК	DNA hybridization (renaturation)	the interaction of complementary DNA strands to form a double-stranded helix; the formation of a double-stranded DNA structure through the establishment of hydrogen bonds between complementary nucleotides of single-stranded DNA molecules according to the A-T, G-C rule.
Гібридизація віддалена	Distant hybridization	the crossing of organisms belonging to different species (interspecific hybridization) or genera (intergeneric hybridization). Distant hybridization enables the combination of valuable traits and properties of different species (genera) in a hybrid organism, the creation of new cultivars and plant species, enrichment of the gene pool of cultivated plants, and the resolution of questions relating to speciation, phylogeny, and introduction.
Гібридизація внутрішньовидова	Intraspecific hybridization	hybridization of parental forms that differ in hereditary traits but belong to the same botanical species.
Гібридизація інтрогресивна	Introgressive hybridization	the introduction of foreign genetic material into a genome by means of crossing.
Гібридизація соматичних клітин	Somatic cell hybridization	the fusion of protoplasts of somatic cells previously stripped of their walls by enzymatic treatment. Somatic cell hybridization enables the overcoming of not only interspecific but also intergeneric crossability barriers, and opens broad prospects for obtaining new source material for plant breeding.
Гібридизація спонтанна	Spontaneous hybridization	cross-pollination between different cultivars and crops occurring freely in nature. Natural hybrids arising as a result of spontaneous hybridization may serve as material for natural selection in the course of evolution, for artificial selection in plant breeding, and as a

Термін українською	Термін англійською	Визначення англійською
		source of biological contamination of cultivars in seed production.
Гібридна ДНК	Hybrid DNA	a DNA molecule formed by strands of different origins (from two different DNA molecules) as a result of sequential denaturation and renaturation processes.
Гібридна популяція	Hybrid population	a set of genetically distinct organisms of a given species formed as a result of natural or artificial crossing.
Гібридна рослина	Hybrid plant	a plant obtained from the crossing of parental forms differing in genotype.
Гібридне насіння	Hybrid seed	seed obtained from a hybrid plant.
Гібридний дисгенез	Hybrid dysgenesis	incompatibility between predeterminate cytoplasm and the genes of the hybrid nucleus. The phenomenon of cytoplasmic genetic predetermination sometimes results in a situation where not every genome is biologically compatible with a given cytoplasm.
Гібридний розсадник	Hybrid nursery	a nursery in which hybrid material is sown and evaluated, and progenitor plants are selected for establishing a breeding nursery.
Гібридний сорт	Hybrid cultivar	a cultivar created by hybridization through the crossing of appropriately selected parental forms.
Гібридологічний аналіз	Hybridological analysis	the analysis of the pattern of trait inheritance by means of crossing specially selected forms and precise statistical analysis of phenotypic segregation in their progeny. Hybridological analysis enables the deciphering of the genotypic structure of individuals involved in crossing and their progeny with respect to the traits under study. The founder of

Термін українською	Термін англійською	Визначення англійською
		hybridological analysis is G. Mendel (1822–1884).
Гібридома	Hybridoma	a hybrid cell obtained by the fusion of normal differentiated cells (normal B-lymphocytes secreting a single specific type of antibody) with transformed cells (tumor cells). Such a hybridoma has the capacity for unlimited growth in artificial medium and for synthesis of monoclonal (homogeneous) antibodies against any antigen. Monoclonal antibodies are employed in the study of the structure and function of the genetic apparatus of cells. They also serve as universal diagnostic and therapeutic preparations used in medicine.
Гігантизм	Gigantism	the manifestation in polyploids, particularly balanced ones, of greater vigor compared to their diploid predecessors larger leaves, flowers, seeds, stems, etc. The cells and nuclei of polyploids are also larger in size, though fewer in number per unit mass of tissue. In many self-pollinating plants, such as tomato, gigantism does not occur. Gigantism is accompanied by changes in a number of physiological and biochemical properties of cells, conferring greater resistance of polyploids to adverse conditions, diseases, etc. The resistance of polyploids to negative environmental influences is explained by the fact that each gene in their cells has multiple copies, so the probability of expression of recessive mutations is considerably lower than in diploids. Furthermore, the overwhelming majority of polyploids are characterized by heterozygosity, which confers high adaptive capacity.

Термін українською	Термін англійською	Визначення англійською
Гігроскопічність насіння	Seed hygroscopicity	the capacity of seeds to absorb or release moisture.
Гідропоніка	Hydroponics	the cultivation of plants without soil, on artificial liquid nutrient media, often on aqueous nutrient solutions.
Гідротермічний коефіцієнт (ГТК)	Hydrothermal coefficient (HTC)	an indicator of comprehensive assessment of moisture conditions according to G.T. Selyaninov, which takes into account both precipitation input and total evaporative loss, determined by air temperature during the same period. It is considered that at HTC < 0,4 – very severe drought; 0,4–0,5 – severe drought; 0,5–0,6 – moderate drought; 0,7–0,9 – mild drought; 1,0–1,5 – sufficiently moist; > 1,5 – excessively moist.
Гідрофобізація насіння	Seed hydrophobization	the treatment of seeds prior to sowing with a special synthetic film that slowly admits moisture and contains pesticides. Treatment of late spring crop seeds (particularly maize) in this manner enables sowing earlier than when the soil warms to +10°C. At low temperatures, seeds protected by a hydrophobic film do not swell and are not affected by diseases. Upon onset of the optimum temperature, such seeds produce uniform emergence 7–10 days earlier than untreated seeds.
Гінандроморф	Gynandromorph	an individual in which one part of the body is phenotypically and karyotypically male, while the other is female. A gynandromorph arises as a result of incorrect distribution of sex chromosomes during fertilization or cleavage of the egg cell. It is frequently encountered in insects.

Термін українською	Термін англійською	Визначення англійською
Гінецей	Gynoecium	the carpels of a flower that form one or several pistils.
Гіногенез	Gynogenesis	the development of an embryo from the nucleus of the egg cell cytoplasm.
Гіперплазія	Hyperplasia	an increase in the number of organelles within a cell, one of the mechanisms of intracellular regeneration and adaptation of the cell to elevated functional demands; an increase in the number of cells as a result of their intensive proliferation. Hyperplasia is an adaptation of the cell to more intensive functional conditions and adverse environmental factors.
Гіпертрофія	Hypertrophy	an increase in the size of cell organelles as a result of enhanced functional activity under the influence of altered external factors; an increase in cell size attributable to hypertrophy and hyperplasia of organelles, as well as an increase in hyaloplasm volume. Hypertrophy is an adaptation to more intensive functional conditions and adverse environmental factors.
Гіперфункція	Hyperfunction	the enhancement of activity of tissues or organs.
Гіпобіоз	Hypobiosis	a reduction in the intensity of vital processes of an organism.
Гіпокотиль	Hypocotyl	the portion of the stem between the root collar and the cotyledons.
Гіпоплазія клітин	Cell hypoplasia	underdevelopment of cells as a result of disruption of normal histogenesis.
Гіпотеза «копі-чайз»	Copy-choice hypothesis	employed in early attempts to understand the mechanisms of crossing-over, according to which the formation of crossover chromatids is accomplished by DNA synthesis involving template switching.

Термін українською	Термін англійською	Визначення англійською
Гіпотеза запрограмованої загибелі клітин	Programmed cell death hypothesis	postulates that a genetic program leading to cell death is irreversibly executed in the cell through differentiated gene expression.
Гіпотеза маргінотомії	Marginotomy hypothesis	explains the mechanisms of aging and is based on the assumption that cell division is accompanied by progressive shortening of the telomeric regions of chromosomes and gradual loss of genetic material necessary for normal vital activity. The rate of these losses determines the rate of aging and lifespan.
Гіпотеза неоднозначної відповідності кодонів і антикодонів (гіпотеза «гойдань»), або Wobble-гіпотеза	Wobble hypothesis	according to which pairing of the third nucleotide of a codon with an anticodon is less specific than the pairing of the first two. The hypothesis is based on evidence that a single amino acid frequently corresponds to several codons differing from one another only in the nucleotide at the third position.
Гіпотеза симбіогенетична	Symbiogenetic hypothesis	a hypothesis proposing that mitochondria and plastids are endosymbionts (bacteria) transformed in the course of evolution that entered into interaction with the precursors of modern cells. It is considered that, as a result of a separate evolutionary event, cyanobacteria capable of photosynthesis were engulfed by a primordial cell and subsequently transformed into chloroplasts, leading to the emergence of the first plant cells. The precursors of mitochondria may have been a particular type of purple photosynthetic bacteria that subsequently lost the capacity for photosynthesis but retained the respiratory chain.
Гістидиновий оперон	Histidine operon	contains nine structural genes responsible for the enzymes of histidine biosynthesis. In the

Термін українською	Термін англійською	Визначення англійською
		absence of histidine, transcription of the operon genes increases tenfold, but may also vary smoothly depending on the amount of His-tRNA. This effect is explained by the presence of an attenuator within the leader DNA located between the promoter and the first structural gene.
Гістологія	Histology	the science of the structure, development, and functions of tissues.
Гістони	Histones	simple basic proteins associated with DNA in the nuclei of somatic cells of eukaryotes. In nuclear nucleoproteins (chromatin), they participate in the formation of nucleosomes, which contain a DNA fragment (approximately 200 base pairs) and are associated with it. Histones regulate genome activity, particularly in processes that read information from nucleic acids and in the biosynthesis of these acids. In histones, 25% of all amino acids are represented by lysine, arginine, and histidine, which determines the basic properties of these proteins.
Гліадини	Gliadins	storage proteins in wheat endosperm.
Глобуліни	Globulins	simple proteins soluble in weak salt, acid, and alkali solutions, slightly soluble in water. Found in plant and animal tissues.
Глютиніни	Glutenins	high-molecular-weight storage proteins in wheat endosperm.
Голокінетична (голоцентрична) хромосома	Holocentric chromosome	a chromosome that has a diffuse centromere, whereby spindle fibers attach along the entire length of the holocentric chromosome or to many of its regions, resulting in uniform movement of all parts of the holocentric chromosome during anaphase.

Термін українською	Термін англійською	Визначення англійською
Гомеобокс	Homeobox	a special class of genes of extraordinary structural conservation, widely distributed across the most diverse taxonomic groups or phyla from plants to mammals. This sequence contains 183 nucleotides encoding a polypeptide chain of 61 amino acids. The homeobox sequence is encountered in virtually all organisms in a nearly unaltered form.
Гомеологічні хромосоми	Homeologous chromosomes	partially homologous chromosomes with the same locus sequence and partial conjugation (e.g., in wheat – A1, B1, D1, etc.).
Гомеорез	Homeorhesis	the stabilized developmental flow over time (term of C.H. Waddington).
Гомеостаз	Homeostasis	the ability of biological systems (organisms, populations) to resist changes in environmental conditions and to dynamically alter the genotypic response such that the functions of the system are not substantially changed.
Гомеостаз генетичний (популяційний)	Genetic (population) homeostasis	the ability of a population to maintain dynamic equilibrium of genetic composition, stability, and integrity of genetic structure under changing environmental conditions.
Гомеостаз розвитку	Developmental homeostasis	the inherent stability of the phenotype during ontogenesis against external factors, according to the genotype.
Гомеотипові мутації	Homeotic mutations	mutations that cause the replacement of one body structure with another during individual development.
Гомоалелі	Homoalleles	point mutations of the same type located at identical sites.
Гомогаметна стать	Homogametic sex	the sex that produces gametes with identical sex chromosomes.
Гомогамія	Homogamy	the simultaneous maturation of the stigma and anthers.

Термін українською	Термін англійською	Визначення англійською
Гомогамне схрещування	Homogamous crossing	crossing between individuals of the same population or species.
Гомогеномний	Homogenomic	cells and organisms with two or more identical genomes in a single nucleus.
Гомозигота	Homozygote	a cell or organism carrying two identical alleles at the same locus of homologous chromosomes (e.g., AA, aa).
Гомозиготна стать	Homozygous sex	individuals of this sex produce gametes that are identical with respect to the sex chromosome carried by each gamete of that sex.
Гомозиготність	Homozygosity	a genetic state in which an organism carries identical alleles (gene variants) for a given gene on homologous chromosomes.
Гомологічні ряди	Homologous series	formed by species and genera in which parallelism in the recurrence of traits has been identified, i.e., traits characteristic of forms within a species or genus are repeated in other species or genera.
Гомологічні хромосоми	Homologous chromosomes	chromosomes that carry an identical set of genes, are similar in morphology, and synapse during prophase I of meiosis. In the diploid set, each chromosome pair is represented by two homologous chromosomes, which may differ in alleles (e.g., Aa) of the genes localized in them and exchange segments during crossing-over.
Гомологія	Homology	the similarity of structures conditioned by an identical system of morphological transformation in individual and historical development.
Гомоплазія	Homoplasy	1. The independent origin and fixation of identical chromosomal mutations in different phyletic lineages. 2. Parallel or convergent evolution, not hereditarily linked to ancestors,

Термін українською	Термін англійською	Визначення англійською
		whereby organisms acquire structural similarity.
Гомостилія	Homostyly	the absence of differences in pistil style length among all plants of a given species.
Гордиїни	Hordeins	storage proteins of barley grain (40%), inherited in blocks by codominant type and controlled by seven closely linked loci Hrd A, B, C, D, E, F, G, located on the short arm of chromosome V.
Горизонтальна (полігенна, польова, неспецифічна) стійкість	Horizontal (polygenic, field, non-specific) resistance	resistance conditioned by a large number of «minor» genes (polygenes), providing complete (moderate but stable) protective effect equally against different races and strains of pathogens.
Горизонтальне перенесення генів	Horizontal gene transfer	an evolutionary mechanism consisting in the transfer of genes between simultaneously existing organisms, as distinct from vertical transfer from parents to offspring. It is considered that horizontal gene transfer occurs among representatives of all kingdoms of life.
Гормони	Hormones	biologically active substances that influence the activity of an organism by activating or inhibiting enzymatic processes. All metabolic processes in the organism that are associated with gene activity occur under hormonal control.
Господарська довговічність насіння	Commercial seed longevity	the property of seeds to maintain standard germination capacity under optimal storage conditions, characterized by the duration of the period during which this property is retained.
Ґрунтовий контроль	Field (soil) control	the control of cultivar purity, species identity, and hybrid nature of seeds, as well as the degree of male sterility in sterile analogues, by sowing seeds on special plots and analyzing all plants

Термін українською	Термін англійською	Визначення англійською
		thereon. Cultivar and species admixtures, the degree of hybridity, and plant sterility are assessed throughout the entire growing season.
Групи зчеплення	Linkage groups	genes localized on the same chromosome form a linkage group and are inherited together. The number of linkage groups equals the number of pairs of homologous chromosomes.
Гуанін, 2-аміно-6-оксипурин	Guanine, 2-amino-6-oxypurine	one of the purine nitrogenous bases constituting nucleic acids (DNA or RNA).
Гуанозин	Guanosine	a nucleoside composed of the purine base guanine and the sugar ribose. Widely distributed in living organisms as a constituent of RNA. Phosphoric esters of guanosine (guanosine phosphoric acids) play an important role in metabolism. Guanosine is produced upon degradation of RNA and guanyl nucleotides.
Гуанозинмонофосфат (гуанілова кислота)	Guanosine monophosphate (guanylic acid)	a nucleotide composed of the purine base guanine, the pentose sugar ribose, and a phosphoric acid residue.
Гуанозинфосфорні кислоти (гуанозинфосфати)	Guanosine phosphoric acids (guanosine phosphates)	nucleotides composed of guanine, ribose, and phosphoric acid residues. Guanosine-5-monophosphate (GMP, guanylic acid) is widely distributed in living organisms.
Густота стояння (маточних буряків)	Plant stand density (of stecklings)	the number of plants per unit area (per square meter, hectare, etc.) or per unit row length.
Густота сходів (маточних і фабричних буряків)	Seedling emergence density (of stecklings and commercial beets)	the number of plants per unit row length at the stage of complete emergence.
Д		
ДАБ (1,4-бісдіазоацетилбутан)	DAB (1,4-bisdiazo-acetylbutane)	a potent chemical mutagen belonging to the group of alkylating agents, applied in plant breeding (particularly in wheat) for the

Термін українською	Термін англійською	Визначення англійською
		induction of mutations. It acts as a supermutagen, inducing chromosomal rearrangements – most frequently chromosomal fragments – and elevates mutation frequency in a concentration-dependent manner (typically used at 0,1–0,2%).
Дарвінізм	Darwinism	the materialist theory of the evolution of the organic world, founded by C. Darwin. According to his theory, evolution proceeds as a result of the interaction of three principal factors – heredity, variability, and natural selection. Generalizing the experience of plant and animal breeding, Darwin concluded that artificial selection plays the leading role in the formation of new cultivars of agricultural plants and new breeds of domestic animals. He demonstrated that variability is inherent in all living organisms existing under natural conditions.
Даунстрим	Downstream	a sequence in linear DNA, RNA, or protein located to the right of, and below, the sequence under consideration, in the direction of gene expression or protein synthesis, at the 3' position downstream.
Двели	Dwells (dental-veinal elements)	denticles and vein endings of the conducting system of leaves.
Двелярна мінливість	Dwell variability	grouped intra-individual variability in the expression of leaf structural elements marked by denticles and terminal veins along the margin of the leaf blade (dwells), which substantially determine leaf shape.
Дводомні рослини	Dioecious plants	plant species in which some individuals bear female flowers and others bear male flowers.

Термін українською	Термін англійською	Визначення англійською
Двонаправлена реплікація	Bidirectional replication	replication in which replication forks move in opposite directions from a common origin.
Двоурожайна культура картоплі	Double-cropping of potato	the production of two potato harvests in a single year by using freshly harvested tubers for the second planting date. Growth regulators and special agronomic measures are employed to break dormancy.
Дегенерація	Degeneration	deterioration of specific traits or properties of an organism; changes associated with simplification of organization and reduction of active functions of a number of organs.
Дегідратація	Dehydration	the loss of water from the cells of an organism.
Деградація	Degradation	simplification of the structure and functions of an organism.
Дезамінування	Deamination	the cleavage of an amino group (NH_2) from organic compounds.
Дезінфекція насіння	Seed disinfection	the elimination of external or internal infection from seeds.
Дезокси-рибонуклеази (ДНК-ази)	Deoxyribonucleases (DNases)	a group of enzymes that catalyze the hydrolytic cleavage of DNA. They belong to the class of hydrolases and are present in all cells of living organisms. The end products of DNA cleavage may include large molecular fragments and individual nucleotides. Deoxyribonucleases also participate in the processes of DNA replication and repair.
Дезокси-рибонуклеїнова кислота, ДНК	Deoxyribonucleic acid, DNA	a macromolecular polymeric structure whose monomeric units are residues of four types of nucleotides, each composed of a nitrogenous base (adenine, guanine, thymine, cytosine), the pentose sugar deoxyribose, and a phosphoric acid residue. DNA molecules consist of two polynucleotide chains wound in a helix around a common axis; the chains are joined by

Термін українською	Термін англійською	Визначення англійською
		hydrogen bonds according to the principle of complementarity (base pairs adenine-thymine and guanine-cytosine). DNA is present in the cell in the form of a complex with proteins (deoxyribonucleoprotein), which in eukaryotes constitutes the basis of chromatin and chromosomes. DNA is the principal material carrier of genetic information in all cells. Genetic information is encoded as a sequence of bases in one of the DNA strands.
Дезоксирибонуклеопротеїд (ДНП)	Deoxyribo-nucleoprotein (DNP)	a complex multicomponent assembly of which DNA and proteins constitute the greater part. It is the principal component of chromatin. Deoxyribonucleoprotein consists of basic proteins (histones and protamines) as well as neutral and acidic proteins. Histones form globular structures with DNA – nucleosomes – which can be observed under an electron microscope. Nucleosomes contain a uniform complement of histones and are evenly distributed along the DNA chain.
Дезоксирибоза	Deoxyribose	a carbohydrate constituent of the nucleotides of DNA.
Декапітація	Decapitation	the removal of the shoot apex (apical meristem) of the stem
Декоративні рослини	Ornamental plants	flowers, lawn grasses, bulbs, corms, seedlings and transplants, cuttings, micro-cuttings, and regenerant plants used for ornamental purposes.
Декстрини	Dextrins	products of incomplete hydrolysis of linear polysaccharides.
Делеція	Deletion	in the broad sense, a type of mutation associated with a change in chromosome structure. In the narrow sense, a deletion is the

Термін українською	Термін англійською	Визначення англійською
		loss of a chromosomal segment. A distinction is made between terminal deletions, or deficiencies (loss of a terminal segment), and interstitial deletions (loss of an internal segment as a result of two breaks). The size of deletions ranges from several nucleotide pairs to fragments carrying several genes.
Дем	Deme	a small local, transiently existing (lasting several generations) group of individuals, relatively isolated from other similar groups. Individual demes may differ from one another in several characteristics.
Денатурація білків	Protein denaturation	a change in the spatial structure of polypeptide chains of protein macromolecules.
Денатурація ДНК	DNA denaturation	a change in the natural properties of DNA by conversion from a double-stranded to a single-stranded form, caused by disruption of the hydrogen bonds holding the two complementary strands together.
Денітрифікація	Denitrification	the conversion of nitrogen compounds to molecular nitrogen.
Деплазмоліз	Deplasmolysis	the restoration of turgor by cell protoplasts.
Депресія	Depression	the phenomenon of suppression of growth and development. Population depression – a sharp decline in the number of individuals of a species or group of species, caused by populational, biocoenotic, or abiotic factors.
Депресія інбредна	Inbreeding depression	the weakening and even degeneration of offspring conditioned by homozygotization of recessive alleles under inbreeding.
Депресія хвороби рослин	Plant disease depression	a significant reduction in the rate of disease development compared to the usual average level; most commonly associated with weather conditions unfavorable to the pathogen.

Термін українською	Термін англійською	Визначення англійською
Державна насіннєва інспекція (держнасінінспекція)	State Seed Inspection (State Seed Inspectorate)	an authority that exercises state control over the varietal and sowing properties of seeds.
Державна реєстрація ГМО	State registration of GMOs	the entry of GMOs into a register, taking into account the assessment of their risk with respect to effects on human health and the state of the natural environment, for the purpose of subsequently obtaining authorization for the practical use of GMOs in Ukraine in accordance with their designated application.
Державна реєстрація прав на сорт	State registration of rights to a plant variety	the official recognition and attestation by the state of the arising, termination, and, in cases established by law, transfer of intellectual property rights to a plant variety by entering the relevant information into the State Register of Patents for Plant Varieties on the basis of a decision by the Competent Authority on the state registration of rights to a variety.
Державна реєстрація сорту	State registration of a plant variety	the official recognition and attestation by the state of the right to distribute a variety by entering the relevant information about the variety into the State Register of Plant Varieties Suitable for Distribution in Ukraine, on the basis of a decision by the Competent Authority on the state registration of the variety.
Державний нагляд (контроль)	State supervision (control)	the activities of the relevant central executive authority within the scope of its powers concerning the identification and prevention of violations of legislative requirements in the field of seed production and nursery growing.
Державний реєстр виробників насіння і садивного матеріалу	State Register of Seed and Planting Material Producers	a list of seed production and nursery entities authorized to produce and sell seeds and planting material.

Термін українською	Термін англійською	Визначення англійською
Державний реєстр ГМО	State Register of GMOs	a specialized list of registered GMOs indicating their designated application.
Державний реєстр ГМО джерел харчових продуктів та кормів	State Register of GMO Sources of Food Products and Feed	a specialized list of GMOs for which, on the basis of international rules and safety assessment criteria for human and animal health, a conclusion has been drawn regarding the possibility of their use as food products and/or feed and/or their sources.
Державний реєстр патентів на сорти рослин	State Register of Patents for Plant Varieties	an official list of varieties and hybrids whose proprietary intellectual property rights are certified by patents for plant varieties and hybrids, together with patent information on such varieties and hybrids.
Державний реєстр сортів рослин, придатних для поширення в Україні	State Register of Plant Varieties Suitable for Distribution in Ukraine	an official list of varieties and hybrids of agricultural crops recommended for cultivation in the soil-climatic zones of Ukraine.
Державний реєстр суб'єктів насінництва та розсадництва	State Register of Seed Production and Nursery Entities	a list of seed production and nursery entities.
Державний резервний насіннєвий фонд	State Reserve Seed Fund	seeds intended for supplying regions that do not produce their own seeds or have limited capacity for seed production, and for use in the event of crop failure or natural disaster. A stock of basic and certified seeds.
Десикація	Desiccation	the artificial drying of plant foliage by treatment with chemical substances (desiccants) to accelerate fruit (seed) ripening and facilitate mechanized harvesting.
Десинапсис (декон'югація)	Desynapsis (deconjugation)	the premature separation of bivalent chromosomes (homologous chromosomes

Термін українською	Термін англійською	Визначення англійською
		undergoing synapsis) during prophase I of meiosis.
Десмосоми	Desmosomes	structures on the surface of cells that ensure their interconnection.
Деспіралізація хромосом	Chromosome despiralization	the uncoiling of chromatids following mitosis or meiosis.
Деструкція екосистем	Ecosystem destruction	disruption of ecosystem structure, stability, and functioning by catastrophic or anthropogenic factors.
Детермінанти	Determinants	organism species characterized by clearly defined ecological requirements for environmental conditions; indicator species of environmental conditions.
Детермінантний тип росту	Determinate growth type	inflorescences located in the apical part of the stem, which ends in a generative bud, causing limited growth and branching (soybean, pea, lupin, buckwheat). Such plants are commonly called determinates among geneticists and breeders.
Детермінація	Determination	the genetically defined direction of development of an individual cell, organ, or entire organism according to a specific type. The basis of determination is the activation or inhibition of gene action in different cells, leading to the synthesis of different mRNAs and proteins.
Дефектні фаги	Defective phages	phages that contain one or more genes of the host bacterium in place of their own genes, but retain the ability to transduce other cells.
Деференціювання	Dedifferentiation	the loss of characteristics inherent in differentiated cells; the transition of specialized, non-dividing cells to proliferation, leading to the loss of most features of specialization.

Термін українською	Термін англійською	Визначення англійською
Дефіцитний сорт	Deficit cultivar	a new, valuable cultivar entered into the State Register of Plant Varieties Suitable for Distribution in Ukraine, for which the quantity of seed is insufficient to meet demand. By virtue of its unquestionable superiority over older cultivars, it is subject to rapid introduction into production according to the cultivar replacement plan.
Дефішенсі, нехватка	Deficiency	a chromosomal aberration (rearrangement) in which the terminal segment of a chromosome (chromatid) is lost; the term «deficiency» is frequently used as a synonym for «deletion» particularly in classical genetics.
Дефоліація	Defoliation	the artificially induced abscission (removal) of leaves from plants as a result of treatment with chemical substances (defoliants). It is applied to accelerate capsule ripening in cotton, castor bean, and other agricultural crops in order to facilitate mechanized harvesting.
Джерело інфекції	Source of infection	a carrier of inoculum (intermediate host, infected plant, plant debris, soil, etc.) that promotes plant infection and disease recurrence.
Джерело стійкості	Source of resistance	a donor of plant resistance capable of crossing with a cultivated plant species requiring enhanced resistance.
Джоуль	Joule	the unit of energy in the International System of Units (SI); it has replaced the calorie. 1 J = 0.2388 cal.
Дивергенція	Divergence	the divergence of characteristics in related organisms in the course of evolution. It is conditioned by the adaptation of organisms to different conditions of existence. The principal

Термін українською	Термін англійською	Визначення англійською
		driving force of divergence is selection (artificial or natural).
Дивергенція екогеографічна	Ecogeographic divergence	the splitting, in the course of evolution, of one ancestral (source) species into two or more species as a result of geographic separation and adaptation to local habitat (growth) conditions.
Дивергенція фітоценозів	Phytocoenosis divergence	the divergence of species characteristics within a community during succession.
Дигаплоїд	Dihaploid	a haploid of a tetraploid-derived organism (digenomic species). A dihaploid contains two haploid chromosome sets, one from each of the constituent genomes of the polyploid. Examples include the dihaploid of potato S. tuberosum, durum wheat T. durum, tobacco N. tabacum, etc.
Дигеномний вид	Digenomic species	an allopolyploid species comprising two genomes of different origin, formed as a result of hybridization.
Дигібрид (дигетерозигота)	Dihybrid (diheterozygote)	an organism heterozygous for two gene pairs – AaBb. It produces four types of gametes with equal frequency AB, Ab, aB, and ab.
Дигібридне схрещування	Dihybrid cross	a cross between organisms carrying different alleles at two different loci.
Дизруптивний або розсікаючий добір	Disruptive (diversifying) selection	selection directed against heterozygotes. An example is provided by genotypes carrying translocations translocation heterozygotes are less well adapted compared to homozygotes due to reduced fertility.
Дикаріоз	Dikaryosis	the presence of two nuclei in a cell.
Дикаріон	Dikaryon	a cell containing two nuclei.
Дикий тип	Wild type	the phenotype characteristic of the majority of organisms in a natural population. The allele

Термін українською	Термін англійською	Визначення англійською
		that determines the wild-type trait is termed the wild-type allele.
Диклінія	Diclinism	the development of male and female reproductive organs of plants in separate flowers. Species are termed monoecious if, under diclinism, unisexual flowers occur on the same plant, and dioecious if some plants bear only female flowers while others bear only male flowers.
Диктіосома	Dictyosome	the structural and functional unit of the Golgi complex. In plant cells the dictyosome is a discrete entity, and its functions are associated with processes of accumulation and transformation of protein substances and carbohydrates.
Диметилсульфат (ДМС)	Dimethyl sulfate (DMS)	a potent alkylating-type chemical mutagen used in plant breeding for the induction of mutations and the creation of novel source material. It effectively influences plant architecture (e.g., stem height), generating useful heritable changes, but exhibits a high degree of cytotoxic and genotoxic activity.
Димінуція хроматину (від лат. diminutio – зменшення)	Chromatin diminution	is a programmed process whereby a cell loses a portion of its genome during early embryonic development. The elimination of surplus chromatin, represented predominantly by highly repetitive sequences, occurs in somatic cell lineages – as observed, for instance, in Parascaris equorum, certain crustaceans, insects, and ciliates. As a result of chromosomal fragmentation and the subsequent degradation of their terminal segments, somatic cells lose genetic material that is dispensable for their further differentiation. Meanwhile, the complete,

Термін українською	Термін англійською	Визначення англійською
		unaltered genome is retained exclusively in germline cells – the progenitors of future gametes. The extent of DNA loss during chromatin diminution may range from 15% to 90% of the total genomic content.
Димінуція хромосом	Chromosome diminution	the loss of individual chromosomes by differentiating cells that are precursors of specific tissues. It also occurs during the dedifferentiation of highly specialized, generally polyploid cells, in particular in plants. It represents the extreme case of chromatin diminution.
Динаміка популяцій	Population dynamics	changes in the size, sex ratio, and age composition of a population, determined by intrapopulation processes and the interaction of populations of different species. A scientific field in biology that studies intra- and interpopulation processes using mathematical modeling.
Динаміка рослинності	Vegetation dynamics	diverse changes in vegetation over time (changes in structure, productivity, etc.).
Динаміка фітоценозу	Phytocoenosis dynamics	changes in a plant community over time under the influence of external or internal factors.
Динамічне сортовипробування	Dynamic variety testing	the testing of varieties in which the dynamics of yield formation throughout the growing season are studied.
Диплоїд	Diploid	an organism whose somatic cells contain a double (diploid – 2n) chromosome set. It arises following the fusion of gametes.
Диплоїдизація	Diploidization	the doubling of chromosome number.
Диплоїдний гібрид	Diploid hybrid	the first generation of beet obtained from crossing maternal and paternal components at the diploid level.

Термін українською	Термін англійською	Визначення англійською
Диплонема (стадія подвійної нитки, диплотенна стадія)	Diplonema (double-thread stage, diplotene stage)	the fourth stage of prophase I of meiosis, during which the homologous chromosomes of a bivalent begin to separate (at their centromeres) from one another. Separation is not completeat certain points (chiasmata) the chromosomes remain joined.
Диплоспорія	Diplospory	the formation of diploid (unreduced) spores as a result of abnormal meiosis. Diplospory is characteristic of apomictic reproduction.
Диплофаза	Diplophase	the developmental phase of an organism from zygote formation until the entry of the mother cell into meiosis.
Дисиміляція	Dissimilation	the breakdown of complex organic substances in an organism into simple ones, with the release of energy.
Диски хромосом	Chromosome discs	dark bands of varying width alternating with light regions – interdisc intervals – along a polytene chromosome.
Дискордантність	Discordance	dissimilarity between twins with respect to the traits under analysis.
Дискретна будова спадкового матеріалу	Discrete structure of hereditary material	the organization of DNA in chromosomes, which consist of discrete units – genes – capable of recombination, that determine the development of different traits and are relatively independent of one another.
Дискретність	Discreteness	the divisibility of genotype and phenotype, whose constituent parts are genes and phenes respectively.
Дисперсійний аналіз	Analysis of variance (ANOVA)	a statistical method developed to partition total variability into components, each conditioned by within-treatment variance, replication, and other errors (random variation). The analysis enables the determination of the significance of

Термін українською	Термін англійською	Визначення англійською
		differences obtained between treatments, blocks, and other factors.
Дисперсія	Variance	a statistical measure of a sample that characterizes deviation from the mean value.
Дисплазія	Dysplasia	a general term for the consequences of aberrant formation of individual parts, organs, or tissues during embryogenesis and the postnatal period; a change in the size, form, and structure of cells, tissues, or organs.
Дистальна локалізація	Distal localization	the positioning of an organ in the part most distant from the center of the body.
Дистальний (кінець)	Distal (end)	in chromosomes – the end or region located farthest from the centromere.
Диференціальне помноження (мультиплікація) хромосом	Differential chromosome multiplication	the unequal increase in the number of individual chromosomes during endomitosis; for example, in Drosophila nurse cells at a ploidy level of 512, the number of Y chromosomes is only 4.
Диференціація	Differentiation	the acquisition by cells of the capacity to perform specific functions associated with their specialization (e.g., epithelial cells, nerve cells, and others). Differentiation begins in early embryogenesis and progressively narrows the number of possible transformations of these cells to one or very few differentiated forms. The differentiated state of cells is fairly stable and is inherited by their descendants.
Диференційна активність генів	Differential gene activity	the occurrence of uniform mutations and morphoses during critical periods of plant ontogenesis (at their greatest sensitivity) in response to environmental stress factors.
Диференційна реалізація	Differential realization	a change in the quality and quantity of genes controlling the development of specific traits.

Термін українською	Термін англійською	Визначення англійською
Диференційна транскрипція генів	Differential gene transcription	a change in the quantitative and qualitative composition of mRNA.
Диференційна трансляція	Differential translation	a mechanism of gene activity regulation consisting in the fact that protein synthesis in a cell is carried out only on specific mRNA molecules, or is regulated on the same mRNA molecule.
Диференційне забарвлення хромосом	Differential chromosome staining	methods of identifying specific chromosomes based on the use of dyes that bind specifically to certain chemical components of chromosomes.
Диференціювання	Differentiation	the process of emergence of differences between parts of an organism (cells) and their specialization during development. Also, the developmental process whereby a relatively unspecialized cell is transformed into a more specialized one, leading to differences between daughter cells and between mother and daughter cells. It manifests as morphological, structural, physiological, and biochemical changes in cells, underpinned by changes in the activity of genes responsible for the synthesis of the corresponding proteins that bring about differentiation. The initial event in this process is determination.
Дихогамія	Dichogamy	the non-simultaneous maturation of anthers and stigmas in a single flower.
Дицентрик	Dicentric	a chromosome or chromatid that has two centromeres and is formed as a result of reciprocal translocation.
Діагностика хвороби рослин	Diagnosis of plant diseases	the identification of a disease based on a combination of symptoms.
Діакінез	Diakinesis	the final stage of prophase I of meiosis. It is characterized by maximum chromosome

Термін українською	Термін англійською	Визначення англійською
		shortening as a result of intensive chromatid spiralization, terminalization, and a reduction in the number of intermediate chiasmata. At the end of this stage, the chromatids remain connected by terminal chiasmata.
Діалельні схрещування	Diallel crosses	crosses providing for the creation of hybrids within a defined group of cultivars or lines in all possible combinations. In heterosis breeding they are employed for the determination of specific combining ability.
Діетилсульфат (ДЕС)	Diethyl sulfate (DES)	a highly active chemical mutagen belonging to the class of alkylating compounds. Widely used in plant breeding to induce heritable changes, causing predominantly gene mutations as well as chromosomal rearrangements, thereby enabling the production of valuable new source material and cultivars.
Дійсно можлива врожайність (ДМУ)	Practically attainable yield (PAY)	the maximum yield obtainable under existing meteorological conditions. It constitutes 60–80 % of the potentially possible yield, because even under ideal technological and reclamation conditions it is limited by the local climate. It depends on the biological properties of the plant cultivar.
Ділянка сортовипробування	Variety trial plot	an elementary unit of the total area of defined size and shape on which an individual cultivar is sown. A variety trial plot is characterized by its sown area, i.e., the total and accountable area of the sowing on which yield accounting and all other records and observations are conducted.
Ділянки гібридизації	Hybridization plots	plots on which seeds of heterotic hybrids are grown in specialized seed-production enterprises.

Термін українською	Термін англійською	Визначення англійською
Ділянки ДНК гіперваріабельні	Hypervariable DNA regions	regions that frequently flank structural genes and substantially influence their expression.
Ділянки ДНК незначущі	Non-coding DNA regions	sequences that do not contain genes. These sequences include regulatory DNA regions of various structures as well as fairly monotonous nucleotide sequences whose function is not always elucidated.
Ділянки ДНК регулювальні	Regulatory DNA regions	regions that bind individual regulatory proteins – activators, repressors, and others. These regions are dispersed throughout the genome and occupy a considerable portion of the DNA molecule, particularly in eukaryotes.
Ділянковий (ґрунтовий) сортовий контроль	Plot (field) variety control	the assessment of conformity of plants obtained from seeds of a control sample with plants obtained from seeds of a standard sample or with the variety description.
ДНК (дезокси-рибонуклеїнова кислота)	DNA (deoxy-ribonucleic acid)	a polymeric organic compound whose monomers are nucleotides. It is a constituent of cell nucleus chromatin, is present in the cytoplasm of bacterial and archaeal cells, and is found inside mitochondria and plastids. DNA ensures the storage and realization of hereditary information.
ДНК високоповторювана	Highly repetitive DNA	nucleotide sequences present in the genome as hundreds of thousands of repeats of short sequences (5–100 bp) that are the first to reassociate during renaturation of total DNA; they form part of heterochromatin and satellite DNA.
ДНК зиготенна (зДНК)	Zygotene DNA (zDNA)	a multiplicity of small (100 bp) sequences dispersed along DNA molecules, constituting approximately 0.3 of total DNA. The number of these regions equals the number of genes or intergenic intervals. During meiotic interphase,

Термін українською	Термін англійською	Визначення англійською
		zDNA is not replicated this occurs considerably later – toward the end of zygotene. By contrast, during mitosis, zDNA is replicated in interphase together with the total DNA.
ДНК комплементарна (кДНК)	Complementary DNA (cDNA)	single-stranded DNA produced by reverse transcription of mRNA molecules.
ДНК лінкерна	Linker DNA	a defined length of DNA fragment (from 8 to 114 bp) between two nucleosomes.
ДНК маркер	DNA marker	a polymorphic characteristic detected by molecular biology methods at the level of the DNA nucleotide sequence for a specific gene or for any other chromosomal region, used in comparing the genotypes of different cultivars (hybrids, lines).
ДНК некодувальна	Non-coding DNA	DNA that encodes neither polypeptides nor RNA. Non-coding DNA is a constituent of most eukaryotic genomes and includes introns, spacers, pseudogenes, centromeres, and the majority of repetitive DNA.
ДНК рекомбінантна	Recombinant DNA	a macromolecule formed by joining genes in a new combination.
ДНК сателітна	Satellite DNA	multiply repeated non-translated sequences in eukaryotic cells. It forms clusters principally in the centromeric and telomeric regions of most chromosomes. Chromosome-specific satellite DNA sequences have been identified, which serve as convenient markers for individual human chromosomes.
ДНК секвенування	DNA sequencing (from Eng. sequence)	methods of investigating primary structure by means of which it became possible to determine the nucleotide sequences of a gene and its regulatory regions, exons and introns,

Термін українською	Термін англійською	Визначення англійською
		intergenic intervals, etc. This has substantially deepened and detailed the understanding of the gene as a functional unit.
ДНК топоізомерази	DNA topoisomerases	a special class of proteins by means of which the so-called problem of unwinding the parental double helix of the DNA molecule is resolved. For displacement in the replication fork, the parental double helix must complete one full rotation around its own axis for every 10 base pairs.
ДНК химерна	Chimeric DNA	an artificially created hybrid DNA molecule with no counterpart in nature.
ДНК-вектор	DNA vector	a replicon in the form of a small plasmid or bacteriophage used in molecular cloning experiments for the transfer of foreign nucleic acids into a host organism, where these acids can be propagated.
ДНК-зонд	DNA probe	a relatively small fragment of single-stranded DNA used to search for complementary sequences in a larger molecule or among various DNA molecules.
ДНК-лігаза	DNA ligase	an enzyme that participates in joining the 3'-end of one DNA fragment to the 5'-end of another via a phosphodiester bond, provided both fragments interact complementarily with an antiparallel strand.
ДНК-полімерази	DNA polymerases	enzymes that participate in DNA replication. Enzymes of this class catalyze the polymerization of deoxyribonucleotides along a DNA strand that the enzyme «reads» and uses as a template. The type of new nucleotide is determined by the principle of complementarity to the template being read. The DNA molecule being synthesized is

Термін українською	Термін англійською	Визначення англійською
		complementary to the template strand and identical to one of the strands of the second double helix.
ДНК-рестриктази або рестрикційні ендонуклеази	DNA restriction enzymes (restriction endonucleases)	bacterial enzymes that cleave DNA at specific, precisely defined sites, usually palindromic sequences. They are used in genetic engineering, genetic research, and the creation of recombinant DNA.
ДНК-технології	DNA technologies	methods based on the latest molecular-genetic research in the field of analysis of genome structure and function.
ДНК-N-глікозилази	DNA-N-glycosylases	hydrolytic enzymes capable of specifically cleaving the N-glycosidic bond between a particular nitrogenous base and the sugar-phosphate backbone of DNA. As a result of this action, so-called apurinic sites are formed in DNA.
Добазове насіння	Pre-basic seed	seed of the primary seed production links used for its further multiplication and for the production of basic seed.
Добір	Selection (from Lat. selectio)	the process of differential reproduction of genotypes in a population against a background of genotypic variability. The significance of an individual that has undergone selection and produced offspring is determined by the contribution of its genotype to the gene pool of the population. All vital traits and properties are subject to selection, since it acts at all stages of individual development. Under selection pressure, genetic changes continuously occur in a population.
Добір відцентровий, дизруптивний	Centrifugal (disruptive) selection	natural selection in which a population is so poorly adapted to existing environmental conditions that virtually any deviation of the

Термін українською	Термін англійською	Визначення англійською
		plant organism from the modal type of the population acquires a selective advantage and is maintained by selection during reproduction.
Добір дестабілізуючий	Destabilizing selection	one form of directional selection, manifested under stressful conditions of existence; it induces increased variability and represents an important factor in the acceleration of evolution. The phenomenon of destabilizing selection was discovered and experimentally confirmed in fur animal breeding (D.K. Belyaev) and in populations of cultivated cells (V.A. Kunakh). The concept of destabilizing selection was developed by D.K. Belyaev.
Добір індивідуальний	Individual selection	selection based on the assessment of progeny of individually selected and propagated superior plants; in self-pollinating plants it is more commonly a single-cycle procedure, while in cross-pollinating plants it is exclusively repeated and continuous. Under individual selection, the population is divided into lines or families and selection is conducted separately within each, or it is performed among progeny obtained by selfing individual plants – inbreeding.
Добір індивідуально-безперервний	Continuous individual selection	individual selection applied in plant breeding and seed production of cross-pollinating plants for the purpose of consolidating or maintaining certain cultivar traits throughout the entire period of its commercial use.
Добір індивідуально-родинний	Individual family selection	a variant of individual selection in cross-pollinating plants, in which seeds of each elite plant are sown as a family on a separate isolated plot. Subsequent pollination of plants occurs within a single family, which promotes rapid uniformity and consolidation of the required

Термін українською	Термін англійською	Визначення англійською
		traits. However, it is accompanied by depression resulting from reduced heterogeneity due to inbreeding.
Добір каналізуючий	Canalizing selection	the elimination of genotypes from a population that confer sensitivity of developing organisms to variable environmental factors. A form of stabilizing selection representing the selection of organisms with genes capable of reducing the sensitivity of ontogenesis to external and internal disturbances.
Добір клітинний (внутрішньосоматичний)	Cell (intrasomatic) selection	the selection of cells in intact organisms during their proliferation (predominantly mitotic), as well as the elimination of individual cells that carry changes reducing their adaptability under specific conditions of existence.
Добір клоновий	Clonal selection	individual selection in vegetatively propagated plants followed by progeny evaluation, with the aim of improving individual traits and creating new cultivars and elite material.
Добір лінійний (направлений)	Linear (directional) selection	natural selection in which forms with trait deviations in a specific direction from the population mean predominantly reproduce, with a shift in that direction of the population's modal type.
Добір масовий	Mass selection	the selection from an original population of a large number of the best plants similar in a complex of traits (by phenotype), with subsequent pooling of their harvests for sowing in the following year on a single plot. In self-pollinating plants, single-cycle mass selection is effective; in cross-pollinating plants, repeated selection is required. When mass selection is applied throughout the entire period of commercial use to maintain a specific

Термін українською	Термін англійською	Визначення англійською
		cultivar trait or property, it becomes continuous selection.
Добір направлений або руховий	Directional (driving) selection	selection directed either against a recessive or against a dominant allele – specifically against the one that reduces individual fitness. In this case, the genetic structure of the population shifts toward an increase in the frequency of the allele not eliminated by selection.
Добір негативний	Negative selection	selection directed toward reducing the frequency of genotypes Aa and aa.
Добір періодичний (рекурентна селекція)	Recurrent selection	selection in populations of cross-pollinating plants that ensures the sequential concentration of required complexes of hereditary factors through the periodic alternation of methods for identifying superior genotypes by means of inbreeding and subsequent crossing.
Добір підтримуючий	Maintenance selection	selection in seed production directed toward preserving the purity, typicality, and agronomically valuable traits of a cultivar.
Добір позитивний	Positive selection	selection directed toward increasing the frequency of genotype AA.
Добір природний	Natural selection	a complex historical process in living nature consisting in the preservation of organisms with individually beneficial changes under specific conditions and the elimination of less adapted forms. The significance of this process as the leading factor of organic evolution was elucidated by C. Darwin. Natural selection is the result of the complex interaction of heritable variability in organisms and the struggle for existence. Its principal forms are directional and stabilizing selection.
Добір родинно-груповий	Family-group selection	a variant of individual selection in cross-pollinating plants, in which parental elite plants

Термін українською	Термін англійською	Визначення англійською
		are divided into groups by relatively similar agronomically valuable traits, followed by sowing on isolated plots.
Добір рушійний	Driving (directional) selection	natural selection as a result of which new mutations and combinations that acquire positive significance under changed conditions of existence enter the population, causing a directed change in the population.
Добір спрямований	Directed selection	a form of selection that ensures evolution in response to changing environmental conditions; in this process, selection of new mutations alters the norm of reaction and adaptive value compared to the source population. Directed selection may fix populations that were deleterious under the conditions of the ancestral population; the classic example of directed selection is industrial melanism.
Добір стабілізуючий	Stabilizing selection	natural selection based on the preservation of average environmental conditions. During population reproduction, individuals whose trait complex approximates the mean level of the entire population are preserved. Individuals that deviate from the population's modal type are eliminated. Selection is directed toward the preservation of mutations that lead to reduced variability of traits.
Добір тандемний	Tandem selection	selection based on two sets of traits within one generation. First, plants with resistance traits are selected, and then among the resistant forms, those with economically valuable traits are chosen.
Добір частотнозалежний	Frequency-dependent selection	selection that favors rare genotypes under specific environmental conditions.

Термін українською	Термін англійською	Визначення англійською
Добір штучний	Artificial selection	conscious or unconscious selection conducted by humans with the aim of improving or creating new plant cultivars, carried out by the systematic preservation over successive generations of forms with certain traits and properties valuable to humans and facilitating their reproduction.
Добір штучний методичний	Methodical artificial selection	selection by one trait or a complex of traits, with the aim of creating plant cultivars with defined traits and properties. It is divided into mass and individual selection.
Добір штучний несвідомий	Unconscious artificial selection	the earliest form of plant breeding, in which the goal of creating new forms and cultivars was not consciously set and the results of selection were unforeseen.
Добору тиск	Selection pressure	the intensity of action of natural selection during population reproduction. The quantitative measure of selection pressure is the selection coefficient.
Довгі кінцеві повтори, ДКП (LTRs)	Long terminal repeats (LTRs)	direct repetitive sequences at the ends of the DNA copy of the RNA genome of retroviruses, formed as a result of reverse transcription. Each LTR consists of three elements – U3-R-U5. The 3'-end of the U5 element itself contains a short inverted repeat homologous to the sequence at the 5'-end of the U3 element, i.e., the LTR sequence itself is flanked by short inverted repeats. LTRs participate in the integration of the DNA copy of the retrovirus genome (retroelement) into the host cell genome. The U3 region of each LTR carries a promoter the promoter of the left LTR participates in transcription of the provirus DNA, while the promoter of the right LTR acts on host cell DNA sequences near the retrovirus

Термін українською	Термін англійською	Визначення англійською
		integration site. LTRs flank complex retroelements and participate in their transposition. In proviruses, the upstream LTR functions as a promoter or enhancer, while the downstream LTR functions as a poly(A) addition signal. LTRs can be employed as elements of integration vectors and serve functions essential for eukaryotic gene expression (e.g., displacement, initiation, polyadenylation of transcripts, etc.).
Довговічність насіння	Seed longevity	the property of seeds to maintain viability (biological longevity) over a prolonged period.
Довговічність насіння біологічна	Biological seed longevity	the duration of the period during which seeds retain the capacity to germinate.
Довговічність насіння господарська	Commercial seed longevity	the duration of the period during which seeds are capable of germinating and ensuring a normal progeny yield.
Довкілля	Environment	all conditions of living and non-living nature under which an organism exists and which directly or indirectly affect the state, development, and reproduction of both individual organisms and populations. A distinction is made between biotic environmental factors, including the animal and plant life of a given locality, and abiotic factors (the inorganic world – characteristics of relief, soil, and aquatic environment, lighting conditions, air humidity, temperature and oxygen regimes, etc.).
Доза гена	Gene dosage	the number of alleles of a single gene present in the genotype of individuals; it depends on the number of chromosomes carrying this gene or on the frequency of its repetition in individual chromosomes. Allelic interaction under equivalent allele action, depending on single,

Термін українською	Термін англійською	Визначення англійською
		double, triple, etc. gene dosage, is expressed by the relationship of the corresponding genotypes as Aaa < AAa < AAA.
Документ про якість насіння	Seed quality document	a certificate, attestation, or act issued by the exporting country or country of origin or production of the seeds, containing at minimum information on the issuing authority, botanical taxon, cultivar name, category, lot number, number of packaging units, lot weight, purity, and germination rate of seeds imported into the territory of Ukraine.
Документ про якість садивного матеріалу	Planting material quality document	a certificate, attestation, or act issued by the exporting country or country of origin or production of the planting material, containing at minimum information on the issuing authority, botanical taxon, cultivar name, category, and quantity of planting material units imported into the territory of Ukraine.
Домен	Domain	1. A discrete region of a chromosome. 2. A region of a protein polypeptide chain that performs a specific function (cytoplasmic, membrane, etc.) and is encoded by a region of the gene located between two introns, i.e., a single exon.
Домен білка	Protein domain	a complex combination of protein secondary structures with specific functions, containing an active site.
Домени варіабельності імуноглобулінів	Immunoglobulin variable domains	the variable domain that determines the specificity of a given immunoglobulin molecule and its capacity to interact with an antigen. Within the variable region there are regions more variable than others, termed hypervariable regions.

Термін українською	Термін англійською	Визначення англійською
Домінанти	Dominants	species that predominate (quantitatively or by biomass) in communities (phytocoenoses), are distinguished by vigor of growth and development, and substantially alter the conditions of growth, thereby limiting the existence of many organisms within the community.
Домінантний ген	Dominant gene	one of a pair of allelic genes that, in the heterozygous state, suppresses the expression of the other (recessive) gene (A > a).
Домінантні ознаки	Dominant traits	traits that are expressed in hybrids.
Домінантність	Dominance	a form of interaction between allelic genes in which one of them (the dominant) suppresses in the heterozygote the action of the other (recessive) and thereby determines the phenotype of the heterozygote.
Домінування	Dominance	the predominance of the action of one of a pair of allelic genes over the action of the other. The gene that suppresses the action of the other allele is termed dominant and is designated by a capital symbol (A). The gene whose action is suppressed by its allele is termed recessive and is designated by the lowercase symbol «a». Under incomplete dominance, an intermediate trait is expressed.
Домінування ознак	Dominance of traits	the phenomenon of preferential development in hybrids of a trait of one parental form with non-expression of the trait of the other form. The trait that is expressed is termed dominant, and the unexpressed trait is termed recessive.
Домінуючі паростки (лідируючі)	Dominant (leading) sprouts	the first to germinate on the mother tuber, predominantly at the apex (apical dominance), and inhibit the formation of new sprouts on other parts of the tuber through a system of

Термін українською	Термін англійською	Визначення англійською
		stimulator-inhibitor substances present in it. Dominant sprouts are distinguished by larger size (10–15 mm) and subsequently give rise to stems (plants).
Донор	Donor	a cultivar, line, or accession that possesses a valuable genetic trait (drought resistance, high yield, etc.).
Донор стійкості рослин	Plant resistance donor	a wild or cultivated plant possessing resistance genes with high combining ability; resistance donors may include species, cultivars, cultivar accessions, special forms, clones, self-pollinated lines, etc.
Дослід	Experiment	an experimental comparative assessment of the cultivars under study with respect to their principal agronomically valuable traits.
Дослідна ділянка	Experimental plot	an elementary land unit of a field experiment of rectangular elongated shape and defined size, on which only one cultivar (experimental treatment) is studied.
Дослідний зразок	Experimental sample	a seed or planting material sample of a cultivar in the quantity and quality required for conducting its qualification examination.
Дот-блот-гібридизація (дот-блотинг)	Dot blot hybridization (dot blotting)	a method for determining the concentration of test DNA or the presence of specific nucleotide sequences within it; based on a modification of the dot hybridization method, which consists in transferring varying amounts of the analyzed DNA onto a nitrocellulose filter in the form of spots followed by hybridization with labeled oligonucleotide probes.
Дот-гібридизація	Dot hybridization	hybridization of nucleic acids in a spot on a solid flat support; a method for quantitative determination of DNA or RNA.

Термін українською	Термін англійською	Визначення англійською
Дрейф генів (генетико-автоматичні процеси)	Genetic drif	random change in the genetic structure of populations (gene or allele frequencies), unrelated to the action of selection, mutational process, or migration. Genetic drift has no independent significance in the evolution of organisms and acts together with other genetic and ecological factors that promote the hereditary transformation of populations, primarily with selection. The term «genetic drift» was introduced by American geneticist S. Wright in 1931.
Дуплекс ДНК	DNA duplex	the structure of DNA molecules described in the Watson-Crick model, according to which two polynucleotide strands are polarically associated with each other in the 3'–5' orientation and are in a renatured (hybridized) state.
Дуплікація	Duplication	a type of chromosomal aberration in which a specific chromosomal region is doubled in the haploid set.
Дуплікація тандемна	Tandem duplication	a duplication in which repeated chromosomal (DNA) segments are arranged directly one after another.
Дуплікація хромосом	Chromosome duplication	a particular case of chromosomal rearrangement of the duplication type in which an entire chromosome is doubled. Chromosome duplication should be distinguished from trisomy, which is based on non-disjunction of chromosomes during anaphase.
Е		
Евкаріоти	Eukaryotes	organisms whose cells contain a differentiated, membrane-bound, formed nucleus and other

Термін українською	Термін англійською	Визначення англійською
		membrane-bound organelles (mitochondria, plastids).
Евксерофіти	Euxerophytes	plants of arid habitats (xerophytes) characterized by low transpiration intensity (e.g., hoary speedwell, Veronica incana).
Еволюційне вчення	Theory of evolution	the doctrine of the historical development of organisms from the origin of life on Earth to the present day. It elucidates the causes, driving forces, mechanisms, general patterns of evolution, and the means of directing it (artificial creation of new forms, influence on speciation processes, etc.). The theory of evolution is the theoretical foundation of biology and generalizes the results obtained in individual branches of the biological sciences.
Еволюційний час	Evolutionary time	a period determined by the rate of accumulation of mutations in a single gene.
Еволюція	Evolution	the process of historical development of the organic world, occurring through the gradual adaptation of living systems to continuously changing conditions of existence. The principal driving factors of evolution are variability, heredity, and natural selection.
Еволюція біологічна	Biological evolution	the process of change and divergence (divergence of traits and properties in originally closely related groups) of biological forms over time.
Еволюція конвергентна	Convergent evolution	the appearance of identical, parallel specializations in independent lineages. In some cases this occurs on the basis of phylogenetic relationship, i.e., in the presence of homologous chromosomes and genes; in other cases it is based on pure convergence – a phenomenon explained by the fact that certain

Термін українською	Термін англійською	Визначення англійською
		fundamental structures change only in limited directions. In such cases convergence may be coincidental, arising under the influence of selection in identical environmental conditions or as a result of parallel loss of function.
Еволюція паралельна	Parallel evolution	the independent accumulation in related groups of organisms of unidirectional changes (e.g., the homologous series of variability of N.I. Vavilov). When the groups are unrelated, this constitutes convergent evolution.
Еволюція спряжена	Coevolution	a type of community evolution consisting in the mutual selection of mutually dependent autotrophs and heterotrophs that are ecologically closely interdependent.
Еволюція спрямована	Directed evolution	an evolutionary change in the progeny of a single lineage that continues over a prolonged period in the same quality and direction.
Еволюція філетична	Phyletic evolution	a type of evolution characterized by a slow progressive shift in the leading traits of a group of organisms in response to a change in the adaptive zone, as a result of which the source taxon gradually transforms into another taxon. It occurs under the action of directional selection when the gene pool of a population changes as a single entity, i.e., no divergence of daughter forms occurs. As a result of phyletic evolution, a single, unbranched phyletic lineage arises in the form of a continuous series of temporally successive groups (populations, species), each of which is a descendant of the preceding group and an ancestor of the subsequent one.
Еврибіонтність	Eurybiontism	the capacity of organisms to exist under considerable environmental variation. The degree of eurybiontism of a species as a whole

Термін українською	Термін англійською	Визначення англійською
		is higher than that of individual organisms or populations. Eurybionts typically have wider ranges than stenobionts.
Евритермність	Eurythermism	the capacity of organisms to exist across wide temperature fluctuations.
Евритопні організми (евритопи)	Eurytopic organisms (eurytopes)	organisms with high ecological plasticity, capable of existing in habitats with the most diverse environmental conditions.
Еврифотність	Euryphoty	the capacity of organisms to withstand considerable changes in light regime.
Едафічні умови	Edaphic conditions	soil conditions for plant development.
Едафон	Edaphon	the totality of all living organisms inhabiting the soil.
Едафотип	Edaphotype	an ecotype formed under the influence of specific soil-hydrological conditions.
Едифікатори	Edificators	dominant plant species in phytocoenoses.
Еквівалент надлишку факторів	Excess factor equivalent	an excessive magnitude of a vital factor at which its negative effect on the plant is experienced.
Еквівалент нестачі факторів	Deficiency factor equivalent	the magnitude of a vital factor at which the plant begins to suffer from its deficiency.
Екзогенез	Exogenesis	evolutionary changes in the characteristics of an organism as a result of changes in conditions of existence.
Екзогенні зміни	Exogenous changes	changes in biocoenoses under the action of external conditions unrelated to the biocoenosis environment, arising both as a result of natural factors and as a result of human activity.
Екзогенота	Exogenote	a gene or group of donor genes that ensures the formation of recombinant progeny.
Екзони	Exons	regions of a eukaryotic gene (DNA) that carry genetic information which, in contrast to

Термін українською	Термін англійською	Визначення англійською
		introns, is fully represented in the messenger RNA molecule encoding the primary structure of a protein.
Екзонуклеази	Exonucleases	enzymes that sequentially cleave nucleotides from the ends of a polynucleotide chain; they may be specific for the 5'- or 3'-ends of DNA or RNA.
Екзоти	Exotics	plants or animals introduced from other countries into regions where they did not previously occur and are still rare.
Екзотоксин	Exotoxin	a toxin released by pathogens into the surrounding environment during their vital activity.
Ековид	Ecospecies	a group of ecotypes that are genetically close enough to allow free gene exchange between them without affecting the fertility and viability of progeny. Ecospecies are genetically isolated from one another, such that gene exchange between them is impossible or severely restricted. An ecospecies may in certain cases correspond to a taxonomic species.
Екогенетика, екологічна генетика	Ecogenetics, ecological genetics	a subdivision of genetics that investigates the processes of interaction between genetic factors and environmental factors (ecological agents), i.e., the role of external conditions in the formation of the phenotype by a given genotype, and pheno- and genotypic differences between related groups of organisms under different ecological conditions.
Екологічна валентність	Ecological valence	the degree of adaptation of organisms to changes in environmental conditions. The assessment of the range of ecological

Термін українською	Термін англійською	Визначення англійською
		conditions under which a cultivar ensures acceptable productivity.
Екологічна ніша	Ecological niche	a narrowly defined habitat of organisms whose specificity determines their capacity for adaptation. The dissimilarity of the vital requirements of plants implies a separate ecological niche for each species and defined relationships among them.
Екологічна пластичність	Ecological plasticity	the degree of adaptation of organisms to changes in environmental conditions.
Екологічна раса	Ecological race	a group of individuals of one species that differ in their rhythms from another group existing in the same econiche.
Екологічна форма	Ecological form	populations of one species that have any morphological features arising as a result of the influence of specific ecological conditions.
Екологічне (зональне) сортовипробування	Ecological (zonal) variety testing	the testing of a cultivar under different ecological conditions for its comprehensive evaluation.
Екологічне заміщення видів	Ecological species replacement	the replacement, under changing ecological conditions, of one species by another closely related species with higher ecological valence.
Екологічний підхід	Ecological approach	a variant of the systems approach that investigates diverse complex systems as ecological ones, formed by two subsystems – a core and an environment – where the core consists of living organisms, biocoenoses, human populations, etc.
Екологічний ряд	Ecological series	the sequence and pattern of arrangement of species or their communities depending on the intensification or attenuation of any ecological factor or ecological regime (moisture, salinity, soil humus content, etc.).

Термін українською	Термін англійською	Визначення англійською
Екологічні аналоги	Ecological analogues	species similar in their principal ecological characteristics.
Екологічні еквіваленти	Ecological equivalents	species that occupy analogous ecological niches in ecosystems of different continents or regions.
Екологічні індикатори	Ecological indicators	components and elements of ecosystems and natural-territorial complexes by which ecological regimes can be assessed (soils, vegetation, relief, etc.).
Екологічні кризи	Ecological crises	disruption of ecosystems over extensive territories due to excessive pollution by industrial waste.
Екологічні піраміди	Ecological pyramids	graphically depicted trophic structure and trophic function of an ecosystem, whose base is formed by the level of producer plants, with subsequent links formed by phytophages and first-, second-, and third-order consumers. Three principal types of ecological pyramids are distinguished the pyramid of numbers, reflecting the abundance of individual organisms; the pyramid of biomass, characterizing total dry mass or caloric value; and the pyramid of energy, characterizing the magnitude of energy flow or productivity at each successive trophic level.
Екологічні фактори	Ecological factors	environmental agents that influence an organism or its individual functions. In the course of evolutionary development, each organism species adapts to specific conditions the chemical composition of the environment, temperature and light regimes, etc. Ecological factors create the complex of conditions in which organisms exist and are subdivided into abiotic, biotic, and anthropogenic factors.

Термін українською	Термін англійською	Визначення англійською
Екологія	Ecology	a subdivision of biology that studies the patterns of relationships between living organisms and their environment, as well as the organization and functioning of supraorganismal systems (populations, species, biocoenoses, the biosphere).
Екологія насіння	Seed ecology	a subdivision of plant ecology that studies the interaction of the maternal organism and seeds with the environment from zygote formation to seedling establishment.
Екологія рослин	Plant ecology	a subdivision of ecology that investigates the relationships of individual plants and plant communities with the environmental conditions in which they exist.
Еколого-географічна систематика культурних рослин	Ecological-geographical taxonomy of cultivated plants	a taxonomy based on the study of similarities and differences in biological and other characteristics between plant forms created by selection in different natural-climatic zones.
Еколого-географічний принцип селекції	Ecological-geographical principle of plant breeding	an effective method of modern plant breeding based on the use in crossing of ecologically and geographically distant forms and the creation of hybrid populations on their basis for selection.
Еколого-географічно віддалені форми	Ecologically and geographically distant forms	forms created and adapted by natural and artificial selection to different soil-climatic conditions.
Екоморфа	Ecomorph	a form of plant vital activity determined by its relationship to external environmental conditions.
Економічний поріг шкідливості (ЕПШ)	Economic threshold of harmfulness (ET)	the pest population density, level of plant disease infection, or degree of weed infestation that causes a level of losses at which the application of protective measures is offset by the preserved yield. It is an important component of integrated plant protection

Термін українською	Термін англійською	Визначення англійською
		systems. The ET varies depending on climate, cultivar resistance, plant developmental stage and condition, abundance of entomophages and acariphages, effectiveness of the protective methods applied, and social strategy. The ET should not be equated with the damage threshold (DT), which denotes the pest population density at which losses begin to manifest; at the ET, losses reach a magnitude at which efforts to prevent them are economically and ecologically justified in applying active protective measures.
Екосистема, екологічна система	Ecosystem, ecological system	a biological system representing the functional unity of an organism community and its environment. The principal properties of an ecosystem are its integrity and relative stability, manifested in its capacity for self-regulation and self-renewal.
Екотип (екологічний тип)	Ecotype (ecological type)	a group of individuals of any species that have adapted to existence in a specific habitat and differ from other groups of individuals of the same species in hereditarily fixed morphophysiological characteristics. The traits that define the nature of an ecotype are preserved upon transplantation of plants to other ecological conditions. Among ecotypes, a distinction is made between climatypes, arising under the influence of climatic factors; edaphotypes, formed under the influence of soil conditions; and coenotypes, adapted to specific conditions of existence (grasses in meadows, forests, etc.). Individuals of different ecotypes interbreed freely.

Термін українською	Термін англійською	Визначення англійською
Екотон	Ecotone	a transitional zone between neighboring communities, characterized by increased species abundance (e.g., a forest edge).
Екофенотип	Ecophenotype	a genetically undetermined phenotype of an organism (species) altered under the action of external (ecological) environmental factors rather than mutations.
Екоцид	Ecocide	the deliberate disruption of the habitat of all living things (the living environment).
Експансія	Expansion	the penetration of a species into new territories.
Експертний висновок за заявкою на сорт	Expert opinion on a variety application	the documented results of the qualification examination of a variety for the purpose of making a decision on the state registration of rights to the variety and/or state registration of the variety, or on the refusal of state registration of rights to the variety and/or state registration of the variety.
Експертний заклад	Expert institution	an enterprise, establishment, or organization authorized by the Competent Authority to exercise specific powers in the field of protection of rights to plant varieties.
Експлант	Explant	tissue cultivated on an artificial medium.
Експресивність	Expressivity	the degree of phenotypic expression of one and the same allele of a specific gene in different individuals, depending on genotype and external conditions. The degree of expressivity is quantitatively measured by statistical methods.
Експресивність варіююча	Variable expressivity	differing manifestations of abnormal traits of diseases with a dominant autosomal type of inheritance.
Експресивність неповна	Incomplete expressivity	the formation in different individuals of a sample of unequal intensity of trait expression,

Термін українською	Термін англійською	Визначення англійською
		which may lead to an increase in the number of phenotypic classes in F_2.
Експресія гена	Gene expression	the process of realization of genetic information concentrated in DNA through transcription and translation.
Експресія екзогенних генів	Expression of exogenous genes	depends on the promoter nucleotide sequences located at the end of the structural gene. Recombinant DNA molecules in which the promoter and structural parts of the gene are in the same orientation are not expressed in the host cell. This obstacle is overcome by joining the structural part of the donor gene to the promoter of the recipient cell. In this case, the promoter is recognized by the RNA polymerase of the host cell, ensuring transcription of the structural part of the gene, i.e., expression of the foreign gene.
Екстремальні умови	Extreme conditions	excessively severe (maximum or minimum) conditions for organism existence that may act as stress.
Ексцизія	Excision	the removal of a damaged region of DNA from the corresponding strand. As a result of excision and subsequent degradation of the damaged fragment, single-stranded breaks or gaps are formed, which are filled in by DNA polymerase I.
Ектопічна кон'югація	Ectopic synapsis	non-specific synapsis of visually euchromatic chromosomal regions during meiosis with proximal (pericentromeric) heterochromatic regions of other chromosomes, i.e., the «euchromatin» of these chromosomal regions possesses the properties of heterochromatin; chromosome breaks usually occur frequently in the zone of ectopic synapsis.

Термін українською	Термін англійською	Визначення англійською
Ектопічна рекомбінація	Ectopic recombination	one of the consequences of transposon-induced variability; it occurs between homologous elements of non-homologous chromosomes during meiosis, leading to chromosomal rearrangements and possibly the formation of «macrotransposons» capable of displacing even relatively large sequences captured from host DNA to new genomic locations.
Ектотрофні організми	Ectotrophic organisms	parasitic organisms that live on the body surface of other organisms, both animals and plants.
Електронна мікроскопія генів	Electron microscopy of genes	a method employing an electron microscope to obtain detailed images of gene structure at the molecular level. Electron microscopy can be used to investigate the structure of DNA or RNA and to study gene interactions.
Електропорація	Electroporation	the creation of micropores in membranes under the action of a short, strong electrical impulse, facilitating the penetration of exogenous genetic constructs into the cell. A method for direct transfer of DNA macromolecules into cells by puncturing cell membranes with short electrical impulses.
Електрофорез запасних білків рослин	Electrophoresis of plant storage proteins	a laboratory method enabling the analysis and characterization of storage proteins synthesized during seed development. This method is used for seed quality control and determination of the genetic characteristics of plants. The electrophoretic separation (electrophoresis) of proteins, nucleic acids, and their fragments in polyacrylamide, starch, or other gels is widely applied in population genetics.
Елементарна еволюційна подія	Elementary evolutionary event	any heritable change in a population. It is considered that genetic processes occurring in populations, i.e., elementary events of

Термін українською	Термін англійською	Визначення англійською
		microevolution, underlie macroevolution, which operates with species and higher taxonomic units.
Елементарна одиниця біологічної еволюції	Elementary unit of biological evolution	a population with the genetic changes occurring within it over generations.
Елементарна ознака (фен)	Elementary trait (phen)	the expression in the phenotype of a structural gene at one or another level of systemic organization of the cell or organism. Some phens can be identified with the aid of ordinary sense organs – vision, touch, etc. Examples include seed color in pea (yellow or green), anthocyanin (violet-red) coloration of organs in certain plants (e.g., maize), and others. For the identification of other phens, such as the presence in the cell of primary RNAs or proteins, sufficiently complex instrumental methods are required.
Елементи контролюючі	Controlling elements	a group of mobile eukaryotic elements with limited inverted terminal repeats. Examples include the P-elements of Drosophila and the Ac-elements of maize. By studying variability in anthocyanin coloration of somatic cells during their division in maize, McClintock determined that genomic changes in this case stimulate the movement of controlling elements, now identified as mobile genetic elements (MGEs). MGEs insert into a chromosome and cause instability of the corresponding genes. The maize genome contains several families of controlling elements, which are divided into two classes 1) autonomous elements, capable of transposition by means of their own transposase; 2) non-autonomous elements, which lack a

Термін українською	Термін англійською	Визначення англійською
		transposase gene and are capable of transposition only in the presence of an autonomous member of the same family.
Елімінація	Elimination	the loss of germ cells or zygotes carrying genes and structural chromosomal changes that reduce viability; the removal from biocoenoses of individuals, populations, or species under the action of biological ecotopic or biocoenotic factors. A distinction is made between normal biological elimination; supratolerante elimination; and selective elimination. Elimination plays a certain role in regulating the species and population composition of biocoenoses.
Елімінація вибіркова	Selective elimination	the death of a portion of population individuals due to their low viability under conditions of normal fluctuations in conditions of existence.
Елімінація надтолерантна	Supratolerante elimination	the death of individuals from the action of environmental factors that exceed the tolerance capacity of the species (e.g., from severe frosts or droughts).
Елімінація нормальна біологічна	Normal biological elimination	the natural dying-off of old population individuals.
Еліситори, провокатори	Elicitors	biotic or abiotic factors that induce defense responses in plants. Most commonly these are low-molecular-weight substances released from the cell walls of pathogens (e.g., fungi) or from plant cell walls during their degradation. They are capable of inducing the activity of genes encoding enzymes of the phenylpropanoid pathway. The action of these enzymes leads to the accumulation of phytoalexins (antimicrobial substances) and

Термін українською	Термін англійською	Визначення англійською
		phenolic compounds with fungicidal properties.
Еліта	Elite	the progeny of the best plants of a specific cultivar that most fully transmit all of its traits and properties.
Елітне базове насіння	Elite basic seed	seed obtained from the sequential propagation of pre-basic (original) seed in elite seed-production enterprises and other enterprises entered in the State Register of Seed and Planting Material Producers.
Елітні рослини	Elite plants	the best plants selected from source material for the creation of a new cultivar or elite seed.
Елонгація	Elongation	a phase in protein synthesis localized in the ribosome; it represents a three-step, repeatedly iterated cycle of extension of the polymeric chain. In the first step, an aminoacyl-tRNA molecule binds to the A-site of the ribosome; in the second step, a new peptide bond is formed; in the third step, the ribosome moves along the mRNA chain by a distance corresponding to three nucleotides and positions itself for repetition of the cycle.
Емаскуляція	Emasculation	is the deliberate removal of anthers or the sterilization of pollen in bisexual flowers prior to anthesis, performed to prevent self-pollination and thereby ensure controlled cross-fertilization in experimental or breeding procedures.
Ембріогенез	Embryogenesis	the process of embryo development from the zygote.
Ембріогенез соматичний	Somatic embryogenesis	regeneration of whole plants from callus cells obtained by in vitro cultivation of somatic cells and tissues, particularly meristem or phloem

Термін українською	Термін англійською	Визначення англійською
		cells, which possess the greatest totipotency and proliferate readily.
Ембріон	Embryo	the part of a seed formed by the union of male and female gametes and developing into a mature plant.
Ембріональна індукція	Embryonic induction	the phenomenon of interaction between parts of an embryo whereby one part determines the direction of development of a neighboring part. Embryonic induction promotes the increase in cell diversity and occurs through direct cell-to-cell contact.
Емфітотія	Emphytotia	a mass disease of plants within a small territory, the intensity of which changes little from year to year.
Ендемік	Endemic	a local species or other taxonomic category (genus, family, class, etc.) inhabiting exclusively a given region.
Ендогенота	Endogenote	the recipient genome that determines the possibility of inheritance of genetic information in the recipient bacterium over successive generations.
Ендодинамічні зміни	Endodynamic changes	gradual changes in communities as a result of their modification of the habitat (changes in the ecological regime of the atmosphere, soil water regime, etc.).
Ендомітоз	Endomitosis	an increase in chromosome number within the cell nucleus without disruption of the nucleolus and nuclear envelope, without formation of an achromatic spindle, and without cell division. Dispersive endomitosis is distinguished separately, in which incomplete chromosome spiralization occurs and individual stages similar to those of normal mitosis can be

Термін українською	Термін англійською	Визначення англійською
		identified – endoprophase, endometaphase, endoanaphase, and endotelophase.
Ендонуклеази	Endonucleases	enzymes that cleave bonds within the polynucleotide chain of nucleic acids. They may be specific for single-stranded RNA or for single- or double-stranded DNA.
Ендоосмос	Endosmosis	the diffusion of substances from the surrounding environment into cells through their semipermeable membranes. It is the principal pathway of mineral nutrition in plants, nutrient absorption by stomach cells in animals, and nutrition of most microorganisms. It is of great importance for the transport of substances into multicellular organisms.
Ендоплазма	Endoplasm	the inner layer of cell cytoplasm containing various granular inclusions and organelles.
Ендоплазматична сітка (ендоплазматичний ретикулум)	Endoplasmic reticulum	a cell organelle forming a reticulate structure in the inner part of the cytoplasm. The endoplasmic reticulum is represented by a branched system of canals, tubules, rounded or elongated vesicles, and flattened saccules bounded by trilayer membranes, connected to the outer nuclear membrane, and performing the role of the cell's conducting system. A distinction is made between granular (rough) endoplasmic reticulum (ergastoplasm), on whose membranes numerous ribosomes accumulate, and agranular (smooth) endoplasmic reticulum, on whose surface ribosomes are absent. Granular endoplasmic reticulum participates in protein biosynthesis.
Ендополіплоїдія	Endopolyploidy	an increase in chromosome number proportional to the number of endomitoses.

Термін українською	Термін англійською	Визначення англійською
Ендоредуплікація	Endoreduplication	a form of endomitosis characterized by multiplication (most commonly doubling) of despiralized chromosomes, in the absence of mitotic features; for this reason it is also termed concealed endomitosis. It underlies chromosome polytenization. In the prophase of the subsequent mitosis, endoreduplicated chromosomes appear as multistranded structures in which each centromere holds 4, 8, etc. chromatids. Diplo- and quadrichromosomes in late metaphase may separate into 2 and 4 chromosomes respectively.
Ендорепродукція	Endoreproduction	the totality of processes leading to intracellular and intranuclear reproduction of hereditary material and manifold increases in DNA content in cells. A mode of somatic cell division leading to polyploidy, polyteny, and the formation of multinucleate cells.
Ендосимбіоз	Endosymbiosis	a type of symbiosis in which one organism lives inside the body or cell of another organism. It is an interaction in which both organisms (the endosymbiont and the host) benefit. Examples of endosymbiosis include mitochondria and chloroplasts in eukaryotic cells, and symbiotic bacteria in the intestine of animals.
Ендосимбіоти	Endosymbionts	organisms living within the body or cells of another organism, thereby forming endosymbiosis.
Ендосимбіотична теорія	Endosymbiotic theory	one of the theories of the origin of the eukaryotic cell, according to which mitochondria and chloroplasts in modern eukaryotic cells were once separate prokaryotic microbes.

Термін українською	Термін англійською	Визначення англійською
Ендосперм	Endosperm	a triploid tissue in the seeds of flowering plants, developing after fertilization of the secondary diploid nucleus of the embryo sac by a haploid sperm cell.
Ендоцитоз	Endocytosis	an energy-independent process of removal of macromolecules, in which intracellular secretory vesicles fuse with the plasma membrane of the cell and their contents are expelled from the cell.
Ензимопатія	Enzymopathy	hereditary disorders of the structure and function of individual enzymes.
Ентомофільні рослини	Entomophilous plants	plants pollinated by insects.
Енхансер, підсилювач	Enhancer	a specific cis-acting DNA sequence of 50–100 bp that influences the efficiency of gene transcription; it affects gene expression independently of orientation and position in the DNA. Also, a modifier gene that enhances the phenotypic expression of another gene.
Епіген	Epigene	a particle of functional hereditary memory in which a portion of hereditary information is stored, encoded, and transmitted to progeny outside the primary structure of the genomic DNA molecules.
Епігенезу теорія	Theory of epigenesis	the doctrine according to which each organism, in the course of ontogenesis, develops from a simple, unorganized rudiment through a sequence of new formations.
Епігенетика	Epigenetics	a scientific field that studies potentially stable and theoretically heritable changes in gene expression or cell phenotype that occur heritable changes in gene expression that do not involve alterations in the DNA nucleotide sequence. Epigenetics investigates the

Термін українською	Термін англійською	Визначення англійською
		molecular pathways of gene packaging in chromosomes and their expression, and the supragenetic mechanisms regulating genome function.
Епігенетична спадковість	Epigenetic inheritance	the constant reproduction over successive generations of somatic cells of such supramolecular regulation of chromosome function as allows strictly defined sets of genes to be expressed in each cell type.
Епігенетичні варіації	Epigenetic variations	phenotypic expression of differential gene activity inherited across cell generations. They differ from mutations in that they are not preserved during meiosis (in sexual generations), since they represent a change in the phenotype of an individual (cell) without a change in the sequence of its genomic DNA.
Епігенетичні елементи геному	Epigenetic genome elements	elements that determine stably inherited changes in the level of gene expression without alteration of the genomic DNA sequence.
Епігеном	Epigenome	the totality of all epigenetic genome elements that cause gene expression in a cell.
Епігенотип	Epigenotype	the part of the genome that, under specific conditions, is expressed in cells of a given type, thereby precluding for that cell the possibility of differentiation in the direction characteristic of differentiated cells of other types.
Епісома	Episome	an extrachromosomal hereditary element; a genetic element capable of autonomous replication in the cytoplasm. An episome can integrate into a chromosome by reciprocal crossing-over (site-specific recombination).
Епісоми	Episomes	genetic elements present in bacterial cells in one of two mutually exclusive states – autonomous (independent of the bacterial

Термін українською	Термін англійською	Визначення англійською
		chromosome) or integrated (incorporated into the chromosome). Episomes include the prophage, the sex F-factor, the bacteriocinogenic factor, the RTF (resistance transfer factor) for antibiotic resistance, and others. Episomes are replicating, DNA-containing elements (replicons) associated with the cytoplasmic membrane.
Епістаз	Epistasis	a type of interaction between non-allelic genes in which one gene (the epistatic gene) suppresses the action of another non-allelic gene pair (the hypostatic genes). Epistasis is symbolically denoted by the sign > (greater than). A distinction is made between recessive epistasis, in which the epistatic gene is recessive (e.g., aa > B-, bb), and dominant epistasis, in which the epistatic gene is dominant (A > B-, bb).
Епіфітотичні хвороби	Epiphytotic diseases	diseases characterized by seasonal dynamics and a pulsating zone of outbreaks (cereal rusts, potato late blight, grapevine downy mildew, etc.).
Епіфітотія	Epiphytoty	a mass disease of plants caused by the activity of a phytopathogen, resulting in a significant reduction or even complete loss of yield.
Ериктоїд	Erectoid	a plant with an erect ear and vertical leaf arrangement.
Етапи біосинтезу білка	Stages of protein biosynthesis	a complex of biochemical reactions during which amino acid activation, polypeptide chain initiation, elongation, termination, and processing occur. Approximately 300 different macromolecules participate in the process of protein biosynthesis. In eukaryotic cells these include more than 70 ribosomal proteins, 20 amino acid activation enzymes, more than 10

Термін українською	Термін англійською	Визначення англійською
		auxiliary enzymes, and nearly 100 enzymes participating in protein maturation (processing). The number of transfer and ribosomal RNAs exceeds 70.
Етикетка	Label	a tag manufactured from special paper or other material, intended for marking, affixed externally and, at the producer's discretion, inserted inside the packaging (container).
Етиленімін (EI)	Ethylenimine (EI)	a highly active chemical mutagen and alkylating agent widely employed in experimental mutagenesis. It induces a broad spectrum of point mutations and chromosomal rearrangements by affecting the structure of DNA.
Етіольовані рослини	Etiolated plants	deformed, elongated, depigmented plant organs lacking chlorophyll, resulting from insufficient or absent light. Such changes are sometimes caused by harmful organisms (nematodes).
Етологія	Ethology	the science that studies the behavior of living organisms.
Еукаріоти	Eukaryotes	organisms whose cells possess a formed (membrane-bound) nucleus containing chromosomes. Eukaryotes include all cellular organisms except bacteria and cyanobacteria.
Еуплоїди	Euploids	organisms containing the chromosome number normal for a given species.
Еуплоїдія	Euploidy	the state of a cell, tissue, or organism characterized by the presence of one or more complete chromosome sets.
Еухроматин	Euchromatin	chromosomal regions that retain a despiralized state in the interphase nucleus and spiralize in prophase, containing the majority of genes and potentially capable of transcription. During cell

Термін українською	Термін англійською	Визначення англійською
		division, when chromosomes spiralize, euchromatic regions stain intensively and become visible as components of chromosomes.
Ефект «засновника»	Founder effect	the establishment of a new population from single or very few individuals of a species under genetic drift.
Ефект «пляшкової шийки»	Bottleneck effect	random changes in allele frequencies similar to those caused by the founder effect, when a population in the course of evolution sharply decreases, nearly goes extinct, and then restores its numbers through the reproduction of the few individuals that survive under adverse conditions.
Ефект материнський	Maternal effect	the role of the cytoplasm in heredity. The essence of this effect is that the properties of the egg cell cytoplasm are formed under the control of the maternal genotype.
Ефект положення гена	Position effect of a gene	the alteration of gene expression attributable to a change in the chromosomal position or neighboring context of a gene, rather than to a change in the gene's coding sequence itself. The position effect influences the manifestations of gene interactions, for example the phenomenon of dominance.
Ефект положення гена нестабільний або мозаїчний	Unstable (mosaic) position effect	an effect in which, when in Drosophila the normal allele w^+ from the X chromosome is translocated into a heterochromatic region of another chromosome, in w^+/w heterozygotes the w^+ allele is not expressed in all facets and the eyes become mosaic. The enhanced mutability of certain genes can be explained by the characteristics of their chromosomal localization.

Термін українською	Термін англійською	Визначення англійською
Ефект положення гена стабільний	Stable position effect	an effect in which a normal allele in an altered genomic environment stably maintains its external expression.
Ефект полярний	Polar effect	a mutation arising in the first structural gene downstream of the promoter, while a nonsense mutation at the end of the operon does not affect the realization of information located closer to the start point. The discovery of such polar mutations played an important role in the development of the operon concept.
Ефективна чисельність популяції	Effective population size	the number of population individuals capable of producing the next generation of offspring.
Ефективне число алелей	Effective number of alleles	a parameter used for the assessment of genetic variability.
Ефективний ген стійкості	Effective resistance gene	a gene that determines resistance against the majority of clones, races, and populations of a pathogen.
Ефектори (регуляція функції генів)	Effectors (gene function regulation)	low-molecular-weight ligands on which the ability of many repressors to bind to specific cis-acting DNA regions (operators) depends.
Ефемерофіли	Ephemerophiles	plants that shed their leaves during the growing season, adapting to adverse conditions (e.g., during drought).
Ж		
Жаростійкість	Heat resistance	the capacity of an organism to withstand considerable increases in ambient temperature.
Живильні середовища	Nutrient media	media on which specific organisms are cultivated. A distinction is made between natural nutrient media (e.g., potato, milk for bacteria and fungi), artificial media (e.g., meat-peptone broth, gelatin for various microorganisms), and synthetic media (comprising various mineral salts for bacterial

Термін українською	Термін англійською	Визначення англійською
		and fungal cultures). In aquatic cultures, higher plants utilize water and the nutrients dissolved in it as a nutrient medium.
Жири	Fats	organic compounds; natural products of plant or animal origin.
Жирні кислоти	Fatty acids	organic monobasic carboxylic acids that are constituents of fats, waxes, lipids, and oils.
Життєва форма	Life form	the morphological structure of plants formed in the course of evolution.
Життєвий цикл	Life cycle	the complete sequence of growth and developmental phases of an organism from the zygote to gamete formation.
Життєвість	Vitality	the intensity of manifestation of vital processes growth, development, reproduction, and organism resistance to adverse conditions and diseases.
Життєздатність	Viability	the capacity of an organism to maintain vital activity under changing environmental conditions.
Життєздатність насіння	Seed viability	the property of seeds to retain germination capacity, expressed as the percentage of living seeds in a seed lot.
Журнал польового оцінювання насіннєвого посіву	Field evaluation journal of a seed crop	a document of defined form in which primary data from field inspection results and the final assessment of a seed crop are recorded.
З		
Зав'язь	Ovary	the lower, more or less thickened, hollow part of the pistil in the flower of angiosperms. The cavity of the ovary contains one, several, or many ovules, from which seeds develop after fertilization, while the ovary itself transforms into a fruit.

Термін українською	Термін англійською	Визначення англійською
Загальна адаптивна здатність (ЗАЗ)	General adaptive ability (GAA)	reflects the capacity of a crop or cultivar to consistently produce high yields under diverse growing conditions.
Загальна комбінаційна здатність (ЗКЗ)	General combining ability (GCA)	the capacity of self-pollinated lines or cultivars, determined by the mean magnitude of heterosis across all hybrid combinations studied involving these forms. GCA is assessed on the basis of complete or incomplete diallel crosses using the topcross, polycross, and open pollination methods.
Загартування рослин	Plant hardening	the gradual adaptation of plants to open-field conditions (sunlight, wind, temperature fluctuations).
Закон біогенетичний	Biogenetic law	organisms, in the course of individual development (ontogenesis), recapitulate in abbreviated and regularly modified form the historical (evolutionary) development of their species (phylogenesis).
Закон гомологічних рядів у спадковій мінливості	Law of homologous series in heritable variability	formulated by N.I. Vavilov in 1920, according to which genetically closely related plant species and genera have similar, parallel series of heritable forms (homologous series). Consequently, knowing the series of forms within one species, the presence or possibility of creating parallel forms in genetically related species can be predicted by homology.
Закон Моргана другий (другий закон хромосомної теорії спадковості)	Morgan’s second law (second law of the chromosomal theory of heredity)	the strictly fixed arrangement of genes along a chromosome (or the principle of linear arrangement of genes along a chromosome).
Закон Моргана перший (перший закон хромосомної теорії спадковості)	Morgan's first law (first law of the chromosomal theory of heredity)	linked inheritance of traits as a result of reciprocal exchange between both sister (chromatids of the same chromosome) and

Термін українською	Термін англійською	Визначення англійською
		non-sister (chromatids of different chromosomes) chromatids.
Закон незалежного успадковування генів (третій закон Г. Менделя)	Law of independent assortment of genes (Mendel's third law)	allelic genes of loci A and B segregate independently into different gametes during meiosis, and subsequently combine independently in zygotes (fertilized egg cells).
Закон регресії	Law of regression	the change in a resultant (functional) trait depending on a defined change in a factorial trait that is correlated with the former.
Закон Харді-Вайнберга	Hardy-Weinberg law	the frequencies of allelic genes, and consequently of genotypes, in an ideal panmictic population remain unchanged from generation to generation. Accordingly, the process of inheritance as such does not influence allele frequencies in a population, and possible changes in its genetic composition are consequences of other causes. The Hardy–Weinberg law is fundamental to the analysis of genetic processes occurring in populations. It was established independently in 1908 by G.H. Hardy and W. Weinberg. When the frequency of allele A equals p and the frequency of allele a equals q ($p + q = 1$), the frequencies of the three genotypic classes – AA, Aa, aa – are $p^2 + 2pq + q^2 = 1$. The law is of fundamental significance for population genetics because it expresses the manifestation of Mendelian inheritance patterns at the population level. The Hardy-Weinberg law characterizes the equilibrium state of a panmictic population of sufficiently large size under relatively constant external conditions.
Закон чистоти гамет	Law of gamete purity	established by G. Mendel. Its essence is as follows two factors (genes) that determine the

Термін українською	Термін англійською	Визначення англійською
		alternative expression of a trait in diploid hybrid organisms (Aa) do not blend but remain in pure form throughout the entire lifetime of individuals. During gamete formation, only one allele from a pair (A or a) enters each gamete. The material basis of gamete purity is the process of meiosis.
Закони успадкування Г. Менделя	Mendel's laws of inheritance	the first law – the law of uniformity of hybrids (F_1); the second law – segregation for the traits under study in the second and subsequent generations occurs in precisely defined quantitative ratios. The character of these quantitative ratios (the number of genotypic and phenotypic classes of progeny in the second hybrid generation (F_2)) depends on the type of cross (monohybrid, polyhybrid) and other causes.
Закрита рамка зчитування	Closed reading frame	a reading frame that contains stop codons, preventing the mRNA corresponding to this sequence from being translated into a functionally active protein due to premature termination of translation.
Закріплювач стерильності	Sterility maintainer	the paternal (male) component, upon pollination by which cytoplasmic male sterility is transferred to the sterile analogue in the subsequent generation (B-line).
Закріплювачі стерильності	Sterility maintainers	fertile cultivars or lines which, when crossed with male-sterile forms, produce sterile progeny.
Замкнута популяція	Closed population	a population that has no sources of gene input other than mutations.
Замкнутість фітоценозу	Phytocoenosis closure	the capacity of ecosystems and other communities to resist the invasion of extraneous forms.

Термін українською	Термін англійською	Визначення англійською
Запал рослин	Plant scorch	damage to plants under the action of high temperatures, accompanied by a change in color of individual organs.
Запилення	Pollination	the process of transfer of pollen from anthers to the stigma of a pistil. Two types of pollination are distinguished self-pollination and cross-pollination.
Запилення гомоклінне	Homoclinous pollination	the transfer of pollen from a flower of one plant to the stigma of the pistil of another. The principal type of pollination in flowering plants. Cross-pollination is accomplished by natural means (insects, birds, wind, water) and by artificial means (performed by humans).
Запилювач «О тип»	O-type pollinator	a self-pollinated line that, when crossed with forms possessing cytoplasmic male sterility, does not restore their fertility in the progeny but perpetuates sterility.
Запліднення (сингамія)	Fertilization (syngamy)	the process of fusion of male and female sexual cells, which underlies reproduction. As a result of fertilization, a zygote is formed. In angiosperms, double fertilization occurs.
Запліднення подвійне	Double fertilization	the fusion of one sperm cell with the egg cell, and of the other with the nucleus of the central cell.
Зародкова плазма	Germ plasm	the total complement of genes and cytoplasmic factors that govern heredity.
Зародковий мішок	Embryo sac	the female gametophyte of angiosperms, located in the central part of the ovule (nucellus), in which double fertilization occurs; as a result, an embryo develops from the fertilized egg cell (zygote), and endosperm develops from the central cell.
Зародок	Embryo	the rudiment of a new individual in ferns and seed plants; in seed plants, it develops within

Термін українською	Термін англійською	Визначення англійською
		the ovule and, in the mature seed, is differentiated into cotyledons, hypocotyl, plumule with leaf and stem primordia, and radicle; may develop from a zygote, an unfertilized egg cell, or other cells of the embryo sac or ovule.
Заселеність рослин шкідником	Pest infestation rate of plants	the number of pest individuals present on a single plant or its part.
Засміченість насіння	Seed impurity content	the presence of various admixtures in a seed lot, expressed as a percentage of the mass of the principal crop seed or as the number of impurity units per 1 kg.
Затравка	Primer	a short sequence (often RNA) that interacts complementarily with one strand of DNA, forming a free 3′-OH end from which DNA polymerase initiates DNA strand synthesis.
Захисна реакція	Defense response	a reaction of the plant that arises in response to pathogen penetration and is directed at limiting or suppressing pathogen development.
Захист середовища	Environmental protection	a complex of international, national, regional, and local administrative, legal, technological, planning, managerial, economic, social, political, and public measures aimed at protecting the environment as a whole or the natural habitat of human beings.
Заявник	Applicant	a person who has filed an application for a plant variety and/or has acquired the rights of an applicant in accordance with the procedure established by law.
Збалансований поліморфізм	Balanced polymorphism	a form of polymorphism in which certain quantitative ratios are established between homozygotes and heterozygotes, maintaining both alleles in the population.

Термін українською	Термін англійською	Визначення англійською
Збалансовані поліплоїди	Balanced polyploids	polyploids possessing an even number of chromosome sets.
Зберігання зерна	Grain storage	a complex of measures encompassing the reception, conditioning, storage, and dispatch of grain.
Зволоження	Moisture supply	the ratio between the amount of precipitation and evaporation; when precipitation exceeds evaporation, moisture supply is excessive; when evaporation exceeds precipitation, it is insufficient; quantitative characteristics are expressed through moisture or aridity coefficients and humidity/aridity indices.
Зворотна транскриптаза	Reverse transcriptase	an RNA-dependent DNA polymerase (revertase); an enzyme of the transferase class that catalyzes the synthesis of a DNA copy from the RNA genome of certain viruses, performing both RNA-dependent and DNA-dependent DNA synthesis.
Зворотна транскрипція	Reverse transcription	the transfer of genetic information from RNA to DNA by means of a specialized enzyme, RNA-dependent DNA polymerase (reverse transcriptase, revertase); the concept was first proposed by the Ukrainian scientist S. M. Gershenson (1960) and experimentally demonstrated by H. Temin and D. Baltimore in 1970; employed as a gene engineering method for synthesizing genes on an RNA template.
Зворотні мутації	Reverse mutations	mutations by which wild-type genes are converted back into dominant allelic forms.
Зворотні послідовності ДНК (інвертовані повтори)	Inverted DNA repeats	regions in which a nucleotide sequence is repeated in the reverse orientation on the opposite strand, frequently forming hairpin or cruciform structures that are important for gene regulation and replication.

Термін українською	Термін англійською	Визначення англійською
Зернівка	Caryopsis	an indehiscent, single-seeded fruit in which the seed coat is fused tightly with the pericarp.
Зерно	Grain	the fruits of cereal, grain legume, and oilseed crops used for food, seed, fodder, and industrial purposes.
Зерно продовольче	Food grain	grain intended for processing and the manufacture of food products.
Зерно технічного призначення	Industrial-use grain	grain designated for industrial processing into other products such as alcohol, starch, and pharmaceutical preparations.
Зерно фуражне	Feed grain	grain of fodder and other cereal crops intended for feeding livestock and poultry in the form of compound feeds, ground meal, and similar products.
Зерновий склад	Grain warehouse	a business entity that owns a grain storage facility and provides individuals and legal entities with grain storage services, issues warehouse documents for grain, and has obtained the right to carry out such activities through participation in the Guarantee Fund for the fulfillment of obligations under grain warehouse documents.
Зернопереробні підприємства	Grain processing enterprises	enterprises engaged in the reception, storage, and processing of grain, including flour mills, groat mills, compound feed plants, oil extraction plants, distilleries, malt houses, and breweries.
Зерносховище	Grain storage facility	a specially equipped place for grain storage, such as a premises or building.
Зигонема	Zygonema	the second stage of prophase I of meiosis, characterized by the pairwise approximation of homologous chromosomes, i.e., the formation of bivalents through synapsis.

Термін українською	Термін англійською	Визначення англійською
Зигота	Zygote	a cell formed by the fusion of male and female gametes; the fusion of two haploid gametes restores the diploid chromosome number characteristic of the given species, and the zygote subsequently gives rise to the embryo and, ultimately, to the organism.
Зигота андрогенетична	Androgenetic zygote	used to obtain exclusively male offspring in the silkworm through artificial androgenesis; unfertilized eggs are treated with high temperature (heat shock) and irradiated with X-rays to destroy the egg nucleus, after which, under polyspermy, two male nuclei fuse to form a diploid nucleus from which an organism with a male phenotype develops.
Зимостійкість	Winter hardiness	the ability of winter crop plants to withstand a complex of adverse environmental factors during the winter and early spring period, including low sub-zero temperatures, ice encasement, waterlogging, and smothering; winter hardiness in cereal crops is genotype-determined and polygenic in nature.
Злиття клітин	Cell fusion	the formation of living cells with new combinations of genetic material through the merging of two or more cells in a manner that does not occur under natural conditions.
Значущі послідовності ДНК	Functional DNA sequences	genome regions that carry a functional role by encoding proteins, regulating gene expression, or maintaining the structural stability of chromosomes; principal types include exons (protein-coding), regulatory elements (promoters, enhancers), and structural regions (centromeres, telomeres) critical for replication and cell division.

Термін українською	Термін англійською	Визначення англійською
Знеособлення	Anonymization (of a control sample)	a method of disposing of a control sample that precludes the subsequent reproduction and use of a plant variety.
Зональна рослинність	Zonal vegetation	vegetation characteristic of an independent zone, such as forest or steppe.
Зональне (екологічне) сортовипробування	Zonal (ecological) variety trial	a trial conducted under various ecological conditions for the comprehensive and rapid evaluation of new superior varieties.
Зональність	Zonality	the change in the character of a phytocoenosis resulting from climatic variation driven by the latitudinal distribution of solar radiation.
Зони оптимального насінництва	Optimal seed production zones	geographic regions in which soil and climatic conditions are favorable for the production of consistently high yields of high-quality seed.
Зсув рамки зчитування	Frameshift mutation	a type of gene mutation caused by insertions or deletions in which all codons to the right of the mutation site are altered; occurs when the number of nucleotides inserted or deleted at a given site is not a multiple of three.
Зчеплення	Linkage	the exclusive or preferential transmission to offspring of a given pair of alleles from one parent; the degree of association between alleles of two genes during meiosis or genetic crossing; linkage results from the co-localization of genes on the same chromosome (linkage group), and genes within one linkage group are inherited independently of genes belonging to other linkage groups; the number of linkage groups corresponds to the haploid chromosome number.
Зчеплення генів	Gene linkage	the phenomenon whereby genes located on the same chromosome are inherited together.
Зчеплення генів неповне	Incomplete gene linkage	the phenomenon whereby genes located on the same chromosome are not always inherited

Термін українською	Термін англійською	Визначення англійською
		together, due to crossing-over, in which chromosome segments are exchanged between homologous chromosomes, resulting in the separation of previously linked genetic material.
І		
Ідеальна популяція	Ideal population	a population in which genetic equilibrium is maintained (Hardy-Weinberg equation), with allele and genotype frequencies remaining stable across generations; its existence requires a large population size, random mating, and the absence of mutation, selection, and gene flow.
Ідентифікація	Identification	the determination of the belonging of plants to a particular geno- or phenotype.
Ідентифікація генів стійкості	Identification of resistance genes	the determination of the presence in a genotype of chromosomal regions influencing the expression of resistance to a specific factor, and the identification of these genes as either known or novel.
Ідіоадаптація	Idioadaptation	the emergence in a plant organism of adaptations to environmental conditions without a change in the general level of organization.
Ідіогамія	Idiogamy	self-pollination, encompassing autogamy (within a single flower), geitonogamy (with pollen from an adjacent flower on the same plant), and adelphogamy (with pollen from another plant of identical genotype or clone).
Ідіограма	Idiogram	a schematic representation of the chromosomes of a karyotype (karyogram) incorporating all morphological details, including the length and width of chromosome arms, centromere position, secondary constrictions, satellites, and the distribution of hetero- and

Термін українською	Термін англійською	Визначення англійською
		euchromatin; one chromosome of each homologous pair is depicted, arranged in order of decreasing length.
Ідіом	Idiome	the complete gene set of a given organism.
Ідіоплазма	Idioplasm	the germ plasm (sensu Weismann); the active morphogenetic element of the cell, the carrier of hereditary determinants, and the sum of all identically reproducing cellular elements performing a genetic function; composed of the genome and plasmone, the latter being subdivided in plant organisms into cytoplasmon and plastome.
Ідіотип	Idiotype	the totality of the hereditary factors of an individual and its specific structure; composed of the genome, plasmone, and, in some plants, the plastome; the same idiotype may, under different external conditions, give rise to different phenotypes.
Ізогамія	Isogamy	a condition in which gametes differ in physiological and biochemical properties but not in morphology.
Ізогенні лінії	Isogenic lines	lines with an identical genetic constitution, differing only in alternative alleles at one or a few gene loci.
Ізолюючі механізми	Isolating mechanisms	properties of individuals that prevent their successful interbreeding with individuals belonging to another population.
Ізолят	Isolate	a monospore culture, a culture of cells from the vegetative part of fungi, or a bacterial cell culture that maintains genetic homogeneity.
Ізолятор	Pollination isolator	a device used to cover plants during their flowering period in order to prevent contact with pollen from other plants.

Термін українською	Термін англійською	Визначення англійською
Ізоляція	Isolation	the emergence of any barriers that restrict the possibility of free interbreeding among organisms; isolation acts as one of the factors of evolution, and its prolonged action promotes speciation, i.e., the emergence and consolidation of differences between populations and distinct intraspecific groups.
Ізоляція посіву	Crop isolation	the application of various measures to prevent undesired cross-pollination, including the surrounding of plots with tall-growing crops or the spatial separation of relevant plantings.
Ізоляція просторова	Spatial isolation	the natural or artificial separation of plantings through the maintenance of specified distances in order to prevent cross-pollination.
Ізоляція репродуктивна	Reproductive isolation	a factor causing divergent changes in the genetic structure of human populations; such isolation may be both territorial and socially determined; migration and the disruption of marriage-system boundaries leads to heterozygotization of the population at numerous polymorphic loci.
Ізоляція соціальна	Social isolation	consanguineous marriages sanctioned for economic or religious reasons; social isolation is prevalent among Eastern peoples.
Ізоляція територіальна	Territorial isolation	consanguineous marriages within small human populations.
Ізомери ДНК топологічні	Topological DNA isomers	identical molecules differing only in their linking number.
Ізоферменти (ізоензими, ізозами)	Isoenzymes (isozymes)	forms of a single enzyme that catalyze the same biochemical reactions but differ from one another in the primary structure of the protein; their formation as distinct molecular forms is determined by differences in the structure of the genes encoding them.

Термін українською	Термін англійською	Визначення англійською
Ізохромосома	Isochromosome	a chromosome with genetically identical arms, arising from an abnormal transverse division of the centromere, whereby sister chromatids may become the arms of the resulting isochromosomes.
Іллегітивне запилення	Illegitimate pollination	pollination in plants with heterostyly, where pollen lands on the pistil style of the same type (from a long-styled flower to a long-styled one, or from a short-styled flower to a short-styled one). In this case, seeds either do not form at all, or very few are produced and the resulting plants are weak.
Імобілізація	Immobilization	a physical or chemical process of fixing enzymes, cells, or cellular organelles onto a solid support.
Імпакція	Impaction	the breaking of seed dormancy by means of shaking and mechanical impact.
Імунізація рослин	Plant immunization	the creation of artificial immunity and the enhancement of plant resistance or tolerance to diseases through the targeted application of specific chemical agents or vaccines.
Імунітет	Immunity	the capacity of a plant organism to resist disease; the highest form of plant resistance to pathogens and pests; distinguished as active immunity (manifested as an active counterresponse of the plant organism upon pathogen invasion) and passive immunity (constitutively present in plants in the form of specific anatomical, morphological, physiological, and biochemical features that impede pathogen penetration and development).

Термін українською	Термін англійською	Визначення англійською
Імунітет вертикальний	Vertical immunity (vertical resistance)	observed when a variety is more resistant to some races of a pathogen than to others.
Імунітет горизонтальний	Horizontal immunity (horizontal resistance)	expressed as uniform resistance of a variety to all races of a pathogen.
Імунітет пасивний	Passive immunity	a category of resistance associated with the morphological and anatomical structural characteristics of plants.
Імунний сорт	Immune variety	a variety that is not susceptible to the pathogenic action of the causative agents of an infectious or invasive disease.
Імунність	Immunity (absolute resistance)	the highest degree of resistance.
Імуногенність	Immunogenicity	the capacity of viral or organismal substances to stimulate the formation of specific antibodies.
Імунологія	Immunology (plant immunology)	the science of the defense reactions of a plant host species or organism directed at preserving its structural and functional integrity; also, a method of artificial inoculation of host plants differing in resistance with various pathogens.
Імунопреципітація	Immuno-precipitation	the process of formation of an insoluble antigen-antibody complex.
Імуносупресія	Immuno-suppression	the suppression of a normal immune response.
Ін'єкція	Injection	the introduction or infusion of substances, including inoculum, into the tissues or cavities of a plant organism.
Інадаптація	Inadaptation	the inability of organisms to adapt to altered specific living conditions.

Термін українською	Термін англійською	Визначення англійською
Інбредна депресія (інцухт-депресія, інбредний мінімум)	Inbreeding depression	a decline in productivity and viability of organisms resulting from enforced self-pollination in cross-pollinating plants.
Інбредна лінія (інцухт-лінія)	Inbred line	a line obtained through repeated self-pollination of a cross-pollinating crop.
Інбредний мінімум	Inbreeding minimum	the most severe expression of inbreeding depression, beyond which no further deterioration is observed.
Інбридинг	Inbreeding (inzucht)	the crossing of closely related forms within a single population of organisms; in cross-pollinating plants, inbreeding may unmask the effects of deleterious recessive genes that become homozygous, leading to depression, the expression of abnormalities, reduced productivity and viability, or partial or complete death of inbred organisms.
Інбридингу коефіцієнт	Inbreeding coefficient	an index characterizing the degree of increase in homozygosity within a population under the influence of close inbreeding; determined by the proportion of homozygous organisms in the population, which doubles with each successive generation of self-pollination.
Інвазійний фон	Infestation background	the presence of a certain infestation pressure on plants; may be natural (through natural pest dispersal), provocational (through artificial intensification of the natural background by creating conditions optimal for pests), or artificial (through deliberate infestation of plants with specific pests).
Інвазія	Infestation	the colonization of plants by harmful organisms, including their development, reproduction, and feeding.
Інверсія	Inversion	a type of chromosomal aberration arising from two chromosome breaks and the 180° rotation

Термін українською	Термін англійською	Визначення англійською
		of the detached fragment, thereby altering the linear order of gene loci within the chromosome.
Інвертовані повтори	Inverted repeats	repeats consisting of two identical copies approximately 300 bp in length, arranged in reverse orientation relative to one another and separated by a distance of zero to ten thousand base pairs; inverted repeats constitute approximately 5% of the genome, and at least one third of them are palindromes forming part of regulated genomic elements.
Інволюція	Involution	the partial or complete reduction of individual organs that have lost their functional significance in the course of evolution.
Інгібірування кінцевим продуктом	End-product inhibition	the capacity of the terminal product of a metabolic pathway to inhibit the activity of the enzyme catalyzing one of the early reactions in that pathway.
Інгібітор (супресор)	Inhibitor (suppressor)	a gene that suppresses the action of another non-allelic gene without itself producing a detectable phenotypic effect.
Індекс адекватності урожаю	Yield adequacy index	the proportional increase in plant yield per one percentage point increase in seed sowing quality parameters.
Індекс деформування насіння	Seed deformation index	the deviation of a seed sample in seed shape from the mean value optimal for a given variety.
Індекс сортування насіння	Seed sorting index	the ratio of seed thickness to seed width, indicating the manner in which the seed passes through sieves with round or elongated apertures.
Індекс стійкості	Stability index	an indicator of the stability of a species or population within a phytocoenosis, determinable on the basis of the coefficient of

Термін українською	Термін англійською	Визначення англійською
		variation, biomass quantity, or abundance derived from long-term data.
Індекс центромерний	Centromeric index	the ratio of the length of the short chromosome arm to the total chromosome length, taken as 100%.
Індексний добір	Index selection	indirect selection based on the ratio of one trait to another (e.g., harvest index, attraction index, Mexican index, etc.).
Індели	Indels	altered DNA sequences for which it is unknown whether they result from an insertion in one chromosomal segment or a deletion in another orthologous chromosomal region.
Індетермінантний тип росту	Indeterminate growth type	an unlimited type of plant growth ending in a vegetative bud; controlled by a dominant allele.
Індивід	Individual	an organism existing independently; the concept is relative for clonal, vegetatively reproducing, and certain parasitic or symbiotic organisms.
Індиферентна дія фактора	Indifferent factor action	the independent influence of various environmental elements on plant development.
Індукований ген	Inducible gene	a gene that is normally repressed (under negative genetic control) but can be induced by physical (light, UV radiation) or chemical factors.
Індукований мутагенез	Induced mutagenesis	the process of mutation induction under the influence of artificial agents deliberately introduced into the environment, enabling a significant increase in mutation frequency for use in plant breeding, investigation of mutation mechanisms, and production of new forms with desired traits.
Індуктор	Inducer	a phenomenon in which an effector reduces the affinity of a repressor for its operator, thereby allowing gene transcription.

Термін українською	Термін англійською	Визначення англійською
Інженерія генетична	Genetic engineering	the science of genetic construction and the creation of new forms of biologically active DNA and genetically novel cells and organisms through artificial gene transfer techniques, primarily recombinant DNA technology and cell hybridization; an integration of molecular and cellular biology characterized by a synthetic (as opposed to analytical) experimental methodology; distinguished at the cellular level (cell engineering) and the molecular-biological level (gene engineering).
Ініціальні клітини	Initial cells	meristematic cells with the capacity for unlimited division.
Ініціація	Initiation	the commencement of synthesis of DNA, RNA, or protein molecules.
Інкрустування насіння	Seed encrustation	the fixation onto the seed surface of protective, nutritive, and stimulating substances together with a colorant by means of film-forming agents.
Інкубаційний період хвороби	Incubation period of disease	the latent period of disease – the interval between the moment of phytopathogen penetration and the manifestation of disease symptoms in plants.
Інокулюм	Inoculum	infectious material (fungal spores, mycelium, bacterial cultures, infectious sap containing viruses, etc.) used for the artificial inoculation of plants in studies of their resistance under artificial disease development backgrounds.
Інокуляція	Inoculation	the introduction of living microorganisms or infected material into plant, animal, or human tissues, or into a culture medium; inoculation with an attenuated live infectious agent promotes the development of immunity in humans or animals.

Термін українською	Термін англійською	Визначення англійською
Інсерційний мутагенез	Insertional mutagenesis	a surge of mutational events in the genome resulting from the integration of nucleotide sequence insertions, particularly mobile genetic elements, as well as from transfection or microinjection of DNA; may lead to partial or complete inactivation of genes.
Інсерція	Insertion	the introduction of a DNA fragment ranging in size from a single nucleotide to a subchromosomal fragment containing several genes; also, a mutation resulting from the introduction of one or more surplus nucleotides into a DNA or RNA molecule; single-nucleotide insertions may be induced by certain chemical agents (e.g., acridine dyes), while longer insertions typically result from the transposition of mobile genetic elements.
Інсоляція	Insolation	the greater or lesser irradiation of the Earth's surface by solar radiation; depends on the solar elevation angle, altitude above sea level, and orientation of the irradiated surface.
Інсулятор, інсуляторна послідовність	Insulator, insulator sequence	a DNA sequence that limits cis-regulatory interactions between regulatory regions located on either side of it.
Інтактний організм	Intact organism (cell, nucleus, etc.)	an organism, cell, or nucleus that has had no contact with the agents under study; used as a control in an experiment.
Інтеграза	Integrase (topoisomerase)	an enzyme that mediates the integration of viral DNA into the host cell chromosome by cleaving DNA strands and rejoining heterologous nucleotide sequences.
Інтеграція	Integration	the insertion of a viral or other DNA sequence into the host cell genome, resulting in its covalent linkage with the host cell DNA sequence.

Термін українською	Термін англійською	Визначення англійською
Інтеграція ядер	Nuclear integration	the fusion of parental cell nuclei within a heterokaryon to form a common nucleus.
Інтенсивність пошкодження рослин	Plant damage intensity	the degree of damage to individual plants, expressed in scores or percentages.
Інтенсивність розвитку хвороби	Disease severity	the degree of plant damage by a pathogen, assessed by the area of the affected organ surface covered with spots, mycelial growth, or pustules, or by the intensity of other symptom manifestations.
Інтенсивність росту паростків	Seedling growth intensity	characterized by the number of shoots that have emerged through the surface of sand or another substrate, and by the mass of shoots and rootlets.
Інтеркінез	Interkinesis	the period between the first (reductive) and second (equational) divisions of meiosis, i.e., between telophase I and prophase II; interkinesis is of relatively brief duration, no nucleolus is formed, and chromosome reduplication does not occur.
Інтерсекси	Intersexes	individuals bearing characteristics of both male and female sex; for example, in Drosophila, intersexes – which are generally sterile – are produced when the ratio of X chromosomes to autosomes is less than 1 but greater than 0.5.
Інтерстиціальна (проміжна) ділянка	Interstitial region	an intermediate (non-terminal) region of a chromosome or chromatid, i.e., the region situated between the terminal portion and the centromere.
Інтерфаза	Interphase	the period between two successive mitotic divisions of a cell, during which processes of synthesis associated with DNA and chromosome duplication and preparation for cell division take place; based on the intensity

Термін українською	Термін англійською	Визначення англійською
		of DNA synthesis, interphase is divided into three periods the presynthetic period (G_1), during which the synthesis of major proteins (histones) occurs; the synthetic period (S), during which DNA synthesis (replication) and chromosome reduplication take place; and the postsynthetic period (G_2), during which energy is accumulated and the cell prepares directly for division.
Інтерференція	Interference	the suppression of crossing-over near a locus where chromosomal exchange has already occurred, whereby an exchange at one locus inhibits crossover at neighboring loci; adjacent chromosome breaks are thus dependent on one another, and the degree of this dependence is determined by the distance between the break sites, with the probability of an additional break increasing with distance from an existing one.
Інтерферони	Interferons	proteins synthesized by vertebrate cells in response to viral infection that confer non-specific antiviral immunity; the applicability of human interferon produced by recombinant DNA technology has been demonstrated.
Інтразональна рослинність	Intrazonal vegetation	vegetation that does not form independent zones but occurs as inclusions within zonal vegetation.
Інтрогресія	Introgression	the acquisition by organisms of one species of genes from another species through interspecific hybridization.
Інтродукція	Introduction	the translocation of individual animal or plant species to localities where they were previously absent.
Інтродуцент	Introduced species (introducent)	an organism new to a region, accidentally or deliberately moved beyond the boundaries of

Термін українською	Термін англійською	Визначення англійською
		its native range and successfully established within local natural complexes.
Інтрон	Intron	a region of a eukaryotic gene (DNA) located between segments of the structural gene (exons) that carries no genetic information for protein synthesis; regions corresponding to introns are represented together with exons only in the primary transcript – the precursor mRNA (pre-mRNA) – from which they are removed by specific enzymes while the exons are retained (RNA processing).
Інфекційне захворювання	Infectious disease	a disease caused by a specific pathogen; the affected organism becomes a source of infection.
Інфекційне навантаження	Infectious load (inoculum load)	the quantity of inoculum sufficient to cause infection and initiate a pathological process in a plant.
Інфекційний фон	Infectious background	the presence of a certain infectious load on plants causing their infection by disease agents; may be natural (infection and disease development under natural conditions without any special measures), provocational (artificial intensification of the natural background by creating conditions optimal for pathogens), or artificial (artificial inoculation of plants with specific pathogens); also refers to a specialized nursery of breeding material (greenhouse, plant growth chamber) for evaluating resistance to a specific pathogen under conditions of artificial inoculation.
Інфекція	Infection	the process of penetration and multiplication of pathogenic microorganisms (viruses, bacteria, fungi, parasites) within an organism, giving rise to pathological reactions.

Термін українською	Термін англійською	Визначення англійською
Інфекція екстраембріональна	Extraembryonal infection	a condition in which pathogens are present in the endosperm, seed coat, pericarp, or bracts.
Інфекція ембріональна	Embryonal infection	a condition in which disease agents are found in any constituent part of the embryo.
Інфікування	Infection (infecting)	the penetration of a pathogenic parasite into a plant with subsequent development of a pathological process.
Інформосома	Informosome	an intracellular particle involved in protein biosynthesis and composed of ribonucleic acid and protein.
Інцизія	Incision	the cleavage of a damaged DNA strand in the vicinity of the lesion site.
Інцухт	Inzucht	synonymous with inbreeding; the term is most commonly used with reference to plants.
Інцухт-лінія	Inzucht line	a generation obtained as a result of inbreeding.
Інцухт-мінімум	Inzucht minimum	the state of inbred progeny at which inzucht depression has reached its maximum expression and no further decline in plant viability upon self-pollination occurs.
Іонізуюче випромінювання	Ionizing radiation	radiation that induces ionization of water molecules and other chemical substances within the tissues of an organism.
ІСТА	ISTA (International Seed Testing Association)	an international seed testing association founded in 1924 and headquartered in Geneva, Switzerland; promotes international cooperation in the field, develops international rules for seed analysis, and organizes scientific forums.
К		
К-мітоз	K-mitosis	mitosis induced by colchicine. During the prophase of such mitosis, chromosomes form and, following dissolution of the nuclear envelope, are released into the cell cavity. In

Термін українською	Термін англійською	Визначення англійською
		metaphase, due to the absence of a spindle apparatus, chromosomes do not align at the equatorial plate but remain freely dispersed in the cytoplasm and undergo normal division into two chromatids. Anaphase is not observed. During telophase, a nuclear membrane forms around the doubled chromosome set.
Калібрування	Calibration	the sorting of seed material according to seed size and shape.
Калюс	Callus	a tissue arising from dedifferentiation and unorganized proliferation of cells at a wound surface. In in vitro culture, it is referred to as primary callus prior to the first passage (subculturing).
Камбіальні клітини	Cambial cells	undifferentiated (stem) cells constituting the regenerative tissues of animals and humans. They are capable of mitotic division and ensure tissue renewal following the loss of a portion of its cells.
Камбій	Cambium	a meristematic tissue in plants that gives rise to secondary vascular tissues – secondary xylem (wood) and phloem (bast) – and ensures radial growth of axial organs.
Каналізація	Canalization	in biology, the tendency to attain a specific, genetically determined final state regardless of variability in early development or environmental conditions. Strict canalization is characteristic of wild-type forms, in contrast to mutants, which are more sensitive to agents inducing variability.
Капсид	Capsid	the protein coat of viruses, composed of one or several types of proteins. Genome size in viruses correlates with the size of the coat

Термін українською	Термін англійською	Визначення англійською
		assembled from proteins encoded by viral genes.
Карантинні бур'яни	Quarantine weeds	particularly harmful weeds that are absent or have limited distribution within a given territory.
Каріогамія	Karyogamy	the fusion of the nuclei of sexual cells (male and female gametes) to form the nucleus of the zygote. Karyogamy is the fundamental process of fertilization. During karyogamy, the pairing of homologous chromosomes carrying genetic information from both the maternal and paternal gametes is restored.
Каріогенез	Karyogenesis	the development of the cell nucleus.
Каріокінез	Karyokinesis	division of the cell nucleus; an archaic synonym for mitosis.
Каріолізис	Karyolysis	one of the variants of dystrophic nuclear changes occurring during cell death by necrosis. It is characterized by nuclear swelling, loss of the capacity of heterochromatin to stain with basic dyes (chromatolysis), and disappearance of the nucleolus. Consequently, the nucleus acquires the appearance of a transparent vesicle and subsequently dissolves entirely following destruction of the karyolemma.
Каріолімфа	Karyolymph (nuclear sap, karyoplasm, nucleoplasm)	the fluid compartment of the nucleus, bounded by the karyolemma and surrounding chromatin and nucleoli. The principal components of karyoplasm include water, glycoproteins, RNA, nucleotides, histone proteins, various enzymes, mineral substances, and other metabolites.

Термін українською	Термін англійською	Визначення англійською
Каріологічний метод відмінності насіння	Karyological seed identification method	a method for determining seed authenticity based on ploidy level or chromosome number in cell nuclei.
Каріологія	Karyology	the branch of cytology concerned with the study of the cell nucleus.
Каріоплазма	Karyoplasm	the contents of the cell nucleus (chromatin).
Каріосистематика	Karyosystematics	the branch of systematics studying the structure of the cell nucleus across different groups of organisms. Karyosystematics emerged from the integration of systematics with cytology and genetics, and investigates the structure and evolution of the chromosomal complement – the karyotype. Taxonomic significance is attributed not only to chromosome number and morphology, but also to nuclear DNA content, nucleotide composition of DNA, and the distribution pattern of hetero- and euchromatin.
Каріотип	Karyotype	the complete chromosome complement of a somatic cell of an organism, i.e., its diploid set. The karyotype is characterized by chromosome number, size and morphology, the number and size of secondary constrictions, and the distribution of hetero- and euchromatic regions.
Карликові форми рослин	Dwarf plant forms	plants exhibiting reduced stature.
Карта зчеплення	Linkage map	a chromosomal map depicting the linear order of genes along a chromosome.
Карта комплементацій	Complementation map	all mutations failing to complement are assigned to a single complementation group (complон) and are graphically represented by interrupted lines. As a rule, only one complementation map can be constructed for each gene, clearly reflecting the sequence and

Термін українською	Термін англійською	Визначення англійською
		relative extent of gene and gene product impairment in the case of allelic mutations.
Карта рестрикційна	Restriction map	a map of a DNA molecule obtained by localizing sites of enzymatic cleavage. It represents a linear sequence of sites recognized by specific restriction enzymes. Distances between restriction sites are measured in nucleotide pairs of DNA.
Карта фізична	Physical map	a map constructed on the basis of the nucleotide sequence of DNA.
Карта цитологічна	Cytological map	a map determining the physical location of individual genes on a chromosome and measuring the physical distances between them. Polytene chromosomes, as well as lampbrush chromosomes, serve as convenient objects for such studies. The advantage of giant chromosomes lies in the fact that they are considerably easier to measure than metaphase chromosomes, which are many times smaller. Furthermore, the distinctive topography of disc patterns in each region of a polytene chromosome enables highly precise localization of individual puffs.
Картування генів	Gene mapping	the determination of the position of a gene on a given chromosome relative to other genes.
Каскадна регуляція	Cascade regulation	the temporal regulation of transcription across different regions of the viral genome. Among the immediate-early phage genes are those whose products are required to initiate transcription from early genes. In turn, the products of certain early genes suppress the activity of immediate-early genes while activating the late viral genes.

Термін українською	Термін англійською	Визначення англійською
Кастрація квіток	Flower emasculation	the removal of immature anthers from flowers of maternal forms prior to pollination in hybridization procedures.
Категорія насіння і садивного матеріалу	Seed and planting material category	seed and planting material obtained at a specific stage of variety reproduction.
Катенани	Catenanes	interlocked rings formed by multiple circular DNA molecules of viruses.
Катехіни	Catechins	the most significant class of flavonoid compounds, widely distributed in plants. They are particularly abundant in young tea shoots, quince fruits, pear, apple, and others. Catechins exhibit the highest vitamin P activity among all flavonoids.
Квадривалент	Quadrivalent	four fully or partially homologous chromosomes associated with one another through synapsis of specific regions, occurring from the zygotene stage of prophase I through metaphase I of meiosis.
Квітка	Flower	a generative organ consisting of a shortened stem bearing the perianth, androecium, and gynoecium. It fulfills the functions of sporogenesis, gametogenesis, pollination, and fertilization.
Кисневий ефект	Oxygen effect	the variability in the frequency of radiation-induced mutations with changes in environmental oxygen concentration. The oxygen effect is universal, being observed upon irradiation of bacteria, plants, and animals, and is explained by the interaction of oxygen with biopolymers that, under the influence of ionizing radiation, enter a state of heightened chemical reactivity. In the presence of oxygen,

Термін українською	Термін англійською	Визначення англійською
		irreversible damage is generated within these macromolecules.
Кількісна спадковість	Quantitative inheritance	the inheritance of traits that vary continuously and are controlled by three or more genes.
Кількісні ознаки	Quantitative traits	traits amenable to quantitative measurement, such as spike length, plant height, number of spikelets, grain mass, and others.
Кільце Бальбіні	Balbiani ring	a giant puff on a polytene chromosome.
Кільце, що котиться	Rolling circle	a mode of replication in which the replication fork completes multiple revolutions around a circular template. The DNA strand synthesized in each cycle displaces the strand produced in the preceding cycle, generating a tail consisting of a linear array of sequences complementary to the single-stranded circle.
Кінетохор	Kinetochore	a complex protein structure located on chromosomes that serves as the attachment site for spindle fibers during cell division. Kinetochores play a key role in ensuring the accurate segregation of chromosomes between daughter cells.
Кінцева захисна смуга	Terminal border strip	the transverse section of the sowing area at the beginning and end of a plot, located outside its measured area.
Кластери генів	Gene clusters	groups of genes with related functions, located within specific chromosomal regions, sometimes arranged as tandem repeats.
Кластерний аналіз	Cluster analysis	an analytical method that enables the identification of varieties with similar characteristics and their grouping accordingly.
Клейковина	Gluten	a plant protein obtained from wheat flour following prolonged washing to remove starch.

Термін українською	Термін англійською	Визначення англійською
Клімат	Climate	a statistically derived long-term weather regime characteristic of a given locality. Geographic factors influencing climate include elevation, distance from large urban centers, terrain slope, and atmospheric circulation patterns.
Кліматично забезпечена врожайність	Climatically attainable yield	the statistically mean yield achievable under the specific climatic growing conditions of a given locality.
Клін, кліна, географічна кліна	Cline, geographic cline	a gradient in the expression of a phenotypic trait and/or in the distribution of allele frequencies within the range of a specific population, conditioned by a corresponding gradient of particular environmental factors.
Клінальна мінливість	Clinal variation	differences in the frequency of allelic variants among populations of the same species. Clinal variation is the result of non-uniform, gradient-distributed selective pressure, or alternatively, a cline may arise from the secondary contact of diverged populations that accumulated differences – through selective or stochastic processes – during their independent evolution.
Клітина	Cell (Lat. celula)	the fundamental structural and functional unit of all living organisms; an elementary living system underlying the organization, reproduction, development, and vital activity of all plant and animal organisms. The term «cell» was introduced by R. Hooke (1665). Depending on their location within tissues and, most importantly, on their functional roles, cells differ considerably in shape and size. The contents of a cell constitute the protoplasm, which contains all organelles. Somatic cells of eukaryotes are capable of reproduction by

Термін українською	Термін англійською	Визначення англійською
		mitosis, while gametes are formed through meiosis.
Клітина реконструйована	Reconstructed cell	the product of fusion between a karyoplast and a cytoplast.
Клітини зародкові	Germ cells	cells that are set apart from somatic cells at early stages of development and give rise to the gonads, which produce gametes. Gametes carry the complete genetic information characteristic of the given species and constitute the continuous, potentially immortal germline.
Клітини компетентні	Competent cells	cells arising during the mid-logarithmic growth phase of bacteria, comprising no more than a few percent of the total population. Competent cells are capable of taking up exogenous DNA.
Клітини стовбурові	Stem cells	unspecialized cells possessing the unique capacity for self-renewal and differentiation into various types of specialized cells. Stem cells can divide to produce copies of themselves and can also differentiate into functionally committed cells, such as muscle, neural, or skin cells.
Клітинна інженерія	Cell engineering	the construction of cells with novel properties; the foundation of genetic engineering, involving the combining of genomes from different species.
Клітинна лінія	Cell line	a culture derived from a strain through selection or cell cloning, possessing defined marker characteristics.
Клітинна селекція	Cell selection	a method for isolating mutant cells and somaclonal variants under selective conditions.
Клітинна теорія	Cell theory	one of the most significant biological generalizations, according to which all organisms possess a cellular organization and

Термін українською	Термін англійською	Визначення англійською
		the cell underlies their development, thereby demonstrating the unity of the organic world.
Клітинний сік	Cell sap	the product of cellular metabolism contained within vacuoles.
Клітинний центр	Cell center (centrosome)	an organelle identified in all cells of multicellular organisms and some unicellular animals, as well as certain plants. The cell center comprises one, two, or occasionally more small granules (centrioles) situated at the center of a spherical layer of cytoplasm (the centrosome). The cell center plays a critically important role in cell division, specifically in the segregation of chromosomes to the poles. The principal tenets of cell theory state that the cell is the elementary unit of the living world; cells of different organisms are homologous in structure; cell reproduction occurs by division; and multicellular organisms consist of complex assemblages of cells organized into systems of tissues and organs.
Клітинний цикл, мітотичний цикл	Cell cycle, mitotic cycle	the totality of processes occurring in a cell during its preparation for division and throughout mitosis itself. The cell cycle consists of interphase – comprising three periods presynthetic, synthetic, and postsynthetic – and mitosis proper. The cell cycle is fundamentally based on the processes of chromosome condensation and decondensation.
Клітинні популяції	Cell populations	aggregates of cells sharing common functions and structural characteristics.
Клон	Clone	a group of cells or individuals derived from a common ancestor by asexual reproduction.

Термін українською	Термін англійською	Визначення англійською
Клон клітин	Cell clone	a pure cell line produced by successive mitotic divisions of a single founder cell. Cell cloning is employed in the study of a range of theoretical and applied biomedical problems, including genetics and oncology. The term «clone» is also applied to groups of related cells within a tissue, referred to as cell generations.
Клонований добір	Clonal selection	individual selection applied to vegetatively propagated plants.
Клонування	Cloning	a system of methods for obtaining clones of genes, DNA, embryos, plants, and animals.
Книга історії полів	Field history book	a document recording the actual placement of experiments and leveling sowings, technological operations performed, and yield data.
Коадаптація генетична	Genetic coadaptation	adaptive interaction among the genes comprising a genome.
Кодомінантні алелі	Codominant alleles	a pair of alleles each of which is phenotypically expressed in the heterozygote.
Кодомінантність, кодомінування	Codominance	the independent phenotypic expression in a heterozygote of traits controlled by different alleles.
Кодон	Codon	the unit of the genetic code, consisting of a sequence of three nucleotide bases (a triplet). Of the 64 codons possible from combinations of three nitrogenous bases, 61 specify a particular amino acid in the protein synthesized under the control of a given gene. Additionally, one codon located at the beginning of the reading frame of messenger RNA designates the initiation of protein synthesis (initiator codon), while two others designate its termination (stop codons).

Термін українською	Термін англійською	Визначення англійською
Коекспресія	Coexpression	the simultaneous expression of homologous parental genes in a hybrid cell.
Коефіцієнт виходу садивних коренеплодів	Planting root yield coefficient	the ratio of the sowing area of reproductive/steckling beet to that of seed-bearing plants.
Коефіцієнт добору	Selection coefficient	an indicator of the intensity of natural selection, determined by the relative fitness of compared genotypes and expressed as the rate of decline of a given genotype within a population.
Коефіцієнт коінциденції	Coefficient of coincidence	a quantitative expression of interference, representing the ratio of the observed frequency of double crossovers to the mathematically expected frequency calculated under the assumption that exchanges in adjacent chromosomal regions occur independently of one another.
Коефіцієнт кореляції	Correlation coefficient	a measure of the degree of dependence between two variable traits or properties.
Коефіцієнт продуктивного кущіння	Productive tillering coefficient (PTC)	the numerical ratio of productive stems to the total number of stems, characterizing the level of varietal resistance to cereal flies by the tolerance type.
Коефіцієнт розмноження насіння	Seed multiplication coefficient	the ratio of the mass of conditioned seed in the harvest to the mass of seed sown. In potato, a weight-based coefficient – the mass of planting tubers harvested (t/ha) divided by the planting rate (t/ha) – and a numerical coefficient – the number of planting-grade tubers in the harvest (units/ha) divided by the planting rate (units/ha) – are distinguished.
Коефіцієнт успадкування	Heritability coefficient	the proportion of genetically determined variation within the total phenotypic diversity of a population.

Термін українською	Термін англійською	Визначення англійською
Коінтеграція	Cointegration	the capacity of bacterial mobile elements to mediate the fusion of two or more replicons into a single unit, resulting in the formation of cointegrates.
Колекційний розсадник	Collection nursery	a type of breeding sowing in which the study of source material is initiated with the objective of identifying forms of value for further breeding work. The size of a collection nursery depends on the scope of the work and may encompass from 150–300 to 1,000 diverse genotypes.
Колеоптиль	Coleoptile	the modified first leaf of a grass seedling, formed as a pointed sheath.
Колінеарність	Collinearity	the correspondence between genes and polypeptides.
Колінеарність хромосом	Chromosomal collinearity	the similarity in the order of molecular markers (DNA markers) on chromosomes; generally refers to homologous chromosomes.
Колхіцин	Colchicine	an alkaloid named after the plant autumn crocus (Colchicum autumnale), in which the substance is produced. The molecular formula of colchicine is $C_{22}H_{25}O_6N$. Colchicine is a mitotic poison that disrupts spindle fibers, preventing sister chromatids from segregating to the poles, thereby arresting cell division at metaphase.
Комбінаційна здатність	Combining ability	the capacity of a line or variety, when incorporated into hybrid combinations, to produce progeny differing from a conventionally accepted baseline in specific traits or properties.
Коменсалізм	Commensalism	the coexistence of organisms of different species under conditions of close spatial contact, in which one species (the commensal) subsists permanently or temporarily at the

Термін українською	Термін англійською	Визначення англійською
		expense of another without causing harm to the latter.
Компенсація	Compensation	the phenomenon whereby a lost organ or function is replaced by another organ or function, such as intensive tillering in cereals or an increase in root mass in thinned stands.
Комплементарна взаємодія генів	Complementary gene interaction	the joint, mutually supplementary action of two or more genes in the development of a given trait.
Комплементарна ДНК (кДНК)	Complementary DNA (cDNA)	DNA synthesized by reverse transcriptase (revertase) using an RNA template.
Комплементарні гени	Complementary genes	non-allelic genes that supplement one another; for example, in the case of a recessively expressed trait, the presence of both complementary genes in the homozygous state is required for its manifestation.
Комплементарність	Complementarity	in molecular biology, the phenomenon of mutual correspondence between matching chemical structures (macromolecules, molecules, radicals), which ensures their interaction based on their respective properties. Complementarity is possible when the structure of one molecule possesses a projecting group (or positive charge) that corresponds to a cavity (or negative charge) in the structure of another molecule.
Комплементаційна група	Complementation group	a group of mutant alleles that express a mutant phenotype when combined with one another in the heterozygous state.
Комплементація	Complementation	the ability of two mutants in combination to restore the normal phenotype. The dominance observed in heterozygotes reflects the capacity of wild-type alleles to complement loss-of-function alleles.

Термін українською	Термін англійською	Визначення англійською
Комплементація міжалельна	Interallelic complementation	a type of interaction between allelic genes observed in compound heterozygotes (heterozygotes in cases of multiple allelism – a_1a_2, a_2a_3, etc.) when the product of a mutant gene serves as a polypeptide that is a subunit of a homomultimeric protein (considerably less frequently, a heteromultimeric protein).
Комплон	Complon	a single complementation group.
Компоненти екосистеми	Ecosystem components	the constituent parts of an ecosystem (biogeocenosis) that determine its functioning.
Кон'югація у бактерій	Bacterial conjugation	a process of sexual reproduction in bacteria involving the transfer of DNA from a donor cell (F^+ bacterium) to a recipient cell (F^- bacterium).
Кон'югація хромосом	Chromosome synapsis	the pairwise temporary approximation of homologous chromosomes, during which exchange of homologous segments is possible. Chromosome synapsis is initiated at zygonema, proceeds through pachynema, and is completed at the onset of diplonema of prophase I of meiosis.
Конвергентний сорт	Convergent variety	a variety into whose genotype several effective resistance genes have been introduced.
Конвергенція	Convergence	the similarity of traits arising in the course of evolution in phylogenetically distant plant species as a result of identical environmental conditions and uniformly directed natural selection.
Конвергенція фітоценозів	Phytocoenosis convergence	the approximation of community characteristics (floristic composition, phytocoenosis structure) in the course of succession.

Термін українською	Термін англійською	Визначення англійською
Конверсія	Gene conversion	a process whereby an allele in an entire chromosome is lost and replaced by another allele from the homologous chromosome.
Конденсація	Condensation	the compaction of a double-stranded DNA molecule that reduces its dimensions by a factor of 10^4.
Кондиційне насіння	Conditioned seed	seed whose varietal and sowing qualities conform to the requirements established by legislation in the field of seed production and nursery growing.
Конкатемер	Concatemer	a long, continuous DNA molecule containing several copies of a single DNA sequence joined in tandem. These polymeric molecules are typically copies of an entire genome linked end-to-end and distributed by cos sites.
Конкордантність	Concordance	the similarity of twins with respect to a given trait.
Конкуренція організмів	Organismal competition	rivalry, antagonism, and active opposition between two or more organisms competing for means of subsistence encompassing a shared substrate or common environmental factors. It is one manifestation of the struggle for existence. Competition occurs between individual organisms occupying the same ecological niches. Intraspecific, interspecific, direct, and indirect competition are recognized.
Конкурсне сортовипробування	Competitive variety trial	the study and comprehensive evaluation, conducted by plant breeding and research institutions, of newly developed varieties and hybrids under field and laboratory conditions, with the objective of identifying superior entries relative to standard varieties and the best varieties of other breeding institutions, for

Термін українською	Термін англійською	Визначення англійською
		subsequent submission to state technical examination.
Консенсус	Consensus	a sequence reconstructed from an aligned set of DNA fragments, in which each position of the consensus contains the most frequently occurring base at that position across the entire set of fragments.
Консенсусна послідовність	Consensus sequence	a defined nucleotide sequence that occurs regularly (with minor variation at individual nucleotide positions) in a given genetic element, such as a promoter. Such sequences are typically characteristic of genes encoding the same protein in different organisms.
Консервативна рекомбінація	Conservative recombination	recombination occurring through breakage and subsequent rejoining of existing DNA strands without additional synthesis of new segments.
Консорція	Consortia	an assemblage of heterogeneous organisms closely associated with and dependent upon the core unit of a community.
Конспецифічний	Conspecific	belonging to one and the same species.
Константна лінія	Constant line	a line characterized by homogeneity, stability, and invariability of genotype.
Константні форми	Constant forms	stable hybrid or mutant forms that do not undergo segregation in subsequent generations.
Контрольна одиниця	Control unit	a mass-defined quantity of seed from which a single sample may be drawn for quality determination.
Контрольна проба	Control sample	a sample formed from a bulk sample for direct sowing on control plots for plot-based (soil) and laboratory varietal control.
Контрольний розсадник	Control nursery	a nursery in which the correctness of elite plant selection based on productivity components in preceding nurseries is verified by assessing the

Термін українською	Термін англійською	Визначення англійською
		yield performance of their progeny on small plots.
Конфігурація мутацій, або мутаційний профіль	Mutational configuration, or mutational profile	a description of the nature and distribution of mutations within a genome. The mutational configuration encompasses types of mutations (e.g., base substitutions, insertions, deletions), their frequency, genomic position, and effect on gene function. In cis configuration, both mutations are located on the same chromosome. In trans configuration, the mutations are situated on opposite (homologous) chromosomes.
Конформація ДНК	DNA conformation	the various spatial arrangements of a DNA molecule arising from changes in the relative orientation of its parts through internal rotation of individual segments without breakage of chemical bonds.
Коректорські властивості ДНК-полімераз	Proofreading properties of DNA polymerases	the removal of nucleotides erroneously incorporated into the growing DNA strand of E. coli during replication.
Корекція	Correction	the rectification of an error introduced during protein or nucleic acid synthesis. A characteristic feature of this process is the verification of each component following its incorporation into the polymer chain.
Кореляція	Correlation	an interdependence between individual parts and traits of an organism, manifested in the fact that a change in one trait leads to a correlative change in another. A statistical method enabling determination of whether a relationship exists between the variables under investigation.

Термін українською	Термін англійською	Визначення англійською
Корепресор	Corepressor	a small molecule that activates the transcriptional repression mechanism by binding to a regulatory protein.
Корова часточка	Core particle	the minimal nucleosome; a stable unit of DNA packaging formed during nucleosome assembly, comprising 146 bp and a core histone octamer. Core particles are resistant to nuclease digestion under certain conditions.
Корончаті гали	Crown galls	tumorous outgrowths formed on the stems and leaves of many dicotyledonous plants following infection by Agrobacterium tumefaciens, which harbors the Ti plasmid. This represents a natural example of genetic transformation of plant cells.
Космополіти	Cosmopolites	species distributed across virtually the entire globe within their characteristic habitat type.
Креод	Creode	the principal canalized developmental trajectory that attracts adjacent trajectories and leads to the formation of the phenotype normal for a population or line (the «wild type» or standard expression of a «mutation»).
Крис-крос успадкування, або хрест-навхрест	Criss-cross inheritance	since the maternal X chromosome is transmitted to both sons and daughters, while the single X chromosome of the heterogametic father is passed only to daughters, traits determined by X-linked genes are inherited in a criss-cross pattern in certain cross directions – that is, from father to daughters and from mother to sons.
Критерій відповідності хі-квадрат (χ^2)	Chi-square goodness-of-fit test (χ^2)	a method of statistical evaluation of hybridological analysis that allows assessment of the concordance between observed and theoretically expected segregation ratios.

Термін українською	Термін англійською	Визначення англійською
Критерій Фішера (F)	Fisher's criterion (F-test)	a criterion for assessing the significance of the individual or combined effect of studied factors on the final outcome.
Критичні періоди вегетації	Critical periods of vegetation	periods during the growing season when plants either exhibit a particularly high demand for a specific vital factor or respond adversely to it.
Кросбридинг	Crossbreeding	the mating of animals of different breeds. With respect to plants, crossbreeding, or xenogamy, refers to cross-pollination within a species, in which pollen from flowers of other plants of the same species is deposited on the pistil stigma.
Кросинговер	Crossing-over	the phenomenon of reciprocal exchange of genes and identical segments between homologous chromosomes during prophase I of meiosis. Cytologically, crossing-over is detectable at the diplonema stage, when bivalents begin to separate and a chiasma is observed at the point of chromosomal interchange. Chromosomes that have undergone crossing-over are termed crossover chromosomes, while those without interchange are non-crossover chromosomes. Crossing-over disrupts gene linkage, thereby generating new gene and trait combinations in hybrids, which is of great significance for evolution and plant breeding. Somatic crossing-over, occurring during mitotic division of somatic cells, is also recognized.
Кросинговер гоніальний	Gonial crossing-over	the exchange of fragments between chromatids of homologous chromosomes in cells of generative tissues during their proliferative phase, i.e., during mitotic divisions.
Кросинговер індукований	Induced crossing-over	an alteration in the frequency of chromosomal exchange under the influence of environmental

Термін українською	Термін англійською	Визначення англійською
		factors, including various types of radiation or chemical agents.
Кросинговер мейотичний	Meiotic crossing-over	chromosomal exchange occurring during prophase I of meiosis.
Кросинговер мітотичний, або соматичний	Mitotic, or somatic crossing-over	the exchange of fragments between chromatids of homologous chromosomes during mitosis in somatic cells.
Кросинговер множинний	Multiple crossing-over	crossing-over occurring simultaneously at several locations within the same pair of homologous chromosomes.
Кросинговер нерівний	Unequal crossing-over	crossing-over in which breaks occur not at strictly identical but at different positions on non-sister homologous chromatids, resulting in the exchange of unequal-sized fragments between those chromatids.
Кросинговер подвійний	Double crossing-over	crossing-over occurring at two locations within the same pair of homologous chromosomes.
Кросинговер рівний	Equal crossing-over	crossing-over in which breaks in the chromatids of homologous chromosomes occur at identical, corresponding positions.
Кросоверні гамети	Crossover gametes	gametes formed from chromosomes that participated in crossing-over.
Ксенії	Xenia	the expression of paternal traits in hybrid seed and fruits. Most commonly observed in the endosperm. The genetic basis of xenia is associated with the phenomenon of dominance and double fertilization. For example, in maize, yellow endosperm color is dominant over white. If female flowers of a white-grained variety are pollinated with pollen from a yellow-grained variety, the endosperm – although developing on a white-grained plant – will display yellow or pale yellow coloration in all or part of the seeds, because the sperm

Термін українською	Термін англійською	Визначення англійською
		nuclei carry the dominant allele controlling yellow endosperm pigmentation, the expression of which is determined following fusion of the sperm nucleus with the central nucleus of the embryo sac from which the endosperm is derived.
Ксенійність у кукурудзи	Xenia in maize	the phenomenon whereby traits of the paternal maize form are expressed in the kernels of the maternal form in the year of pollination. Xeniaic kernels are hybrid in nature but possess the specific feature that the hybrid character of the progeny is manifested in the year of crossing. Xenia for kernel color is most frequently observed in dent (yellow-grained and white-grained) and white-grained flint maize.
Ксеноморфізм	Xeromorphism	the totality of morphological and anatomical traits arising in plants as adaptations to arid conditions, including reduction of total leaf surface area, dense trichome coverage on leaves and stems, sunken stomata, dense venation, and epicuticular wax deposition. Features of integumentary tissue structure and morphological adaptations result in reduced transpiration and more economical water use by plants under conditions of acute water deficit.
Культиген	Cultigen (cultivated species)	a species created as a result of human activity.
Л		
Лабільність	Lability	the property of a tissue to reproduce without alteration the frequency of rhythmic stimulations.

Термін українською	Термін англійською	Визначення англійською
Лабораторний дослідний зразок	Laboratory experimental sample	a defined quantity of seed or plant parts (vegetative and generative organs) of a given variety, collected from experimental plots, or, in cases provided for by specific methodologies for certain botanical taxa, from a research sample, for the purpose of conducting laboratory investigations.
Лабораторний зразок	Laboratory sample	a seed or plant material sample isolated from a control sample and designated for laboratory examination (testing).
Лабораторний сортовий контроль	Laboratory varietal control	the determination of the affiliation of seed under investigation to a specific variety or hybrid, and assessment of the degree of varietal purity (percentage content of the principal variety or hybrid).
Лайонізація	Lyonization	the process of heterochromatinization and functional inactivation of one X chromosome in female mammals, constituting the mechanism of dosage compensation for X-linked genes.
Ламаркізм	Lamarckism	the theory of evolution of the organic world formulated by J.-B. Lamarck, explaining speciation and the transformation of living organisms under the influence of environmental conditions. According to Lamarck, the simplest life forms arose and continue to arise through spontaneous generation from inorganic matter. The further development of the organic world, in his conception, proceeds through gradation – a stepwise increase in organismal complexity. Lamarck attributed the driving and directing force of evolution to a transcendent inner tendency of nature toward progress. He nevertheless held that under the constant

Термін українською	Термін англійською	Визначення англійською
		influence of environmental conditions, organisms undergo adaptive modifications accompanied by speciation that disturbs the regularity of gradation. Analysis of the principal tenets of Lamarckism reveals that they are grounded in mechanistic and teleological premises.
Ланцюги живлення	Food chains	the relationships among organisms through which the transformation of matter and energy occurs within an ecosystem.
Латентна інфекція	Latent infection	a plant disease in which external symptoms of manifestation are absent.
Латентність	Latency	the absence of phenotypic expression of a gene present in the genotype.
Легітимне запилення	Legitimate pollination	the normal mode of pollination in heterostylous plants, in which pollen from long-styled flowers is deposited on the stigma of short-styled flowers and vice versa.
Легоглобін	Leghemoglobin	a complex protein responsible for the red coloration of root nodules in leguminous plants.
Легумін	Legumin	a storage globular protein of legume seeds.
Лейкопласти	Leucoplasts	colorless plastids of plant cells, differing in form and function.
Лептонема	Leptonema	the first stage of prophase I of meiosis (the thin-thread stage). As a result of condensation and contraction, chromosomes in the nucleus begin to appear as thin chromatin threads bearing chromomeres, their number corresponding to the somatic chromosome number. In early leptonema, chromatin threads are sometimes randomly distributed throughout the nucleus. By the end of leptonema they become polarized

Термін українською	Термін англійською	Визначення англійською
		and oriented toward one pole, forming the so-called bouquet configuration.
Летальний ген	Lethal gene	a gene that blocks normal development of gametes, zygotes, or adult organisms, causing their death.
Летальні умови	Lethal conditions	extreme conditions capable of causing complete disruption of the most vital biological functions of an organism, resulting in its death.
Летальність генетична	Genetic lethality	the death of an organism (at any stage of development prior to reaching sexual maturity) under the influence of various lethal genetic factors.
Липкий кінець	Sticky end	a free single-stranded end of a double-stranded DNA molecule, complementary to a single-stranded end belonging to the same or another DNA molecule.
Листкова пластинка	Leaf blade	the principal part of the leaf in the majority of higher plants.
Лігаза	Ligase	an enzyme that seals breaks in a DNA molecule by forming covalent bonds between 5′ and 3′ termini.
Лігнін	Lignin	a natural polymer containing branched aromatic alcohols; a constituent of wood and a raw material for the microbiological industry. Lignin impregnates the plant cell wall and causes its lignification.
Лігування	Ligation	a method by which foreign DNA is inserted between the two ends of plasmid DNA using the enzyme ligase. Also, the process of joining two linear nucleic acid molecules via phosphodiester bonds with the participation of ligase.
Лігула	Ligule	a membranous outgrowth located at the base of the leaf blade in wheat, rye, and related species.

Термін українською	Термін англійською	Визначення англійською
Лідируючий дочірній ланцюг	Leading strand	the newly synthesized strand produced continuously in the direction of replication fork progression.
Лізин	Lysine	one of the 20 amino acids incorporated into proteins; classified as an essential amino acid.
Лізис	Lysis	the disruption and dissolution of cells through the action of enzymes or other agents with lytic activity.
Лізис мікроорганізмів	Microbial lysis	the dissolution of bacteria under the influence of certain physicochemical and biological factors, involving destruction of the bacterial cell wall followed by release of cytoplasmic contents into the external environment.
Лізогенізуючі бактеріофаги	Lysogenizing bacteriophages	bacteriophages capable of integrating into the bacterial chromosome and persisting there in an inactive state without causing lysis of the host cell.
Лізогенія	Lysogeny	the genetically determined capacity of bacteria to lyse with release of bacteriophage after several generations following direct infection. Lysogeny is conditioned by the integration of the genome of a temperate bacteriophage into the bacterial chromosome. Temperate bacteriophages are defined as bacteriophages that typically cause abortive lysogenic infection resulting from integration of the bacterial and lysogenic phage genomes.
Лізогенні бактерії	Lysogenic bacteria	bacteria harboring a prophage, thereby acquiring a number of novel characteristics.
Лізосома	Lysosome	an organelle of animal and plant cells involved in intracellular acid digestion (phagocytosis), as well as in autolytic and necrotic processes.
Лікарські рослини	Medicinal plants	wild and cultivated plants or their parts (seeds, buds, flowers, fruits, stems, rhizomes) used in

Термін українською	Термін англійською	Визначення англійською
		medicine for the preparation of pharmaceutical preparations.
Ліміти	Limits	the minimum and maximum values (variants) of a variation series.
Лімітуючі чинники	Limiting factors	the deficiency or excess of a given factor that restricts the possibility of normal existence of a species or population. Light, heat, water, chemical substances, and environmental pollution may all serve as limiting factors.
Лінія	Line	the progeny of a single homozygous self-pollinating plant reproduced by sexual means.
Лінія материнська	Maternal line	a line serving as the maternal form in the production of heterotic hybrids.
Лінія самозапилена	Inbred line	the progeny of a single cross-pollinating plant obtained through forced self-pollination and selection over several years.
Лінія чоловіча (запилювач)	Paternal line (pollinator)	one of the crossing components used in the production of heterotic hybrids; pollen of the paternal line participates in fertilization.
Лінкер, лінкерна ДНК	Linker, linker DNA	a synthetic oligodeoxyribonucleotide of defined sequence containing one or several recognition sites for restriction endonucleases; also, a DNA segment of variable length connecting two adjacent nucleosomes in euchromatin of eukaryotes.
Ліофільність	Lyophilicity	the capacity of highly dispersed particles of a substance to interact with molecules of a liquid dispersion medium.
Ліофобність	Lyophobicity	the inability of dispersed particles of a substance to interact with molecules of a liquid dispersion medium.

Термін українською	Термін англійською	Визначення англійською
Ліпіди	Lipids	fat-like substances that are cellular constituents playing a defined role in cellular organization and metabolism.
Ліпопротеїди	Lipoproteins	associations of lipids with specific proteins.
Літична інфекція	Lytic infection	phage replication within a cell resulting in lysis.
Літофіти	Lithophytes	plants inhabiting rocky outcrops and stone surfaces.
Ліцензія на насіння	Seed license	a document certifying the right of an enterprise to produce seed for sale over a defined period.
Локальна набута стійкість	Locally acquired resistance	resistance manifested at the site of penetration of an avirulent pathogen; determined by a complex of active resistance mechanisms and exhibiting non-specific action against the pathogen.
Локус	Locus	the position of a given mutation or gene on a genetic map.
Локус хромосоми	Chromosomal locus	the specific region of a chromosome occupied by a particular gene.
Луб	Bast	the secondary phloem of higher plants.
Луб'яні волокна	Bast fibers	elongated cells of the bast (phloem) with tapered ends.
Льононасінницька одиниця	Flax seed production unit	a zone of commercial flax seed production encompassing several adjacent administrative districts with uniform soil and climatic conditions, within which variety replacement, variety renewal, and the cultivation of high-quality flax seed are conducted under the guidance of a flax seed station.
М		
М1 (М2, М3 і т.д.)	M1 (M2, M3, etc.)	notation in experimental mutagenesis designating the generation grown from seed treated with a mutagen.

Термін українською	Термін англійською	Визначення англійською
Макрогаметогенез	Macrogameto-genesis	the process of formation of the female gametophyte and female gamete (egg cell).
Макроеволюція	Macroevolution (from macro- and evolution)	evolutionary transformations leading to the formation of taxa of higher rank than species (genera, families, etc.). The term was introduced by Yu. A. Filipchenko in 1927. It was once considered a qualitatively distinct process; however, according to the prevailing view among contemporary evolutionists, macroevolution possesses no specific mechanisms of its own and is accomplished exclusively through microevolutionary processes, representing their integrated expression. Accumulating microevolutionary processes find external expression in macroevolutionary phenomena.
Макроелементи	Macroelements	inorganic chemical elements required in large quantities for plant growth, including nitrogen, phosphorus, potassium, calcium, magnesium, and sulfur.
Макроергічні зв'язки	High-energy bonds	chemical bonds in compounds storing large amounts of energy.
Макроклімат	Macroclimate	the climate of extensive geographic areas, ranging from a geographic region or landscape to the planet as a whole.
Макромолекули	Macromolecules	molecules of natural substances with high molecular mass.
Макромутації	Macromutations (large mutations)	mutations that substantially alter one or more traits of an organism. They generally affect intraspecific traits, but occasionally give rise to traits unknown within the species, genus, or even family. Until recently, macromutations affecting only intraspecific traits constituted the principal material for plant breeding.

Термін українською	Термін англійською	Визначення англійською
Макроспора	Macrospore	one of the four haploid cells assembled into a tetrad, produced during macrospore genesis.
Макроспорогенез	Macrospore genesis (from macro- and genesis)	the process of formation of large spores (mega- or macrospores) in higher plants. One of the macrospores formed within the ovule gives rise to the embryo sac.
Макрофаги	Macrophages	large immune cells derived from blood monocytes that engulf and digest pathogens (bacteria, viruses), dead cells, and foreign particles (phagocytosis). They are present in virtually all tissues, constituting the first line of defense.
Малі гени стійкості (мінорні гени)	Minor resistance genes	genes exhibiting weak expression of resistance traits.
Маніфестація, неповна пенетрантність і варіююча експресивність	Manifestation, incomplete penetrance, and variable expressivity	the late-onset expression of anomalous traits characteristic of diseases with autosomal dominant inheritance.
Маркер	Marker	a DNA fragment of defined size used for calibration of fragments in an electrophoretic gel.
Маркер генетичний	Genetic marker	(1) an allele whose inheritance can be traced through crosses; used in plant breeding and seed production for selection based on specific traits determined by corresponding genes; (2) a gene that does not directly influence a quantitative trait but is associated with its variability, enabling characterization of its inheritance pattern; (3) a chromosomal locus determining a specific phenotypic trait.
Маркер селективний	Selectable marker	an additional gene encoding antibiotic resistance that is introduced into a vector for subsequent selection of transformants.

Термін українською	Термін англійською	Визначення англійською
		Biochemical (protein-based), immunogenetic, and in vitro methods are also employed.
Маркування	Labeling	a label bearing information about a seed lot as well as a conventional designation (word, text, trademark, symbol, or image) applied directly to seed packaging.
Маркування	Marking	the application to a label of information including the botanical taxon name, variety, lot number, category, generation, year and month of packaging, and other information as required by legislation in the field of seed production and nursery growing.
Масовий добір	Mass selection	a method of plant breeding and seed production in which a large number of superior plants are selected from a source population in the field based on one or more traits. Their seed, following elimination of inferior plants, is combined and sown the following year on a single plot (mass selection without progeny testing), or seed of the best progenies is pooled after evaluation on separate plots – mass selection with progeny testing.
Материнська спадковість	Maternal inheritance	the transmission of traits exclusively through the maternal line, conditioned by cytoplasmic factors or plastids.
Материнське успадкування	Maternal inheritance	the transmission of traits encoded by cytoplasmic (extranuclear) factors – mitochondrial or chloroplast genomes, or long-lived mRNA – that is, traits transmitted to progeny only from the maternal organism.
Материнський ефект	Maternal effect	the determination of cytoplasmic properties of a cell under the control of the maternal genotype.

Термін українською	Термін англійською	Визначення англійською
Маточний посів	Steckling nursery	a plot designated for the multiplication of hybrid crossing components and population varieties to obtain steckling roots.
Маточники	Stecklings	roots, bulbs, and other plant organs grown from seed in the first year of biennial plant life cycles, intended for subsequent planting to produce seed.
Маточні буряки	Steckling beet	beet plants grown for subsequent seed production.
Матрикс (гіалоплазма)	Matrix (hyaloplasm)	in cytology, the fundamental homogeneous or finely granular semi-liquid medium of the cell in which all organelles are suspended. Its most important role is to unite all cellular structures and ensure their interaction.
Матроклінія	Matrocliny	the resemblance of hybrid progeny to the maternal form in reciprocal crosses.
Матураза	Maturase	a splicing enzyme that specifically recognizes canonical dinucleotide sequences essential for recognition of exon-intron boundaries, or the secondary structure arising from base-pairing of the terminal sequences of an intron with at least six types of small nuclear RNA (snRNA).
Мацерація	Maceration	the process of cell separation within plant and animal tissues, occurring as a result of breakdown of the intercellular substance that holds cells together. In cytology, specialized maceration methods are employed in the preparation of cytological specimens.
Маячні рослини	Marker plants	plants of tall-statured crops sown on hybridization plots (most frequently maize) to delineate rows of the maternal and paternal forms.
Мегаспора	Megaspore	a haploid cell of heterosporous higher plants, produced by meiotic division of a

Термін українською	Термін англійською	Визначення англійською
		megasporocyte and serving as the precursor of the female gametophyte.
Мегаспорогенез	Megasporogenesis	same as macrospore genesis.
Мезотрофи	Mesotrophs	plants growing on soils with moderate mineral nutrient content.
Мезофіл	Mesophyll	the principal tissue (parenchyma) of the leaf located between the epidermal layers, whose cells typically contain chloroplasts.
Мезофіти	Mesophytes	plants growing under conditions of moderate moisture supply, intermediate between hygrophytes and xerophytes.
Мейоз	Meiosis	a specialized mode of cell division resulting in the reduction of chromosome number and transition of cells from the diploid to the haploid state. Meiosis was discovered by W. Flemming (1882) in animals; E. Strasburger (1888) described chromosome number reduction in plants. Meiosis consists of two successive cell divisions division I – reductional, and division II – equational, resembling mitosis. Meiosis is preceded by premeiotic interphase, during which DNA replication and chromosome duplication occur. The meiotic cycle proceeds through the following sequential phases interphase → Division I prophase I (leptonema, zygonema, pachynema, diplonema, diakinesis) → metaphase I → anaphase I → telophase I → interkinesis → Division II metaphase II → anaphase II → telophase II. Meiosis yields four daughter cells, each bearing a haploid chromosome complement. Meiosis ensures random independent recombination of genes and their further recombination through crossing-over.

Термін українською	Термін англійською	Визначення англійською
Мейомерія	Meiomery	reduction in chromosome number.
Мейотична поліплоїдія	Meiotic polyploidy	the origin of polyploid zygotes through fusion of unreduced gametes with normal gametes. Fertilization of a diploid (unreduced) egg cell by a haploid sperm produces a zygote with three chromosome sets (2n+1n). Fusion of two unreduced diploid gametes yields a tetrahaploid zygote with four genomes (2n+2n). By the same or analogous mechanisms, cells and organisms of other ploidy levels arise – pentaploids, hexaploids, and others.
Мейотичний ефект	Meiotic effect	certain types of spontaneous mutations in S. cerevisiae arise considerably more frequently during meiosis. This applies to both insertions and deletions of individual base pairs, which may result from imprecise recombination. However, the contribution of recombination to the mutational process is not confined to local errors. A range of mutations may arise from reciprocal and non-reciprocal rearrangements of DNA segments accompanying inversions, translocations, transpositions, and other chromosomal restructuring events.
Мембрани	Membranes	a system of specialized structures that separate the cell from the external environment.
Мембранний потенціал	Membrane potential	the difference in electrical potential across the cell membrane between the cytoplasm and the extracellular fluid.
Мембранний транспорт	Membrane transport	the pathways and mechanisms of substance movement across biological membranes.
Менделізм	Mendelism	the doctrine governing the patterns of trait inheritance in organisms; a branch of genetics based on experimental analysis of hybrids and

Термін українською	Термін англійською	Визначення англійською
		their progeny using the hybridological method proposed by G. Mendel in 1865.
Менделя закони	Mendel's laws	scientific generalizations formulating the principal patterns of inheritance of parental traits by hybrids in crosses. The First Law – the Law of Uniformity of First-Generation Hybrids – states that crossing two genetically pure (homozygous) forms differing in a given trait yields first-generation hybrids (F_1) that are completely uniform both genotypically and phenotypically. Under complete dominance, the phenotype resembles that of one parental form; under incomplete dominance, it is intermediate. The Second Law – the Law of Trait Segregation – states that in the second hybrid generation (F_2), segregation into groups of individuals bearing the parental traits in pure form and hybrid individuals occurs at defined ratios; for example, in monohybrid crosses the ratio is 3 1 by phenotype and 1 2 1 by genotype. The Third Law – the Law of Independent Assortment of Hereditary Traits – states that each pair of alternative traits is expressed independently across generations, resulting in the appearance among progeny of individuals with new (relative to parental) trait combinations at ratios determinable by the formulas $(3\ 1)^n$ by phenotype and $(1\ 2\ 1)^n$ by genotype, where n is the
Меридиплоїди або мерозиготи	Meridiploids, or merozygotes	partial diploids of E. coli formed as a result of sexduction involving genes incorporated into the F factor.
Меристема	Meristem	formative, undifferentiated cells capable of active division from which all permanent tissues of the organism are derived. In plants,

Термін українською	Термін англійською	Визначення англійською
		several meristem types are recognized apical (indeterminate), determinate, and intercalary (located between zones of permanent tissue, e.g., at the base of internodes in grasses).
Метаболізм (обмін речовин)	Metabolism	the totality of processes involving the uptake of environmental substances by a living organism (assimilation), their transformation into its constituent components, and the excretion of final metabolic products (dissimilation).
Метаболіти	Metabolites	products of substance transformation in an organism during the course of metabolism.
Метакінез	Metakinesis	the period of mitotic cell division during which chromosomes migrate to the equator of the cell division spindle.
Метамери	Metameres	a multiplicity of mutually similar parts arranged not around an axis but along it, repeated throughout all or nearly all of the body.
Метаморфоз	Metamorphosis	the transformation of vegetative organs as a consequence of functional change resulting from ecological adaptation.
Метаплазія	Metaplasia	the conversion of one tissue type of an organism into another.
Метастабільний	Metastable	an unstable state (e.g., of a gene allele) or substance that readily transitions into another, more or less stable state.
Метафаза	Metaphase	the second phase of mitotic and meiotic cell division, characterized by maximum chromosome condensation and contraction, with chromosomes aligned at the equatorial plate of the cell.
Метафаза I мейозу	Metaphase I of meiosis	a phase broadly resembling the analogous mitotic phase but distinguished by the fact that tetrads (complexes of four chromatids joined at

Термін українською	Термін англійською	Визначення англійською
		specific sites) migrate to the cell equator, forming the equatorial plate. Unlike mitosis, chromosomal microtubules attach to kinetochores from one side only.
Метафаза II мейозу	Metaphase II of meiosis	a phase in which short microtubules attach to centromeres; bivalent chromosomes align on the equatorial plane and a mitotic spindle forms.
Метафаза мітозу	Metaphase of mitosis	the stage of mitosis during which bivalent chromosomes align at the cell equator in a single plane at equal distances from the nuclear poles.
Метацентрична хромосома	Metacentric chromosome	a chromosome in which the centromere is located at the midpoint, resulting in arms of equal length.
Метилтрансфераза	Methyltransferase	a specialized enzyme in bacteria that transfers a methyl or ethyl group from a base alkylated by chemical compounds to one of its own cysteine residues.
Метилювання ДНК	DNA methylation	a reversible covalent modification of DNA structure involving the addition of a methyl group ($–CH_3$) to the carbon of certain nitrogenous bases. DNA methylation occurs in virtually all organisms – from bacteria to mammals – and participates in the regulation of virtually all molecular-genetic processes transcription, replication, recombination, transposition of mobile elements, repair, genetic imprinting, X chromosome inactivation in sex determination, and the formation of systems of epigenetic inheritance.
Метіонін	Methionine	one of the 20 amino acids incorporated into proteins; an essential sulfur-containing amino acid that participates in methylation reactions.

Термін українською	Термін англійською	Визначення англійською
Метод близнюковий	Twin method	a method used to elucidate the hereditary determination of traits under investigation. The method is based on the fact that monozygotic twins develop from a single zygote, are genetically identical, and therefore any phenotypic differences between them are attributable to environmental influences.
Метод Вайнберга (метод сибсів)	Weinberg method (sib method)	used for pedigree analysis taking into account the possible occurrence of phenocopies of mutations in humans under the influence of exogenous factors. The method involves pedigree analysis encompassing all families with children who are carriers of the trait, with determination of the ratio of siblings of the proband who carry the trait to all children in the family.
Метод випадкового розрізання геному рестриктазами	Random restriction cloning method	the cloning of an entire genome in the form of randomly generated fragments.
Метод відбитків	Footprinting method	used to identify regions of a DNA molecule bound to specific proteins. The method is based on the principle that proteins protect the DNA sequence from nuclease digestion at binding sites.
Метод гібридизації нуклеїнових кислот	Nucleic acid hybridization method	used to compare fragments and identify overlapping regions among them. For example, fragments of 2100 and 2500 bp containing a 1900 bp overlapping region will hybridize with one another if first subjected to thermal denaturation followed by renaturation conditions (lowering of temperature).
Метод збагачування або концентрування мутагенів	Mutant enrichment method	based on the principle that the antibiotic penicillin kills bacteria only when they are in an actively growing state, since penicillin blocks bacterial cell wall synthesis. This

Термін українською	Термін англійською	Визначення англійською
		method enables direct selection of auxotrophic mutants.
Метод збалансованих леталей або метод CuL/Pm	Balanced lethal method (CuL/Pm method)	used to detect recessive lethal mutations and mutations with visible phenotypic expression in the autosomes of D. melanogaster.
Метод зизограм	Zymogram method	the specific staining of multiple molecular forms of enzymes to determine genetic heterogeneity by electrophoretic analysis of tissue extracts.
Метод індексації вічок бульб	Tuber eye indexing method	applied to detect virus infection of tubers during winter storage, incorporating serological and indicator analyses.
Метод культури апікальних (верхівкових) меристем	Apical meristem culture method	used for the elimination of viruses from potato. Founded in 1949 by Limasset and Cornuet on the basis that viral particle concentration decreases toward the plant growth apex. The meristematic zone of dividing cells is free from, or can be freed (by thermotherapy or chemotherapy) from, viral infection when cultivated under artificial conditions on nutrient medium.
Метод Максама-Гілберта	Maxam-Gilbert method	one approach for generating defined sets of DNA fragments, in which DNA is chemically cleaved into fragments sharing a fixed identical terminus at one end while the other end increases by one nucleotide from fragment to fragment.
Метод Мединця В.Д.	Medinets method	a method for indirect assessment of winter hardiness in winter wheat varieties and lines based on resistance to artificial delay in resumption of spring vegetation.

Термін українською	Термін англійською	Визначення англійською
Метод Меллер-5 або М-5	Muller-5 method (M-5)	a method used for analyzing the frequency of recessive lethal mutations in the X chromosome.
Метод ментора	Mentor method	a method of directed modification of vegetative development in fruit trees by grafting, in which selection of a specific rootstock (mentor) influences the scion and vice versa; successfully employed by I. V. Michurin.
Метод мічених атомів	Radiotracer method	the investigation of metabolic processes, movement, and distribution using labeled atoms.
Метод ошпарювання насіння	Seed scalding method	treatment of seeds with boiling water; applied in the determination of hull integrity in sunflower seeds.
Метод педигрі	Pedigree method	based on repeated individual selection and progeny testing of all selected plants and lines in each generation. Hybrid F_1 plants are harvested individually, and seed from each is sown as separate rows in F_2 on a common plot. In F_2 the first selection of founder plants is made, whose seed is sown on separate plots. Selection and progeny comparison continue until a high degree of homozygosity is achieved, generally through F_5.
Метод пептидних карт або двомірний електрофорез	Peptide mapping method, or two-dimensional electrophoresis (two-dimensional chromatography, fingerprinting method)	used in combination with amino acid composition analysis of individual peptides, enabling not only the detection but also the precise localization of a mutation.

Термін українською	Термін англійською	Визначення англійською
Метод переривчастої кон'югації	Interrupted mating method	used to determine the order of genes on the circular chromosome of E. coli, based on artificially interrupting bacterial conjugation at various time points after its initiation, followed by analysis of recombinant progeny of the recipient.
Метод пересіву	Bulk method	applied in work with hybrid populations of self-pollinating plants; consists of sowing hybrid seed of each combination, beginning with F_1, as bulk populations without division into families or lines for five or six years, with selection of constant forms commencing from F_5 or F_6. Also known as the mass population method, population method, ramsch method, or Akarp method.
Метод половинок (резервів)	Half-and-half method (reserve method)	the use of repeated individual selection in breeding of cross-pollinating crops, in which the harvest from each elite plant is divided into two portions – one sown in a breeding nursery, the other retained as reserve. In the following year, seed from the reserve of plants that showed the best performance in the breeding nursery is sown on isolated plots.
Метод популяційний	Population method	facilitates the acquisition of information about the degree of heterozygosity and polymorphism of populations and reveals differences in the frequencies of individual allelic genes among different populations.
Метод рослин-індикаторів	Indicator plant method	based on the capacity of certain plant species to react to infection by specific viruses affecting potato.
Метод селективних середовищ	Selective medium method	used for studying reverse and suppressor biochemical mutations involving reversion from an auxotrophic to a prototrophic phenotype. A selective medium is one that

Термін українською	Термін англійською	Визначення англійською
		enables the detection of a specific mutant; for example, plating an auxotrophic E. coli culture requiring biotin onto medium lacking this vitamin allows selection of cells that have regained the ability to synthesize biotin through reverse or suppressor mutations.
Метод Сенгера	Sanger method	used to generate defined sets of DNA fragments; the method consists in synthesizing in vitro on a DNA template fragments of the required length and composition, with synthesis specifically terminated at a given base.
Метод серології	Serological method	based on the antigenic properties of viruses; applied to detect potato infection by various viruses (X, S, M, Y, A, F).
Метод схрещування	Crossing method	consists in the hybridization of parental forms and constitutes the basis of hybridological analysis.
Метод CLB	CLB method	a method for detecting and quantifying recessive sex-linked lethal mutations in Drosophila, based on the use of heterozygous females of the CLB line, one of whose X chromosomes carries an inversion (C) preventing crossing-over with the homologous X chromosome, a recessive lethal factor (L), and the dominant Bar gene (B) for bar-shaped eyes.
Метод термотерапії бульб картоплі	Potato tuber thermotherapy method	used to eliminate potato leafroll virus from tubers by maintaining them at 36°C for 20 days.
Метод хіміотерапії	Chemotherapy method	the use of compounds that slow or suppress viral replication within cells or impede viral movement from internal tissues, with the aim

Термін українською	Термін англійською	Визначення англійською
		of enlarging the virus-free zone in infected potato plants.
Метод цитогенетичний	Cytogenetic method	used in the diagnosis of numerous hereditary diseases attributable to aneuploidy and other chromosomal aberrations.
Метод CyL/Pm або збалансованих леталей	CyL/Pm method, or balanced lethal method	used to detect recessive lethal mutations with visible phenotypic expression in the autosomes.
Методична витриманість досліду	Methodological rigor of an experiment	strict adherence to all methodological requirements, both general and variety-specific, at all stages of planning, establishment, crop management, observation, recording, harvesting, and statistical processing of the obtained data.
Метричні ознаки	Metric traits	measurable traits required for quantitative comparison of individuals and their groups, such as length, mass, and related parameters.
Механізм передачі збудника інфекції	Pathogen transmission mechanism	a structural component of the epizootic process that ensures the persistence of a pathogen in nature, associated with the capacity of a pathogenic organism to move from the source of infection to a susceptible host. Several principal transmission mechanisms are recognized aerogenic – entry into the host organism via air; alimentary – oral ingestion of the infectious agent by the host; transmissive – transmission via living vectors (parasites or predators); transovum and transovarial transmission.
Механізми стійкості рослин проти хвороб	Plant disease resistance mechanisms	mechanisms that impede germination and development of the pathogen; disease avoidance; restricted colonization; resistance to sporulation; and tolerance.

Термін українською	Термін англійською	Визначення англійською
Механічне засмічення сорту, гібрида	Mechanical contamination of a variety or hybrid	contamination of a variety or hybrid with seed of other varieties, hybrids, or plant species during threshing, processing, storage, transportation, sowing, or by other means.
Механічні тканини	Mechanical tissues	plant tissues providing structural strength and resistance to deformation.
Міграція або потік генів	Gene migration, or gene flow	the incorporation of genotypes from one population into another, resulting in the introduction of new, previously absent alleles and leading to changes in allele frequencies within the recipient population. Gene flow is a genetically effective factor capable of altering the genotypic structure of a population.
Міграція галузок	Branch migration	the capacity of half-chiasmata to migrate the crossover point of recombinant strands along a paired molecule in both possible directions, analogously to a zipper. Branch migration extends the region of base-pairing between DNA strands belonging to different molecules and substantially expands the heteroduplex region.
Мігруючі (транспозибельні) генетичні елементи (МГЕ)	Transposable (mobile) genetic elements (MGE)	genetic elements capable of altering their location within the genomes of bacteria and eukaryotes.
Міжалельна комплементація	Interallelic complementation	a type of interaction between allelic genes observed in compound heterozygotes when the product of a mutant gene serves as a polypeptide that is a subunit of a homomultimeric protein.
Міжклітинники	Intercellular spaces	cavities between cells in plant tissues, filled with air, resins, essential oils, or other substances.

Термін українською	Термін англійською	Визначення англійською
Міжлінійна гібридизація	Interline hybridization	crossing of two or more successively recruited hereditarily distinct lines.
Міжлінійний гібрид	Interline hybrid	a hybrid obtained by crossing constant inbred lines.
Міжсортове схрещування рослин	Intervariety crossing	crossing conducted between different varieties of the same species, with the aim of obtaining source material for the breeding process and for exploiting the heterosis effect in seed production.
Мікоз рослин	Plant mycosis	a disease of plants caused by fungi.
Міколітична бактерія	Mycolytic bacterium	a bacterium capable of degrading fungal mycelium.
Мікоплазмовий організм	Mycoplasma organism	an organism closely related to bacterial forms, lacking a rigid cell wall. Unlike viruses, it possesses a cellular organization, both forms of nucleic acid, and is capable of multiplication on artificial nutrient media.
Мікориза	Mycorrhiza	a symbiotic association between fungal mycelium and the roots of higher plants.
Мікотоксикоз	Mycotoxicosis	poisoning caused by the ingestion of fungal toxins.
Мікотрофи	Mycotrophs	plants that grow and develop normally upon formation of mycorrhiza.
Мікрогаметогенез	Microgametogenesis	the process of formation of the male gametophyte and male gametes from the microspore.
Мікроделеції	Microdeletions	rearrangements causing the loss of a small number of nucleotides; not always detectable by cytological methods.
Мікроеволюція	Microevolution	the totality of evolutionary processes occurring within populations of a species, leading to changes in the gene pool of those populations and the formation of new species. The term was

Термін українською	Термін англійською	Визначення англійською
		introduced by N. V. Timofeev-Ressovsky (1938). Microevolution proceeds on the basis of mutational variability under the control of natural selection.
Мікроелементи	Microelements	inorganic chemical elements required by plants in small quantities, including iron, copper, manganese, zinc, boron, and molybdenum.
Мікроклімат	Microclimate	local environmental factors including slope, valley, riparian terrace, shelterbelts, forest stands, and similar features.
Мікроклітини	Microcells	cells obtained by cultivation in the presence of colcemid, under which conditions the cell nucleus fragments into several micronuclei, each containing one or a few chromosomes.
Мікропіле	Micropyle	the aperture at the apex of the ovule through which the pollen tube penetrates in flowering plants.
Мікропрепарат постійний	Permanent microscopic preparation	a preparation that may be preserved for years or even decades. In its preparation, the specimen applied to a glass slide must be dehydrated and stained, mounted in a specialized transparent solid medium (typically Canada balsam), and covered with a coverslip.
Мікропрепарат тимчасовий	Temporary microscopic preparation	a preparation that may be examined for several hours after preparation. The specimen applied to a glass slide is mounted in a liquid medium (water, physiological saline, or glycerin-gelatin). Temporary preparations are widely used in laboratory diagnostics and for instructional purposes.
Мікросателіти	Microsatellites	short, partially homologous nucleotide sequences distributed throughout the genome and frequently flanking specific significant sequences. The number of repeats at particular

Термін українською	Термін англійською	Визначення англійською
		chromosomal loci may vary even among individuals of the same species, enabling determination of the degree of relatedness between individuals and their predisposition to hereditary diseases.
Мікроскоп електронний	Electron microscope	a microscope in which, instead of visible light, a beam of electrons generated by a cathode tube (electron gun) inside the microscope column under conditions of high voltage and vacuum is used for specimen examination. Focusing of the electron beam is accomplished by electromagnetic fields – lenses performing the roles of condenser, objective, and projector (eyepiece).
Мікроскоп світлооптичний (світловий)	Light (optical) microscope	a microscope operating with visible light; the principal instrument for cytological, histological, and embryological investigations. The light microscope comprises two systems – optical and mechanical. The optical system includes a mirror, a condenser with diaphragm and filter system, an objective, an eyepiece, and a binocular attachment. The mechanical framework consists of a stand, coarse and fine adjustment screws, a condenser adjustment screw, a mechanical stage with specimen mover, a revolving nosepiece carrying the objectives, and a body tube.
Мікроскопія люмінесцентна (флуоресцентна)	Luminescence (fluorescence) microscopy	a method for obtaining magnified images using luminescence – the emission of light by excited atoms and molecules of the specimen. In fluorescence microscopy, the specimen is irradiated with light of higher frequency and the image is collected at a lower frequency; specimen emission is passed through a filter that blocks the excitation frequency. One type

Термін українською	Термін англійською	Визначення англійською
		of fluorescence microscopy is confocal microscopy, which allows imaging at defined depths within a specimen. A simpler surface-imaging approach is termed epifluorescence microscopy.
Мікроскопія темного поля	Dark-field microscopy	a method of image formation in optical and electron microscopes in which only the scattered beam reaches the objective while the intense direct beam is blocked. Consequently, specimen images appear bright against a dark background. Blocking the primary beam enhances image contrast in the absence of intense direct illumination, though the use of a less focused scattered beam reduces resolution. A limitation of dark-field microscopy is that the scattered beam may be insufficiently intense, requiring high-intensity beams that may damage the specimen.
Мікроскопія ультрафіолетова	Ultraviolet microscopy	a method for examining micro-objects using ultraviolet radiation. It enables improved microscopic resolution and image contrast, and extends the scope of microscopic investigation by exploiting the ability of particles that are transparent in visible light – including many cellular constituents – to absorb ultraviolet radiation of specific wavelengths, thereby becoming distinguishable in the ultraviolet image. Images are recorded by photography, electro-optical conversion, or a luminescent screen. Applied in biology, medicine (particularly cytochemistry), mineralogy, and related fields.

Термін українською	Термін англійською	Визначення англійською
Мікроскопія фазово-контрастна	Phase-contrast microscopy	a method of image formation in optical microscopes in which phase shifts of the electromagnetic wave are transformed into intensity contrast. A specialized phase-contrast device is employed, comprising a set of phase objectives distinguished by an annular phase plate, a condenser, and a set of annular diaphragms. As a light beam passes through this device, an additional phase shift is introduced; the resulting interaction of beams of differing amplitude produces a high-contrast light-and-dark image of the specimen. Phase-contrast microscopy was invented by Frits Zernike, for which he was awarded the Nobel Prize in 1953. It is particularly widely used in biology as it does not require prior staining of cells, which might otherwise destroy them.
Мікроспорангій	Microsporangium	the pollen sac of flowering plants, in which microspores are produced through microsporogenesis and subsequently develop into pollen.
Мікроспори	Microspores	haploid cells produced by meiosis from microspore mother cells; microspores develop into pollen grains.
Мікроспорогенез	Micro-sporogenesis	the process of microspore formation within the microsporangia of angiosperm anthers. Archesporial cells give rise to microspore mother cells, each of which, following two successive meiotic divisions (reductional and equational), produces four microspores with a haploid chromosome complement.
Мікроспороцит	Microsporocyte	a microspore mother cell derived from archesporial cells of anther microsporangia.
Мікрофлора	Microflora	the totality of fungal species inhabiting a given territory.

Термін українською	Термін англійською	Визначення англійською
Мікрофлора насіння ендофітна (фітопатогенна)	Endophytic (phytopathogenic) seed microflora	microorganisms capable of penetrating into internal plant tissues and developing therein, causing disease in seed and plants grown from it.
Мікрофлора насіння епіфітна	Epiphytic seed microflora	microorganisms colonizing the seed surface and subsisting on metabolic products of plant cells.
Міксоплоїд	Mixoploid	an organism possessing mixed cells or tissues with differing chromosome numbers; a particular case of chimerism.
Міксоплоїдія, полісоматія	Mixoploidy, polysomaty	a form of cellular mosaicism characterized by the simultaneous presence of diploid, polyploid, aneuploid, and other cells with varying chromosome numbers within a single individual or a single tissue (excluding the normal coexistence of somatic and haploid generative cells within one organism).
Мінісателіти	Minisatellites	tandem (head-to-tail) repeats with a repeat motif of 10–64 nucleotides; one form of satellite DNA.
Мінливість	Variability	the property of living organisms to acquire new traits or lose existing ones under the influence of various factors. Several types of variability are distinguished by their mechanisms and nature heritable, or genotypic variability, conditioned by genotypic changes that are preserved over successive generations – its basis may be mutations (mutational variability) or recombinations (combinatorial variability); non-heritable, or modification variability, reflecting phenotypic changes induced by environmental factors that do not alter the structure of the genetic material; and ontogenetic variability, reflecting the realization of regular changes in the course of

Термін українською	Термін англійською	Визначення англійською
		individual organismal development (morphogenesis) or cellular development (differentiation), in which the genotype remains unchanged although the ontogenetic changes are genotypically determined. Variability is one of the major factors of evolution; genotypic variability underlies practical plant breeding.
Мінливість генофонду	Gene pool variability	the frequency of genes or genotype frequencies.
Мінливість комбінаційна	Combinatorial variability	heritable variability conditioned by genotypic changes resulting from the independent assortment of chromosomes in meiosis and their random combination in the zygote, generating diversity of hybrid forms, and from processes of genetic recombination producing new combinations of allelic genes in chromosomes. Under combinatorial variability, the structure of chromosomes and discrete units of heredity is unchanged – only combinations of genes and their genomic interactions vary.
Мінливість мутаційна	Mutational variability	the result of the emergence of new gene alleles and more substantial rearrangements in the genetic apparatus of cells, which may occur at the chromosomal and other hereditary information carrier levels.
Мінливість полігенна	Polygenic variability	variability arising from segregation of quantitative trait loci.
Мінливість сомаклональна	Somaclonal variability	variability conditioned by genetic disturbances in callus tissue of plants. During in vitro cultivation of plant cells, gene mutations, chromosomal rearrangements, aneuploidy, and related phenomena are frequently observed. It is also known that individual shoots

Термін українською	Термін англійською	Визначення англійською
		regenerating from callus tissue may be polyploid.
Місцевий сорт	Landrace	a variety of folk breeding that has been cultivated in a specific locality over an extended period.
Мітоз	Mitosis	the most widespread mode of division of animal and plant cells. The biological significance of mitosis lies in the strictly equal distribution of reduplicated chromosomes between daughter cells, ensuring the production of genetically equivalent cells and the maintenance of hereditary continuity across successive cell generations. During mitosis, a series of sequential changes occur in the nucleus and cytoplasm. Four phases of mitosis are distinguished prophase, metaphase, anaphase, and telophase. The period between two successive mitoses is termed interphase.
Мітотичний апарат	Mitotic apparatus	the totality of structures constituting the achromatic figure of mitosis, comprising the astrosphere surrounding the centriole and the mitotic spindle (division spindle). The mitotic apparatus is formed during nuclear division, specifically during late prophase or early metaphase.
Мітотичний індекс	Mitotic index	an indicator characterizing the mitotic activity of a tissue, determined as the ratio of cells in mitotic division to the total number of cells examined. The mitotic index is expressed in per mille (‰), i.e., as the number of mitoses per 1000 cells of the tissue.
Мітотичний цикл	Mitotic cycle	the developmental cycle of an individual cell, comprising interphase and mitosis.

Термін українською	Термін англійською	Визначення англійською
Мітохондріальні гени	Mitochondrial genes	genes localized in mitochondria, associated with the inheritance of certain impairments of respiratory enzyme function in yeast and with yeast cell resistance and sensitivity to antibiotics. For yeast mitochondrial genes, linkage has been established and the possibility of recombination demonstrated.
Мітохондрії	Mitochondria	obligate organelles of every cell of all multicellular and unicellular organisms. Mitochondrial size and shape vary considerably spherical mitochondria range from 0.2 to 1 μm in diameter; rod-shaped mitochondria may reach 7 μm in length; and filamentous forms may extend to 20 μm. Young embryonic cells contain more mitochondria than aging cells. Mitochondria are responsible for the production, accumulation, and distribution of energy within cells. Their universal components include DNA and RNA, indicating the presence of an autonomous genetic system.
Мічені атоми	Labeled atoms	atoms differing from atoms of the same chemical element in their properties – either radioactivity or mass.
Множинна дія гена	Pleiotropy	the capacity of a single gene to influence the formation of several traits of an organism.
Множинний сайт клонування (MCS)	Multiple cloning site (MCS)	an extended region of a plasmid that allows the plasmid to be cleaved simultaneously by two different restriction enzymes (e.g., EcoRI and BamHI), enabling insertion and cloning of a foreign DNA fragment with two different ends (an EcoRI end and a BamHI end). This approach is termed directional or forced cloning, since foreign DNA is inserted into the vector in only one fully predictable orientation.

Термін українською	Термін англійською	Визначення англійською
Множинні алелі	Multiple alleles	the occurrence in individuals of a given species of more than two alleles for a specific locus; a series of alleles of a single gene arising through mutations at the same chromosomal locus and influencing the phenotypic expression of the trait.
Мобільні генетичні елементи (МГЕ), або транспозони	Mobile genetic elements (MGE), or transposons	DNA sequences capable of relocating within the genome. They can change their genomic position, potentially leading to diverse consequences including alterations in gene structure or expression. Many types of MGE are recognized, differing in structure, transposition mechanisms, and genomic consequences. Transposition may cause mutations, changes in gene expression, chromosomal rearrangements, and other genetic alterations. DNA transposons move by a «cut-and-paste» or «copy-and-paste» mechanism, in which they are first transcribed into RNA and then reverse-transcribed into DNA, which is inserted at a new genomic location.
Модель сорту	Variety model	a scientific forecast defining what characteristics a variety and the traits of its plants should possess in order, under specific cultivation conditions, to best meet production requirements for a given crop.
Модифікатор	Modifier	a gene that modulates the phenotypic expression of one or more other genes; also, a DNA sequence located upstream (5′) of a promoter that either enhances or reduces the expression of a downstream gene.
Модифікації	Modifications	changes in the external and internal traits of an organism, i.e., its phenotype (leaf shape, organism and organ size, coloration, chemical

Термін українською	Термін англійською	Визначення англійською
		composition, etc.), induced by environmental conditions without alteration of the genetic apparatus. Modifications are not inherited.
Модифікації адаптивні	Adaptive modifications	non-heritable, organism-beneficial changes that facilitate survival under altered environmental conditions. Adaptive modifications represent the response of cells and organisms to environmental changes that have acted upon them persistently throughout evolution. The range of adaptive modifications falls within the norm of reaction determined by the genotype.
Модифікації тривалі	Prolonged modifications	cytoplasmic changes induced by specific external factors that persist across several generations. They are consequences of ontogenetic predetermination of the cytoplasm, i.e., of non-genetic changes; their mechanism remains unknown.
Модифікації-рестрикції	Restriction-modification systems	systems that protect prokaryotic cells from foreign genetic information.
Модифікаційна мінливість	Modification variability	non-heritable phenotypic variability expressed as the norm of reaction of the genotype to changes in the conditions under which organismal development occurs.
Мозаїки або химери	Mosaics or chimeras	individuals carrying sectors of mutant tissue. In diploid organisms, a recessive somatic mutation is expressed only in the homozygous or hemizygous condition.
Мозаїцизм	Mosaicism	the local proliferation of mutant cells at their sites of origin. An example is the simultaneous presence of red and white facets in the eyes of mutant male Drosophila, attributable to the occurrence of a recessive mutation in the X

Термін українською	Термін англійською	Визначення англійською
		chromosome of individual cells during the development of imaginal discs. This mosaicism is not observed in females because they carry two X chromosomes and the recessive allele (w) is masked by the dominant allele (w^+).
Мозаїчні гени	Mosaic genes	genes consisting of a defined sequence of exons – which encode the structure of the final gene product and are represented in mature RNA – and introns, which are transcribed but absent from mature RNA. Initially, an RNA copy (transcript) is read from the DNA molecule whose nucleotide sequence fully corresponds to the primary structure of one DNA strand. This is, however, only an RNA precursor that does not directly participate in protein synthesis. Mature RNA is produced only after removal of all introns from the precursor.
Молекулярна біологія	Molecular biology	the study of the fundamental properties and manifestations of life at the molecular level. The most important areas of molecular biology include investigation of the structural and functional organization of the cellular genetic apparatus, the mechanisms of hereditary information expression, the molecular mechanisms of virus-cell interactions, the patterns of immune responses, the origin of cellular diversity during individual organismal development, and cell specialization. The year 1953, when F. Crick and J. Watson proposed the three-dimensional model of DNA structure, is regarded as the founding date of molecular biology as an established science. The ideas and methods of classical genetics, microbiology, virology, and the achievements of the exact sciences – physics, chemistry,

Термін українською	Термін англійською	Визначення англійською
		mathematics, and crystallography – played a significant role in its establishment.
Молекулярна генетика	Molecular genetics	a branch of genetics and molecular biology studying the molecular bases of heredity and variability in living organisms and viruses. One of its principal achievements is the elucidation of the chemical nature of the gene.
Молекулярна селекція	Molecular breeding	the selection of transformed bacterial cells (a diverse mixture of molecules differing in their foreign DNA fragments) with desired traits and properties, carried out using selective media on the principle employed in microbial genetics for the isolation of specific strains. This principle also underlies the selection of transformed eukaryotic cells. More broadly, molecular breeding is a method for improving plant varieties, animal breeds, and microbial strains based on DNA analysis (marker-assisted selection) for the identification of organisms with desired traits rather than solely on the basis of phenotypic characteristics. Molecular breeding increases precision, substantially accelerates the breeding process, and is highly effective for stress resistance improvement.
Моніторинг	Monitoring	continuous surveillance of changes in the genetic nature of populations of plants, animals, and microorganisms, enabling the detection of changes and prediction of their consequences.
Моногенна лінія	Monogenic line	a plant or animal line differing from the source line (variety) in the allelic state of only one gene. The development of such lines involves considerable difficulty; consequently, isogenic lines are more frequently employed in practice.

Термін українською	Термін англійською	Визначення англійською
Моногенні ознаки	Monogenic traits	traits whose expression is determined by the action of a single gene (allelic pair). Monogenic traits are inherited according to Mendel's laws and frequently manifest as discrete, alternative (qualitative) characteristics, such as awned versus awnless spike in wheat or specific blood groups in humans.
Моногібрид	Monohybrid	a hybrid heterozygous for a single pair of alleles.
Моногібридне схрещування	Monohybrid cross	a cross between individuals differing in a single pair of contrasting (alternative) traits, such as red versus white flower color or awned versus awnless spike.
Монокарпічні рослини	Monocarpic plants	plants that flower and fruit once during their lifetime and then die.
Монокультура	Monoculture	the cultivation of a single agricultural crop on the same field over many years.
Моноплоїд	Monoploid	a nucleus, cell, or organism characterized by the base chromosome number – the lowest haploid number in a polyploid series (symbol x).
Моносомик	Monosomic	a diploid organism lacking one member of a pair of homologous chromosomes, with a total chromosome number of 2n−1.
Моносомія	Monosomy	a type of chromosomal anomaly in which only a single copy of a given chromosome is present in the cell instead of two homologues, resulting in a reduction of the chromosome number in the karyotype.
Моноспермія	Monospermy	fertilization of an egg cell by a single male gamete.
Морганіда	Centimorgan	the unit of crossover measurement, named in honor of T. H. Morgan – the founder of the chromosomal theory of heredity. One

Термін українською	Термін англійською	Визначення англійською
		centimorgan equals 1% recombination frequency.
Морозобійне насіння	Frost-damaged seed	seed damaged by frost during the ripening period, characterized by a wrinkled seed coat surface that is readily separable.
Морозостійкість	Frost resistance	the capacity of plants to withstand the effects of low subzero temperatures.
Морфа	Morph	one of two or more alternative phenotypes within a population, occurring regularly at defined frequencies, characterized by stable combinations of phenotypic elements (not random mosaics thereof), and representing the outcome of stable developmental trajectories.
Морфогенез	Morphogenesis	the process of emergence and development of the form and structure of organisms, both in individual development (ontogenesis) and in evolutionary development (phylogenesis). Morphogenesis encompasses the formation of organs, tissues, and body parts, as well as their spatial organization.
Морфогени	Morphogens	specific compounds of determinants and inductors encoded by specialized genes that mediate morphogenetic processes during embryonic development. One such morphogen – the product of the hedgehog gene – is responsible for the determination of segment polarity in the Drosophila embryo.
Морфози	Morphoses	non-heritable changes in organismal traits induced by extreme or environmentally unusual factors. Unlike modifications, morphoses are non-adaptive and irreversible in character. Morphoses induced by ionizing radiation are termed radiomorphoses; those induced by chemical substances are termed

Термін українською	Термін англійською	Визначення англійською
		chemomorphoses. Morphoses are regarded as aberrant forms atypical for the species under normal conditions.
Морфологія рослин	Plant morphology	the science of the external and internal structure of plants and the regularities of form development in the course of individual (ontogenetic) and historical (phylogenetic) development.
Морфопроцес	Morphoprocess	the continuous change and transformation inherent in all living organisms; even the existence of any individual constitutes a morphological process, as old cells are replaced by new ones and rapid and slow physiological transformations occur. In the formulation of V. N. Beklemishev Life is a morphoprocess.
Морфотип	Morphotype	a discrete combination of elements of various external structural traits of an organism.
Морфотипова мінливість	Morphotypic variability	the space of possible transformations of morphotypes of a given organismal structure or population.
Мутабільність	Mutability	the capacity of a species, variety, or cultivar to mutate at a defined frequency under the action of mutagens. Mutability may be high or low with respect to the total number of mutations or mutations of a specific type.
Мутагенез	Mutagenesis	the process of mutation occurrence. Spontaneous (natural) mutagenesis – occurring without human intervention – and induced (artificial, experimental) mutagenesis – the deliberate induction of mutations using mutagens – are distinguished.
Мутагенез сайт специфічний	Site-directed mutagenesis	one of the simplest methods for generating desired point mutations, consisting in the in vitro restructuring of cloned genes. Most

Термін українською	Термін англійською	Визначення англійською
		commonly, single-stranded DNA of phage M13 (the plus strand) is used, into which the coding strand of the target gene is incorporated. The latter is hybridized with a complementary synthetic oligonucleotide carrying, for example, one nitrogenous base non-complementary to a base of the inserted gene.
Мутагени	Mutagens	factors of various natures – physical (X-ray, gamma, infrared, and ultraviolet radiation; electrons, protons, neutrons, etc.); chemical (alkylating compounds, nitrogenous base inhibitors, base analogues, oxidizers, reducing agents, free radicals, acridine dyes); and biological (viruses, exogenous DNA, etc.) – that, upon penetration into a cell, induce mutations.
Мутагенний ефект іонізуючих опромінень	Mutagenic effect of ionizing radiation	discovered by G. A. Nadson and G. S. Filippov in 1925 following treatment of yeast cells with «radium rays». In 1927, H. Muller established the mutagenic action of X-ray irradiation. Radiation genetics is today regarded as one of the foremost disciplines in modern science.
Мутагенний ефект ультрафіолетового опромінення	Mutagenic effect of ultraviolet radiation	manifested only in cellular monolayers such as microorganisms, pollen, spores, and superficial skin cells, owing to the low tissue penetrance of ultraviolet radiation. Irradiation at a wavelength of approximately 250 nm proved most mutagenic, as it is absorbed by DNA molecules.
Мутант	Mutant	an organism in which a specific trait or property has been altered as a result of mutation. Spontaneous and induced mutants constitute valuable source material for plant breeding.

Термін українською	Термін англійською	Визначення англійською
Мутанти ауксотрофи	Auxotrophic mutants	bacterial mutants that have lost the ability to independently synthesize amino acids, purines, pyrimidines, vitamins, and other growth factors.
Мутанти супресорозалежні	Suppressor-dependent mutants	phage mutants capable of infecting only those bacteria that carry a suppressor mutation able to negate the effect of a conditionally lethal mutation in the phage genome. Nonsense mutations serve as an example such mutations are lethal for the phage when it infects certain bacterial strains, but in bacteria of other strains carrying the suppressor gene (su^+), development of such mutant phages proceeds normally.
Мутанти температуро-залежні	Temperature-sensitive mutants	mutants that reproduce normally under certain temperature conditions but die under others. For example, certain strains of phage T4 develop across a wide temperature range, forming clear plaques on an E. coli lawn at both 25°C and 42°C; temperature-sensitive phage mutants reproduce normally at 25°C but fail to form negative colonies – i.e., do not replicate – at 42°C. Temperature-sensitive mutants have been identified in bacteria, viruses, and eukaryotes.
Мутанти умовно летальні	Conditionally lethal mutants	biochemical mutants capable of normal development under permissive conditions but incapable of development under non-permissive conditions. The group of conditionally lethal mutants also includes those with temperature-sensitive and suppressor-dependent mutations.

Термін українською	Термін англійською	Визначення англійською
Мутації	Mutations	sudden, stable heritable changes in the traits and properties of an organism, caused by alterations in the genetic apparatus and not associated with recombination.
Мутації ауксотрофності	Auxotrophy mutations	loss of the ability in microorganisms to synthesize amino acids, nucleotides, or vitamins.
Мутації біохімічні	Biochemical mutations	mutations that qualitatively or quantitatively alter the synthesis of specific chemical substances in an organism.
Мутації брунькові	Bud mutations	one type of somatic mutation in plants, arising in the meristematic cells of the stem growth point, from which mutant shoots containing exclusively mutant cells subsequently develop.
Мутації видимі	Visible mutations	mutations detectable visually, i.e., associated with changes in the structure or properties of organs, tissues, or individual cellular structures – such as gigantism, dwarfism, or albinism. Accordingly, visible mutations are also termed morphological mutations.
Мутації генеративні	Germinal mutations	mutations arising in gametes or in cells from which gametes are formed; germinal mutations are heritable.
Мутації генні (або точкові)	Gene (or point) mutations	mutations conditioned by changes in gene structure. The essence of local intragenic changes may be reduced to four types (1) substitution of base pairs in the DNA molecule without change in orientation (transitions); (2) substitution of nucleotide pairs with change in orientation (transversions); (3) insertion of an extra nucleotide pair; (4) deletion of a nucleotide pair.

Термін українською	Термін англійською	Визначення англійською
Мутації геномні	Genomic mutations	mutations conditioned by changes in the chromosome number of an individual (polyploidy, haploidy).
Мутації гомейозисні	Homeotic mutations	mutations arising randomly in homeotic genes, which have been found to be highly similar in structure across different eukaryotic species, with certain regions of these genes being entirely identical.
Мутації домінантні	Dominant mutations	genetic changes expressed in the genotype even in the heterozygous state; that is, if an organism carries one copy of a dominant mutation and one copy of the normal allele, the trait associated with the mutation is expressed.
Мутації зворотні (реверсії)	Back mutations (reversions)	mutations of a mutant allele in the reverse direction, i.e., back to the wild type a→A.
Мутації зсуву рамки зчитування	Frameshift mutations	mutations caused by insertion or deletion of nucleotides in DNA, resulting in a change in the reading frame of codons in the mRNA molecule. Frameshift mutations lead to an abnormal amino acid sequence in the protein from the point corresponding to the position of the mutation.
Мутації індуковані	Induced mutations	heritable changes in genetic material arising as a result of exposure of an organism to specific agents termed mutagens.
Мутації істотних генів	Essential gene mutations	in complex phages, as in bacteria, genes are classified as essential (vital) and non-essential, the latter being those whose mutation is compatible with viability. Mutations in essential genes of bacteriophages may be identified using conditionally lethal mutations, for which purpose temperature-sensitive and nonsense mutants are employed.

Термін українською	Термін англійською	Визначення англійською
Мутації корисні	Beneficial mutations	mutations whose phenotypic expression mimics adaptive modifications and thus contributes to the preservation of the species under given conditions.
Мутації летальні	Lethal mutations	mutations that cause death of the zygote at various stages of its development.
Мутації місенс	Missense mutations	mutations leading to alteration of the corresponding triplet (codon), in which replacement of one nucleotide in a codon by another results in an amino acid substitution in the polypeptide chain. The degree of phenotypic expression depends on which amino acid replaces the original, its polarity, and the specific position in the polypeptide at which the substitution occurs.
Мутації морфологічні	Morphological mutations	mutations manifested by changes in the structure of cells and organisms or in the colony structure of prokaryotes.
Мутації напівлетальні	Semi-lethal mutations	mutations that reduce the viability of an organism or cell.
Мутації нейтральні	Neutral mutations	mutations that do not affect the vital activity of cells or organisms. In neutral mutations, the meaning of the codon is unchanged due to degeneracy of the genetic code – a given amino acid may be encoded by two or more triplets. Neutral mutations are one cause of genetic polymorphism in natural populations, and their occurrence does not alter, or barely alters, the function of the corresponding proteins. S. Wright, N. P. Dubinin, D. D. Romashov, and others concluded that precisely such non-selectable variability may underlie not only microevolution but also macroevolution.

Термін українською	Термін англійською	Визначення англійською
Мутації нестабільні	Unstable mutations	mutations characterized by a high frequency of reversion to the wild type.
Мутації нонсенс	Nonsense mutations	mutations arising when substitution of a single nucleotide in a codon converts it into one of the three possible termination (nonsense) triplets. Nonsense mutations may restore polypeptide translation – though the relevant genes carry nonsense mutations, i.e., contain termination triplets instead of sense codons. Transcription proceeds normally in this case, and both normal and mutant codons are transcribed onto mRNA; however, full-length translation from these mRNAs is impossible due to premature termination at the position of the mutant nonsense codon.
Мутації полярні	Polar mutations	mutations arising as a consequence of the appearance of termination (nonsense) triplets within structural genes, leading to translational termination. Such mutations cannot complement a mutation in another gene located distally in the same operon. Polar mutations inactivate the cistron in which they arise and additionally reduce the activity of other cistrons located distally relative to it.
Мутації прямі	Forward mutations	mutations of wild-type alleles to a new state. Since the wild-type allele is generally dominant, forward mutations are predominantly recessive A→a.
Мутації рецесивні	Recessive mutations	mutations arising spontaneously or being induced. The recessiveness of mutations is of great importance for species survival. Despite their deleterious nature, recessive alleles in the homozygous state are long maintained in population individuals and become expressed through combinatorial variability. Under

Термін українською	Термін англійською	Визначення англійською
		certain environmental conditions such mutations may prove beneficial and acquire a selective advantage over wild-type alleles. According to the theory of dominance, transition of a recessive allele to a dominant state is possible in the course of evolution, constituting a rather complex and protracted process. Alongside this, an abrupt spontaneous reversion of a mutant allele to the wild-type gene by back mutation may occasionally occur.
Мутації соматичні	Somatic mutations	mutations arising in body cells not associated with reproduction. Somatic mutations generate genotypic diversity in the body tissues of an individual, causing the appearance of genetic mosaics; as a rule, they are not inherited through sexual reproduction. In plants, somatic mutations may be exploited through vegetative propagation.
Мутації спонтанні	Spontaneous mutations	mutations that arise in nature continuously at a defined frequency, resulting from possible errors in the physiological systems of cells that normally ensure the function of the genetic apparatus. The efficiency of replication, repair, recombination, and other molecular-genetic process enzymes has been shown to depend substantially on individual genotypic characteristics and environmental conditions, thereby accounting for variable error rates of the respective enzymes and, consequently, variable spontaneous mutation frequencies under specific conditions.
Мутації супресорні	Suppressor mutations	mutations that restore a given phenotype. Reversion of a mutant to a different phenotype is most commonly the result of suppression by a secondary mutation.

Термін українською	Термін англійською	Визначення англійською
Мутації умовно-летальні	Conditionally lethal mutations	mutations incompatible with life under certain conditions but not expressed, or barely expressed, under other functional conditions. The lethality of such mutations indicates that the corresponding genes control vital functions, while the conditional nature of lethality may be explained by the capacity of the mutant gene product to perform its function under some optimal conditions. For this reason, conditionally lethal mutants constitute the only feasible objects for studying genes controlling vital functions.
Мутації фізіологічні	Physiological mutations	mutations accompanied by disruption of physiological functions of organisms, including fertility, resistance to xenobiotics and viral infection, and changes in numerous vital activity and behavioral parameters.
Мутації хромосомні (хромосомні аберації)	Chromosomal mutations (chromosomal aberrations)	mutations conditioned by changes in chromosome structure.
Мутації цитоплазматичні	Cytoplasmic mutations	mutations occurring in cytoplasmic DNA.
Мутацій спектр	Mutation spectrum	the totality of all mutation types arising in an organism spontaneously or under the action of a specific mutagen. A large number of mutation types constitutes a broad mutation spectrum; a small number constitutes a narrow mutation spectrum.
Мутаційна мінливість	Mutational variability	genotypic variability in which the genotype is altered as a result of mutations. The changes that arise may affect the nucleotide sequence of a DNA molecule (gene mutation), lead to increases or decreases in chromosome number

Термін українською	Термін англійською	Визначення англійською
		(genomic mutation), or cause chromosomal rearrangements (chromosomal mutation).
Мутаційна теорія	Mutation theory	a concept developed by Hugo de Vries explaining evolution as a process proceeding through heritable changes – mutations. Its principal tenets state that mutations arise suddenly and discretely, are heritable, are non-directional (being potentially beneficial, deleterious, or neutral), and are recurrent.
Мутаційний тиск	Mutation pressure	alteration of the equilibrium frequencies of dominant and recessive genes, disrupting genotypic equilibrium in a population as a consequence of differing rates of forward and reverse mutations. All genes of an organism are capable of mutation. The frequency of a given allele increases in the direction in which the mutational process proceeds with greater probability.
Мутон	Muton	the smallest unit of the DNA molecule whose alteration causes gene mutations. A muton is strictly equivalent to one nucleotide pair in a double-stranded DNA molecule, or to one nucleotide if the genetic material of the organism is represented by a single-stranded DNA molecule (certain bacteriophages) or RNA (RNA-containing viruses).
Н		
Набуті ознаки	Acquired traits	traits absent in the ancestors of a given individual that arose during its individual lifetime under the influence of external conditions, i.e., modifications that are not transmitted to progeny.

Термін українською	Термін англійською	Визначення англійською
Наддомінування	Overdominance	the phenomenon in which both homozygotes (AA; aa) exhibit lower fitness than the heterozygote. The heterosis effect is conditioned by heterozygosity of the genotype, i.e., the heterozygote has an advantage over both homozygotes AA < Aa > aa.
Надійність рослинних систем	Reliability of plant systems	the capacity of phytocoenoses to resist adverse factors without substantial structural or functional changes.
Надлишковість геномів	Genome redundancy	the presence of non-coding sequences and repetitive elements in DNA. The essence of genome redundancy lies in the fact that the length of genomic DNA molecules considerably exceeds what is necessary to encode the required number of proteins.
Надпродуценти (суперпродуценти)	Overproducers (superproducers)	microbial strains capable of producing antibiotics, certain amino acids, and other biologically active compounds at rates hundreds of times greater than source forms; employed in the microbiological industry.
Нанізм	Nanism	dwarfism – the condition in which a plant fails to attain the normal size characteristic of the given species.
Напівконсерва-тивний механізм реплікації ДНК	Semiconservative DNA replication mechanism	the process of DNA molecule doubling in which each new double-stranded DNA consists of one «old» (template) strand and one «new» (synthesized) strand, ensuring precise copying of genetic information. Each parental helix serves as a template for synthesis of a complementary new strand.
Напівметильовані ДНК	Hemimethylated DNA	the state of DNA arising during semiconservative replication, in which the two daughter DNA molecules each contain one strand from the parental (methylated) molecule

Термін українською	Термін англійською	Визначення англійською
		while the newly synthesized strand remains unmethylated for a period after emerging from the replication fork.
Напівсибси (напівсиди)	Half-sibs	plants sharing one parent in common.
Насиченість видова	Species richness	the number of species per unit area.
Насичуюче схрещування	Backcross saturation	repeated backcrossing of hybrids in any combination with a parental form to enhance a trait in the hybrid, during which the cytoplasm of the maternal form becomes enriched with nuclear material from the pollinator.
Насінина	Seed	a qualitatively new organism formed on the maternal plant, possessing a range of morphological, biological, physiological, and genetic characteristics. The seed bears the hereditary basis of the plant organism, contains nutrients for its development, and possesses adaptations for dispersal.
Насінний зачаток	Ovule	the part of the ovary containing the egg cell, which develops into a seed following fertilization.
Насіннєвий контроль	Seed control	a system of state and on-farm measures for monitoring the production, preparation, and storage of seed, as well as for determining the varietal properties and sowing quality of seed and planting material of agricultural crops.
Насіннєвий матеріал	Seed material	plant organs designated for sowing, including botanical seeds, fruits, fractions of compound fruits, and vegetative parts.
Насіннєвий посів	Seed sowing	the cultivation of agricultural crops for the purpose of producing high-quality planting material of high varietal purity and sowing quality for sowing, establishing seed reserves, replenishing emergency seed funds, fulfilling

Термін українською	Термін англійською	Визначення англійською
		state resource requirements, and related purposes.
Насіннєвий фонд	Seed fund	seed conforming to state standards and designated for sowing.
Насіннєві схеми Організації економічного співробітництва та розвитку	OECD seed schemes	schemes for varietal certification or control of seed circulation in international trade developed by the Organisation for Economic Co-operation and Development.
Насіннєдолі	Cotyledons	modified first leaves of the seed embryo that contain stored nutrients.
Насіннєзнавство	Seed science	a branch of biological knowledge studying the development of seeds on the maternal plant from zygote formation to maturation; the state of seeds and the processes occurring in them from harvest to sowing; the sowing-to-seedling emergence period; and the transition of young plants to autotrophic nutrition. Seed science constitutes the theoretical foundation of the technology of cultivation, post-harvest processing, storage, and field germination of seeds.
Насінник (висадок)	Steckling	a beet plant grown from a steckling root.
Насінництво	Seed production	a branch of crop production ensuring the multiplication and production of seed and planting material of plant varieties.
Насінництво за схемою відновлення	Restorer-based hybrid seed production	a method of maize hybrid seed production in which a male-sterile form is used as the maternal crossing component and a fertility restorer is used as the paternal component.
Насінництво за схемою змішування	Mixed-row hybrid seed production	a method of maize hybrid seed production used when parental hybrid forms lack or have insufficient fertility-restoring capacity, in which the maternal crossing component is

Термін українською	Термін англійською	Визначення англійською
		sown in alternating rows of sterile and fertile forms, with tassels removed from the fertile maternal forms.
Насінницьке господарство	Seed production enterprise	an enterprise whose primary activity is the production of certified seed of specific agricultural crops, operating under a license authorizing such activity.
Насіння	Seed	plant material used for sowing, including seeds proper, fruits, multiple fruits, and material not intended for direct consumption by humans or animals.
Насіння елітне (ЕН)	Elite seed (ES)	seed obtained from the successive multiplication of basic seed at elite seed production enterprises and other enterprises listed in the Seed Producer Register.
Насіння карантинних бур'янів	Seed of quarantine weeds	seed of particularly harmful weeds defined in the list of quarantine objects, the presence of which is not permitted in sowing material.
Насіння репродукції (РН-I-III)	Certified seed (CS-I-III)	first through third, (CS-N) fourth and subsequent generation certified seed.
Настії	Nasties	movements of plant organs in response to external stimuli, conditioned by changes in turgor pressure.
Нативна ДНК	Native DNA	double-stranded DNA isolated from a living organism that has retained hydrogen bonds between strands and exists in a biologically active form.
Нативний, природний	Native, natural	(1) a species within its natural range; (2) natural, unaltered – an object not subjected to any external influence; with respect to organisms the term «intact» is applied in such cases.

Термін українською	Термін англійською	Визначення англійською
Науково-дослідна сівозміна	Research crop rotation	a scientifically substantiated rotation of agricultural crops and fallow in time and space.
Негативна надспіралізація ДНК	Negative DNA supercoiling	the winding of double-stranded DNA in the direction opposite to that of the double helix itself.
Негативний добір	Negative selection	a variant of mass selection in which, rather than selecting superior plants, inferior individuals are removed from the stand.
Негістони	Non-histones	other chromatin proteins; quantitatively less abundant than histone proteins but highly diverse in structure and function.
Незалежне комбінування ознак або незалежне успадкування ознак	Independent assortment of traits	a principle in genetics established by G. Mendel, according to which genes responsible for different traits are inherited from parents to progeny independently of one another, enabling their combination in all possible configurations. This occurs when genes are located on different chromosomes or far apart on the same chromosome.
Незамінні амінокислоти	Essential amino acids	amino acids not synthesized by the human or animal organism but required as obligatory constituents of proteins and other biologically important substances in these organisms, obtained through plant-based food. The eight essential amino acids synthesized by plants include valine, leucine, isoleucine, lysine, methionine, threonine, tryptophan, and phenylalanine.
Незначущі послідовності ДНК	Non-coding DNA sequences	sequences that do not contain genes, comprising various regulatory DNA regions as well as relatively monotonous nucleotide sequences whose function is not always established. Non-coding sequences vary in length and repeat frequency; most are short,

Термін українською	Термін англійською	Визначення англійською
		dispersed throughout the genome, and constitute components of promoters, terminators, and other regulatory elements specifically recognized by corresponding proteins.
Нейтралізм	Neutralism	the coexistence of two species of organisms in mixed culture.
Нейтральна еволюція	Neutral evolution	a concept proposed by Japanese geneticist M. Kimura and American scientists J. L. King and T. H. Jukes, stating that natural selection drives evolution only at the organismal level, while changes in the primary structure of nucleic acids and proteins are predominantly non-selectable and proceed through random drift of neutral mutations. According to this concept, neutral mutations – which do not affect organismal fitness – constitute the majority of mutations spreading in a population and may be regarded as elementary evolutionary events underlying microevolution.
Нейтральні заміни в ДНК	Neutral DNA substitutions	substitutions that do not alter the meaning of a codon due to degeneracy of the genetic code, whereby the same amino acid may be encoded by two or more triplets.
Нейтральність	Neutrality	a form of relationship in a phytocoenosis between cenopopulations or individual organisms that do not substantially affect one another.
Некондиційне насіння	Non-conditioned seed	seed whose varietal and sowing qualities do not conform to the requirements established by legislation in the field of seed production and nursery growing.
Некробіоз	Necrobiosis	irreversible physiological and biochemical changes in a cell that precede its death.

Термін українською	Термін англійською	Визначення англійською
Некроз	Necrosis	the death of part of a living organism (cells, tissues, organs) – the irreversible cessation of vital activity of its elements – as a result of intensive action of harmful environmental factors such as trauma, oxygen deprivation, or elevated temperature.
Некросоверні гамети	Non-crossover gametes	gametes formed from chromosomes that did not participate in crossing-over.
Некротрофний паразит	Necrotrophic parasite	a parasite that subsists exclusively on dead plant cells and therefore immediately causes rapid death of plant tissues following infection.
Нематоди	Nematodes	representatives of the class of roundworms, among which species pathogenic for animals and plants are found.
Неменделівське успадкування	Non-Mendelian inheritance	deviations from the expected Mendelian phenotypic frequency ratios in crosses, or the appearance of unusual phenotypes as a consequence of various gene interactions, linkage of hereditary factors, and determination of divergent phenotypes by cytoplasmic genes (plastome).
Неметричні ознаки	Non-metric traits	qualitative (structural) traits whose states (phenes) exhibit alternative discrete expression.
Неодарвінізм	Neo-Darwinism	an evolutionary concept representing an attempt to modernize the interpretation of classical Darwinism, whose foundations were laid by A. Weismann, who developed the theory of heredity. According to this theory, somatic and germ plasms – or material heredity – exist within an organism. The germ plasm in turn consists of intracellular units of heredity – determinants – contained within chromosomes

Термін українською	Термін англійською	Визначення англійською
		and independent of the somatoplasm and environmental conditions.
Неоламаркізм	Neo-Lamarckism	a collection of diverse trends in evolutionary theory that develop the erroneous aspects of J.-B. Lamarck's doctrine and falsify it. Neo-Lamarckism emerged in the second half of the 19th century. Adherents of neo-Lamarckism deny the creative role of natural selection and, in essence, oppose the materialist understanding of evolution.
Неоморфи	Neomorphs	mutations that give rise to alleles with novel functions, which may completely dominate over normal alleles.
Неофіти	Neophytes	plant species that have recently appeared in the composition of the local flora and are encountered in natural coenoses and agrocoenoses.
Непермісивні умови	Non-permissive conditions	environmental conditions under which individuals carrying conditionally lethal mutations – i.e., mutations controlled (determined) by the environment – die.
Неплідник	Non-bolting plant	a beet plant that fails to produce flowering shoots in its second year of life.
Неповне домінування	Incomplete dominance	the phenomenon in which a dominant gene does not completely suppress the trait of the recessive gene, resulting in a hybrid phenotype of intermediate character.
Нередуковані гамети	Unreduced gametes	gametes formed as a result of complete non-disjunction of chromosomes during meiosis. Unreduced gametes contain a doubled chromosome complement, and their participation in fertilization may give rise to organisms with three or four chromosome sets.

Термін українською	Термін англійською	Визначення англійською
Нереплікаційний синтез ДНК або репараційний біосинтез	Non-replicative DNA synthesis, or repair biosynthesis	the process characteristic of repair mechanisms – the excision and replacement of damaged DNA regions.
Нерециркона рекомбінація	Non-reciprocal recombination	a process in which genetic information is transferred only from donor to recipient. Such information exchange is characteristic of microorganisms. In bacteria, non-reciprocal recombinations occur during transformation and transduction, as well as during recombinational events that may accompany transposition (translocation) of individual chromosomal segments within the genome.
Нерівний кросинговер	Unequal crossing-over	duplication or multiplication of a gene locus in one of the homologous chromosomes accompanied by its deficiency in the opposite chromosome.
Нерозходження	Non-disjunction	the loss of the ability to separate during division of two sister chromatids or homologous chromosomes, as a result of which both migrate to the same pole, producing an aneuploid nucleus.
Нерозходження хромосом	Chromosome non-disjunction	a disruption of the criss-cross inheritance pattern, first noted by C. Bridges while studying the inheritance of sex-linked traits in Drosophila.
Несортове насіння	Non-certified seed	seed that does not conform to state standard requirements for varietal purity, or for which varietal documentation is absent.
Нестатеве розмноження	Asexual reproduction	the reproduction of organisms without the participation of sexual cells (gametes) or fertilization.
Нестача	Deficiency	a variant of structural chromosomal rearrangement (aberration) causing mutations,

Термін українською	Термін англійською	Визначення англійською
		defined literally as the loss of a chromosomal segment. Mutations caused by deficiencies are generally lethal.
Несумістність	Incompatibility	the genetically determined inability of pollen to germinate on the flower stigma and accomplish fertilization.
Несхрещуваність	Crossability barrier	the impossibility of obtaining progeny through crossing, or the impossibility of crossing taxonomically distant forms.
Нехромосомне успадкування	Non-chromosomal inheritance	the transmission of hereditary determinants to progeny by non-chromosomal cellular structures.
Нітрозоетилсечовина (НЕС)	Nitrosoethylurea (NEU)	a highly active chemical mutagen belonging to the group of nitroso compounds, widely used in plant breeding and experimental genetics. It induces point mutations (base substitutions) in DNA, enabling the recovery of novel plant forms with valuable traits, frequently surpassing the mutagenic efficiency of ionizing radiation.
Нітрозо-метилсечовина (НМС)	Nitrosomethylurea (NMU)	a potent chemical mutagen from the group of alkylating agents, widely used in plant breeding for the induction of mutations. It is highly effective at low concentrations (0.0125–0.05%), inducing a broad spectrum of heritable changes, including the development of high-yielding and dwarf lines of wheat and barley.
Новоутворення	Novelty	the formation of a new phenotypic expression in F_2 through complementary interaction of two non-allelic recessive genes.
Номогенез	Nomogenesis	an anti-Darwinian hypothesis of the evolution of living nature, according to which the leading role in the historical development of life is

Термін українською	Термін англійською	Визначення англійською
		played by internal causes that determine all principal characteristics of organisms and direct the evolutionary process along a defined progressive pathway. The role of environmental conditions is deemed insignificant, and the creative role of natural selection is disregarded.
Нонсенс-кодон	Nonsense codon	a codon that serves as a termination signal for polypeptide chain synthesis.
Нонсенс-супресор	Nonsense suppressor	a mutant tRNA gene encoding a molecule with an altered anticodon, as a result of which the mutant tRNA begins to recognize a nonsense codon, thereby preventing termination of mRNA translation.
Норма реакції генотипу	Norm of reaction of the genotype	the range of organismal variability in response to changes in environmental conditions, expressed in the form of modifications. Trait variability may be manifested within broad limits but does not exceed the norm of reaction determined by the genotype.
Нуклеази	Nucleases	enzymes that cleave internucleotide bonds in DNA and RNA. Nucleases may be DNases, RNases, or enzymes with non-substrate-specific («omnivorous») action. Depending on whether phosphodiester bonds are cleaved within the polynucleotide molecule or from its terminus, nucleases are classified as endonucleases and exonucleases.
Нуклеїнові кислоти	Nucleic acids	biopolymers composed of nucleotides, represented by DNA and RNA, which are destined for the storage and transmission of hereditary information.
Нуклеозиди	Nucleosides	natural and synthetic organic compounds comprising a nitrogenous base residue and the

Термін українською	Термін англійською	Визначення англійською
		sugar ribose or deoxyribose. They are designated ribonucleosides (adenosine, guanosine, uridine, cytidine) and deoxyribonucleosides (deoxyadenosine, deoxyguanosine, deoxycytidine, thymidine) accordingly. Nucleosides are formed in cells through hydrolytic cleavage of nucleic acids and nucleotides.
Нуклеоїд	Nucleoid	the nuclear equivalent in prokaryotes, such as bacteria; a compact circular DNA molecule anchored to the cell membrane.
Нуклеокапсид	Nucleocapsid	a viral particle; the specific complex of nucleic acid with the viral capsid.
Нуклеомер	Nucleomere	a single supercoiled loop formed by a chromatin fibril.
Нуклеоплазма, каріоплазма	Nucleoplasm, karyoplasm	the ground substance of the nucleus; the unstructured contents of the cell nucleus, separated from the cytoplasm by the nuclear envelope.
Нуклеопротеїди	Nucleoproteins	complex chemical components of the nucleus and cytoplasm, representing compounds of proteins (histones) with the nucleic acids DNA or RNA.
Нуклеосома	Nucleosome	spherical bodies representing complexes of DNA with histones. A nucleosome consists of eight histone molecules and has a diameter of approximately 10 nm, around which a segment of double-stranded DNA is wound in nearly two turns (encompassing 160–200 nucleotides). Adjacent nucleosomes are connected by short DNA linker segments of 100–150 nucleotides. A gene of average size consists of a segment comprising approximately six nucleosomes.

Термін українською	Термін англійською	Визначення англійською
Нуклеотиди, мононуклеотиди	Nucleotides, mononucleotides	phosphoric esters of nucleosides; constituent components of nucleic acids, numerous coenzymes, and other biologically active compounds. In addition, nucleotides occur in free form in the living cell and play an important role in metabolism. Phosphoric esters of ribonucleosides are termed ribonucleotides; those of deoxyribonucleosides are termed deoxyribonucleotides.
Нулівка	Blank plot	a plot in an experiment on which no measurements or observations are conducted.
Нулісомік	Nullisomic	an aneuploid cell or organism in whose diploid complement an entire pair of homologous chromosomes is absent (2n−2).
Нуцелус	Nucellus	the central tissue (nucleus) of the plant ovule.
О		
Об'єкт заявки на сорт	Subject of a variety application	the plant variety in respect of which an application has been submitted.
Обернені повтори, інвертовані повтори	Inverted repeats	sequences consisting of two identical copies approximately 300 bp in length, oriented in opposite directions on the same DNA strand, separated by distances ranging from zero to 10,000 bp (average 1,600 bp); approximately one-third of inverted repeats are palindromes.
Обіг	Circulation	the movement (transportation) or storage of, and any actions associated with, transfer of ownership or possession, including sale, exchange, or donation.
Облігатний паразит	Obligate parasite	a parasite incapable of living outside the host organism, its cells, or tissues.
Облік ураженості (пошкодженості)	Disease (damage) assessment	actions prescribed by specific methodologies aimed at determining the number of diseased (damaged) plants and the degree of their infection (damage).

Термін українською	Термін англійською	Визначення англійською
Обмежений протеоліз	Limited proteolysis	a proteolytic modification of primary peptides widely encountered in living organisms, carried out during the synthesis of certain eukaryotic proteins, consisting in the removal of approximately 20 amino acids from the N-terminus of the synthesized protein.
Обмежуючий чинник	Limiting factor	a factor that halts or retards a given process.
Обмін речовин, метаболізм	Metabolism	the transformation of matter and energy in living systems, directed toward their preservation and self-renewal.
Оболонка рослинної клітини	Plant cell wall	a structure surrounding the cell protoplast and representing a product of its vital activity, composed of plasmodesmata-containing pores.
Однодольні	Monocotyledons	a class of flowering plants whose embryo possesses a single cotyledon.
Однодомні рослини	Monoecious plants	plants bearing both male and female generative organs on the same individual.
Однозначні гени	Synonymous genes	non-allelic genes (located at different loci) that influence the development of the same trait, whose effects accumulate cumulatively or interact in other ways to produce a broad spectrum of phenotypes (e.g., leaf color).
Одноклітинні організми	Unicellular organisms	organisms whose body consists of a single cell.
Однорічні рослини	Annual plants	plants that complete their life cycle within one year.
Одностатеві квітки	Unisexual flowers	flowers bearing stamens but no pistil (male, staminate flowers), or a pistil but no stamens (female, pistillate flowers).
ОЕСР	OECD	the Organisation for Economic Co-operation and Development.

Термін українською	Термін англійською	Визначення англійською
Ознака	Trait	(1) in genetics, a unit of morphological, physiological, biochemical, molecular, immunological, or any other discrete characteristic of organisms (cells), i.e., a specific quality or property by which they differ from one another; (2) any property of an organism expressed in the phenotype.
Окислювальне фосфорилювання	Oxidative phosphorylation	the synthesis in living cells of adenosine triphosphate (ATP) from adenosine diphosphate (ADP) and inorganic phosphate, utilizing the energy released by oxidation of organic molecules.
Оксилофіти	Oxylophytes	plants that grow well on acidic soils.
Оксипролін	Hydroxyproline	a heterocyclic amino acid that is a constituent of proteins.
Олеїнова кислота	Oleic acid	a monounsaturated fatty acid that is a constituent of plant oils.
Олігогени (головні гени)	Oligogenes (major genes)	genes controlling defined traits for which Mendelian segregation can be observed. Oligogenes are responsible for alternative variability and do not act in isolation but exert their effect as part of the overall genetic system. Thus, an oligogene determining a qualitative trait may also influence a quantitative trait in the manner of a polygene. Oligogenes are the principal genes responsible for the emergence of qualitative or quantitative variability.
Олігомер	Oligomer	a molecule consisting of a small number (5–20) of monomers.
Олігонуклеотиди	Oligonucleotides	short synthetic DNA or RNA fragments consisting of a small number of nucleotides (approximately 15–20), used as universal tools in molecular biology for PCR diagnostics,

Термін українською	Термін англійською	Визначення англійською
		sequencing, genetic engineering, and novel therapeutic approaches.
Олігосахариди	Oligosaccharides	polymeric carbohydrates containing 2 to 10 monosaccharide residues linked by glycosidic bonds; carbohydrates containing more than 10 monosaccharides are classified as polysaccharides.
Оліготрофи	Oligotrophs	plants capable of developing on soils with low nutrient concentrations.
Онкогени	Oncogenes	genes that bring about the transformation of normal eukaryotic cells into malignant cells, effected through their encoding of oncoproteins. Oncogenes are present in DNA-containing and RNA-containing viruses, as well as in the genomes of tumor cells. Retroviral and tumor oncogenes are derived from altered normal genes – proto-oncogenes – identified in representatives of all vertebrate classes, many invertebrates, and even yeasts. The conversion of proto-oncogenes into oncogenes is based on point mutations, chromosomal rearrangements, gene amplification, and enhanced gene expression.
Оновлення насіння і садивного матеріалу	Seed and planting material renewal	the periodic replacement of certified seed and perennial plant steckling stands through variety replacement or variety renewal.
Онтогенез	Ontogenesis	the individual development of an organism – the totality of its transformations from inception (fertilization of the egg cell, initiation of independent life of a vegetative propagule, or division of a unicellular maternal organism) to the end of life (death or cell division). In the course of ontogenesis, growth, differentiation, and integration of the parts of the developing organism occur. According to current

Термін українською	Термін англійською	Визначення англійською
		understanding, the cell from which ontogenesis begins contains a defined developmental program encoded in the hereditary code, which is realized during ontogenesis through nucleus-cytoplasm interactions in each embryonic cell and through interactions among different cells and cell complexes. The hereditary apparatus, by encoding the synthesis of specific protein molecules, determines only the general direction of morphogenetic processes, whose specific execution depends to a greater or lesser extent (within the norm of reaction) on external conditions.
Онтогенетика	Ontogenetics	a branch of genetics studying the foundations of individual organismal development (ontogenesis), including research on gamete genetics, genetic determination, cell differentiation, sex determination, phenotype establishment, gene interactions, immune system development, genetic bases of ontogenetic adaptation, and specific behavioral expressions.
Онтогенетична пам'ять	Ontogenetic memory	a concept formulated by A. A. Zhuchenko, arising from the influence of various factors on crossing-over processes and early stages of embryonic development; it postulates the «memorization» by organisms of environmental factors affecting the intensity of biochemical processes and the frequency of recombination events. The concept proposes suppression of crossing-over in better-adapted individuals and its enhancement in less-adapted individuals under specific environmental conditions.

Термін українською	Термін англійською	Визначення англійською
Оператор	Operator	a region of the DNA molecule located immediately adjacent to the structural gene region that activates operon function. The operator has the property of recognizing and binding regulatory proteins – products of specific regulator genes.
Операційні таксономічні одиниці	Operational taxonomic units (OTUs)	elementary units of classification in numerical taxonomy (samples).
Оперон	Operon	a DNA region consisting of regulatory elements – a promoter, operator, and one or more closely linked structural genes. The operon determines the synthesis of protein enzymes that carry out sequential biochemical reactions in the cell (organism). The operon concept was developed by F. Jacob and J. Monod to explain the mechanism of gene activation and inactivation. A group of genes belonging to a single operon is transcribed into a single mRNA, which is sequentially translated by ribosomes to produce each of the proteins.
Оперони анаболітні	Anabolic operons	operons whose genes encode enzymes of amino acid biosynthesis.
Оперони арабінозні (ara-оперони)	Arabinose operons (ara-operons)	operons characterized by a more complex organization of the operator region. The principal gene group of these operons encodes three enzymes that convert L-arabinose to D-xylulose-5-phosphate (araBAD). Additionally, two unlinked structural genes – araE and araF – encode membrane and periplasmic proteins, respectively.
Оперони галактозні	Galactose operons	operons whose genes are responsible for the conversion of galactose to galactose-1-phosphate; they are transcribed from one of two

Термін українською	Термін англійською	Визначення англійською
		start points into a polycistronic RNA that is sequentially translated to produce three enzymes.
Оперони катаболітні	Catabolic operons	operons whose genes encode the utilization of sugars as energy substrates.
Опис сорту	Variety description	information about a variety obtained from the results of qualification examination conducted in Ukraine or from the competent authority of a contracting party to the Convention, subject to publication in the official journal based on the decision on state registration of the variety and/or state registration of rights to the variety.
Опін	Opine	one of a series of unusual amino acids or sugar derivatives specifically synthesized by crown gall tumor cells produced by Agrobacterium tumefaciens. Opine genes are located on the Ti plasmid and are expressed following their integration into the plant genome. For agrobacteria, opines serve as sources of carbon, nitrogen, and energy.
Опірність середовища	Environmental resistance	the totality of actions of all abiotic and biotic mortality factors acting on an organism that prevent it from realizing its absolute reproductive potential, expressed as the ratio of actual to optimal population density as determined by maximum fecundity and survival.
Оптимальна температура проростання насіння	Optimal seed germination temperature	the temperature at which seed germination proceeds most intensively.
Оптимальні умови	Optimal conditions	the most favorable external environmental conditions for the vital activity of a given organism.

Термін українською	Термін англійською	Визначення англійською
Оптимум	Optimum	(1) the totality of the most favorable conditions for the vital activity of an organism or for the progress of a physiological process or biochemical reaction; (2) the value of a factor corresponding to the best vital activity parameters of an organism; one of the cardinal points of ecological factor action on an organism.
Оптимум біоценотичний	Biocoenotic optimum	the best conditions under which a population of a given species can fulfill the greatest coenotic role (may be dominant), maintaining viability and attaining high abundance.
Оптимум екологічний	Ecological optimum	the combination of external environmental factors most favorable for a species (population).
Органели	Organelles	permanent constituents of the cell cytoplasm with defined functions required for the normal vital activity of the cell.
Органи з оцінки відповідності	Conformity assessment bodies	enterprises, institutions, organizations, or their subdivisions accredited by the national accreditation body of Ukraine and authorized by the relevant central executive authority to carry out conformity assessment activities in the field of seed production and nursery growing.
Організм	Organism	(1) a biological unit possessing characteristic anatomical and physiological traits, which may consist of a single cell (unicellular organism), a large number of identical cells (colonial organism), or cells differing in function (multicellular organism); all organisms are classified as eukaryotes or prokaryotes; (2) any biological system consisting of interrelated and subordinate elements whose mutual relationships and structural features are

Термін українською	Термін англійською	Визначення англійською
		determined by their functioning as a single entity individuals, colonies, families (in social insects), populations, biocoenoses, etc.
Органогенез	Organogenesis	the formation and development of new plant organs from the appearance of the zygote on the maternal plant.
Оригінальне насіння	Original seed	seed of the primary seed production links, grown by the variety originator institution or under its direct supervision, released for further multiplication and production of elite seed.
Оріджин	Origin	the locus at which DNA replication or transfer is initiated.
Оріджин переносу	Origin of transfer	a defined nucleotide sequence of a transmissible or mobilizable plasmid; the mechanism of plasmid transfer from donor to recipient involves its duplication and transmission of a copy.
Орографічні фактори	Orographic factors	elements of abiotic environmental factors constituting components of the ecological conditions of an organism's existence.
Ортогенез	Orthogenesis	evolution proceeding in a specific direction and orientation, conditioned by internal factors.
Ортологи, ортологічні гени	Orthologs, orthologous genes	genes that have diverged in the course of evolution – i.e., homologous genes derived from an ancestral gene present in the genome of the species from which the compared species descend. In a certain sense, they represent the same gene in different genomes. Unlike paralogs, the origin of orthologs is not associated with gene duplications.
Ортоплоїдія	Orthoploidy	the multiplication of the monoploid chromosome set by a whole-number factor, giving rise to di-, tetra-, hexa-, octo-, etc. ploid organisms.

Термін українською	Термін англійською	Визначення англійською
Ортоплоїдне число хромосом	Orthoploid chromosome number	the normal chromosome number; for example, diploid organism cells contain two chromosome sets (2n), and haploid cells contain only one (n).
Осередки (центри) походження і формотворення культурних рослин	Centers of origin and diversity of cultivated plants	regions of the globe in which specific cultivated plant species originated and in which their greatest diversity is observed.
Осмотичний тиск	Osmotic pressure	the pressure generated by substances dissolved in cells.
Основне число хромосом	Base chromosome number	the smallest haploid number in the polyploid set of a species.
Особина, індивід, індивідум	Individual	the smallest indivisible unit of a biological species with a specific structure and the capacity to perform the most essential vital functions.
Офіційний зразок	Official sample	planting material provided for long-term storage and for the purpose of establishing the preservation of variety characteristics in the manner established by the Competent Authority.
Офіційні джерела інформації про заявки на сорт та сорти рослин	Official sources of information on variety applications and plant varieties	official publications, information published on the websites of the Competent Authority and the expert institution, information published in the Application Register, Patent Register, Variety Register, and Register of Representatives on Intellectual Property Matters concerning Plant Varieties.
Оцінка ризику	Risk assessment	a scientifically substantiated process consisting of GMO hazard identification, hazard characterization, exposure assessment, and risk characterization.
Очікувана врожайність	Expected yield	the anticipated crop output determined during specific growth and development periods of

Термін українською	Термін англійською	Визначення англійською
		agricultural crops based on stand density and overall plant condition; measured in tonnes per hectare (t/ha) or assessed qualitatively as high, medium, low, or at the level of the previous year. The expected yield indicator is used for planning agronomic measures.
П		
Пагін	Shoot	one of the principal plant organs, whose constituent parts (stem, leaves, buds) develop from the apical meristem.
Пакування	Packaging	the process of filling (portioning) a defined mass of seed or quantity of planting material into packaging (containers).
Палеополіплоїди	Palaeopolyploids	(1) natural plant species whose karyotypes appear diploid at metaphase of mitosis and meiosis and which behave as diploids during meiotic divisions but are in reality polyploids, usually segmental polyploids; (2) polyploids that arose in ancient times, typically many millions of years ago, which no longer exhibit the chromosome pairing and segregation properties characteristic of polyploids but possess whole-genome duplication of chromosomal segments, often highly rearranged – essentially «diploidized polyploids». Taking palaeopolyploids into account, the ancestors of no fewer than 90% of extant flowering plant species have undergone one or more rounds of polyploidization.
Паліндроми	Palindromes	inverted repeats dispersed throughout the genome that facilitate recognition of certain strategic DNA regions (promoters, terminators, etc.) by enzymatic and regulatory proteins.

Термін українською	Термін англійською	Визначення англійською
Пангенезис	Pangenesis	Ch. Darwin's hypothesis on the mechanism by which traits of preceding generations are reproduced in progeny. According to pangenesis, all cells of an organism shed minute particles – gemmules – which concentrate in the reproductive organs and form gametes, thereby ensuring trait inheritance, including newly acquired traits. The pangenesis hypothesis was subjected to experimental testing by F. Galton (1871) and rejected by him, as well as by the majority of other scientists.
Панміксія	Panmixia	random mating of individuals with different genotypes in a population of cross-pollinating organisms. Some degree of panmixia is characteristic of the majority of plant and animal species. Complete panmixia is possible only in ideal populations (of infinite size, free from selection, mutation pressure, migration, and other isolating factors), in which random gamete combination and uniform distribution of genotypic class frequencies is achieved in accordance with the Hardy-Weinberg law.
Панфітотія	Panphytotia	a mass disease of plants extending across several countries or continents.
Панцирність насіння	Seed hull armor	the presence in sunflower seed coats of an armored cell layer that confers resistance to damage by sunflower moth larvae.
Параамінобензойна кислота (ПАБК), вітамін Н1	Para-aminobenzoic acid (PABA), vitamin H_1	a chemical compound widely distributed in nature; a growth factor for multicellular organisms that synthesize folic acid from PABA. As a constituent of folic acid, PABA promotes synthesis of purines and pyrimidines and consequently of DNA and RNA. PABA also influences the metabolism of certain

Термін українською	Термін англійською	Визначення англійською
		biogenic amines. Ethyl and diethylaminoethyl esters of PABA are used in medicine. Antagonists of PABA – sulfonamide drugs – exert their antimicrobial action by virtue of their structural similarity to PABA, which disrupts its utilization in folic acid synthesis by microorganisms. Research has demonstrated the efficacy of PABA used in combination with chemical mutagens for reducing the frequency of chromosomal aberrations, and for increasing agricultural crop yields through pre-sowing seed treatment.
Парадигми	Paradigms	scientific achievements recognized by all that, for a given period, provide a model for problem formulation and resolution within the scientific community.
Паразит	Parasite	an organism that lives on the surface or within the organs and tissues of other living beings (hosts), subsisting at their expense by obtaining ready organic substances from them and inflicting a degree of harm. Endoparasites – inhabiting the interior of the host – and ectoparasites – existing on the surface of the host organism – are distinguished.
Паразит облігатний	Obligate parasite	an organism incapable of living and reproducing independently without feeding on a specific host species.
Паразит факультативний	Facultative parasite	an organism capable of living and reproducing not only at the expense of a host but also utilizing dead organic remains; frequently parasitizes hosts with reduced viability.
Паразитизм	Parasitism	a form of interspecific relationship characterized by the unilateral exploitation by one living organism of another as a source of nutrition and habitat.

Термін українською	Термін англійською	Визначення англійською
Паралоги, паралогічні гени	Paralogs, paralogous genes	homologous genes produced by duplication of an ancestral gene followed by divergence, capable of evolving in parallel within a single species (in contrast to orthologs).
Параметр	Parameter	a quantity characterizing a property of a process, phenomenon, system, or technical device. With respect to seed quality assessment, parameters include mass of 1000 seeds, shape, germination energy, laboratory and field germination, and related measures.
Парамутації	Paramutations	interallelic interactions that cause heritable changes in one of the alleles at high frequency within a single generation. This distinctive form of gene control was identified in the paramutation phenomenon in maize. The gene R, localized on chromosome 10 of maize and determining pigment formation in the aleurone layer, carries alleles Rst (stippled) and Rmb (marbled) that condition aleurone variegation. Heterozygotes R/Rst and R/Rmb, where the alleles originate from geographically distinct populations, produce unusual progeny in which the R gene, upon transmission to progeny, no longer exerts its effect in the absence of the Rst and Rmb alleles. The Rst and Rmb alleles are termed paramutagens.
Паранекроз	Paranecrosis	a set of reversible cellular changes representing a non-specific response to various adverse influences; regarded as the first stage of necrosis. The term was proposed by D. Nasonov in 1940.
Парасексуальний процес	Parasexual process	a sequential chain of events – diploidization through nuclear fusion in vegetative mycelium, segregation of diploids via mitotic crossing-

Термін українською	Термін англійською	Визначення англійською
		over or haploidization – leading to restoration of the haploid state without meiosis.
Паратип	Paratype	the totality of external factors influencing the expression of a genetic trait.
Паратипова мінливість (неспадкова, модифікаційна)	Paratypic variability (non-heritable, modification)	variability of traits conditioned by environmental factors and not rigidly fixed in the genotype.
Парацентрична інверсія	Paracentric inversion	a chromosomal inversion that does not include the centromere.
Партеногенез	Parthenogenesis	the development of a new organism from an egg cell without fertilization. Parthenogenesis may be natural (observed in certain plant and animal species) or artificial, induced by the action of various factors on an unfertilized egg cell.
Партенокарпія	Parthenocarpy	the development of fruits in plants without fertilization and seed formation.
Партія насіння і садивного матеріалу	Seed and planting material lot	any quantity of seed and planting material homogeneous in quality, whose quality is certified by the corresponding document.
Патоген	Pathogen	a parasitic organism capable of causing plant disease.
Патогенез	Pathogenesis	the course of a disease, comprising the totality of processes including infection, development and spread of the pathogen within the plant, and the reactions occurring in the infected plant.
Патогенність	Pathogenicity	the capacity of a microorganism to cause plant disease and to lead a parasitic mode of life.
Патроклінія	Patrocliny	the predominance in progeny of traits of the paternal form.
Пахінема	Pachynema	the stage of prophase I of meiosis during which bivalents shorten, thicken, and become twisted,

Термін українською	Термін англійською	Визначення англійською
		creating the appearance of a reduction in chromosome number to the haploid level. Since DNA replication preceded prophase, however, the actual chromosome and DNA content is tetraploid.
Педігрі	Pedigree method	a plant and animal breeding method consisting in careful selection and progeny analysis from specific crossing pairs to identify individuals with desired hereditary traits, concentrating favorable genes and improving varieties or breeds. The pedigree method enables the creation of pure lines and fixation of valuable genes, which is essential for the development of new varieties and breeds.
Пектини	Pectins	a group of acidic polysaccharides present in the primary cell wall, intercellular spaces, and cell fluid.
Пелюстки	Petals	modified leaves forming the corolla of a flower.
Пенетрантність	Penetrance	the proportion of individuals with a given trait among all individuals carrying the corresponding gene. Under conditions of variable penetrance – when a trait is expressed depending on specific conditions – phenotypic segregation ratios may be substantially altered.
Пентози	Pentoses	organic compounds of the monosaccharide group containing five carbon atoms, including arabinose, ribose, xylose, ribulose, and related compounds.
Пептиди	Peptides	organic substances consisting of residues of identical or different amino acids joined by peptide bonds.
Первинна структура ДНК і РНК	Primary structure of DNA and RNA	encompasses the structure of monomeric residues, the chemical nature of internucleotide

Термін українською	Термін англійською	Визначення англійською
		bonds, and the sequence of monomeric units in the polynucleotide chain.
Первинне насінництво	Primary seed production	the initial stages preceding the production of pre-basic and basic seed, including selection of source material, its progeny evaluation, and multiplication.
Первинні ланки насінництва	Primary seed production links	sowings (plantings) of selection and multiplication nurseries of an approved variety for pre-basic seed.
Первинні ланки розсадництва	Primary nursery production links	steckling plantings of perennial plants established using original planting material of approved varieties in basic nurseries, and the planting material obtained therefrom.
Перелік сортів рослин Організації економічного співробітництва та розвитку	OECD List of Varieties	the official list of plant varieties recognized as eligible for certification by countries that have acceded to the seed schemes of the Organisation for Economic Co-operation and Development.
Переривчаста реплікація	Discontinuous replication	the synthesis of DNA through the formation of short fragments (Okazaki fragments) that are subsequently joined into a continuous strand.
Перехідний фонд насіння	Carry-over seed fund	seed of winter crops from the previous year's harvest designated for sowing in the current year.
Перехресне запилення (алогамія)	Cross-pollination (allogamy)	the pollination of flowers with pollen from other plants of the same species.
Перинуклеарний простір	Perinuclear space	the zone of the nuclear envelope between its two membranes – the space located between the outer and inner membranes of the karyolemma.
Периплазма (периплазматичний простір)	Periplasm (periplasmic space)	a unique compartment in Gram-negative bacteria located between the cytoplasmic (inner) and outer membranes, containing a thin

Термін українською	Термін англійською	Визначення англійською
		peptidoglycan layer and enzymes involved in metabolism, substance transport, and antibiotic resistance (e.g., beta-lactamases).
Перисперм	Perisperm	the reserve nutrient tissue of plant seeds utilized by the embryo during germination.
Перицикл	Pericycle	a layer of primary meristematic cells in roots and occasionally in stems, surrounding the vascular cylinder and located beneath the epidermis.
Період вегетації	Growing season	the period of the year during which growth and development of specific plant species is possible under given climatic conditions.
Перспективний сорт, гібрид	Promising variety or hybrid	a new variety or hybrid that, in the first years of state variety trials, substantially exceeded standard varieties in agronomically valuable traits and properties.
Пилкове зерно	Pollen grain	the male gametophyte, developing from a microspore in microsporangia or in the pollen sac.
Пилок	Pollen	the collective term for pollen grains.
Пігменти	Pigments	colored substances constituting components of organism tissues.
Підвид	Subspecies	an assemblage of local populations of a species inhabiting a defined geographic portion of its range and taxonomically distinguished from other populations of the species.
Підсім'ядольне коліно	Hypocotyl	the stem segment in plant seedlings between the root collar and the point of cotyledon attachment.
Підтримувач сорту	Variety maintainer	a person who, without acquiring intellectual property rights to the variety, ensures the preservation of the variety by maintaining the traits determined at the time of state

Термін українською	Термін англійською	Визначення англійською
		registration, and who distributes a variety constituting public domain or a widely distributed variety.
Пікноз	Pyknosis	the shrinkage of the cell nucleus as a result of one form of cellular degeneration.
Піноцитоз	Pinocytosis	the uptake of liquid by the cell surface and its ingestion by the cell.
Пінцеровка рослин	Plant pinching	the removal of the vegetating plant apex with the aim of accelerating maturation and increasing productivity; particularly effective in sugar beet seed production.
Піримідинові основи	Pyrimidine bases	a group of natural compounds (cytosine, uracil, thymine, and minor pyrimidine bases) that are derivatives of the heterocyclic nitrogenous base pyrimidine. They are constituents of nucleic acids and, by virtue of their capacity to interact specifically (by complementarity) with purine bases, participate in the coding and transmission of hereditary information. Pyrimidine bases are structural components of nucleotide coenzymes playing an important role in carbohydrate and lipid metabolism, antibiotics, and many other biologically active compounds.
Післязбиральне дозрівання насіння	After-ripening of seed	the biochemical processes occurring in freshly harvested plant seed that lead to the breaking of dormancy.
Плавлення (ДНК або РНК)	Melting (of DNA or RNA)	the dissociation of complementary strands of double-stranded DNA or RNA, as well as DNA-RNA heteroduplex molecules, with formation of single strands.
Плазматична мембрана	Plasma membrane	a structure surrounding the cell of plant organisms that separates the cell contents from the external environment.

Термін українською	Термін англійською	Визначення англійською
Плазміда (епісома)	Plasmid (episome)	a small circular DNA molecule capable of stable, chromosome-independent existence and autonomous replication, localized in the cytoplasm of bacterial cells and cells of certain yeasts; plasmids may also integrate into chromosomes. A plasmid can integrate into the genome of the host cell and persist in a state integrated with the bacterial DNA, behaving like chromosomal bacterial genes.
Плазміда гібридна (рекомбінантна)	Hybrid (recombinant) plasmid	a circular molecule containing one or more fragments of foreign DNA.
Плазмогамія	Plasmogamy	the initial stage of the sexual process, in which fusion of the cytoplasm of two gametes of opposite mating types occurs.
Плазмогени	Plasmogenes	genes localized in the DNA of cytoplasmic organelles (mitochondria, chloroplasts) and other extranuclear elements of the cell.
Плазмодесми	Plasmodesmata	cytoplasmic strands connecting the protoplasts of adjacent cells in plants. Plasmodesmata are filled with hyaloplasm and may contain vacuoles and endoplasmic reticulum cisternae; they mediate communication between cell protoplasts.
Плазмоліз	Plasmolysis	the separation of the cytoplasm from the cell wall.
Плазмон (плазмотип)	Plasmon (plasmatype)	the totality of all plasmogenic units, consisting of the cytoplasmon with carriers of cytoplasmic heredity and the plastome with plastid hereditary elements. Determinants represent self-duplicating protein particles, non-identical to one another, distributed among daughter cells during somatic divisions – apart from the genetic material changes known for the cell

Термін українською	Термін англійською	Визначення англійською
		nucleus through mutations and hybrid combinations.
Планова врожайність	Planned yield	the quantity of produce obtainable from 1 ha under specific farm conditions, determined prior to sowing taking into account varietal potential, previously achieved yield levels, soil fertility, and enterprise provision of machinery and mineral fertilizers.
Пластиди	Plastids	organelles in the cytoplasm of plant cells. Three plastid types are distinguished chloroplasts – green plastids in which photosynthesis occurs; chromoplasts – derivatives of chloroplasts, less frequently leucoplasts, colored by carotenoid pigments that are intensively synthesized during ripening with simultaneous degradation; and leucoplasts – colorless plastids in which starch and protein are stored.
Пластичність	Plasticity	the degree of change in genotype expression under the influence of varying environmental conditions.
Пластичність відносна	Relative plasticity	the relative level of modification variability enabling an organism, as the carrier of a specific genotype, to adapt to environmental changes; the quantitative expression of the norm of reaction.
Пластичність генетична	Genetic plasticity	the capacity of the genetic structure of populations to change across generations, to genetically adapt to environmental conditions (population-genetic adaptive capacity), and thereby to survive. The prerequisite of genetic plasticity is concealed, or potential, genetic variability. Genetic plasticity is strongly influenced by selection.

Термін українською	Термін англійською	Визначення англійською
Пластичність геному	Genome plasticity	the genetically programmed capacity of the genome to change during ontogenesis in adaptation to varying environmental conditions – for example, through ontogenetic polyploidy, polysomaty, differential amplification of specific sequences, and the capacity to form genotrophs. It results from the interaction of the genotype and environmental conditions at the level of genome structure in different cells of the organism.
Пластичність розвитку	Developmental plasticity	the capacity of an organism to reversibly adapt to local environmental conditions. Two types of developmental plasticity are distinguished (1) the organism's genotype produces different phenotypes under different environmental conditions, with the most adapted phenotype being the one formed under those specific conditions; (2) the genotype is so balanced that environmental changes exert no pronounced influence on development and a phenotype equally adapted to all conditions is formed across diverse environments – this form is termed «canalization of development», in contrast to the first type, termed «adaptive plasticity».
Пластичність сорту	Varietal plasticity	the property of a variety to produce satisfactory yields when grown under different soil-climatic conditions or within a given zone under variable annual meteorological conditions.
Пластичність фенотипова	Phenotypic plasticity	the capacity of an organism to maintain its vital functions under new conditions through phenotypic changes.
Пластом	Plastome	the plastid system of the cell as the third element of the complex system consisting of the genome, plasmon, and plastome.

Термін українською	Термін англійською	Визначення англійською
Плейотропія	Pleiotropy	the capacity of a gene to simultaneously influence several traits. The cause of pleiotropy may be the participation of the product (e.g., an enzyme) of a single gene in several biochemical reactions.
Плечі хромосоми	Chromosome arms	the two equal or unequal parts of a chromosome formed by division of the chromosome at the centromere.
Плід	Fruit	the reproductive organ of flowering plants, formed after fertilization from the pistil and other floral parts (receptacle, perianth, peduncle) and serving for the protection and dispersal of seeds.
Плодоношення	Fruiting	the stage of plant development during which they flower and form fruits; during the growing season, fruiting is the phenological phase from fruit set to full maturation.
Плоїдність	Ploidy	the number indicating how many times the chromosome set characteristic of the gametes of organisms of a given species is repeated in the cell nucleus.
Плямистість	Spotting	one form of manifestation of mycoses, characterized by the appearance of spots of various shapes, sizes, and colors on plant organs.
Побічний синтез ДНК	Unscheduled DNA synthesis	any DNA synthesis in a eukaryotic cell occurring outside the S-phase.
Повідомлення про ризик	Risk communication	the mutual exchange of information on GMO risk among risk assessment specialists, risk management personnel, interested trading partners, and other interested parties.
Повнота сходів	Stand establishment	the number of seedlings expressed as a percentage of the optimal plant number for given conditions.

Термін українською	Термін англійською	Визначення англійською
Повтор	Repeat	a duplication of a chromosomal segment in which the duplicated regions are adjacent to one another in direct or inverted orientation.
Повторення, повторність	Replication (in experimental design)	a portion of an experimental (variety trial) area containing the complete set of experimental variants, varieties, or lines. As the number of replications increases, the reliability of the experiment increases.
Повтори ДНК	DNA repeats	dispersed DNA repeats approximately 300–7,000 bp in length, occurring multiple times in the genome, oriented in various directions, and separated from one another by distances ranging from zero to tens of thousands of bp (average 1,600 bp), constituting approximately 5% of the genome.
Повтори мікросателітні	Microsatellite repeats	tandem repeats with a repeat unit size of 1–9 nucleotides, dispersed throughout the genome and generally characterized by high population-level variability in the number of core repeat units in a cluster; including, for example, variable-number di-, tri-, tetra-, and pentanucleotide tandem repeats.
Повтори мінісателітні	Minisatellite repeats	tandem repeats with unit size of 9–64 bp, dispersed throughout the genome.
Повторювана ДНК	Repetitive DNA	a nucleotide sequence represented in the genome by a large number of copies. Repetitive sequences are frequently found as clusters in specific chromosomal regions. Repetitive DNA is classified into several categories highly repetitive fraction containing short sequences (5–100 bp) repeated up to one million times; moderately repetitive sequences of 100–500 bp repeated 100–10,000 times (e.g., rRNA and tRNA genes); and unique fraction.

Термін українською	Термін англійською	Визначення англійською
Погода	Weather	the totality of meteorological factors (air temperature and humidity, wind speed, cloudiness, precipitation, etc.) observed in the surface layer of the atmosphere over a short period.
Подвійне запліднення	Double fertilization	the sexual process in angiosperms occurring in the embryo sac, consisting in the fusion of one sperm with the egg cell nucleus and of another sperm with the central cell nucleus or with one of the polar nuclei. From the fertilized egg cell (zygote) the embryo develops, and from the fertilized central nucleus the endosperm develops. Double fertilization was discovered by S. G. Navashin in 1898.
Подвійний міжлінійний гібрид	Double interline hybrid	a hybrid obtained by crossing two simple interline hybrids.
Подвоєні гаплоїди	Doubled haploids	diploids produced by chromosome number doubling in haploids; theoretically, they represent completely homozygous organisms.
Поживні речовини	Nutrients	compounds accessible to plants that contain elements necessary for plant nutrition; of vital importance for plant life. Macroelements and microelements are distinguished.
Позахромосомна (цитоплазматична) спадковість	Extrachromosomal (cytoplasmic) inheritance	heredity conditioned by genes localized outside the nucleus (in the cytoplasm). The carrier of heredity is genetic material localized in mitochondria and plastids (chloroplasts).
Позитивна надспіралізація ДНК	Positive DNA supercoiling	the winding of double-stranded DNA in the same direction as the double helix itself.
Показник	Indicator	a value expressing data that indicate the development of something or the degree of expression of a parameter – for example, wheat stem length of 80 cm.

Термін українською	Термін англійською	Визначення англійською
Покоління	Generation	a group of individuals in a population with equal remoteness from common ancestors, or coexisting simultaneously during a life cycle.
Покритонасінні	Angiosperms	a division of higher seed plants characterized by the possession of a flower with an ovary in which enclosed ovules are located and double fertilization occurs.
Полівольтний (мультивольтний)	Polyvoltine (multivoltine)	a species having two or more complete generations per year.
Полігаплоїд, алоплоїд	Polyhaploid, alloploid	a cell or organism containing several differentiated haploid chromosome sets, formed as a result of hybridization. For example, the haploid of bread wheat – hexaploid in origin (genome AABBDD) – is a triploid (ABD) with n = 3x.
Полігени	Polygenes	genes responsible for quantitative (continuous) genotypic changes that interact by the type of cumulative polymery.
Полігенія	Polygeny	the influence of several genes on the formation of a single trait that appears uniform.
Полігенні (складні) ознаки	Polygenic (complex) traits	traits consisting of two or more phenes.
Полігібрид	Polyhybrid	an organism obtained by crossing individuals differing in more than three gene pairs.
Полігібридне схрещування	Polyhybrid cross	crossing of organisms differing in three or more pairs of alleles.
Поліембріонія	Polyembryony	the presence of several embryos in a single seed.
Полікарпічні рослини	Polycarpic plants	plants that flower and fruit repeatedly throughout their lifetime (the majority of perennial flowering plants).
Полікрос	Polycross	a method for determining combining ability in cross-pollinating crops, based on free cross-

Термін українською	Термін англійською	Визначення англійською
		pollination of each tested accession with pollen from a defined set of other forms, resulting in the production of polycross synthetic hybrids.
Полімерази	Polymerases	enzymes catalyzing the formation of macromolecules from low-molecular-weight substances. The most important polymerases are nucleotidyltransferases, which catalyze the synthesis of nucleic acids from nucleoside triphosphates using DNA or RNA as a template, including DNA-dependent RNA polymerase (carrying out DNA transcription), DNA-dependent DNA polymerase (catalyzing DNA replication), RNA-dependent DNA polymerase (reverse transcriptase, identified in oncogenic and non-oncogenic viruses), and replicase (effecting RNA synthesis in cells infected by RNA-containing viruses).
Полімеразна ланцюгова реакція (ПЛР)	Polymerase chain reaction (PCR)	a method for amplification of specific DNA sequences, described in 1987, enabling the production of numerous copies of a defined DNA sequence within a relatively short period. PCR requires oligonucleotide primers that delimit the DNA sequences to be amplified.
Полімеразна ланцюгова реакція з довільними праймерами (AP-PCR)	Arbitrarily primed PCR (AP-PCR)	a modification of the standard PCR method enabling amplification of target DNA sequences without prior knowledge of the nucleotide sequences of the given genome. The method enables detection of polymorphism between different plant varieties, bacterial and fungal strains, etc.
Полімеразна ланцюгова реакція зі зворотною транскриптазою (RT-PCR)	Reverse transcription PCR (RT-PCR)	a variant of the PCR method modified for the analysis of RNA molecules. In the first step, single-stranded cDNA is synthesized from the target mRNA molecule template using reverse

Термін українською	Термін англійською	Визначення англійською
		transcriptase, which is then amplified by the standard PCR method.
Полімерія	Polymery	a type of gene interaction in which the degree of development of a single trait is conditioned by the simultaneous action of several synonymous genes, termed polymeric genes.
Полімерні гени	Polymeric genes	non-allelic genes acting on the same trait in the same manner. If each dominant gene individually exerts the same effect on trait development as the sum of all dominant polymeric genes present in the genotype, this type of polymery is termed non-cumulative. If the degree of trait expression depends on the number of corresponding dominant alleles of polymeric genes present in the genotype, polymery is termed cumulative.
Поліморфізм	Polymorphism	the simultaneous permanent presence in a population of two or more genotypic and phenotypic groups of individuals differing from one another. Seasonal, sexual, and age polymorphism are distinguished. Polymorphism has significant biological importance, ensuring species persistence under diverse environmental conditions and providing the basis for the emergence of new species through character divergence among different groups of individuals of a polymorphic species.
Поліморфізм ДНК	DNA polymorphism	the phenomenon of heterogeneity or variability of the nucleotide composition of homologous DNA sequences, arising as a result of point mutations, insertions, deletions, or inversions, generally in non-coding sequences.
Поліморфізм довжини	Restriction fragment length	variation in the length of DNA fragments produced by specific restriction endonucleases

Термін українською	Термін англійською	Визначення англійською
рестрикційних фрагментів, ПДРФ	polymorphism (RFLP)	from the genomic DNA of two or more species or organisms.
Поліморфізм популяції, групова мінливість	Population polymorphism, group variability	one level of intraspecific variability, reflecting differences in certain traits among groups of individuals or populations.
Поліморфність популяції	Population polymorphism rate	the proportion of polymorphic loci out of the total number of loci studied.
Полінуклеотиди	Polynucleotides	natural or synthetic complex biopolymers containing tens, and sometimes thousands, of nucleotides.
Поліплоїд	Polyploid	a nucleus, cell, or organism possessing more than two haploid chromosome sets (3n, 4n, etc.). Autopolyploids – containing a multiplied number of their own genomes – and allopolyploids – containing genomes of different species or genera – are distinguished.
Поліплоїдія	Polyploidy	the phenomenon of whole-number multiplication of chromosome number in cell nuclei of plants, protists, and less commonly multicellular animals. Polyploidy is conditioned by spontaneous or experimental mutation. Balanced polyploidy – producing cells with an even chromosome number (2n diploid, 4n tetraploid, 6n hexaploid, 8n octoploid, 10n decaploid, etc.) – and unbalanced polyploidy – producing cells with an odd chromosome number (3n triploid, 5n pentaploid, 7n heptaploid, etc.) – are distinguished. Under sexual reproduction, balanced natural polyploids are normally fertile, while unbalanced polyploids are sterile (reproducing asexually or parthenogenetically). Polyploidy is of great general biological significance it increases organismal resistance to various influences,

Термін українською	Термін англійською	Визначення англійською
		constitutes an important source of heritable variability, and is capable of fixing heterosis. The regularities underlying polyploidization are exploited for the production of valuable economic forms.
Поліплоїдний ряд	Polyploid series	a group of related plant species that differ from one another by whole-number multiplication of the basic chromosome number.
Полірибосома або полісома	Polyribosome, or polysome	a structure combining the simultaneous functioning of up to several dozen ribosomes on a single mRNA molecule.
Полісахариди	Polysaccharides	high-molecular-weight carbohydrates whose molecules consist of monosaccharide residues linked by glycosidic bonds.
Полісомія	Polysomy	an increase in the number of homologous chromosomes through the appearance of supernumerary chromosomes (trisomic 2n+1, double trisomic 2n+1+1, tetrasomic 2n+2, etc.); arising generally as a result of chromosome non-disjunction during cell division anaphase.
Поліспермія	Polyspermy	fertilization of an egg cell by multiple sperms. In angiosperms, when a large number of pollen tubes penetrate the embryo sac, several sperms enter the egg cell; however, as a rule, only one participates in nuclear fusion.
Політенія	Polyteny	a variant of endomitotic polyploidy in which chromosomes (and correspondingly DNA) undergo repeated doubling without chromatid separation, producing giant (polytene) chromosomes hundreds of times larger than ordinary ones, with ploidy levels of several hundreds to thousands.
Поліфакторний	Polyfactorial	controlled by several genetic factors.

Термін українською	Термін англійською	Визначення англійською
Положення гена	Gene position	the location of a gene within a chromosome.
Польова стійкість до захворювань	Field resistance to diseases	resistance controlled by a polygenic system that confers relative, partial resistance to all races of the disease affecting a given variety under natural field conditions.
Польова схожість насіння	Field germination	seed germination determined under field conditions, expressed as a percentage of the number of viable seeds sown.
Польове обстеження	Field inspection	monitoring of the quality of work on hybrid seed production at hybridization plots, maintenance of spatial isolation standards, and completeness of male sterility in plants during multiplication of sterile analogues, lines, or varieties.
Польове оцінювання	Field evaluation	the assessment of the condition and varietal qualities of seed crops, perennial plantings, seed, and planting material.
Польовий метод дослідження	Field research method	the principal method for studying agricultural crops, involving direct investigation under field conditions. It encompasses meteorological and phenological observations, agro-physical, agrochemical, and microbiological soil studies, as well as botanical, physiological, and biochemical studies of harmful organisms, enabling identification of varietal and hybrid characteristics and clarification of the nature of productivity differences.
Полютанти	Pollutants	environmental contaminants.
Попереднє (мале) сортовипробо-вування	Preliminary (small-scale) variety trial	the initial testing of the best breeding lines – future varieties – selected in the control nursery.
Попереднє охолодження насіння	Pre-chilling of seed	the holding of imbibed seed at low temperature prior to germination to overcome dormancy.

Термін українською	Термін англійською	Визначення англійською
Попереднє прогрівання насіння	Pre-warming of seed	the holding of seed at elevated temperature prior to germination to overcome dormancy.
Попереднє розмноження	Preliminary multiplication	the multiplication of the most promising varieties – candidates for state variety trials, or varieties that demonstrated the best results in the first year of state variety trials – identified on the basis of preliminary and competitive trial results.
Популяційна генетика	Population genetics	a branch of genetics studying the genetic structure and dynamics of the genetic composition of populations. Factors determining the dynamics of population genetic composition include the mutation process, genetic drift, isolation, and natural selection. Modern population genetics studies natural and experimental populations of various plant and animal species and microorganisms, as well as problems of genetic polymorphism, mutation load, and spatial population structure.
Популяційна динаміка	Population dynamics	the study of changes in the size of assemblages of individuals, determined by intrapopulation processes and interactions among populations of different species.
Популяційна екологія	Population ecology	a branch of ecology studying the conditions of formation, structure, and developmental dynamics of populations of individual species.
Популяційна морфологія	Population morphology	a branch of population biology directed toward resolving problems of evolutionary biology and ecology, characterizing intra- and intergroup intraspecific differences on the basis of metric, meristic, and non-metric traits and statistical methods.

Термін українською	Термін англійською	Визначення англійською
Популяційна рівновага	Population equilibrium	the balanced state of allele frequencies in a panmictic population, expressed by the Hardy-Weinberg law.
Популяційний онтогенез	Population ontogenesis	the transformation of the species developmental program, common to all individuals of a population, that has been historically refined by selection for specific conditions of its existence.
Популяційний склад патогена	Population composition of a pathogen	the totality of races, biotypes, and strains of a given pathogen species identified within a defined territory during a defined period.
Популяційно-генетичні параметри	Population-genetic parameters	indicators characterizing the genetic structure of a population.
Популяція	Population	an assemblage of individuals of the same species sharing a common gene pool and occupying a defined territory within which free interbreeding (panmixia) occurs and no significant isolation barriers exist; separated from neighboring similar assemblages of the species. Population composition is determined not by random association of individuals but by defined relationships of the species with its complex of environmental conditions in the course of speciation. Each species is represented by an assemblage of populations. The term «population» was introduced by W. Johannsen in 1903.
Популяція гібридна	Hybrid population	an assemblage of hereditarily distinct plants obtained as a result of hybridization.
Популяція локальна	Local population	an assemblage of individuals potentially interbreeding within a defined locality.
Популяція маргінальна	Marginal population	a population situated in the peripheral portion of its species range.

Термін українською	Термін англійською	Визначення англійською
Популяція патогена	Pathogen population	an assemblage of individuals of a given species, race, or strain, similar in anatomical-morphological characteristics, capable of interbreeding, and characterized by territorial commonality.
Пори ядерної оболонки	Nuclear pores	through-apertures in the nuclear envelope formed by the fusion of the two karyolemma membranes at specific sites. Pores contain a pore complex that forms an aqueous channel and regulates the transport of fluid and dissolved substances from the nucleus to the cytoplasm.
Поріг шкідливості	Economic threshold	the population density of a pest or pathogen at which crop productivity (yield) begins to decline.
Порогамія	Porogamy	the penetration of the pollen tube into the pollen sac through the micropyle during fertilization.
Порогові неметричні ознаки	Threshold non-metric traits	non-metric traits based on quantitative variability to which epigenetic threshold constraints are superimposed. In some individuals, threshold non-metric traits are not expressed (remaining below the threshold). Those threshold non-metric traits expressed in the phenotype vary continuously from small to large values, as do ordinary quantitative (metric) traits.
Порушення екологічної рівноваги	Disruption of ecological equilibrium	changes in the processes of interaction and in the composition of ecological components and ecosystem elements, ultimately resulting in its replacement by another ecosystem over an extended period.
Посадковий матеріал	Planting material	seed or planting material considered suitable for the reproduction of intact plants.

Термін українською	Термін англійською	Визначення англійською
Посвідчення про кондиційність насіння	Seed conditionality certificate	a state document issued by the state seed inspection authority for a lot of conditioned seed.
Посівна одиниця	Sowing unit	a defined quantity of seed, specified in units and kilograms, contained in a single factory packaging, calculated to be sufficient for sowing a specific area of land.
Посівна придатність насіння	Sowing suitability of seed	the percentage content of germinable seeds of the principal crop in a seed lot, calculated from laboratory germination and physical purity values.
Посівний матеріал	Sowing material	seed ready for sowing.
Посівні якості насіння	Sowing qualities of seed	the totality of indicators characterizing seed suitability for sowing.
Послідовність	Sequence	the order of arrangement of nucleotides in nucleic acid strands and amino acids in a polypeptide chain.
Послідовності	Sequences	fractions of nucleotide sequences classified as unique sequences – DNA regions with distinctive structure occurring singly in the genome; repetitive sequences – DNA regions with distinctive structure occurring twice or more in the genome; and satellite DNA – short, highly repetitive DNA regions that may be represented by even millions of copies in the genome.
Постадаптація	Post-adaptation	evolutionary changes in organisms that refine existing adaptive properties.
Постачальники	Suppliers	persons engaged in one of the following professional activities concerning planting material multiplication, production, preservation and/or processing, placing on the market, and importing.

Термін українською	Термін англійською	Визначення англійською
Посухостійкість	Drought resistance	the capacity of plants to most productively utilize water and nutrients under high temperatures, low relative air humidity, and low soil moisture, forming a high-quality yield under these conditions. Drought resistance is controlled by polymeric genes and is characterized by an intermediate inheritance type in hybridization.
Потенціал ботанічний	Botanical potential	(1) the hereditarily determined degree of species resistance to adverse environmental factors; (2) the degree of capacity of plant cover to transform solar energy in the course of the biological cycle.
Потенціал виживання	Survival potential	the degree of species resistance to adverse environmental conditions, determined by its ecological valence.
Потенційна врожайність (ПУ)	Potential yield (PY)	the theoretically maximum quantity of produce obtainable from 1 ha upon full realization of the productive potential of a variety.
Потенційні втрати	Potential losses	yield losses that may be caused by quarantine objects and other particularly dangerous harmful plant organisms.
Потік генів	Gene flow	one- and two-directional exchange of genes between populations.
Поширеність хвороби рослин	Plant disease prevalence	the number of diseased plants expressed as a percentage of the total number of plants examined.
Поширеність шкідника рослин	Plant pest prevalence	the percentage of phytocoenosis areas surveyed during a given period in which a given pest species has been detected.
Поширення шкідника чи хвороби рослин	Spread of a plant pest or disease	the dissemination of a pest or disease within a defined territory over a given time interval.

Термін українською	Термін англійською	Визначення англійською
Пошкодженість рослин	Plant damage rate	the number of plants damaged by a harmful organism, expressed as a percentage.
Праймер ДНК	DNA primer	a short nucleic acid fragment or associated molecule serving as the starting point for DNA replication. A primer is required because no DNA polymerase (the enzyme catalyzing DNA replication) can initiate synthesis of a new DNA molecule from a single-stranded template, as it requires a double-stranded region for attachment and can only add a nucleotide to an existing 3′-OH group of another nucleotide.
Праймосома	Primosome	a complex of proteins participating in the initiation of fragment synthesis during discontinuous DNA replication; primosomes can migrate along the DNA molecule.
Преадаптація	Preadaptation	the emergence in an organism of potential adaptive traits that may acquire adaptive value under altered conditions of existence; preadaptation is controlled by natural selection and is a by-product thereof.
Превалентність	Prevalence	an indicator of the frequency of occurrence of carriers (sources of infectious agents), including copies of transposons or transpositions.
Предетермінація цитоплазми	Cytoplasmic predetermination	the inheritance of traits through the DNA of organelles (mitochondria, plastids) located in the cytoplasm; transmitted exclusively through the maternal line.
Представник	Representative	a person acting in the interests of an applicant and/or other rights holders concerning a variety, with the aim of carrying out any legal actions for which the right has been acquired on the basis of a transaction or by law.

Термін українською	Термін англійською	Визначення англійською
Преформізм	Preformationism	the doctrine asserting the presence in the gametes of an organism of fully formed miniature embryos or their parts. Adherents of preformationism interpreted individual organismal development mechanistically, as mere unfolding or quantitative growth of embryonic parts already present in the gametes.
Природне середовище	Natural environment	the totality of abiotic, biotic, and edaphic factors influencing an organism.
Проба	Sample	the required quantity of seed or plant parts (vegetative and generative organs) of a given variety, selected from the total quantity for examination and analysis.
Пробанд	Proband	the individual in genealogical analysis from whom investigation begins when constructing a pedigree.
Пробна ділянка	Sample plot	a portion of a seed crop on which plants are evaluated during field inspection and assessment.
Провіруси	Proviruses	DNA copies of the viral genome integrated into the chromosomes of infected cells, which may cause malignant transformation of cells.
Провокаційний фон	Provocative background	an artificially created environment for accelerating the evaluation of breeding material for resistance to a specific adverse factor.
Програмування	Programming	the development and implementation of a scientifically substantiated complex of interrelated measures for cultivating plant varieties, whose timely and high-quality execution will ensure attainment of planned yields while simultaneously improving soil fertility.
Прогрес біологічний	Biological progress	the improvement of organisms of individual taxa in the course of evolution.

Термін українською	Термін англійською	Визначення англійською
Прогулянка по хромосомі, прогулянка по геному	Chromosome walking, genome walking	a method for selecting clones from a genomic library containing restriction fragments with overlapping sequences for sequencing. Applied for the isolation and analysis of nucleotide sequences (new genes) flanking known genes for which oligonucleotide probes are available; overlapping sequences are used to investigate unknown genomic regions, screen allelic gene loci, and map DNA.
Продукти переробки зерна	Grain processing products	flour, groats, compound feed, gluten, malt, and by-products of grain processing, including bran, oil cake, and meal.
Продуктивність біологічна	Biological productivity	the quantity of biological matter (biomass) produced by a population or community per unit area over a given period.
Продуктивність біоценозу	Biocoenosis productivity	the quantity of biomass produced by the organisms of a biocoenosis per unit soil surface area during a given period (year, month, etc.).
Продуктивність рослин	Plant productivity	the mean yield of a single plant.
Продуктивність фітоценозу	Phytocoenosis productivity	the quantity of organic matter (biomass) produced by the plants of a given phytocoenosis per unit area per year.
Продуценти	Producers	autotrophic organisms that form organic substances from inorganic ones through photosynthesis or chemosynthesis.
Прокаріоти	Prokaryotes	unicellular organisms (bacteria, cyanobacteria) that lack a membrane-bound nucleus and most organelles. Prokaryotic DNA exists as a circular molecule (nucleoid) in the cytoplasm. Prokaryotes reproduce by division and play a key role in the biosphere.
Проксимальний	Proximal	situated closer to the median plane of the body or another important reference point. In

Термін українською	Термін англійською	Визначення англійською
		genetics, the closer proximity of a given chromosomal region (site) to the centromere relative to other regions of the same arm.
Проламін	Prolamin	storage proteins of cereal grain seeds.
Пролін	Proline	a heterocyclic amino acid of natural proteins.
Проліферація	Proliferation	the growth of a tissue or organ through reproduction (division) of its cells, resulting in an increase in their number.
Промотор	Promoter	a specific DNA region performing a regulatory function through attachment of RNA polymerase that initiates RNA transcription; consists of 80–90 nucleotide pairs.
Промутагени	Promutagens	chemical compounds that are converted into mutagens only within plant, animal, or human organisms through metabolic activation.
Прополка видова	Species roguing	the removal from the varietal composition of a crop stand of admixtures belonging to other species and genera.
Прополка сортова	Varietal roguing	the removal from the varietal composition of a crop stand of admixtures belonging to other varieties.
Проростання насіння	Seed germination	the totality of processes – adequate moisture, free access to oxygen-containing air, defined temperature, and for certain species also light – that condition the development and emergence of the sprout.
Проросток	Seedling	a sprout with embryonic rootlets formed during seed germination.
Простий міжлінійний гібрид	Single cross hybrid	a hybrid obtained by crossing two constant inbred lines.
Просторова ізоляція посівів	Spatial isolation of crops	the placement of crops at a defined distance from one another to prevent cross-pollination

Термін українською	Термін англійською	Визначення англійською
		between varieties or botanically related crops, for the preservation of varietal purity.
Протандрія	Protandry	the earlier maturation of pollen, which is shed before the stigma of the same flower is receptive.
Протеїди	Proteids	complex proteins consisting of simple proteins – proteines – and non-protein substances (prosthetic groups).
Протеїни	Proteines	simple proteins consisting of amino acid residues.
Протогінія	Protogyny	the earlier maturation of the pistil and stigmas relative to the stamens.
Протоплазма (жива речовина)	Protoplasm (living matter)	the contents of a living cell – its cytoplasm and nucleus.
Протопласт, ізольований протопласт	Protoplast, isolated protoplast	a plant cell deprived of its cell wall by enzymatic degradation or mechanical means.
Протруювання насіння	Seed dressing	pre-sowing treatment of seed with chemical dressings against fungal and bacterial disease pathogens present on the seed surface, and for protection of seedlings against soil pests.
Профаг	Prophage	the genome of a temperate bacteriophage located within a bacterial cell, replicating simultaneously with chromosome replication. Upon prophage induction, closely situated regions of the bacterial chromosome or bacterial DNA fragments may become incorporated into the phage genome. Such phages are used in experiments involving specific and generalized transduction.
Профаза	Prophase	the first phase of the meiotic and mitotic cell cycle. During prophase, cell polarization occurs through separation of centrioles to opposite poles of the cell and formation of the

Термін українською	Термін англійською	Визначення англійською
		division spindle between them. In mitotic prophase, chromosomes shorten, thicken, and acquire the appearance of double threads; at the end of prophase the nucleolus disappears and the nuclear envelope breaks down. Meiotic prophase consists of several stages – leptonema, zygonema, pachynema, diplonema, and diakinesis – during which chromosome synapsis and crossing-over occur.
Процес інфекційний	Infectious process	the totality of biological processes in an organism caused by an infectious agent.
Процесинг	Processing	the totality of reactions leading to the conversion of primary transcription and translation products into functioning molecules. Processing affects functionally inactive precursor molecules of various ribonucleic acids (tRNA, rRNA, mRNA) and many proteins. In RNA precursor processing, in the simplest cases, excess nucleic acid sequences are removed from both ends of these molecules. A specific type of processing – splicing – has been identified in eukaryotic cells, affecting precursors of all mRNAs and also certain tRNAs and rRNAs.
Прямі ознаки	Direct traits	traits by which varieties and breeding forms are evaluated directly through counting, measurement, weighing, and related methods.
Псевдогени	Pseudogenes	structurally altered and non-functioning copies in the eukaryotic genome.
Псевдогібриди	Pseudohybrids	non-hybrid individuals formed during hybridization as a result of self-pollination, developing according to the maternal type.
Псевдодиплоїд	Pseudodiploid	a nucleus, cell, or organism characterized by a chromosome number corresponding to the

Термін українською	Термін англійською	Визначення англійською
		diploid number but differing from the diploid in chromosome morphology, i.e., aberrant.
Псевдодомінантність	Pseudodominance	the expression of a recessive gene (allele) conditioned by loss of the corresponding gene in the homologous chromosome.
Пульверизація	Pulverization	a complex structural chromosomal aberration representing an extreme case of fragmentation, in which entire (or all) chromosomes of a cell are dispersed into a multitude of small fragments.
Пункт дослідження	Research station	a subdivision of an expert institution in the corresponding soil-climatic zone that directly conducts field studies for the qualification examination of plant varieties.
Пуринові основи	Purine bases	a group of natural compounds (adenine, guanine, and minor purine bases) that are derivatives of the heterocyclic nitrogenous base purine. They are constituents of nucleosides – in which purine bases are linked to ribose or deoxyribose – and of nucleotides (phosphoric esters of nucleosides) – the structural components of nucleic acids. Purine bases also play a role in cellular bioenergetics (ATP).
Пуф, пуфи	Puff, puffs (Fr. pouf)	thickenings on the giant (polytene) chromosomes of dipterans, formed as a result of despiralization of functionally active chromosomal regions with the formation of open DNA loops. The larger the puffs (large puffs are termed Balbiani rings) and the more loosened their material, the higher the rate of transcription (RNA synthesis) in that region. Study of the dynamics of puff formation – and consequently of the activity of individual genes – enables understanding of how the same chromosomal set, essentially similar in all cells

Термін українською	Термін англійською	Визначення англійською
		of an organism, participates in the differentiation of different cellular systems.
Пуфінг	Puffing	a cytological indicator of the differential activity of genes at different stages of somatic cell development.
Пшенично-житні транслокації (ПЖТ)	Wheat-rye translocations (WRT)	the transfer of chromosomal segments from rye (typically the short arm of chromosome 1R) into the genome of common wheat. They are employed in breeding to enhance grain yield, disease resistance, and adaptability to adverse environmental conditions. Wheat-rye translocations represent an effective approach to the improvement of soft winter wheat, although they may occasionally cause a slight deterioration in bread-making quality.
Р		
Радіаційна генетика	Radiation genetics	the study of heritable changes arising as a result of exposure to various forms of radiation.
Радіаційна екологія	Radiation ecology	a science that investigates the patterns of interaction between ecosystems and radioecological factors, as well as the effects of ionising radiation on ecosystems.
Радіаційний ефект	Radiation effect	the response of cells or an organism to the action of ionising radiation.
Радіоавтографія	Radioautography	a method that enables the determination of the distribution of radioactive elements introduced into a living organism across individual organs and tissues, based on their effect on photographic film.
Радіоактивні речовини	Radioactive substances	substances whose composition includes atoms of radioactive elements.
Радіоліз	Radiolysis	the decomposition of water molecules and other substances within cells under the influence of ionising radiation. It arises as a

Термін українською	Термін англійською	Визначення англійською
		result of the rupture of chemical covalent bonds between atoms within a molecule. Upon radiation exposure, ionisation products – free radicals – are generated in water; these combine to form a series of compounds such as hydrogen peroxide, which in aqueous media bring about a range of chemical transformations of substances and constitute the indirect action of ionising radiation on living cells.
Радіопротектори	Radioprotectors	substances capable of reducing the lethal effect of ionising radiation. Effective radioprotectors include sulphur-containing amino acids – cysteine, cystine, methionine, and others.
Рамет	Ramet	an individual representative of a clone arising from vegetative reproduction.
Рамка зчитування	Reading frame	one of the three possible ways of reading a nucleotide sequence as a consecutive series of triplets.
Рамка зчитування відкрита	Open reading frame	a sequence of mRNA triplets containing no termination codons; it can potentially be translated into a polypeptide chain. Also, an extended DNA fragment beginning with a start codon and containing a whole number of codons without a stop codon.
Раса	Race	a group of organisms sharing common traits that are, however, less significant than those characterising a species. In biological systematics, a race denotes groups of organisms of the same species or subspecies that have acquired certain differences as a result of varying conditions of existence.

Термін українською	Термін англійською	Визначення англійською
Раса шкідливого організму	Race of a harmful organism	a portion of a species or a specialised form of a harmful organism capable of infecting specific cultivars (hybrids) of host plants.
Реакліматизація	Reacclimatisation	the restoration within a biocoenosis of a particular plant species that previously existed and was eliminated.
Реакція ланцюгова природна	Natural chain reaction	a chain of natural phenomena in which each link influences changes in others connected to it.
Реалізація насіння або садивного матеріалу	Sale and supply of seed or propagating material	the activity of legal entities and/or individual entrepreneurs involving the sale and/or supply of seed or propagating material.
Реасоціація ДНК	DNA reassociation	the interaction of complementary DNA strands to form a double (double-stranded) helix.
Реверсія	Reversion	1. In genetics – the transition of a mutant allele back to the original or wild type (back mutation). It arises spontaneously or under the influence of various mutagens. 2. In plant cultivation – the appearance in plant hybrids or chimeras of shoots that genotypically correspond to one of the components of the combination.
Ревертаза	Revertase (reverse transcriptase)	an enzyme of the transferase class (RNA-dependent DNA polymerase) that synthesises DNA on an RNA template. Revertase provides the reverse flow of genetic information characteristic of retroviruses and is employed in biotechnology for the synthesis of complementary DNA (cDNA).
Ревертант	Revertant	a mutant organism in which, as a result of a back or suppressor mutation, the traits of the original (wild-type) organism are fully or partially restored.

Термін українською	Термін англійською	Визначення англійською
Регенерація	Regeneration	a biological process by which an organism restores damaged or lost structures (tissues, organs, cells) during its lifetime. Regeneration is a fundamental property of living organisms, ensuring homeostasis and wound healing at the molecular, cellular, tissue, and organ levels.
Регенерація репаративна	Reparative regeneration	the restoration of lost or damaged structural components of the organism.
Регенерація фізіологічна	Physiological regeneration	the continuous renewal of functioning cells or tissues.
Регрес	Regress	the simplification of the organisation and function of organisms in the course of evolution.
Регресія	Regression	the change in a resultant (functional) trait as a function of a given change in a factorial trait that is correlated with the former.
Регулон	Regulon	a system that unites dispersed genes under common control.
Регулятор	Regulator gene	a gene that encodes the structure of a repressor, whose function is to control transcription of an operon.
Регулятори росту рослин	Plant growth regulators	organic compounds capable of inhibiting or suppressing the growth and morphogenesis of plants.
Регуляторні ділянки ДНК	Regulatory DNA regions	non-coding nucleotide sequences that control gene expression by determining when, where, and how much protein is to be synthesised. They serve as binding sites for specific regulatory proteins (transcription factors).
Редиференціювання	Redifferentiation	the transition of specialised cells from one state of differentiation to another, either via preceding divisions or directly; also the process of morphogenesis and regeneration of plants from dedifferentiated callus cells.

Термін українською	Термін англійською	Визначення англійською
Редукційний поділ	Reductional division	the first division of meiosis, resulting in the reduction of chromosome number by half, caused by the separation of homologous chromosomes to opposite poles of the cell.
Редукція	Reduction	the underdevelopment or complete disappearance of organs, the simplification of their structure, and the loss of their functions during ontogenesis; the reduction of chromosome number during meiosis.
Редукція подвійна	Double reduction	a complex process involving recombination mechanisms, whereby, for example, in a triplex AAAa, gametes aa are formed. The entry of two chromatids bearing the recessive allele a into the same gamete is ensured by genetic recombination between non-sister chromatids and by the two subsequent meiotic divisions.
Редуплікація хромосом	Chromosome reduplication	the process of chromosome doubling, which is based on DNA autosynthesis in interphase. Each chromosome consists of two subunits – half-chromatids. In interphase, each half-chromatid builds a new, complementary counterpart and forms a chromosome. Thus, each new chromosome consists of one old and one new half-chromatid.
Реєстр виробників насіння і садивного матеріалу	Register of seed and propagating material producers	a state document listing the enterprises authorised to produce and sell seed.
Реєстр заявок	Register of applications	a list of official information on variety applications, maintained in electronic form.
Реєстр зерна (заставного зерна)	Grain register (pledged grain register)	a system for recording information on grain (pledged grain) accepted by grain warehouses for storage in a specified volume and for a specified period.

Термін українською	Термін англійською	Визначення англійською
Реєстр представників з питань інтелектуальної власності на сорти рослин	Register of representatives on intellectual property matters relating to plant varieties	an official list of persons acting on behalf of variety authors, breeders, applicants, patent holders, and holders of proprietary rights to variety distribution, as well as variety maintainers.
Реєстр складських документів на зерно	Register of warehouse documents for grain	a system for recording information on warehouse documents for grain issued by grain warehouses and on the holders of such documents.
Реєстрація сортових посівів	Registration of varietal crops	field inspection and documentary registration of varietal crops without appraisal, where the seed may nevertheless be used for sowing. Carried out by visual inspection of the crops (without selection of appraisal sheaves), followed by the compilation of a varietal crop registration act.
Резистентність	Resistance	the ability of an organism to withstand the action of adverse factors.
Рекомбінанти	Recombinants	hybrid organisms in the formation of which a regrouping of genes occurred in the gametes (as a result of segregation of allelic pairs and crossing-over during meiosis), causing the expression of new traits in the hybrid.
Рекомбінантна ДНК, рекДНК	Recombinant DNA	a new DNA sequence formed in vitro by the ligation of two or more non-homologous DNA molecules (DNA fragments that have never previously co-existed).
Рекомбінантний білок	Recombinant protein	a protein obtained by means of recombinant DNA containing the corresponding structural gene.
Рекомбінатори	Recombinators	special homologous sequences – 5′-GCTGGTGG-3′ – dispersed along the

Термін українською	Термін англійською	Визначення англійською
		chromosome, from which crossing-over is initiated.
Рекомбінаційні вузлики	Recombination nodules	spherical, ellipsoidal, or otherwise shaped proteinaceous structures located along the central element of the synaptonemal complex, i.e. between two homologous chromosomes, which play an important role in recombination.
Рекомбінація незаконна	Illegitimate recombination	recombination occurring in the complete or near-complete absence of homology between two interacting DNA molecules; it underlies the translocation within the genome of so-called mobile genetic elements (MGEs).
Рекомбінація реплікаційна	Replicative recombination	recombination that occurs when a mobile genomic element is duplicated and its copy is translocated.
Рекон	Recon	the unit of genetic recombination; an individual nucleotide pair in a DNA molecule that cannot be divided and exists as a single entity.
Рекуренція	Recurrence	the repeated appearance in the course of evolution of similar forms; evolutionary reversion.
Релікти	Relicts	species and other taxa of rare plants that have survived from distant geological epochs.
Ремоделювання (ремоделінг) хроматину	Chromatin remodelling	the restructuring of chromatin, involving specific gene networks that alter the nucleosomal organisation of DNA and the degree of condensation of DNA sequences. Since promoter regions of genes are inaccessible in the condensed state, chromatin remodelling is required; this is accomplished by gene networks as well as by epigenetic rearrangement of DNA through DNA methylation and deacetylation of the histones of the nucleosomal core.

Термін українською	Термін англійською	Визначення англійською
Ренатурація, гібридизація нуклеїнових кислот	Renaturation, nucleic acid hybridisation	a process whereby two single-stranded polynucleotides form a double-stranded molecule as a result of hydrogen bond formation between complementary nucleotides of the two strands. It may occur between complementary DNA strands (or RNA strands) or between a DNA strand and an RNA strand, resulting in a hybrid RNA-DNA molecule.
Рендомізований спосіб розташування досліду	Randomised experimental design	ahe random placement of varieties, groups, and blocks in all replications of an experiment.
Реовіруси	Reoviruses	RNA-containing viruses of mammals, birds, insects, and plants.
Репарація	DNA repair	the process of restoring the native structure of DNA damaged during normal replication or by physical or chemical agents. The term repair also has a broader meaning, encompassing any process of restoration following damage by various factors. Repair is carried out by specific enzymatic systems of the cell. Three main types of repair are distinguished light repair (photorepair or photoreactivation), excision repair, and post-replicative repair.
Реплікатор або ARS-сегмент	Replicator (ARS segment)	a region from which replication (DNA duplication) is initiated.
Реплікаційна вилка	Replication fork	the point at which the strands of the parental double-stranded DNA separate to allow replication to proceed.
Реплікація	Replication	the process of self-reproduction of nucleic acid macromolecules, ensuring accurate copying of genetic information and its transmission from generation to generation. The mechanism of replication is based on the enzymatic synthesis

Термін українською	Термін англійською	Визначення англійською
		of DNA on a DNA template, or RNA on an RNA template. DNA replication is semiconservative, meaning that in the synthesis of two daughter DNA molecules, each contains one «old» and one «new» strand. DNA replication in vivo is a highly accurate process; the error frequency leading to spontaneous mutations does not exceed 10^{-9} per nucleotide per generation.
Реплікон	Replicon	the unit of replication within which it is initiated and terminated. A self-replicating genetic element containing a DNA replication initiation region and genes that control replication. In eukaryotes, chromosomes are polyreplicons.
Репресія	Repression	the suppression of gene activity (transcription or translation) through the binding of a repressor protein to the operator gene in DNA or to a specific region of mRNA. A mechanism of gene regulation opposite to induction.
Репресор	Repressor	a regulatory protein that binds to the operator region of DNA and suppresses transcription of operon genes, thereby preventing RNA polymerase from interacting with the promoters of these genes. This leads to the cessation of synthesis of the corresponding RNA and, consequently, of the enzymes encoded by the operon. The repressor is synthesised under the control of a regulator gene at a level of 10 to 20 molecules per cell, in the form of active RNA.
Репродуктивна фаза	Reproductive phase	the period in the life of plants during which the organs of sexual reproduction are formed.
Репродуктивні органи	Reproductive organs	the organs of plants that perform reproductive functions.

Термін українською	Термін англійською	Визначення англійською
Репродукційний посів	Seed multiplication plot	a plot for the multiplication of pre-elite seed, breeding elite of population varieties, or hybrid crossing components.
Репродукція	Reproduction	the propagation of organisms in the course of multiplication.
Репродукція насіння	Seed generation	the designation of successive resowings of elite seed. The yield from elite seed sowing is termed the first generation, followed by the second, third, and so on.
Реституційне ядро	Restitution nucleus	a nucleus with a doubled chromosome number compared to the original, formed as a result of deviations from normal mitosis (disruption of spindle formation or function, etc.); in meiosis, a nucleus with a diploid or polyploid chromosome number arising from disruption of meiotic divisions.
Реституція	Restitution	the rejoining of chromatid or chromosomal fragments following breakage in a manner that restores the original (native) chromosome structure.
Рестриктази	Restriction endonucleases (restriction enzymes)	are a class of endonucleolytic enzymes that cleave double-stranded DNA at defined restriction sites – specific nucleotide sequences typically comprising 4–7, and less frequently 8–12, base pairs, which are characteristic for each respective enzyme. To date, over 500 distinct types of bacterial restriction endonucleases have been described.
Рестрикційний аналіз	Restriction analysis	1. The comparative evaluation of electrophoretic profiles of DNA restriction products for restriction mapping. 2. The analysis of DNA structure by determining the cleavage sites of restriction endonucleases and studying the lengths of restriction fragments.

Термін українською	Термін англійською	Визначення англійською
Рестрикція ДНК	DNA restriction	a bacterial defence system against foreign genetic material.
Ретровіруси	Retroviruses	RNA-containing viruses that also exhibit properties of DNA-containing viruses. Many retroviruses are tumour-forming. The virion of retroviruses contains RNA; however, within cells they exist as DNA integrated into the cellular genome. The RNA of retroviruses, upon entering the cell, is incorporated into its genes, which can be transmitted to the progeny of the cell in the form of stable integrated DNA molecules. Retroviruses contain several structural proteins as well as the enzyme reverse transcriptase, by means of which the conversion of RNA-containing viruses into DNA genes (reverse transcription) takes place. A subfamily of RNA-containing oncoviruses has been isolated from retroviruses.
Ретропозони	Retroposons	products of reverse transcription of cellular RNAs in eukaryotes.
Ретрорегуляція	Retroregulation	the capacity of a downstream DNA sequence to regulate mRNA translation.
Ретротранспозони	Retrotransposons	multiple dispersed genes (mdg) of Drosophila, discovered by D. Hogness, G. P. Georgiev, and V. A. Gvozdev. One mode of retrotransposon movement within the genome involves the synthesis of a DNA copy from RNA by reverse transcriptase, which is then inserted into a new genomic location.
Реутилізація	Reutilisation	the repeated use by plants of low-molecular-weight organic compounds and mineral nutrient elements from ageing and dying leaves and stems, as a result of their export via phloem sieve tubes to young, growing organs.

Термін українською	Термін англійською	Визначення англійською
Референтні зразки ГМО	GMO reference samples	reference (standard) GMO material whose property values are sufficiently uniform and appropriate for evaluating measurement methods or establishing specific properties of the material.
Рецесивна ознака	Recessive trait	a trait that does not manifest in heterozygous individuals as a result of the phenotypic expression of the dominant trait.
Рецесивний ген	Recessive gene	a suppressed gene that is expressed only in the homozygous state.
Рецесивність	Recessiveness	the absence of phenotypic expression of one allele in a heterozygous individual (i.e. an individual carrying two different alleles of the same gene, e.g. Aa, Bb, etc.). Recessive alleles are denoted by lowercase symbols a, b, etc.
Реципієнт	Recipient	a cell or organism that receives new genetic information in the form of foreign DNA or RNA, or any biological material from another donor organism.
Реципрокні схрещування	Reciprocal crosses	crosses in which each of two lines (forms) serves as the maternal parent in one cross and as the paternal parent (pollen donor) in the other; for example, A / B and B / A.
Решітка Пеннета	Punnett square	A two-dimensional table proposed by R. Punnett for the graphical determination of the genotypes and phenotypes of offspring from hybridisation. It represents the probable combinations of maternal and paternal gametes, enabling the visual calculation of individual segregation ratios.
Рибоза	Ribose	a monosaccharide belonging to the class of pentoses, specifically the aldopentose group. Empirical formula $C_5H_{10}O_5$. It exists as optically active D- or L-forms. In nature, D-

Термін українською	Термін англійською	Визначення англійською
		ribose is prevalent as a component of ribonucleic acids, whilst the derivative 2-deoxy-D-ribose is found in DNA.
Рибозима	Ribozyme	a proRNA molecule that acts as an autocatalyst of its own rearrangement; an RNA molecule capable of biocatalysis.
Рибонуклеази	Ribonucleases	enzymes of the hydrolase class that catalyse the cleavage of phosphodiester bonds in ribonucleic acid (RNA) molecules. Ribonucleases include both endonucleases and exonucleases. Ribonucleases with endonucleolytic activity cleave internucleotide bonds within the polyribonucleotide chain. Ribonucleases with exonucleolytic activity successively remove ribonucleotides from a specific end of the polyribonucleotide chain. Ribonucleases are used in biochemical research to study the primary structure and functions of various RNAs and for the preparative isolation of pure DNA in medicine.
Рибонуклеїнова кислота (РНК)	Ribonucleic acid (RNA)	a complex high-molecular-weight compound. RNA is one of the two types of nucleic acids whose monomers are nucleotides, specifically ribonucleoside monophosphates. Each monomer contains the carbohydrate ribose, the nitrogenous bases adenine and guanine (purines) and cytosine and uracil (pyrimidines), and a phosphoric acid residue. Three principal types of RNA have been identified in all animal, plant, and bacterial cells ribosomal, transfer, and informational (messenger).
Рибонуклеопротеїди (РНП)	Ribonucleoproteins (RNPs)	complex bioorganic compounds composed of simple proteins and RNA. The protein component of ribonucleoproteins may consist of basic proteins (histones) as well as acidic or

Термін українською	Термін англійською	Визначення англійською
		neutral proteins. Ribonucleoproteins are found in all formations of the cytoplasm and nucleus of the cell.
Рибонуклеотиди	Ribonucleotides	nucleotides containing the carbohydrate ribose, together with a purine (adenine or guanine) or pyrimidine (cytosine or uracil) base and one or more phosphoric acid residues. They serve as monomers from which RNA is assembled, and their precursors enter into the composition of certain coenzymes.
Рибосома	Ribosome	a spherical cell organelle with a diameter of 150–350 Å, composed of two subunits built from RNA and protein. The majority of ribosomes in the cytoplasm are located on the membranes of the granular endoplasmic reticulum. Protein biosynthesis takes place in ribosomes; this process is typically carried out not by individual ribosomes but by their complexes, which generally consist of 5–70 ribosomes and are termed polysomes (polysomes).
Ринок зерна	Grain market	a system of commodity-monetary relations arising between its participants in the course of the production, storage, trade, and use of grain on the basis of free competition, free choice of grain marketing directions and price determination, as well as state control over grain quality and storage.
Ринок насіння	Seed market	the sphere of circulation and the totality of purchase-sale transactions involving commercial seed lots. The participants of the seed market include enterprises, organisations, research institutions, and private individuals.

Термін українською	Термін англійською	Визначення англійською
Ритм життєдіяльності організмів	Rhythm of vital activity of organisms	cyclic fluctuations in the vital activity of organisms, associated with cyclic rhythms in the external environment. These include daily, 27-day, annual, and other rhythms linked to solar activity.
Рівноважна вологість насіння	Equilibrium moisture content of seed	the moisture content of seed resulting from free moisture exchange with the surrounding environment.
Рід	Genus	the principal supraspecific taxonomic category uniting the phylogenetically closest species to one another. According to the rules of the International Code of Botanical Nomenclature, each genus is designated by a single word – a noun (e.g. Triticum, Hordeum, Solanum).
Різновид	Variety (varietas)	an intraspecific taxonomic category in botanical nomenclature, occupying a position between subspecies (below subspecies) and form (above form). The rank of variety is assigned to a group of individuals or populations that differ from the typical individuals of a species in secondary characteristics (degree of pubescence, growth habit, colour, etc.) and do not have a clearly delimited range. Sometimes a subvariety (subvarietas) is distinguished within a variety. The occurrence of varieties is associated with the existence of a species in diverse ecological conditions.
Різноманітність видова	Species diversity	an index by which species richness is assessed both within a single community and in a biocoenosis, ecosystem, or across an entire landscape.
Різноякісність насіння	Seed heterogeneity	the non-uniformity of seeds within the same lot with regard to shape, dimensions, and degree of filling.

Термін українською	Термін англійською	Визначення англійською
Ріст	Growth	the increase in the size and mass of a plant as a result of the formation of new cells, tissues, and organs in the course of the individual development of the organism.
РНК	RNA	ribonucleic acid. Three types of RNA are distinguished mRNA (messenger or informational RNA), tRNA (transfer RNA), and rRNA (ribosomal RNA).
РНК-затравка (праймер)	RNA primer	a short RNA fragment (10–60 nucleotides) required for the initiation of DNA replication. The RNA primer interacts complementarily with one of the DNA strands, generating a 3'-OH end that is utilised by DNA polymerase to initiate synthesis of the deoxyribonucleotide chain.
РНК-інтерференція, РНКі	RNA interference (RNAi)	a cell-protein-mediated natural mechanism of selective degradation of specific (target) RNAs by complementary short double-stranded RNA oligonucleotides. It provides protection for eukaryotic cells against exogenous foreign RNAs.
РНК-інформаційна (матрична)	Messenger RNA (mRNA)	carries the genetic information for protein construction; mRNA serves as a template for the synthesis of cellular proteins in accordance with the information encoded within it. On ribosomes, this information is «read» and expressed as a specific sequence of amino acids in the synthesised protein molecule.
РНК-полімераза	RNA polymerase	an enzyme responsible for transcription – the transfer of genetic information from a DNA molecule to an mRNA molecule.
РНК-праймази	RNA primases	enzymes that synthesise short RNA primers on the template of a single-stranded circular DNA molecule of phage C4. Primase differs from

Термін українською	Термін англійською	Визначення англійською
		RNA polymerase in its ability, during in vitro synthesis, to utilise both ribonucleotides and deoxyribonucleotides as precursors.
РНК-рибосомна (рРНК)	Ribosomal RNA (rRNA)	constitutes more than 80% of cellular RNA. It is a component of ribosomes, forming their structural framework. rRNA plays an important role in the initiation and termination of synthesis and in the detachment of completed protein molecules from ribosomes. rRNA is composed of up to 300–500 nucleotides.
РНК-транспортна (тРНК)	Transfer RNA (tRNA)	has the shortest molecules (70–100 nucleotides); tRNA is located in the cytoplasm. It constitutes approximately 10% of the total cellular RNA mass. Its function is the transport of amino acids to ribosomes with the participation of the enzyme aminoacyl-tRNA synthetase, which attaches the corresponding amino acid to the tRNA.
Розвиток бактеріофагів	Bacteriophage development	a temporally programmed and irreversible process involving the sequential activation and inactivation of large gene groups through σ-subunits.
Розвиток рослин	Plant development	a irreversible, directionally ordered process of closely interrelated quantitative (growth) and qualitative (differentiation, maturation, ageing, etc.) changes in an individual, occurring during ontogenesis.
Розвиток хвороб рослин	Development of plant diseases	the degree of plant infection expressed as a percentage or in score units.
Роздільностатеві організми	Dioecious organisms	organisms in which the male and female reproductive organs belong to different individuals.

Термін українською	Термін англійською	Визначення англійською
Розмноження	Reproduction	the property of organisms to produce offspring of their own kind, ensuring the continuity and hereditary succession of life.
Розрив	Chromosome break	a spontaneous or induced transverse breakage of chromosomes, affecting the entire chromosome prior to its longitudinal separation (chromosomal break) or only one chromatid (chromatid break).
Розсадник	Nursery plot	a specific type of planting in the breeding or seed production process, where breeding or seed production material is studied and evaluated accordingly.
Розсадник гібридний	Hybrid nursery	a nursery of source material designated for the study and evaluation of hybrid generations F_1–F_3, and sometimes higher, with subsequent selection and relative genetic stabilisation of the best plants for the establishment of a breeding nursery.
Розсадник інфекційний	Infectious nursery	a special planting (isolated from others) with an infectious background, where breeding material is evaluated for resistance to a specific pathogen or pest.
Розсадник колекційний	Collection nursery	a nursery of source material (domestic and foreign bred varieties, wild species, etc.) for preliminary study with a view to their further targeted use in the breeding process.
Розсадник контрольний	Control nursery	a nursery designated for the comprehensive evaluation of breeding numbers selected in the previous nurseries of the breeding process, with regard to productivity and its components, as well as biochemical and technological indicators.

Термін українською	Термін англійською	Визначення англійською
Розсадник розмноження	Multiplication nursery	a nursery designated for the multiplication of seed of the best families, clones, and lines selected in the progeny testing nursery.
Розсадник селекційний	Breeding nursery	the type of breeding planting that follows the collection nursery; used for preliminary comparative evaluation and selection of the best progeny of individual plants or families with a view to their further study and multiplication.
Розсадники випробування потомств	Progeny testing nurseries	the initial links of primary seed production in cereal crops in the production of pre-basic seed by the individual-family selection method. First-year and second-year progeny testing nurseries are distinguished. The first-year progeny testing nursery is established with seed from the best (elite) individually selected plants. Seed from each plant is sown in separate plots (families) for progeny testing. During the growing season, the progeny is evaluated for a complex of economically valuable traits uniformity within the family, typicality for a given variety, disease susceptibility, etc. Plants are harvested, threshed, and productivity (by grain weight) is assessed on a family (plot) basis. The best families are retained for sowing in the second-year progeny testing nursery, which is designated for further evaluation and selection (analogously to the first-year nursery) of the best families and rejection of the inferior ones. Seed from the best families of the second-year progeny testing nursery is combined and used for establishing a multiplication nursery.
Розсадники добору	Selection nurseries	a seed multiplication link in which seed selected from the best plants is used for the

Термін українською	Термін англійською	Визначення англійською
		subsequent establishment of multiplication nurseries.
Розсадники розмноження	Multiplication nurseries	seed multiplication links derived from selection nurseries.
Розсадництво	Nursery production	a branch of plant cultivation concerned with the production and establishment of mother plantings.
Розщеплення	Segregation	the appearance in the progeny of a hybrid of individuals (cells) of different genotypes (genotypic segregation) or a genotypically determined difference in progeny phenotypes (phenotypic segregation). The regularities of trait segregation in definite quantitative ratios were first established by G. Mendel.
Розщеплення хроматидне	Chromatid segregation	the segregation of allelic genes as a result of crossing-over in the second meiotic division, providing the morphogenic process in hybrid generations.
Розщеплення хромосомне	Chromosomal segregation	the segregation of allelic genes in the absence of crossing-over in the first meiotic division, ensuring morphogenesis in hybrid populations.
Рослина материнської форми (♀)	Female parent plant (♀)	a plant on which seed is formed.
Рослина чоловічої (запилювач) форми (♂)	Male parent plant (pollinator) (♂)	a plant whose pollen is used to fertilise the female parent plant.
Рослина-живитель (рослина-господар)	Host plant	a plant that can be utilised by a pathogen as a nutritional substrate; on which the pathogen can grow and multiply at the expense of its organic compounds.
Рослини	Plants	autotrophic organisms characterised by the capacity for photosynthesis and the presence of dense cell walls and storage substances.

Термін українською	Термін англійською	Визначення англійською
Рослинність	Vegetation	the totality of plant communities (phytocoenoses) of the Earth or of specific regions thereof.
Ростковість	Germination capacity (germinability)	the ratio of the total number of beet seedlings to the number of germinated seeds.
Ростовий цикл	Growth cycle	the growth of a cell population in vitro during a passage in a batch culture cycle, characterised by an S-shaped curve. The phases of the growth cycle are latent, exponential (logarithmic), linear, growth deceleration, stationary, and degradation.
Рубчик насіннєвий	Seed hilum	the trace of attachment of the seed to the funicle, appearing as a small scar on the seed.
Ряд	Series	a botanical taxonomic category uniting related geographical races of plants with a normal sexual developmental cycle and common origin.
С		
Садивний матеріал	Propagating material	plants and their vegetative organs (parts) suitable for the reproduction of an intact plant organism.
Сайленсер	Silencer	a DNA sequence in the promoters of eukaryotic genes, 20–200 bp in size, that reduces (silences) gene expression.
Сайт	Site	the site of a mutation at any point within a gene; a small region of a nucleotide sequence, protein molecule, etc.
Сайт мішені	Target site	a region of the genome (DNA) into which a mobile genetic element is capable of inserting.
Сайт рестрикції	Restriction site	a sequence, typically of 4–7 nucleotide pairs, at which a specific restriction endonuclease cleaves (cuts) DNA.

Термін українською	Термін англійською	Визначення англійською
Сайти-заміщення	Replacement sites	sites within a gene at which mutations result in the substitution of the encoded amino acid.
Сальтація	Saltation	1. The sudden, single-step origin of new population types and taxonomic units of various ranks from genetically altered individuals as a result of mutations with large phenotypic effects (macromutations), leading to the formation of a new species. 2. Variations or mutations that arise spontaneously.
Самозапилена лінія	Self-pollinated line	the progeny of a single cross-pollinated plant obtained by repeated forced self-pollination.
Самозапилення	Self-pollination	the transfer of pollen from anthers to the stigma of the pistil within a single flower (autogamy) or within a single plant (geitonogamy).
Самозапліднення	Self-fertilisation	the fusion of the male and female sex cells (gametes) of the same organism.
Самозігрівання насіння	Seed self-heating	the rise in temperature during storage to 55–75°C due to high seed moisture content and increased respiration intensity of the grain mass and other biotic components (microorganisms, insects).
Самонесумістність (самостерильність)	Self-incompatibility (self-sterility)	the inability of organisms with normally developed male and female gametes to self-fertilise.
Саморегуляція надорганізмових систем (популяцій, біоценозів)	Self-regulation of supra-organismal systems (populations, biocoenoses)	the maintenance of the optimal population size of each species within these systems as a result of their mutual adaptation.
Саморегуляція, авторегуляція	Self-regulation (autoregulation)	the ability of biological systems to restore a stable level of various functions following their alteration. Self-regulation is based on the principle of feedback. At the molecular level, self-regulation is manifested in the self-renewal

Термін українською	Термін англійською	Визначення англійською
		of the principal organic substances and the maintenance of their dynamic equilibrium; at the cellular level, in the stabilisation of the normal composition and functioning of cells. The basis of self-regulation in the organism consists of the corresponding functional systems ensuring its internal homeostasis.
Самосплайсинг	Self-splicing	the splicing of rRNA precursors in the ciliate Tetrahymena without specialised protein enzymes and without energy expenditure.
Самофертильність рослин	Self-fertility of plants	the ability of plants to set seed upon pollination with pollen from their own flowers.
Сантиморганіда (сМ)	Centimorgan (cM)	a unit of measurement of the distance between genes on a chromosome. One cM equals one percent of crossing-over frequency.
Сапоніни	Saponins	natural glycosides found in many medicinal plants, characterised by their ability to form a foam resembling soap lather.
Сапрофіти	Saprophytes	plant organisms that obtain nutrition from the organic remains of dead plants or animals, or from the secretions of living organisms.
Сателіт (хромосома із супутником)	Satellite (satellite chromosome)	a small, spherical thickening separated by a secondary constriction from the main body of a chromosome.
Сателітна ДНК	Satellite DNA	a special type of tandem repeat of simple sequences (10–20 bp) in the genomic DNA of eukaryotes. It differs from the bulk of chromosomal DNA in the ratio of A-T to G-C pairs. Upon fractionation in a density gradient (e.g. a caesium chloride gradient), it forms «lighter» or «heavier» additional bands, which is the origin of its name. It is localised in centromeres and telomeres of chromosomes and forms part of heterochromatin. Classes of

Термін українською	Термін англійською	Визначення англійською
		satellite DNA such as microsatellites and minisatellites are widely employed in the study of the genome.
Сегрегаційний тягар	Segregational load	the segregation of inherited mutations.
Секвенування ДНК	DNA sequencing	methods for determining the exact sequence of nucleotide bases (A, T, C, G) in a DNA molecule, enabling the «reading» of the genetic code for the study of evolution, rapid analysis of entire genomes or parts thereof, and disease diagnostics, thereby expanding the possibilities of genetic research. DNA sequencing has made it possible to elucidate the nucleotide sequences of a gene and its regulatory regions, exons, introns, intergenic intervals, etc., significantly deepening and detailing the understanding of the gene as a functional unit.
Секвенування ДНК методом Максама-Гілберта	Maxam-Gilbert DNA sequencing	a method in which DNA is chemically cleaved into fragments, one end of which is fixed (identical) whilst the other increases progressively by one nucleotide from fragment to fragment. This method is based on the specific chemical modification of nucleotides followed by cleavage of the DNA strand into fragments.
Секвенування ДНК методом Сенгера	Sanger DNA sequencing	a method employing dideoxynucleotides to terminate chain synthesis, enabling the determination of sequences of intermediate length. DNA fragments of the required length and structure are synthesised in vitro on a DNA template, with synthesis specifically terminated at each base.
Сексдукція	Sexduction	the transfer of genetic material (hereditary information) in the course of conjugation from

Термін українською	Термін англійською	Визначення англійською
		one bacterium to another by means of the sex factor.
Селективне середовище	Selective medium	a culture medium in which only a specific type of selected cell (e.g. hybrid cells) can grow and multiply, while other cells (e.g. parental cells) perish.
Селекційний диференціал (Sd)	Selection differential (Sd)	the difference between the mean value of a quantitative trait in the group of individuals selected for reproduction and the mean value of all individuals of the source population.
Селекційний матеріал	Breeding material	plants, varieties, and breeding numbers that have been evaluated and selected in the course of breeding work.
Селекційний номер	Breeding number	progeny of one or several source plants selected for multiplication in a breeding nursery, with a view to further study and the development of a new variety.
Селекційний сорт	Bred variety	a variety created at a research institution using scientific methods of hybridisation.
Селекційні індекси	Selection indices	mathematical formulae integrating several economically valuable quantitative traits (stem length, spikelet number, grain weight per spike, etc.) into a single numerical indicator for the comprehensive assessment of plant genotype. They allow for increased efficiency of evaluation and selection in the breeding process.
Селекціонер	Plant breeder	a person who has bred, discovered, or improved a variety. A person who has or had employment or civil-law relations with the person who bred, discovered, or improved the variety (employer, customer) related to the breeding, discovery, or improvement of the variety. A person who is

Термін українською	Термін англійською	Визначення англійською
		the successor (heir) of the aforementioned persons.
Селекція	Plant breeding	the science of methods for creating new varieties and hybrids of agricultural plants, breeds of animals, and strains of microorganisms. Plant breeding develops ways of influencing plants and animals to alter their hereditary properties in a direction beneficial to humankind.
Селекція комбінативна	Combinative breeding	the combination in hybrid progenies of new gene combinations controlling traits valuable for breeding.
Селекція рекурентна	Recurrent selection	a method of breeding cross-pollinated plants based on alternating inbreeding of lines with subsequent crossing of the best to obtain allele combinations that ensure high heterosis.
Селекція синтетична	Synthetic breeding	one of the principal methods of modern breeding, based on the use of source material obtained by hybridisation (synthesis) of diverse forms for selection purposes. The basis of synthetic breeding is recombination and transgression.
Сенаптонемальний комплекс	Synaptonemal complex	the specific submicroscopic organisation of paired homologous chromosomes in prophase I of meiosis.
Середовище	Environment	the totality of external conditions acting on an organism, population, or more complex biotic communities. All environmental elements are classified into biotic and abiotic factors.
Середовище біотичне	Biotic environment	the totality of living organisms that exert an influence on other organisms through their vital activity.

Термін українською	Термін англійською	Визначення англійською
Середовище генетичне (генотипне)	Genetic (genotypic) environment	the totality of all genes comprising a given genome, constituting the internal (genetic) environment for the action of each specific gene and influencing phenotype formation.
Сертифікат на насіння	Seed certificate	a conformity document attesting to the varietal or sowing qualities of seed.
Сертифікат на насіння Міжнародної асоціації з контролю за якістю насіння	ISTA seed certificate	a certificate issued in accordance with the rules and procedures established by the International Seed Testing Association (ISTA).
Сертифікат на насіння Організації економічного співробітництва та розвитку	OECD seed certificate	a certificate issued in accordance with OECD seed schemes.
Сертифікат на садивний матеріал	Propagating material certificate	a conformity document attesting to the varietal or commercial qualities of propagating material.
Сертифікація насіння і садивного матеріалу	Seed and propagating material certification	a complex of measures aimed at determining the varietal and sowing qualities of seed and the varietal and commercial qualities of propagating material, with a view to documentary confirmation of compliance with legislative requirements in the field of seed production and nursery cultivation.
Сертифіковане насіння	Certified seed	seed generations obtained from the successive multiplication of basic seed.
Сертифікований садивний матеріал багаторічних рослин	Certified propagating material of perennial plants	virus-free plants of varieties and clones obtained from the multiplication of basic propagating material and intended for the establishment of commercial plantings.

Термін українською	Термін англійською	Визначення англійською
Сесквіполіплоїд	Sesquiploid	an unbalanced set of genomes of different species of the type ABB or AAB.
Сибси	Sibs	offspring of the same parents developing from different zygotes (brothers and sisters).
Сигнальні послідовності ДНК	DNA signal sequences	specific nucleotide regions (A, T, C, G) that serve as molecular markers for the initiation, regulation, or termination of biological processes such as replication, transcription, and splicing. They define the beginning of a gene (promoters), the origin of replication, or the boundaries of introns/exons.
Симбіогенетична гіпотеза	Symbiogenetic hypothesis	the proposition that mitochondria and plastids are endosymbionts (bacteria) transformed in the course of evolution that entered into interaction with the predecessors of modern cells. It is considered that, as a result of a distinct evolutionary event, a primary cell captured cyanobacteria capable of photosynthesis, which subsequently became chloroplasts, leading to the emergence of the first plant cells.
Симбіоз	Symbiosis	forms of coexistence of different organisms that constitute a symbiotic system.
Симпатричне видоутворення	Sympatric speciation	one of the forms of speciation in which reproductive separation of polymorphic groups occurs from a territorially unified population. Sympatric speciation proceeds via autopolyploidy or hybridisation followed by chromosome doubling.
Симпатрія	Sympatry	the coexistence within any territory of systematically related species. Also, one of the forms of speciation in which new species arise from populations whose ranges overlap considerably or coincide.

Термін українською	Термін англійською	Визначення англійською
Симпласт	Symplast	the continuity (totality, uninterrupted integrity) of the cellular protoplasts of plants, ensured by the presence of plasmodesmata.
Синапоморфія молекулярна	Molecular synapomorphy	the emergence within a gene family of a new group of genes through duplication (and subsequent divergence).
Сингамія	Syngamy	the fusion of male and female sex cells (gametes) to form a zygote.
Синергіди	Synergids	two cells located adjacent to the egg cell in the embryo sac of flowering plants. In most cases, synergids degenerate after the pollen tube enters the embryo sac. They are considered to play an auxiliary role in fertilisation. Occasionally, an embryo develops from a synergid.
Синергізм	Synergism	the enhancement of an effect resulting from the interaction of two or more factors, when their combined action considerably exceeds the sum of the individual effects of each component.
Синкаріон	Synkaryon	the fusion of two nuclei of parental forms into a single nucleus containing the chromosomes of both parents.
Синтенія	Synteny	the phenomenon of homology between chromosomal regions in distantly related species.
Синтетик	Synthetic variety	a form created by synthetic breeding.
Синтетична селекція	Synthetic breeding	one of the principal methods of modern breeding, based on the selection of source material created by hybridisation (synthesis) of different genotypes.
Синтетична теорія еволюції	Synthetic theory of evolution	a system of modern concepts concerning the pathways and directions, factors, and regularities of the historical development of the evolution of living nature. The synthetic theory

Термін українською	Термін англійською	Визначення англійською
		of evolution is based on the synthesis of classical Darwinism with genetics, molecular biology, ecology, etc. It is characterised by a systemic-structural approach to the study of the phenomenon of evolution and the broad application of comprehensive research methods. According to the synthetic theory, the elementary unit of the evolutionary process is not the individual organism but the population. At the population level, mutations occur continuously, serving as the elementary evolutionary material. Under the action of natural selection at the population level within a species, divergence is observed, resulting in the emergence of biologically distinct forms.
Синтетичні гени	Syntenic genes	identical genes located in homologous regions (loci) of chromosomes of different species.
Синцитій	Syncytium	a protoplasm containing multiple nuclei not separated by membranes.
Система насінництва та розсадництва	Seed production and nursery system	a complex of interrelated organisational, scientific, and agrotechnological measures aimed at ensuring the production, distribution, and use of seed and propagating material of plant varieties.
Систематика	Systematics	a branch of biology whose task is classification, i.e. the grouping of extant and fossil organisms by similarity and relatedness.
Систематичний спосіб розташування досліду	Systematic experimental design	a design in which varieties in an experiment are arranged in the same sequence across different replications, but with a staggered arrangement of varieties in adjacent tiers.
Сільсько-господарські рослини	Agricultural plants	plants represented by varieties (hybrids) used for the production of agricultural raw materials and food products.

Термін українською	Термін англійською	Визначення англійською
Сім'я	Family (in plant breeding)	the progeny of a single plant in cross-pollinated crops.
Сім'янка	Achene	a dry, single-seeded fruit with a relatively thin, leathery pericarp that separates readily from the seed.
Сімейство генів	Gene family	functionally related genes with similar structure and common origin.
Скарифікація насіння	Seed scarification	the disruption of the coats of hard seed to accelerate its swelling and germination.
Складна раса фітопатогена	Complex race of a phytopathogen	is a physiological race of a plant disease agent (fungus, bacterium, virus, or other pathogenic organism) that possesses more than one virulence gene.
Склоподібне зерно	Vitreous grain	grain with an almost translucent consistency and a horn-like structure at the fracture.
Слід транспозиції (footprint)	Transposition footprint	two modified copies of the original target site remaining in chromosomal DNA following excision of a DNA transposon.
Соланін	Solanine	a glycoalkaloid present in plants of the Solanaceae family. Its content is particularly high in the flowers and aerial organs of potato.
Соло-ДКП (solo-LTR)	Solo LTR	a single long terminal repeat remaining in a single LTR-containing retrotransposon following unequal intra-strand recombination between two LTRs.
Сома	Soma	in flowering plants, the totality of all cells of the organism with the exception of the mother cells of microspores and megaspores.
Соматична гібридизація	Somatic hybridisation	the fusion of two or more somatic (non-sexual) cells into a single cell.
Соматичний гібрид	Somatic hybrid	a cell obtained by the fusion of two or more somatic cells into one; a plant obtained from such a hybrid cell.

Термін українською	Термін англійською	Визначення англійською
Соматичні клітини	Somatic cells	all cells of the body of a multicellular organism, excluding gametes.
Сорт	Variety (cultivar)	a self-regulating biological system of plants of a single crop of common origin, created through breeding work, uniform in morphological and agronomic characters and biological properties. The system has been formed and multiplied to yield a high-quality harvest through efficient utilisation of environmental factors when grown under specific natural and production conditions.
Сорт багатолінійний	Multiline variety	a variety obtained with the participation of lines identical in morphological and economically valuable characters but differing in resistance to different races of a pathogen. A multiline variety may be created by mixing several varieties that differ little in the complex of economically valuable traits but possess differential immunity.
Сорт гібридний	Hybrid variety	a variety obtained by crossing and subsequent selection from a hybrid population.
Сорт дефіцитний	Deficit variety	a new variety registered in the State Register of Plant Varieties Suitable for Distribution in Ukraine, whose seed is not yet available in sufficient quantities for commercial sowings.
Сорт інтенсивного типу	Intensive-type variety	a highly productive variety capable of yielding a significant increase in crop yield under high agronomic input and with pest, disease, and weed protection; created for cultivation under conditions of intensive crop farming, and highly sensitive to stress conditions.
Сорт лінійний	Line variety	a variety of a self-pollinating crop obtained by individual selection from a natural or hybrid population, representing the progeny of a single

Термін українською	Термін англійською	Визначення англійською
		elite plant. A line variety is characterised by high uniformity in all traits and properties.
Сорт рослин	Plant variety	a distinct group of plants (clone, line, first-generation hybrid, population) within the lowest known botanical taxon (genus, species, variety), regardless of whether it satisfies the conditions for the establishment of legal protection, which can be defined by the degree of expression of the characteristics resulting from a given genotype or combination of genotypes; it differs from any other group of plants by the degree of expression of at least one of the mentioned characteristics and is regarded as a unit with respect to its suitability for reproduction in an unchanged form.
Сорт синтетичний	Synthetic variety	a complex hybrid population of cross-pollinated plants; the progeny of a multiline hybrid obtained on the basis of a large number of simple hybrids. The productivity of synthetic varieties is lower than that of the source hybrids but higher than that of conventional varieties. The elevated yield is maintained for several years, making seed production economically advantageous.
Сорт стандарт	Standard variety	the best of the varieties widely grown in a given zone, registered in the State Register of Plant Varieties Suitable for Distribution in Ukraine and approved by the State Commission for Testing and Protection of Plant Varieties as the national standard.
Сорт-диференціатор	Differential variety	a variety of a host plant included in a set of varieties used to determine the race of a harmful organism on the basis of infection results.

Термін українською	Термін англійською	Визначення англійською
Сорт-клон	Clone variety	the progeny of a single plant propagated vegetatively (by tubers, rhizomes, bulbs, etc.). A clone variety is characterised by high uniformity, which is disrupted only under the influence of spontaneous mutagenesis.
Сорт-популяція	Population variety	a variety of a cross-pollinated or self-pollinated crop created by mass selection, predominantly from local material or from that obtained under natural or artificial crossing.
Сорти-диференціатори	Differential varieties	varieties with a typical reaction to the physiological races of parasites. From differential plants that differ in their interaction response with physiological races, scales of differentials are compiled.
Сортова домішка	Varietal admixture	an admixture in the sowing of the main crop of plants of other varieties, subspecies, and types.
Сортова ідентичність	Varietal identity	the correspondence of the expression of morphological traits of plants of a control sample to the official variety description or to the standard sample.
Сортова чистота (типовість)	Varietal purity (typicality)	the proportion of typical plants of a variety (self-pollinated line, hybrid) relative to the total number of plants of the same-named crop in the sowing.
Сортове прополювання	Varietal roguing	the removal from a varietal sowing of admixtures of plants of other varieties and subspecies of the same crop, or – in the sowing of a sterile form – of fertile plants of the same form.
Сортовий контроль	Varietal control	a complex of measures for determining the varietal qualities of seed, propagating material, or mother plantings of perennial plants.
Сорто-випробовування	Variety testing	the study and comprehensive evaluation of new varieties and hybrids of agricultural crops

Термін українською	Термін англійською	Визначення англійською
		under field and laboratory conditions according to an approved methodology and relevant indicators, with a view to identifying the best ones for cultivation in production conditions.
Сортовипробування виробниче	Commercial variety trial	a trial of a variety or hybrid under production conditions, organised by a breeding research establishment, state variety trial plot, or variety station.
Сортовипробування державне	State variety trial	the testing of new plant varieties conducted at state variety trial plots or stations within the system of the State Commission of Ukraine for Testing and Protection of Plant Varieties, organised in accordance with approved methodologies. State variety testing is the concluding stage of the breeding process, at which the best breeding forms – varieties, hybrids, lines, populations – receive official recognition on the basis of their superiority over the corresponding standards and are entered into the Register of Plant Varieties Suitable for Distribution in Ukraine.
Сортовипробування динамічне	Dynamic variety trial	the study of the dynamics of yield formation during the growing season in the varieties and hybrids under test. Dynamic variety testing is used in crops for which it is important to know not only the total yield but also its magnitude at individual periods of the growing season (potato, vegetables, maize for silage, etc.).
Сортовипробування конкурсне (велике)	Competitive (main) variety trial	a variety trial conducted in breeding research establishments to study varieties selected in the preliminary variety trial. Varieties are compared with one another, with the standard, and with the best varieties of other breeding institutions. Varieties that considerably surpass

Термін українською	Термін англійською	Визначення англійською
		the standard and other varieties in a complex of traits are submitted for state variety testing.
Сортовипробування міжстанційне (зональне, екологічне)	Inter-station (zonal, ecological) variety trial	a variety trial conducted under different ecological conditions for the comprehensive evaluation of new varieties.
Сортовипробування попереднє (мале)	Preliminary (small) variety trial	a mandatory stage of the breeding process, conducted at a breeding research establishment, consisting of the testing of the best breeding numbers selected after comparison in the control nursery.
Сортовипробування спеціальне	Special variety trial	dynamic and zonal variety testing, as well as the study of varieties on different agronomic backgrounds with a view to revealing the response of new varieties to various agronomic factors.
Сортовипробування станційне	Station variety trial	preliminary and competitive variety testing conducted at a breeding research establishment.
Сортові вирізняльні ознаки	Variety distinguishing traits	characteristic morphological traits or a set of plant traits by which the attribution of a plant to a specific variety (hybrid, line) can be established.
Сортові якості насіння і садивного матеріалу	Varietal qualities of seed and propagating material	the totality of morphological traits by which the attribution of a plant to the corresponding variety is determined.
Сортозаміна	Variety replacement	the replacement of old varieties in production with new, higher-yielding, resistant, and technologically superior ones. Rapid variety replacement across all production areas is one of the principal tasks of seed production.
Сортозразок	Variety sample	plant breeding material used in breeding prior to its official registration.

Термін українською	Термін англійською	Визначення англійською
Сортооновлення	Variety renewal	the periodic replacement of varietal seed on farms with seed of the same varieties but of higher generations (multiplications) in accordance with the seed production system. Variety renewal is carried out within time frames accepted in a given zone (oblast) for individual crops.
Сортосуміш	Variety mixture	a mixture of two or more varieties of the same (single-species mixture) or different (multi-species mixture) agricultural crops, composed at known component ratios with a view to obtaining higher yields compared to pure sowings.
Спадковість	Heredity	an inherent property of organisms to transmit their traits and developmental characteristics to progeny in the course of reproduction. Heredity ensures the material and functional continuity of generations, creating the continuity of the organic world and self-reproduction in the course of generational succession. Since an organism develops as a result of the interaction of genetic factors and conditions of existence, heredity may be realised in different variants depending on the characteristics of the genotype and external conditions. The material carriers of heredity are genes, which are the units of heredity by function and specific nucleotide sequences of DNA molecules by structure. Chromosomal (nuclear) heredity, associated with the DNA of nuclear chromosomes, and non-chromosomal (extranuclear) or cytoplasmic heredity, determined by genes localised in the cytoplasm, are distinguished.

Термін українською	Термін англійською	Визначення англійською
Спадковість пластидна	Plastid heredity	a form of cytoplasmic heredity associated with the division of extranuclear genes (plasmons) localised in plastids. It is manifested in the inheritance of the variegation trait in plants and is observed as an alternation of green and white colouration of plant organs and tissues, conditioned by the presence in cells of green and colourless plastids borne by extranuclear and plastid genes. During cell division, plastids are distributed randomly among daughter cells, entering only the egg cell and being almost always absent from pollen, ensuring transmission of the trait by hybrids exclusively through the maternal line.
Спейсер, спейсерна ДНК	Spacer, spacer DNA	1. A repetitive sequence flanking functional genes, 5–10 bp in size. 2. DNA sequences in the intervals between address sites (boxes) of DNA-binding proteins in eukaryotic promoters.
Спейсери	Spacers	non-significant sequences separating individual genes in bacterial genomes.
Спермій	Sperm cell	the male sex cell in plants, formed from a pollen grain and responsible for the actual fertilisation of the egg cell.
Специфічна адаптивна здатність (САЗ)	Specific adaptive ability (SAA)	a characteristic of a genotype (variety or hybrid) that determines its capacity to respond effectively and to ensure high yield under specific, often extreme, environmental conditions. SAA shows the deviation of yield from the mean level (general adaptive ability) under the influence of specific factors.
Специфічна комбінаційна здатність (СКЗ)	Specific combining ability (SCA)	the ability of self-pollinated lines or varieties, determined by the magnitude of heterosis in specific combinations. SCA is always determined after preliminary simplified

Термін українською	Термін англійською	Визначення англійською
		evaluation of material for general combining ability on the basis of diallel crosses.
Спеціалізація організмів	Organism specialisation	narrow morphological adaptations; the adaptation of individual plant and animal species to relatively constant specific environmental conditions (e.g. a parasitic fungus and its host plant).
Спеціалізація патогена	Pathogen specialisation	the confinement to parasitism on plants of specific genera, species, and varieties, arising as a result of co-evolution of plants and pathogens.
Спеціалізована форма патогена	Specialised form of a pathogen	a portion of the population of a specific pathogen species that has a genetically determined capacity to parasitise on one or more host species or genera, and which, as a rule, cannot be distinguished morphologically from forms of the given species.
Спеціалізована форма фітопатогена	Specialised form of a phytopathogen	a form of a phytopathogen adapted to genera of plants belonging to a specific family.
Співвідношення статей	Sex ratio	the ratio of the number of male individuals to the number of female individuals immediately after fertilisation (primary sex ratio), at birth (secondary sex ratio), and at the attainment of sexual maturity (tertiary sex ratio).
Спіралізація хромосом	Chromosome spiralisation	the coiling of chromonemata, from which chromosomes are composed, during preparation for cell division (mitosis and meiosis). Chromosome spiralisation proceeds gradually and reaches its maximum degree in metaphase. In telophase of mitosis and meiosis, chromosomes uncoil.

Термін українською	Термін англійською	Визначення англійською
Сплаймосома	Spliceosome	the packaging of long nuclear transcripts within ribonucleoprotein complexes, required for correct processing and splicing.
Сплайсинг	Splicing	the process of removing introns from pre-mRNA and joining exons into functionally continuous mature mRNAs. For each type of molecule, splicing is catalysed by a specific enzyme or group of enzymes.
Сплайсинг альтернативний	Alternative splicing	a form of splicing enabling a single gene to encode structurally and usually functionally distinct polypeptides. It involves the joining of the gene's exons in different combinations, producing different mature mRNA molecules.
Спокій насіння	Seed dormancy	a physiological state in which viable seed does not germinate even under favourable conditions (presence of moisture, light, optimal temperature, etc.).
Спокій насіння вимушений	Forced seed dormancy	the cessation of growth processes caused by unfavourable environmental factors.
Спокій насіння екзогенний	Exogenous seed dormancy	the phenomenon of delayed seed germination associated with various physical or chemical properties of the seed coverings, including gas permeability.
Спокій насіння екзогенний механічний	Mechanical exogenous seed dormancy	a phenomenon associated with mechanical impediments to seed germination created by the pericarp or its inner part (e.g. the shell of hazel nuts, the stone of many fruits).
Спокій насіння екзогенний фізичний	Physical exogenous seed dormancy	a phenomenon caused by water impermeability of the seed coat, which possesses a well-developed cuticle and a layer of palisade cells. Such seeds are termed hard seeds.
Спокій насіння екзогенний хімічний	Chemical exogenous seed dormancy	a phenomenon caused by inhibitors present in the seed that prevent its germination under unfavourable conditions.

Термін українською	Термін англійською	Визначення англійською
Спокій насіння ендогенний	Endogenous seed dormancy	a phenomenon determined primarily by the specific anatomical-morphological or physiological properties of the embryo.
Спокій насіння ендогенний морфологічний	Morphological endogenous seed dormancy	a phenomenon caused by an underdeveloped embryo.
Спокій насіння ендогенний фізіологічний	Physiological endogenous seed dormancy	a phenomenon conditioned by reduced embryo activity which, in combination with impaired gas exchange through the coverings, creates a physiological mechanism for inhibiting seed germination.
Спокій насіння органічний	Organic seed dormancy	a phenomenon conditioned by the active action of inhibitors and the structural features of the seed.
Спорідненість розвитку паразита з живителем	Developmental affinity of parasite and host	the biological adaptation of the parasite's developmental cycle to the developmental cycle of the host.
Спороутворення	Sporulation	the process of spore formation – specialised cells for reproduction (both asexual and more complex life-cycle stages) and/or survival under adverse conditions. Sporulation is characteristic of fungi, algae, mosses, and ferns, and enables rapid increase in the number of organisms or transition to a dormant state.
Сприйнятливість рослин до патогена	Plant susceptibility to a pathogen	the inability of plants to resist the penetration of a pathogen and the development of the pathological process.
Спрямований мутагенез	Directed mutagenesis	the artificial induction of mutations at desired genomic locations.
Стандартна ділянка	Standard plot	a plot on which plants are grown from seed of the standard sample of a variety to establish the identity of plants of the control sample.
Стандартний зразок	Standard sample	planting material provided for the conduct of field (soil) and/or laboratory varietal control by

Термін українською	Термін англійською	Визначення англійською
		the patent holder, or in the absence of the patent holder, by the holder of the proprietary right to variety distribution or the variety maintainer, or selected from the official sample.
Стартова точка (ініціюючий сайт)	Start point (initiating site)	a region of DNA corresponding to the first base incorporated into RNA.
Статеве розмноження	Sexual reproduction	a mode of reproduction in which a new individual develops from a zygote formed by the fusion of male and female sex cells (gametes).
Статеві хромосоми	Sex chromosomes	chromosomes that genetically determine the sex of an organism.
Стать	Sex	the set of mutually contrasting generative and associated traits of individuals of the same species.
Стерильний аналог самозапильної лінії	Sterile analogue of a self-pollinated line	the maternal component to which the property of cytoplasmic male sterility has been conferred, and which is incapable of shedding viable pollen (A-line).
Стерильність	Sterility	the complete or partial inability of individuals to form viable sex cells (gametes). When gametes are not formed or nearly all gametes are abnormal, complete sterility is said to exist. The formation of a certain proportion of abnormal gametes results in partial sterility.
Стерильність генна	Genic sterility	sterility caused by the action of genes.
Стерильність жіноча	Female sterility	the partial or complete inability of female gametes to function normally.
Стерильність зиготна	Zygotic sterility	the inability to produce progeny as a result of complete or partial lethality in the diplophase. The individual dies at the zygote stage, the development of which is suppressed immediately after gamete fusion, at a specific

Термін українською	Термін англійською	Визначення англійською
		stage of embryogenesis, or at a more advanced stage of ontogenesis.
Стерильність чоловіча	Male sterility	the inability of pollen to function normally, manifesting phenotypically in several forms 1) complete absence of the androecium; 2) non-viable pollen in abnormally formed anthers; 3) non-dehiscent anthers containing normal, viable pollen.
Стимулятори	Stimulators	natural or synthetic substances that, to varying degrees, accelerate enzymatic reactions and other intracellular processes.
Стійкість довготривала	Durable resistance	resistance that provides protection of a variety from pathogen infection over many years or decades.
Стійкість домінантна	Dominant resistance	resistance conditioned by a dominant gene (genes).
Стійкість індукована	Induced resistance	resistance formed in ontogenesis by the action of a non-virulent or weakly virulent agent; conditioned by the stimulation of the organism's defence reactions.
Стійкість комплексна	Complex resistance	the resistance of plants (a variety) to several species of pathogens and pests.
Стійкість набута	Acquired resistance	resistance acquired in ontogenesis as a result of treatment of the plant organism.
Стійкість олігогенна	Oligogenic resistance	resistance conditioned by genes each of which has a clearly expressed (qualitative) phenotypic effect. More frequently this type conditions vertical resistance, in connection with which oligogenic resistance is sometimes used as a synonym for vertical resistance.
Стійкість рослин до патогена	Plant resistance to a pathogen	the ability of plants to resist infection or to suppress the development of a disease pathogen without significant yield losses; realised through the activation of defence

Термін українською	Термін англійською	Визначення англійською
		reactions; may vary in degree from absolute (immunity) to moderate and weak.
Стохастичний процес	Stochastic process	the same as a random or probabilistic process; the realisation of a random variable or random event on the basis of probability.
Страхова проба	Reserve sample	a portion of seed taken from each control sample for short-term storage (2 years) at the Institute's testing point. If necessary, this sample may be used as a standard sample.
Страховий насіннєвий фонд	Reserve seed fund	an inviolable, periodically renewed seed stock in the state fund of agricultural enterprises, held in reserve against crop failure or natural disaster.
Стрес	Stress	a state of suppression. Biotic stress is caused by diseases and pests, while abiotic stress is caused by adverse temperatures, soil, and atmospheric conditions.
Структура Холідея	Holliday structure	a pair of joined double-stranded molecules resulting from the exchange of homologous strands of non-sister chromatids.
Структурна частина гена	Structural part of a gene	a DNA region that encodes a polypeptide.
Ступінь поширення хвороби	Disease incidence	an indicator of the ratio of the number of diseased plants to the total number of inspected plants.
Ступінь ураження (пошкодження) рослин	Degree of plant infection (damage)	the measure of the action of harmful organisms on plants, characterised by yield or damage level, expressed in scores or percentages.
Ступінь фенотипового домінування (hp)	Degree of phenotypic dominance (hp)	an indicator used to determine the type of inheritance of quantitative traits.
Субдоміанти	Subdominants	plant species predominating in secondary, non-principal strata of a plant community.

Термін українською	Термін англійською	Визначення англійською
Сублетальний	Sublethal	bordering on the threshold between life and death. In the majority of cases (90%) sublethal plants die before reaching maturity.
Субстрат для пророщування насіння	Seed germination substrate	materials and substances used as a medium for germinating seed under laboratory conditions.
Сукцесія	Succession	the sequential replacement of one community of organisms by another within a given habitat area, resulting in the formation of biocoenoses best suited to the conditions of that habitat. Primary successions (e.g. the formation of biocoenoses on rocks, artificial sands, etc.) and secondary successions, arising at sites of disturbed communities where soil and some organisms have been preserved (e.g. on burned areas), are distinguished.
Суперген (складний локус або множинний локус)	Supergene (complex or multiple locus)	several closely linked loci affecting the expression of a single trait or an entire series of interrelated traits.
Супереліта	Pre-elite seed	high-quality seed of a variety registered in the State Register of Plant Varieties Suitable for Distribution in Ukraine, obtained by resowing basic seed and intended for the production of elite seed.
Супереліта картоплі	Potato pre-elite	tuber progeny obtained from the clone testing nursery (super-pre-elite) of potato. Pre-elite planting material is placed in storage for the production of elite seed in the following year.
Супермутагени	Supermutagens	chemical compounds with very high mutagenic activity derivatives of N-nitroso compounds (N-nitrosoalkylureas, N-nitrosoalkylurethanes, N-nitrosoalkylamides, and N-nitrosoalkylamines); certain polyfunctional derivatives of diazomethane; some derivatives

Термін українською	Термін англійською	Визначення англійською
		of ethyleneimine. Supermutagens are widely used in mutation breeding to create source material.
Суплідда	Multiple fruit	mature fruits developed from individual flowers of an inflorescence. Upon germination, they produce several seedlings.
Супресія	Suppression	1. Genetic processes occurring in cells that lead to the arrest or attenuation of the consequences of a mutation, or to the reduction or elimination of the cells' capacity to produce antibodies under the influence of a foreign antigenic body. 2. The restoration of a lost or disrupted aberrant function. The principal mechanism of suppression is the inhibition of the phenotypic expression of one mutation by the action of another (suppressor) mutation. Intragenic and intergenic suppression are distinguished.
Супутник хромосоми	Chromosome satellite	a small, spherical thickening of the secondary constriction separated from the main body of a chromosome.
Схема досліду	Experimental scheme	an experimental plan specifying the set of varieties, replications, number of blocks, sowing and accounting plot areas, etc.
Схема насінництва	Seed production scheme	a group of interrelated nurseries and seed production sowings in which the process of variety reproduction is carried out in a specific sequence by selection and multiplication.
Схема посіву	Sowing scheme	the alternation of rows of parental components on a hybridisation plot or a multiplication plot for the sterile analogue of a self-pollinated line.
Схема селекційного процесу	Breeding process scheme	a group of interrelated nurseries and sowings in which source material and breeding objectives are sequentially studied and evaluated according to a specific methodology;

Термін українською	Термін англійською	Визначення англійською
		hybridisation, rejection of inferior plants, and selection of the best progenitor plants and their testing are carried out with a view to developing a new variety.
Схожість насіння	Seed germination	the ability of seed to produce normal seedlings within a period specific for each crop; expressed as a percentage. Laboratory germination and field germination are distinguished.
Схрещування	Crossing	the union of genetic material of different cells within one cell. The most widespread method of creating source material in breeding. In the great majority of organisms, crossing is accomplished through the fusion of specialised cells – gametes – and the formation of a zygote. In unicellular organisms and in cell culture in vitro, non-specialised cells may fuse. A system of specific crosses underlies genetic analysis. The following types of crosses are distinguished simple, reciprocal, test, backcross, close-kin (inbreeding, inzucht), unrelated (outbreeding), cyclical, step, and convergent.
Схрещування асортативні	Assortative crosses	crosses that do not alter allele frequencies but alter genotype frequencies. An important form of assortative crossing is inbreeding, in which crosses between related individuals occur far more frequently than probability theory would predict.
Схрещування внутрішньовидове	Intraspecific crosses	crosses between breeding forms of the same botanical species.
Схрещування зворотні (бекрос)	Backcrosses	crosses of hybrids with one of the parental forms.

Термін українською	Термін англійською	Визначення англійською
Схрещування конвергентні	Convergent crosses	parallel backcrosses of hybrids with parental forms for the transfer of valuable traits. The convergent breeding method enables the transfer of several traits to an improved form.
Схрещування міжгібридне	Inter-hybrid crosses	a system in which the heredity of multiple parents is combined in parallel through the preliminary creation of simple hybrids and their subsequent crossing.
Схрещування множинне (полікрос)	Multiple crosses (polycross)	crosses in which the maternal plant is pollinated with a mixture of pollen from several male forms A / (B + C + D + E ...).
Схрещування насичуюче	Backcross breeding (saturating crosses)	repeated backcrossing of hybrids with one of the source parental forms whose contribution to the hybrid genotype is to be increased; e.g. A / B → AB / B → ABB etc., or A / B → AB / A → AAB etc.
Схрещування поглинальне	Absorptive crosses	repeated saturating crosses in which the proportion of the male nuclear material in the hybrid zygote increases with each backcross, i.e. the maternal nuclear heredity is almost completely displaced by the paternal.
Схрещування послідовні	Sequential crosses	a variant of complex crosses in which several parental forms are successively involved in hybridisation.
Схрещування просте (парне)	Simple (pair) cross	a single crossing of two parental forms. The term simple cross is also applied to the crossing of two inbred lines for the purpose of obtaining heterotic seed of a simple hybrid.
Схрещування складні	Complex crosses	crosses involving more than two parental forms. Variants of complex crosses include saturating and step crosses.
Схрещування східчасті	Step crosses	a variant of complex crosses in which several parental forms are successively involved in hybridisation. The scheme of step crosses may

Термін українською	Термін англійською	Визначення англійською
		take various forms [(A / B) / C] / D; [(A / B) / (C / D)] / B, etc.
Т		
Таксон	Taxon	a group of organisms united by common traits and properties, which serves as the basis for their assignment to specific taxonomic categories.
Таксономічні категорії	Taxonomic categories	concepts used to designate subordinate groups of plants differing in degree of relatedness.
Тандемна дуплікація	Tandem duplication	a duplication in which repeated chromosomal segments are located directly adjacent to one another.
Тандемний добір	Tandem selection	selection for two complexes of traits within a single generation. Plants are first selected for resistance traits, and then, among the resistant forms, for valuable agronomic traits.
Таніни	Tannins	phenolic compounds of plants capable of forming strong bonds with proteins, polysaccharides, and other macromolecules.
Таутомеризація	Tautomerisation	the shift in the position of a proton that alters the chemical properties of the molecule. Tautomerisation in nucleotide bases of DNA alters their hydrogen-bonding capacity such that adenine acquires the properties of guanine, guanine those of adenine, cytosine those of thymine, and thymine those of cytosine, giving rise to transition and transversion mutations.
Теломера	Telomere	the terminal portion of a chromosome, often enriched in structural heterochromatin. It prevents the fusion of chromosome ends.
Телофаза	Telophase	the final stage of mitotic and meiotic cell division.

Термін українською	Термін англійською	Визначення англійською
Телофаза мейозу	Telophase of meiosis	in meiotic division, the telophase of the first (reductional) and the second (equational) division are distinguished. Telophase of the first (reductional) division is characterised by the reconstruction of daughter nuclei around chromosomes positioned at the cell poles and composed of two interconnected chromatids, and by the formation of two nuclei with the haploid chromosome number. Telophase of the second (equational) meiotic division does not differ fundamentally from telophase of mitosis.
Телофаза мітозу	Telophase of mitosis	a period characterised by the reconstruction of daughter nuclei, the appearance of the nuclear envelope and nucleolus, the despiralization and become invisible of chromosomes, and the reduction of the achromatic apparatus. Telophase concludes with cytokinesis – the division of the cytoplasm of the mother cell with the formation of two daughter cells.
Теорія біохімічного збагачення	Theory of biochemical enrichment	posits the appearance in heterozygotes of interallelic complementation, the formation of hybrid multimer proteins for a large number of isozymes, etc.
Теорія домінантності	Theory of dominance	indicates the possibility of a recessive allele transitioning in the course of evolution to a dominant state. Such a transition is a fairly complex and lengthy process. Alongside this, the sudden saltational conversion of a mutant allele to the wild-type gene via back mutation may sometimes occur.
Теорія домінування	Dominance theory of heterosis	explains heterosis by the accumulation in the hybrid of the maximum possible number of favourable dominant alleles at multiple loci. These dominant genes suppress the expression of deleterious recessive alleles and interact by

Термін українською	Термін англійською	Визначення англійською
		the principles of additivity and complementarity. Since economically valuable traits are inherited polygenically, the accumulation of a large number of additively interacting dominant alleles in the hybrid genotype leads to a more pronounced expression of the corresponding traits. In subsequent generations, gene segregation occurs and heterosis effects diminish. This theory has been rejected as inconsistent with a number of facts. Modern data on the heterozygosity of populations indicate that individuals heterozygous for numerous recessive alleles are often more viable than homozygous individuals with dominant genes.
Теорія компенсанційних комплексів генів	Theory of compensatory gene complexes	holds that a specific compensatory gene complex arises in individuals of a population in response to a fitness-reducing mutation and virtually compensates for the negative effect of that mutation. Upon crossing two inbred lines, each carrying its own compensatory complex, the hybrid receives two sets of genes that counteract the negative effects of homozygosity. The combined action of the genes of the two compensatory complexes results in increased viability and other properties of the hybrid forms, which manifests as the phenomenon of heterosis.
Тератогенез	Teratogenesis	the occurrence of developmental deformities and anomalies in organisms, expressed as changes in the number, size, and mutual arrangement of the external and internal structure of organs. Teratogenesis is caused by various agents that disrupt the normal development of organisms.

Термін українською	Термін англійською	Визначення англійською
Терміналізація хіазм	Chiasma terminalization	the progressive decrease in the number of chiasmata from the centromeres to the ends of bivalents, beginning in the diplotene stage of prophase I of meiosis and continuing until metaphase I.
Термінальні повтори	Terminal repeats	the arrangement of a duplication at the end of a chromosome.
Термінатори	Terminators	specialised regulatory DNA sequences whose interaction with specific chemical compounds (regulators) underlies numerous mechanisms of both positive and negative regulation of gene function. Positive regulation leads to the stimulation of gene activity, whilst negative regulation leads to its suppression or complete shutdown. RNA molecule synthesis terminates at terminators.
Термінація	Termination	the completion of DNA synthesis.
Термінуючий кодон	Termination codon	one of the three triplets UAG (amber), UAA (ochre), or UGA (opal), which signal the completion of protein synthesis; also termed nonsense codons.
Термічне знезаражування насіння	Thermal seed treatment	treatment of seed with elevated temperatures that are lethal to infection but do not damage seed embryos.
Терморегуляція	Thermoregulation	a physiological function that maintains the optimal temperature for a given species under conditions of varying ambient temperature.
Термофіли	Thermophiles	heat-loving organisms capable of normal functioning at temperatures lethal to most organisms (generally above 45°C).
Терофіти	Therophytes	plants that survive the unfavourable season (winter, drought) in the form of seed (e.g. hemp, poppies, etc.).

Термін українською	Термін англійською	Визначення англійською
Тест-системи	Test systems	simple biological research objects that respond sensitively to the action of a mutagen by changes in one or another phenotypic trait – the appearance of gene mutations, chromosomal and chromatid rearrangements, non-disjunction of chromosomes in meiosis, changes in reversion and recombination frequencies, etc.
Тест-схрещування	Test crosses	crosses conducted to determine the general combining ability of self-pollinated lines, using specific varieties, lines, or hybrid testers as the paternal forms.
Тестер (аналізатор)	Tester (analyser)	a variety, line, or hybrid used as the paternal form for determining the general or specific combining ability of lines and varieties in crosses by the topcross system.
Тетравалент	Tetravalent	four homologous chromosomes of a polyploid organism that conjugate with one another in meiosis. Chromosomes in a tetravalent are held together by chiasmata until anaphase I of meiosis, at which point they separate in all possible combinations 4 0, 3 1, 2 2.
Тетрада	Tetrad	a group of four cells formed in plants as a result of meiosis in spore mother cells. In flowering plants, male-line tetrads consist of four microspores, which later separate from one another and develop into pollen grains.
Тетрадний аналіз	Tetrad analysis	the determination of the genotype of an individual on the basis of analysis of the genotypes of the four cells (haplonts) from a single tetrad. The basis of the tetrad is gametic segregation in the course of meiosis. Such analysis in fungi and mosses enables the collection of data on gene and chromosome segregation and their recombination during meiosis.

Термін українською	Термін англійською	Визначення англійською
Тетраплоїд	Tetraploid	an organism whose cells contain four basic chromosome sets (4n). If the tetraploid genotype consists of a doubled chromosome set of the same species, it is an autotetraploid (4n = AAAA); if the tetraploid arose from the combination and doubling of different species, it is termed an allotetraploid or amphidiploid (4n = AABB).
Тетрасомик	Tetrasomic	an aneuploid in whose diploid chromosome set one (simple tetrasomic, 2n + 2) or two (double tetrasomic, 2n + 2 + 2) pairs of homologous chromosomes are represented twice.
Технологічна карта	Technological map	a series of technological processes, production norms, human labour costs, fuel, fertiliser and pesticide inputs, wage costs, and approximate execution schedules for the cultivation of various botanical taxa.
Тимідин	Thymidine	a nucleoside consisting of thymine and the carbohydrate deoxyribose. It is found in all living cells as a component of DNA and thymidine phosphoric acids.
Тип	Type	a specimen on the basis of whose characteristics a taxon is described.
Типи стійкості рослин проти шкідників	Types of plant resistance to pests	four types are distinguished antixenosis (non-preference), antibiosis (suppression of development), tolerance (without change in productivity), and escape (non-coincidence of susceptible phases with the harmful stage).
Типи успадкування кількісних ознак	Types of inheritance of quantitative traits	positive overdominance (heterosis) $hp > +1$; positive dominance $+0.5 < hp \leq +1$; intermediate inheritance $-0.5 \leq hp \leq +0.5$; negative dominance $-1 \leq hp < -0.5$; negative overdominance (depression) $hp < -1$.
Тичинка	Stamen	the male generative organ of a flower.

Термін українською	Термін англійською	Визначення англійською
Ті-плазміди	Ti-plasmids (tumour-inducing plasmids)	circular, membrane-associated DNAs isolated from Agrobacterium. A bacterial cell contains 1 or 2 Ti-plasmids, which account for approximately 4% of the cellular DNA. Ti-plasmids transform normal plant cells into tumour cells, carry out conjugational transfer of Ti-plasmids between bacteria, and specifically synthesise opines and catalyse their catabolism. Ti-plasmids are the sole effective vector by means of which recombinant DNAs can be constructed. Their use opens broad possibilities for the directed improvement of cultivated plants.
Тканина	Tissue	a system of cells that are structurally and functionally interconnected and usually of common origin.
Тканинна несумісність	Tissue incompatibility	the rejection by the recipient's immune system of donor cells, tissues, or organs, as well as the destruction of recipient tissue by donor immunocompetent cells.
Тканинна сумісність	Tissue compatibility	a state in which cells or organs of one individual (donor) engraft and function within the internal environment of another individual (recipient).
Товарні якості садивного матеріалу	Commercial qualities of propagating material	the totality of biometric indicators of propagating material, including sanitary status, according to which grading and determination of the agronomic suitability of propagating material is carried out.
Токсини	Toxins	poisonous substances produced by microorganism pathogens of disease for the purpose of killing or weakening living plant cells.

Термін українською	Термін англійською	Визначення англійською
Толерантність	Tolerance	1. The resistance of living organisms to the action of adverse environmental factors. 2. The absence or attenuation of an immunological response to a given antigen whilst the organism's immunoreactivity to other antigens is preserved.
Тонопласт	Tonoplast	a membrane surrounding vacuoles in the cytoplasm of plant cells. It has the property of selective permeability and is capable of active transport of substances.
Топкрос	Topcross	a crossing method used to determine the general or specific combining ability of inbred lines or varieties in heterosis breeding. In the topcross, the lines and varieties under study are crossed with a specially selected tester (analyser) to determine general combining ability.
Топоізомерази	Topoisomerases	enzymes capable of increasing or decreasing the number of supercoils, thereby regulating superhelicity in circular, covalently closed DNAs. Type I and type II topoisomerases exist.
Топологічні ізомери	Topological isomers	identical molecules that differ only in the number of interlocking turns and can be interconverted from one topological isomer to another by DNA topoisomerases.
Тотипотентність	Totipotency	the ability of cells to realise the genetic information of the nucleus, ensuring their differentiation and development into a complete organism. Totipotency is realised in many plant species. Animal cells lose this capacity after the first division of the fertilised egg. Totipotency of somatic cells is realised in plant tissue culture.

Термін українською	Термін англійською	Визначення англійською
Точка початку реплікації	Origin of replication	a DNA sequence at which replication is initiated.
Травмоване насіння	Damaged seed	seed with physical damage resulting from mechanical or other influences.
Травмування насіння біологічне	Biological seed damage	damage caused by pest infestation and disease infection of seed.
Травмування насіння екологічне	Ecological seed damage	damage to seed occurring as a result of alternating rainy and sunny weather, when seed repeatedly becomes wetted and dried. It manifests as the formation of cracks along both sides of the groove. In addition, ecological damage may manifest as detachment of the seed coat from the endosperm for the above reasons or as a result of frost action or sunburn.
Травмування насіння механічне	Mechanical seed damage	damage to seed during harvesting, transport, and post-harvest processing, resulting in disruption of tissue integrity.
Транзиція	Transition (from Latin transitio – passage, transfer)	is a mutation caused by the substitution of a nitrogenous base within the DNA molecule. In a transition, one purine base is replaced by another (adenine by guanine or vice versa), or one pyrimidine base is replaced by another (cytosine by thymine or vice versa). Unlike transversion, a transition is sometimes referred to as a simple substitution, owing to the fact that in this case the purine-pyrimidine orientation at the mutant site of the double-stranded DNA molecule remains unchanged.
Транс-положення	Trans configuration	1. The localisation of two given alleles (genes) on different homologous chromosomes. 2. The arrangement of two closely linked dominant and recessive genes on one, and of the corresponding alleles on the other, homologous

Термін українською	Термін англійською	Визначення англійською
		chromosome (Ab-aB trans configuration; AB-ab cis configuration).
Транс-сплайсинг	Trans-splicing	the joining in a single mRNA molecule of exons derived from primary transcripts of different genes. These genes may even belong to different chromosomes.
Трансверсія	Transversion	is a mutation caused by the replacement of a purine base (adenine or guanine) by a pyrimidine base (thymine or cytosine), or vice versa. Unlike transition, transversion is sometimes referred to as a complex, or cross-substitution, owing to the fact that it involves a change in the purine-pyrimidine orientation at the mutant site of the DNA molecule.
Трансген	Transgene	a discrete segment of a basic gene (basigene) with functional individuality. Each transgene can mutate independently of other transgenes of the same basigene, interacting allelically with the latter.
Трансгенезис	Transgenesis	the transfer of genes in the form of DNA fragments from one cell (donor) to another (recipient) within or between species, not mediated by natural cell-cell interaction.
Трансгенний (генетично модифікований) організм	Transgenic (genetically modified) organism	an organism whose genome contains a foreign recombinant gene (genes).
Трансгеноз	Transgenosis	the introduction by any means of foreign genes into plant cells. In contrast to transformation, heterologous DNA is used.
Трансгресії	Transgressions	the summative action of polymeric genes that cause an increase or decrease in any trait or property in hybrid progeny compared with the parents.

Термін українською	Термін англійською	Визначення англійською
Трансдукція	Transduction	the transfer of genetic material from one bacterium (donor) to another (recipient) by means of temperate bacteriophages. Discovered in 1952 by J. Lederberg and N. Zinder. It has been established that during prophage induction, a fragment of the bacterial chromosome is occasionally incorporated into the mature phage particle. A phage carrying genetic material is termed a transducing phage.
Трансдукція абортивна	Abortive transduction	a donor DNA fragment introduced into the cell by the phage is not incorporated into the chromosome of the recipient cell but remains in its cytoplasm in an unaltered state and is expressed phenotypically.
Трансдукція обмежена	Restricted transduction	transducing phage particles necessarily contain DNA of both types, as recombination occurs between phage and chromosomal DNA.
Транскриптон	Transcripton	a unit of transcription representing a group of sequentially located genes that are transcribed simultaneously; usually these are genes for proteins or nucleic acids that are functionally related.
Транскрипційні фактори, ТФ	Transcription factors (TFs)	are a class of DNA-binding proteins that interact with specific recognition sites on DNA and regulate – either activating or repressing – the initiation of transcription by DNA-dependent RNA polymerase. Transcription factors may bind to promoters (regulatory sequences located immediately upstream of a gene – for example, the TATA box), as well as to distal regulatory elements such as enhancers or silencers, which may be situated far upstream, downstream, or even within the coding region of a gene.

Термін українською	Термін англійською	Визначення англійською
Транскрипція	Transcription	the process of transferring information from DNA to mRNA. It occurs through the synthesis of an mRNA chain whose nucleotide sequence is complementary to the template region of one DNA strand, from which genetic information is transcribed by the enzyme RNA polymerase.
Транслокація	Translocation	a type of structural rearrangement (mutation) consisting of the transfer of a chromosomal segment to a new (unusual) position on the same or a different chromosome. Translocation is based on the exchange of non-homologous chromosomal segments.
Трансляція	Translation	the synthesis of polypeptide chains of proteins on an mRNA template according to the genetic code – the second stage of protein biosynthesis. In the process of translation, the genetic information encoded as a nucleotide sequence in mRNA is converted into the amino acid sequences of polypeptide chains. Translation takes place on ribosomes. The start of translation on mRNA is marked by a specific initiation codon; the end, by a termination codon.
Транспірація	Transpiration	the physiological process of water evaporation by plants.
Трансплантація	Transplantation	the grafting of tissue or an organ in plants, animals, and humans. Depending on the degree of relatedness between donor and recipient, several types of transplantation are distinguished autotransplantation (grafting of one's own tissue or organs), isotransplantation (grafting from genetically identical organisms), allotransplantation (grafting from organisms of the same species), and xenotransplantation (grafting from organisms of a different

Термін українською	Термін англійською	Визначення англійською
		species). Transplantation is also used in experimental biology as a method for studying morphogenesis. Transplantation has great practical significance in agriculture and medicine.
Транспозаза	Transposase	an enzyme encoded by transposons that catalyses the excision, transfer, and insertion of a transposon (mobile, transposable) element.
Транспозиційний вибух	Transposition burst	a sharp increase in the frequency of translocation of one or many mobile genetic elements (transposons); often causes a sharp rise in chromosomal rearrangement frequency.
Транспозиція	Transposition	the movement of a gene or group of genes from one genomic location to another.
Транспозиція мобільних елементів геному	Transposition of mobile genomic elements	the rapid restructuring of genome structure and function, which may arise as a result of environmental change. Transposition processes are directed and regulated by a large number of protein enzymes and other regulatory epigenetic factors.
Транспозони	Transposons	one of the classes of mobile genomic elements; DNA sequences capable of moving to another genomic location (changing their localisation within the genome); found in the DNA of all organisms.
Трансфекція	Transfection	carries distinct meanings depending on the biological context in which it is applied. In bacterial genetics, the term refers to the reconstitution of viral particles following infection of host cells exclusively by viral nucleic acid, in the absence of intact virions. In somatic cell genetics, transfection is used synonymously with transformation, denoting the stable integration of exogenous donor

Термін українською	Термін англійською	Визначення англійською
		genetic material into the chromosomal apparatus of a recipient cell.
Трансформаційна подія	Transformation event	an alteration of an organism's genetic material using artificial gene transfer techniques that do not occur under natural conditions.
Трансформація	Transformation	in genetics – the change of the hereditary properties of a cell as a result of the penetration of foreign DNA into it. One of the means of genetic material exchange in prokaryotes. Transformation is used for the genetic analysis of bacteria in which other forms of genetic material exchange (conjugation and transduction) are unknown, and in genetic engineering experiments. The discovery and study of transformation proved that DNA is the material carrier of heredity.
Трейлер	Trailer	the terminal sequence located after the termination signal, i.e. at the 3′-end of mRNA.
Треонін	Threonine	an essential amino acid of proteins (with the exception of protamines).
Третинна структура ДНК	Tertiary structure of DNA	the molecular conformation involving interactions between nucleotide residues belonging to different fragments of the secondary structure.
Тривалент	Trivalent	a group of three chromosomes at the metaphase stage of meiosis, most frequently an indicator of sterility.
Тривалість періоду вегетації	Growing season duration	the time required for plant growth and development, determined from the date of full emergence to the onset of commercial maturity.
Тригібрид	Trihybrid	a hybrid heterozygous for three allele pairs.
Триплет	Triplet	a combination of three consecutively arranged nucleotides in a nucleic acid molecule that encodes one amino acid in protein synthesis. In

Термін українською	Термін англійською	Визначення англійською
		mRNA molecules, triplets are called codons; in tRNA, anticodons. The interaction of anticodon triplets with codons determines the specificity of the polypeptide synthesised in the course of translation.
Триплоїд	Triploid	an individual whose somatic cells contain three basic (monoploid) chromosome sets – 3n. As unbalanced polyploids, they are frequently completely sterile.
Триплоїдний гібрид	Triploid hybrid	a beet hybrid with three basic (monoploid) chromosome sets, derived from the crossing of a diploid and a tetraploid.
Трисомик	Trisomic	an aneuploid in whose diploid chromosome set one (simple trisomic, 2n + 1) or two (double trisomic, 2n + 1 + 1) chromosomes are represented three times. Trisomics find effective application in research on gene localisation and chromosome mapping. In humans, trisomies of chromosomes 13, 18, and 21 and of the X chromosome are known.
Тритикале	Triticale	intergeneric hybrids of wheat with rye. Depending on the nature of their origin, triticale are divided into three types two-species 56-chromosome triticale – obtained from the crossing of common wheat Triticum aestivum with rye Secale cereale; two-species 42-chromosome triticale – derived from the crossing of winter durum wheat Triticum durum with rye; three-species 42-chromosome triticale – obtained through the crossing of winter durum wheat, winter common wheat, and rye.
Тропофіти	Tropophytes	plants growing in areas with a constant alternation of humid and arid seasons, adapted

Термін українською	Термін англійською	Визначення англійською
		to such moisture conditions through regulation of the water balance.
Трофіка	Trophics	the processes of cellular nutrition aimed at maintaining the structure and function of an organ and tissue.
Трофічна структура	Trophic structure	the organisational structure of an ecosystem based on the trophic links of populations and consisting of nutritional cycles. It determines the functioning of the ecosystem.
Трофічні зв'язки	Trophic relationships	interrelationships between populations of different species in ecosystems based on nutrition. One species feeds on another (living individuals, dead remains, or metabolic products).
Трофічні рівні	Trophic levels	the positions of organisms in the food chain, determined by the number of energy transfer steps, each characterised by a specific form of energy organisation and utilisation.
Трофотаксис	Trophotaxis	active movement of organisms towards a food source.
Тургор	Turgor	the tense state of the cell wall conditioned by the hydrostatic pressure of the plant cell wall and the protoplast.
У		
Угрупування	Community	an assemblage of species united by specific interrelationships, a specific habitat territory, and the influence of a complex of environmental conditions.
Ультрафіолетова ендонуклеаза	UV endonuclease	a specific enzyme that significantly disrupts DNA structure by recognising a thymine dimer (or other DNA strand damage) and making two single-stranded cuts in the DNA on the 5′ and 3′ sides of the lesion.

Термін українською	Термін англійською	Визначення англійською
Ультрацентрифугування	Ultracentrifugation	a method of fractional separation of high-molecular-weight substances, viruses, and subcellular particles by means of centrifugal forces substantially exceeding gravitational acceleration.
Умови існування	Conditions of existence	environmental factors required by a species or community for normal development.
Умови середовища	Environmental conditions	the totality of all environmental factors influencing individual organisms, populations, or communities.
Умовно-летальні мутації	Conditionally lethal mutations	mutations that cause the death of an organism under certain external environmental conditions but are non-lethal under other conditions.
Унівалєнти	Univalents	unpaired chromosomes that have not conjugated with homologous chromosomes in the first meiotic division. They arise predominantly in aneuploids, haploids, or distant hybrids as a result of disruption of homologous chromosome conjugation during zygotene or premature terminalization of chiasmata. Chromosomes in a univalent state are frequently lost during meiosis, leading to the formation of gametes with unequal chromosome numbers.
Універсальний праймер	Universal primer	a synthetic oligonucleotide complementary to conserved sequences. It may be used in the polymerase chain reaction as a primer for the amplification of specific fragments of nuclear or organellar genes from nearly all representatives of the principal taxonomic groups (plants, fungi).

Термін українською	Термін англійською	Визначення англійською
Унікальні послідовності ДНК	Unique DNA sequences	genomic regions that are not repeated or are nearly unrepeated and constitute less than 5% of total eukaryotic DNA, including the great majority of protein-coding genes. They ensure individuality and gene regulation, and differ from repetitive sequences.
Управління еволюцією	Management of evolution	the deliberate influence on form-building processes continuously occurring in nature, directing them towards the creation of forms or species characteristics useful to humankind or important for the preservation of ecological balance.
Управління популяціями	Population management	the artificial regulation of the size and age composition of populations and the removal from them of individuals undesirable in terms of morphological or other characteristics.
Управління ризиком	Risk management	the process of selecting alternative decisions on the basis of GMO risk assessment results and, where necessary, selecting and implementing appropriate management (control) measures, including regulatory measures.
Ураження рослин	Plant infection	the process of pathogen penetration into a plant.
Урацил	Uracil	a cyclic organic compound from the group of pyrimidine bases. Uracil, as a component of nucleotides, nucleosides, and ribonucleic acid (RNA), is present in the cells of all living organisms. Paired with adenine according to the principle of complementarity, it ensures the stability of the RNA molecule.
Уридин	Uridine	an organic substance; a nucleoside containing uracil and the carbohydrate ribose. Uridine is found in all living cells as a component of RNA.

Термін українською	Термін англійською	Визначення англійською
Урожай	Yield	the mass of the principal and by-products harvested from the field.
Урожайні властивості насіння	Yield properties of seed	the capacity of seed to form a yield whose magnitude, under identical growing conditions, is determined by its hereditary (varietal) and sowing properties.
Урожайні властивості сорту, гібрида	Yield properties of a variety or hybrid	the properties of a variety or hybrid to produce a yield of a certain magnitude under specific production conditions.
Успадковуваність	Heritability	the hereditary determination of trait variability for a population or group of organisms. It reflects the degree of association between genotype and phenotype. The quantitative indicator of heritability is the heritability coefficient (h^2), expressed as a percentage from 1 to 100% or as a fraction of unity (from 0 to 1.0). If $h^2 = 100\%$, this means that all observed individual variation is attributable solely to genotypic variability; $h^2 = 0\%$ indicates purely modificational variability. Intermediate values of h^2 indicate that the population is characterised by both genotypic and phenotypic variability. The higher the h^2 value for a given trait, the more expedient it is to conduct selection for that trait.
Успадкування	Inheritance	a regular process of transmitting the hereditary properties of an organism from generation to generation. Inheritance is based on the processes of duplication, combination, and distribution of genetic material; therefore, the regularities of inheritance in different organisms depend on the characteristics of these processes. Since the development of an organism's traits is genetically determined, reference is made to the inheritance of traits,

Термін українською	Термін англійською	Визначення англійською
		although in the strict sense it is not traits that are inherited but genes.
Ухилення	Escape (resistance by escape)	a type of resistance conditioned by the non-coincidence of the susceptible phenophases of plant (variety) development with a specific period of phytophage development.
Ф		
Фаги помічники	Helper phages	transducing and normal phages in cases where a cell is infected with an excess of phages.
Фагосома	Phagosome	a single-membrane-enclosed vesicle containing material ingested by the cell via endocytosis.
Фагоцитоз	Phagocytosis	the process of active capture and ingestion of solid particles (bacteria, cell remnants) by specialised cells (phagocytes) or unicellular organisms. It is a key mechanism of innate immunity, providing protection of the organism, destruction of pathogens, and removal of damaged tissues.
Фаза	Phase	1. One of the qualitative or functionally distinct stages of development of a natural system. 2. A specific stage in the growth and developmental cycle of an organism.
Фазування нуклеосом	Nucleosome positioning	he non-uniform arrangement of nucleosomes along the nucleosomal fibre, dependent on the nucleotide sequence of DNA.
Фактор фертильності	Fertility factor	a plasmid controlling the ability of a bacterium to conjugate. The presence of the fertility factor confers donor properties on the bacterial cell (male cell); its absence confers recipient properties (female cell). In addition to the F-factor, the fertility factors include colicinogenic factors (Col-factors), resistance factors (R-factors), and certain others.

Термін українською	Термін англійською	Визначення англійською
Фактор, чинник	Factor	the cause or driving force of any process (in particular, a genetic process), determining it in its entirety as well as in specific features. The term «factor» is used as a synonym for «gene».
Фактори динаміки генетичної структури популяції	Factors of dynamics of the genetic structure of a population	absence or restriction of panmixia; genetic drift (considerable restriction of population size); migration of individuals (population mixing or gene flow); the mutation process (mutational pressure); the action of selection.
Фактори елонгації	Elongation factors	proteins that cyclically associate with the ribosome in accordance with the incorporation of each new amino acid into the polypeptide chain.
Фактори ініціації (IF)	Initiation factors (IFs)	proteins that specifically bind to the small ribosomal subunit at the stage of initiation of protein synthesis.
Фактори компетентності клітин	Cell competence factors	low-molecular-weight proteins or polypeptides that differ somewhat among different bacterial species and are required for the successful accomplishment of transformation.
Фактори спадкові	Hereditary factors	factors (genes) responsible for the independent inheritance of Mendelian traits and associated with specific chromosomal regions (loci). In the broad sense, the term «factor» is used to denote the totality of influences of both genetic and non-genetic nature.
Факторіальна гіпотеза спадковості	Factorial hypothesis of heredity	the recessive trait in its latent state passes through the F_1 generation and does not disappear but reappears (segregates) in subsequent generations. This phenomenon gave rise to the idea of material hereditary factors responsible for these phenomena. G. Mendel denoted the dominant factor by the uppercase symbol «A» and the recessive by the

Термін українською	Термін англійською	Визначення англійською
		lowercase «a». This hypothesis played an important role in the development of genetics and formed the foundation of the theory of the gene.
Факторіальна ознака	Factorial trait	a trait that is correlationally associated with the resultant trait and according to which plant selection is conducted.
Фальсифіковане насіння та/або садивний матеріал	Falsified seed and/or propagating material	seed and/or propagating material in the labelling or packaging of which a trademark, other individualising designation, or the external design of another producer's packaging has been unlawfully used, and/or which is distributed with false information regarding the varietal and/or sowing qualities of the seed and/or propagating material.
Фасціація	Fasciation	the deformation of plant shoots resulting from the fusion of stems with one another, of branches with the main shoot, etc.; a disruption of the rhythm of cell division and differentiation.
Фен	Phene	an elementary, discrete, hereditarily determined trait. The term «phen» was applied by W. Johannsen in 1909 to denote a «simple» hereditary trait. Examples of phens are the qualitative and quantitative traits of pea with which G. Mendel worked (green or yellow seed, smooth or wrinkled seed surface, etc.). Phens also exist for physiological traits (ability or inability to taste phenylthiocarbamide in humans), biochemical traits (presence or absence of enzymatic activity, etc.). Polygenic trait variants may often serve as phens. The polygenic nature of traits leads to the situation where the same phens may be expressed through different genotypic changes.

Термін українською	Термін англійською	Визначення англійською
Фенетика	Phenetics	a branch of biology that studies the appearance and distribution of phens. The theoretical basis of phenetics is the law of homologous series in hereditary variability, which enables prediction of the hereditary determination of a quantitative trait (phen) in a genotypically unstudied species by analogy with more or less distantly related genetically studied forms.
Феногенетика	Phenogenetics	a branch of genetics that studies the pathways of realisation of genetic information from gene to trait during ontogenesis. Phenogenetic research is conducted at the molecular, cellular, and organismal levels.
Феногенетична мінливість	Phenogenetic variability	intra-individual variability conditioned by varying degrees of realisation of the morphogenesis programme in antimers and metamers. Phenogenetic variability is studied at the group (population) level. The basis of phenogenetic variability lies in epigenetic threshold mechanisms that, on one hand, set the qualitative diversity and sequence of expression of certain elements of morphological structures in morphogenesis (epigenetic variability), and, on the other, determine the stochastic (random) nature of their realisation on each side of the individual/metamer (realisation variability).
Феногеографія	Phenogeography	the study of the geographical distribution of phens and their complexes. By means of phenogeography, population boundaries and their groups can be delimited, population structure studied, evolutionary factors analysed, and the phylogeny of species forms reconstructed.

Термін українською	Термін англійською	Визначення англійською
Фенодевіанти	Phenodeviants	hereditary deviations from the norm that are highly variable in expression and frequency of occurrence and are difficult to subject to genetic analysis.
Феноіндикація	Phenoindication	the evaluation of environmental conditions based on regularities of the phenological development of the phytocoenosis.
Фенокопії	Phenocopies	non-hereditary phenotypic changes arising under the influence of external factors and similar in their manifestation to mutations. Phenocopies are conditioned by changes in somatic cells and arise as a result of disruption of gene division, but the structure of the genotypes is not altered.
Фенологічний спектр	Phenological spectrum	a graphical representation of the alternation of developmental phases of an individual plant or plant community.
Фенологічні спостереження	Phenological observations	observations on the passage of plants through developmental phases. Records of phenological observations are entered in the phenological observation journal.
Фенологічні фази	Phenological phases	phases of the ontogenetic development of plants, recorded by morphological changes. In cereals, the following phenological phases are noted emergence, tillering, stem elongation, heading, flowering, and ripeness.
Фенологія	Phenology	a body of knowledge concerning the seasonal phenomena of nature, the timing of their occurrence, and the factors determining these timings.
Фенологія фітоценозів	Phenology of phytocoenoses	a branch of phytocoenology studying the phenological regularities of phytocoenoses.
Феноритміка	Phenorhythmics	the rhythm of growth and development of organisms, adapted to the annual and seasonal

Термін українською	Термін англійською	Визначення англійською
		rhythms of environmental factors. It is expressed in a clear alternation of phenological phases.
Фенотип	Phenotype	the totality of all traits and properties of an organism formed in the course of the interaction of its genotype with environmental conditions. The term «phenotype» was introduced by W. Johannsen in 1903. Not all genotypic possibilities are realised in the phenotype; therefore, the phenotype represents only a partial manifestation of the genotype under specific environmental conditions. A one-to-one correspondence between genotype and phenotype does not exist, and phenotypic changes are not necessarily associated with genotypic changes.
Фенотипічна варіанса	Phenotypic variance	the variance (dispersion) of the frequency distribution of individuals by any trait or combination of traits.
Фенотипічні адаптації	Phenotypic adaptations	adaptations conditioned by changes in environmental factors to which individual organisms can respond rapidly. The amplitude of the possible adaptive response to various deviations of environmental conditions from optimal is limited by the norm of reaction, which is a property of a specific genotype acquired in the course of natural selection. Unlike phenotypic adaptations, genotypic adaptations are associated with changes in the genotype of populations and species in the course of their adaptation to new environmental conditions. As a rule, they manifest as hereditarily fixed changes in the norm of reaction.

Термін українською	Термін англійською	Визначення англійською
Фенотиповий індекс	Phenotypic ratio	the segregation ratio by phenotype. For example, in a dihybrid cross ♀AaBb / ♂AaBb, the phenotypic ratio is 9A_B_ 3A_bb 3aaB_ aabb.
Ферменти	Enzymes	specific proteins of living cells (biological catalysts) that accelerate and regulate all biochemical processes of living organisms.
Фертильність	Fertility	the ability of organisms to produce viable progeny by sexual reproduction.
Фертильність пилку	Pollen fertility	the viability of pollen.
Фізико-механічні властивості насіння	Physical and mechanical properties of seed	shape, surface character and area, mass, colour, aerodynamic resistance, thermal conductivity, specific mass, and other seed properties.
Фізіологічна раса патогена	Physiological race of a pathogen	a specialised form of a pathogen that differs from others in its capacity to parasitise on specific genotypes (varieties) of host plants.
Фізіологічна стиглість бульб	Physiological maturity of tubers	the ability of planting tubers to germinate after emergence from dormancy.
Фізіологічні ритми	Physiological rhythms	periodic changes in the intensity and character of processes inherent to cells, organs, and organisms; the basis of biological rhythms.
Фізіологічно зріле насіння	Physiologically mature seed	seed with completed structural formation and accumulation of essential nutrient elements, capable of normal germination and plant development.
Фізіологія	Physiology	the science of the vital activity (functions) of an organism and its component systems, organs, tissues, and cells.
Фізіологія рослин	Plant physiology	the science of the plant organism as a complex self-regulating system, based on the subordination of different structural levels – from the plant to the macromolecule.

Термін українською	Термін англійською	Визначення англійською
Фіксація	Fixation	a method of treating biological objects with special substances in order to preserve their morphological structure and chemical composition during cytological and histochemical investigations.
Філаменти проміжні (мікрофібрили)	Intermediate filaments (microfibrils)	one of the components of the cytoskeleton; fibrillar-type organelles approximately 10 nm in diameter – larger than actin filaments but smaller than microtubules. They perform a supporting function. In different tissues, intermediate filaments of different chemical nature are encountered neurofilaments in neurons, desmin filaments in muscle, vimentin filaments in connective tissue, and keratin filaments in epithelial cells.
Філогенез	Phylogenesis	phylogeny; the historical development of living organisms both as a whole and of individual taxonomic groups kingdoms, phyla (divisions), classes, orders, families, genera, and species. The term was introduced by E. Haeckel in 1866. The branch of biology studying the regularities of phylogenesis is called phylogenetics.
Філогенетика	Phylogenetics	a branch of genetics that studies all transformations of genetic material and its elements as a result of recombination during sexual reproduction, mutations, or changes in the genetic composition of a population. The study and reconstruction of phylogenesis are necessary for the development of a general theory of evolution and the construction of a natural system of organisms.
Філогенетичне дерево	Phylogenetic tree	a diagram visually depicting the evolutionary relationships among different species, genes, or other organisms sharing a common ancestor,

Термін українською	Термін англійською	Визначення англійською
		showing how they have branched over extended periods of time. Phylogenetic trees are hypotheses about evolutionary history and are constructed on the basis of morphological, biochemical, and genetic data; more closely positioned nodes indicate a more intimate relationship.
Фінгерпринтинг ДНК	DNA fingerprinting	a method of genetic «fingerprinting», consisting of the comparative analysis and identification of genomes by gel electrophoresis or chromatography of DNA after partial hydrolysis.
Фітоалексин	Phytoalexin	an antibiotic substance arising as a result of the interaction between host cells and a pathogen, which is responsible for the suppression of pathogen growth at the site of local damage.
Фітогормони, гормони рослин	Phytohormones, plant hormones	physiologically active substances formed in plants in very small amounts (10^{-5}–10^{-8} mol) that regulate plant growth and development. Phytohormones include auxins, cytokinins, gibberellins, abscisic acid, ethylene, and more recently also brassinosteroids (brassins) and jasmonic acid.
Фітоекологія	Phytoecology	a branch of ecology that studies the relationships of plants with their habitat.
Фітоклімат	Phytoclimate	the climate modified by a plant community as a result of the combined action of factors conditioned by the vital activity of plants.
Фітомаса	Phytomass	the total mass of plant matter per unit area or volume of a habitat; a constituent of biomass.
Фітонциди	Phytoncides	chemically active organic substances of plant origin, released by plants into the atmosphere or formed intracellularly; they perform a protective role for plants by exerting a lethal

Термін українською	Термін англійською	Визначення англійською
		effect on microorganisms and increase the purity and sterility of the air.
Фітопатоген	Phytopathogen	a causative agent of plant disease (fungus, bacterium, virus, etc.).
Фітопатологічний аналіз насіння	Phytopathological seed analysis	analysis of seed for the presence of pathogenic organisms and quantitative assessment of the degree of seed infection.
Фітосанітарна діагностика	Phytosanitary diagnostics	a system of monitoring and control of the prevalence, population density, and intensity of development of harmful organisms.
Фітосанітарний моніторинг	Phytosanitary monitoring	a system of observation and control of the prevalence, population density, and intensity of development of harmful organisms.
Фітосанітарний стан	Phytosanitary status	the state of an agrocoenosis in a given territory at a specific point in time, determined by the composition of harmful organisms, their population level, developmental intensity, and potential threat.
Фітосфера	Phytosphere	the part of the biosphere constituted by the plant world.
Фітотрон	Phytotron	a specialised facility or complex where artificial conditions are created for plant cultivation (light, humidity, temperature, etc.). It is used for the conduct of breeding work throughout the entire calendar year.
Фітофаг	Phytophage	a species that feeds on plants.
Фітоценоз	Phytocoenosis	a conventionally delimited land area with an assemblage of plants (cenopopulations) united by conditions of existence and mutual influence.
Фітоценотипи	Phytocoenotypes	a group of species populations or species sharing common adaptive features in terms of life conditions.

Термін українською	Термін англійською	Визначення англійською
Фланкуюча ділянка	Flanking region	a sequence of up to 500 base pairs at the 5'- or 3'-end of a gene. Also, any sequence located adjacent to (on the «flank» of) another sequence at either the 3'- or the 5'-end of a polynucleotide chain.
Флуктуації	Fluctuations	1. Continuous hereditary or non-hereditary changes within certain mean values, with extreme deviations observed rarely. 2. Differences between genetically uniform individuals conditioned by environmental conditions.
Фолдинг	Protein folding	the process of folding of a polypeptide chain into the correct spatial structure.
Форма	Form	an assemblage of organisms at the species level that differ from the typical representative of the species in characteristic morphological, anatomical, and ecological traits.
Формування насіння	Seed formation	the acquisition by seed of the forms, dimensions, biochemical composition, physiological state, germination capacity, and reproductive ability characteristic of the given plant. It is accompanied by the formation of new organs and the accumulation and transformation of substances. In ontogenesis, seed formation represents the embryonic period of plant development.
Фосфоліпіди	Phospholipids	the principal component of cell membranes; complex lipids containing a phosphoric acid residue.
Фосфопротеїди	Phosphoproteins	complex globular proteins containing phosphate groups attached to serine and threonine residues of the polypeptide chain.

Термін українською	Термін англійською	Визначення англійською
Фосфорилювання	Phosphorylation	the substitution of a hydrogen atom in molecules of inorganic and organic compounds by a phosphoric acid residue.
Фотоперіод	Photoperiod	the duration of daylight, the light period of the day. It has a pronounced influence on plant growth and development.
Фотоперіодизм	Photoperiodism	the response of plants to the ratio between the duration of day and night, manifested in the rate of onset of flowering and fruiting phases.
Фотосинтез	Photosynthesis	the process of synthesis of organic compounds utilising radiant solar energy and involving chlorophyll. The photosynthesis process is expressed by the following overall equation $6CO_2 + 6H_2O + Energy \rightarrow C_6H_{12}O_6 + 6O_2$.
Фототаксис	Phototaxis	the response of an organism to the action (stimulus) of light.
Фототропізм	Phototropism	the change in the direction of growth of plant organs and parts as a result of unilateral light exposure.
Фрагмент Оказакі	Okazaki fragment	a segment of the newly synthesised lagging strand of a DNA molecule.
Фрагментація	Fragmentation	the breakage of a chromosome or chromatid into parts (fragments).
Фузаріоз	Fusariosis	a disease caused by fungi of the genus Fusarium.
Функціональний критерій	Functional criterion	based on the observation that the combination in a heterozygote of different mutant genes is accompanied by the appearance of a given phenotype in F_1, whilst the presence in parental forms of mutations in the same gene typically leads to the preservation of the mutant phenotype in hybrids.

Термін українською	Термін англійською	Визначення англійською
Функція	Function	the specific activity of an organism, its organs, tissues, and cells.
Х		
Хазмофіти	Chasmophytes	plants adapted to life on rocks and in rock crevices.
Харчова спеціалізація шкідливого організму	Food specialisation of a harmful organism	the adaptation of a harmful organism to feeding on specific plants, their organs, or tissues.
Хвороба рослин	Plant disease	a disruption of normal metabolism in the plant organism arising under the influence of a phytopathogen or adverse environmental conditions, leading to a reduction in productivity.
Хеморецептори	Chemoreceptors	sensitive cells or their structures through which an organism perceives the chemical substances (stimuli) necessary for its vital activity.
Хемотропізм	Chemotropism	a growth response of plant organs (bending) to the unilateral influence of chemical factors.
Химера гаплохламідна	Haplochlamydeous chimera	a periclinal chimera in which foreign or genetically altered surface cells are arranged in a single layer.
Химера мериклінальна	Mericlinal chimera	a periclinal chimera in which foreign or genetically altered surface cells cover only a portion of the organism.
Химера периклінальна	Periclinal chimera	an organism in which the histogenic layers are genetically distinct; they may be haplo-, di-, or trichlamydeous, or mericlinal.
Химери	Chimeras	an organism or part thereof consisting of genetically heterogeneous regions of tissue or cells. They may be formed artificially – by the transplantation of organs, tissues, or cells – or spontaneously – by disruption of mitosis or as

Термін українською	Термін англійською	Визначення англійською
		a result of mutations. Genetic engineering methods enable the construction of molecular-genetic chimeras, such as plasmid chimeras representing hybrids of plasmids and chromosomal DNA of other organisms, possessing properties of both. The term «chimera» was applied in 1907 by the German botanist H. Winkler. Chimeras are classified as periclinal (haplo-, di-, trichlamydeous), mericlinal, and sectorial.
Хіазма	Chiasma	a region of contact (crossing-over point) between homologous non-sister chromatids, visible at the diplotene stage of prophase I of meiosis. At this region, the exchange of homologous segments of non-sister chromatids takes place in the course of crossing-over.
Хлоренхіма	Chlorenchyma	a parenchymatous plant tissue whose cells contain chloroplasts.
Хлоропласти	Chloroplasts	specialised green plastids (organelles) in the cells of plants and algae, containing chlorophyll and ensuring photosynthesis. Chloroplasts convert solar energy, carbon dioxide (CO_2), and water (H_2O) into organic substances (carbohydrates) and oxygen, providing nutrition for plants.
Хлорофіли	Chlorophylls	green pigments of plants involved in photosynthesis.
Холін	Choline	a biologically active compound affecting metabolic processes in plant tissues.
Холодне пророщування насіння	Cold germination of seed	the germination of seed at reduced temperatures under laboratory conditions.
Холодостійкість рослин	Cold tolerance of plants	the ability of plants to withstand the influence of low positive temperatures (from +1 to

Термін українською	Термін англійською	Визначення англійською
		+10°C) for prolonged periods without detriment to their vital activity.
Хондріом	Chondriome	the totality of genes located in the DNA of mitochondria. It is served by an independent apparatus of replication, transcription, and translation. The chondriome in diverse organisms includes genes for all tRNAs and ribosomal RNAs required for mitochondrial protein synthesis, as well as for a number of proteins – principally enzymes of respiratory chains. The genes of the chondriome of fungi and plants have a mosaic (intron-exon) structure characteristic of nuclear genes of eukaryotes. The genetic code of the chondriome differs from the universal genetic code.
Хроматида	Chromatid	the physiological and structural unit of a chromosome, formed in a metaphase cell as a result of chromosome duplication (one of the two copies of a replicated chromosome – the «half-chromosome»). It consists predominantly of a single DNA molecule.
Хроматиди	Chromatids	the two longitudinal subunits of a duplicated chromosome, composed of fibrillar subunits of chromonemata. Chromatids are clearly visible during mitosis and meiosis.
Хроматин	Chromatin	the substance of cell nuclei that stains with basic dyes. The basis of chromatin is DNA (30–45%), histones (30–50%), and non-histone proteins (4–33%) – a deoxyribonucleoprotein complex. Two forms of chromatin are distinguished heterochromatin and euchromatin. In genetic terms, heterochromatin is less active than euchromatin. In cytology, chromatin refers to the dispersed state of

Термін українською	Термін англійською	Визначення англійською
		chromosomes in the interphase of the cell cycle. Chromatin plays an important role in the storage and transmission of hereditary information.
Хроматографічний метод відмінності насіння	Chromatographic method of seed differentiation	a method of determining seed authenticity based on revealing differences in the quantitative and qualitative composition of chemical substances by their extraction and separation with appropriate reagents.
Хромомери	Chromomeres	thickened regions of deoxyribonucleoprotein fibres – chromonemata – from which chromosomes are composed, resulting from strong spiralisation. Chromomeres differ in size, shape, and DNA content and confer a characteristic pattern on chromonemata. The chromomer pattern (distance between chromomeres and their size) is used for chromosome identification.
Хромосоми	Chromosomes	self-reproducing structural elements of the cell nucleus in eukaryotes; the principal carriers of units of heredity (genes or genetically active loci). Each duplicated chromosome consists of two longitudinal functioning units – chromatids – which are in turn composed of chromonemata. Chromosomes are capable of self-reproduction and possess structural and functional individuality, which is preserved across generations. The term «chromosome» was proposed by W. Waldeyer in 1888. The basis of the chromosome is a single continuous double-stranded DNA molecule associated with proteins (histones, etc.) in a nucleoprotein. The structure of the DNA molecule and its genetic code ensure the recording of hereditary information. Proteins participate in the

Термін українською	Термін англійською	Визначення англійською
		complex compaction of DNA in the chromosome and in the regulation of its capacity for RNA synthesis (transcription). In the course of their functioning, chromosomes undergo structural-morphological transformations based on the process of spiralisation-despiralization of the structural subunits of the chromosome – the chromonemata. The chromosome number characteristic of each species is relatively constant. Somatic cells of plants and animals have the diploid chromosome number, whilst reproductive cells have the haploid number.
Хромосоми (хроматиди) кросоверні або рекомбінантні	Crossover (recombinant) chromosomes (chromatids)	chromosomes and chromatids formed in the course of crossing-over as a result of reciprocal exchanges of genetic material.
Хромосоми акроцентричні	Acrocentric chromosomes	rod-shaped chromosomes with a very short, barely perceptible second arm.
Хромосоми гетерологічні	Heterologous chromosomes	chromosomes of different pairs.
Хромосоми гігантські	Giant chromosomes	special chromosomes characterised by enormous dimensions, with correspondingly enlarged cell nuclei. They are observed in certain cells at specific stages of their life cycle.
Хромосоми метацентричні	Metacentric chromosomes	chromosomes with arms of equal or near-equal length, resembling the letter V.
Хромосоми статеві (гоносоми)	Sex chromosomes (gonosomes)	a pair of chromosomes differing in males (XY) and females (XX) that determine the sex of the organism. They carry genes for sexual traits and other sex-linked genes.
Хромосоми субметацентричні	Submetacentric chromosomes	chromosomes with arms of unequal length.

Термін українською	Термін англійською	Визначення англійською
Хромосоми телоцентричні	Telocentric chromosomes	rod-shaped chromosomes with the centromere located at the proximal end.
Хромосомна теорія спадковості	Chromosomal theory of heredity	a fundamental biological principle formulated by T. Morgan between 1910 and 1920, according to which genes are located in the chromosomes of the cell nucleus in a linear sequence. Chromosomes are the material basis of heredity, and genes of the same chromosome form a linkage group and are inherited predominantly together, disrupted only by crossing-over. The theory explains Mendel's laws at the cytological level and proves that the hereditary properties of organisms are determined by the transmission of their chromosomes across generations.
Хромосомний набір	Chromosome set	the totality of chromosomes characteristic of the cells of a given organism. Reproductive cells contain the haploid chromosome set (n), whilst somatic cells contain the diploid set (2n).
Хромосомний поліморфізм	Chromosomal polymorphism	the existence in a population across generations of groups of individuals (or, in cell populations, cells) with different karyotypes arising as a result of chromosomal or genomic mutations.
Хромосомні аберації (хромосомні перебудови)	Chromosomal aberrations (chromosomal rearrangements)	a type of mutation that alters the structure of chromosomes. They arise spontaneously but most frequently under the action of mutagens. Chromosomal aberrations are identified by cytological and genetic research methods and are classified as intrachromosomal, interchromosomal, and genomic.
Хромосомні карти	Chromosome maps	graphical representations of a chromosome on which the loci (genes) of a specific linkage group are identified and the corresponding distances between them are indicated.

Термін українською	Термін англійською	Визначення англійською
Хромосомні перебудови	Chromosomal rearrangements	segmental mutations that alter the structure of chromosomes.
Хромоцентр	Chromocentre	a heterochromatic region of a chromosome that retains the spiralised chromonema structure in the interphase nucleus of the cell.
Ц		
Царство	Kingdom	the highest taxonomic category in the system of organisms, officially recognised by the International Codes of Botanical and Zoological Nomenclature and the International Code of Nomenclature of Bacteria.
Цвітіння	Flowering	the period in the life of angiospermous (flowering) plants from the formation of flowers in buds to the withering of the perianth and stamens (fading). One of the initial stages of the development of reproductive organs, during which pollination and fertilisation take place. Flowering is a phase in the phenology of plants.
Цвітушність	Bolting	the formation of flowering stems on first-year beet plants.
Целюлоза	Cellulose	celullose; the principal component of plant cell walls, responsible for their elasticity and strength.
Ценоекосистема	Coenosystem (cenoecosystem)	an elementary ecosystem corresponding to a biocoenosis with its characteristic biocoenotic environment and trophic links, established material cycling, productivity, autoregulation, and energy flux. A coenosystem has various levels of development and direct coenotic interrelations with neighbouring ecosystems.
Ценоз	Coenosis	a general term denoting interrelated communities of organisms of any size.

Термін українською	Термін англійською	Визначення англійською
Ценопопуляція	Cenopopulation	the totality of individuals of a single species within the boundaries of a community.
Центр походження	Centre of origin	a region of the globe that is the place of origin of a given taxon; typically the territory of its most abundant existence and/or greatest diversity of intra-taxon forms.
Центральна догма молекулярної біології	Central dogma of molecular biology	the pathways of transfer of information encoded in DNA, as summarised by F. Crick. Its essence is as follows information can be reproduced in DNA replication and transferred from DNA to RNA and thence to protein. Special cases of information transfer from RNA to RNA during RNA replication, from RNA to DNA via reverse transcription, and directly from DNA to proteins are possible. Transfer of information in the reverse direction from proteins to nucleic acids is absent. This means that modifications of proteins – gene products – are not inherited.
Центри походження культурних рослин	Centres of origin of cultivated plants	geographical regions where the wild ancestors of cultivated species were first domesticated and developed. Based on the research of N. I. Vavilov, 7 principal centres were identified South Asian Tropical; East Asian; South-West Asian; Mediterranean; Abyssinian (Ethiopian); Central American; Andean (South American). In domestic scientific literature, Vavilov's classification of centres of origin is used, supplemented by P. M. Zhukovsky to 12 Sino-Japanese; Indonesian-Indochinese; Australian; Indian; Central Asian; Near Eastern; Mediterranean; African; European-Siberian; Central American; South American. These centres are the sites of the greatest genetic diversity of species.

Термін українською	Термін англійською	Визначення англійською
Центри розповсюдження	Centres of dispersal	geographical locations from which a given species has spread.
Центричне злиття	Centric fusion	the fusion of two non-homologous chromosomes into one.
Центричний поділ	Centric fission	the division of a single chromosome into two, necessarily involving the origin of one new centromere.
Центрова теорія гена	Centre theory of the gene	proposed by N. P. Dubinin, according to which a gene consists of smaller elements – centres.
Центромера	Centromere	a structurally and functionally defined chromosomal region. Structurally, it coincides with the primary constriction, which divides the chromosome into two equal or unequal arms. Functionally, the centromere is defined as the region responsible for contact with spindle microtubules and for the movement of chromosomes or chromatids to the poles of cell division. An essential aspect in ensuring the segregation function of chromosomes in mitosis and meiosis is the longitudinal division of chromatids in the centromeric region at a precisely defined moment in the mitotic or meiotic cycle – at the onset of anaphase of mitosis and anaphase II of meiosis. Untimely division of centromeres of sister chromatids causes severe disruption of chromosome distribution in meiosis.
Центромера дифузна	Diffuse centromere	in certain plant species (family Juncaceae), algae, mosses, fungi, and arthropods, chromosomes have diffuse centromeres – i.e. during cell division, contact with spindle microtubules is established along the entire length of the chromosomes. Such chromosomes are termed holocentric.

Термін українською	Термін англійською	Визначення англійською
Центромерний індекс	Centromere index	the ratio of the length of the short arm to the total length of the chromosome, multiplied by 100. Metacentric chromosomes have a centromere index of 46–50; submetacentric chromosomes, 26–46; acrocentric chromosomes, 3–25.
Цибриди (ядерно-цитоплазматичні гібриди)	Cybrids (nuclear-cytoplasmic hybrids)	hybrids obtained by the fusion of cytoplasts (cells from which the nucleus has been removed) with normal cells. The production of cybrids enables the study of the interrelationships between nuclear and extranuclear genes.
Циклічність	Cyclicity	the regular repetition of processes in the abiotic environment (e.g. temperature, illumination, humidity), conditioned by cosmic and geographical rhythms.
Циркадні ритми, добові ритми	Circadian rhythms, daily rhythms	regular rhythms of mitotic activity in cells, growth, and biochemical activity with a period of approximately 24 hours.
Цис-активація	Cis-activation	the activation of a gene by an activator present on the same chromosome (in cis), as opposed to the activation of a gene by an activator present on a different chromosome – trans-activation (in trans).
Цис-активні (цис-домінантні) послідовності	Cis-acting (cis-dominant) sequences	nucleotide sequences whose function is to attract regulatory proteins or RNA, thereby altering the transcription rate in adjacent structural genes.
Цис-гетерозигота	Cis-heterozygote	an organism or cell carrying both mutations in the cis configuration, i.e. on the same chromosome.
Цис-положення	Cis configuration	the localisation of two analysed alleles on the same one of two homologous chromosomes. In molecular biology – a DNA sequence (gene)

Термін українською	Термін англійською	Визначення англійською
		localised on the same chromosome as the analysed sequence (e.g. an enhancer sequence), positioned upstream of the gene's initiation point and positively influencing its expression; it is termed a cis-acting sequence.
Цис-транс-тест	Cis-trans test	a method of genetic analysis for determining whether two mutations with the same phenotypic expression are located in the same or in different genes.
Цистеїн	Cysteine	a non-essential, sulphur-containing amino acid of the monoaminomonocarboxylic acid group; it is converted to cystine upon protein hydrolysis.
Цистин	Cystine	the disulphide of cysteine; a non-essential amino acid.
Цистрон	Cistron	a chromosomal region responsible for the synthesis of a single protein (or polypeptide), a single ribosomal RNA, or a transfer RNA, and determining their specificity. In modern genetics, the cistron is used as a synonym for «structural gene».
Цитогенетика	Cytogenetics	a branch of genetics that studies the features of reproduction, recombination, alteration, and function of genetically important cell structures; their distribution in mitosis, meiosis, and during fertilisation; depending on their number and genetic structure. The theoretical foundation of cytogenetics is the chromosomal theory of heredity. The application of modern research methods in cytogenetics (electron microscopy, X-ray structural analysis, etc.) has substantially expanded and deepened understanding of the fine-structural organisation of chromosomes in the processes of replication, transcription, and translation.

Термін українською	Термін англійською	Визначення англійською
		Cytogenetic data are important for the study of karyotype evolution in breeding practice and medicine. Cytogenetics as a science of the material bases of heredity arose in the first decade of the 20th century as a result of the synthesis of cytology and genetics.
Цитогета	Cytoheta	cytoplasmic heterozygotes with respect to genes of the chloroplast of zoospores.
Цитозин	Cytosine ($C_4H_5ON_3$)	a heterocyclic nitrogen-containing compound of the pyrimidine base group. Cytosine is a component of nucleotides and nucleic acids (DNA and RNA).
Цитокінез	Cytokinesis	the division of the cytoplasm; one of the two principal stages of cell division (the other being mitosis or karyokinesis – division of the nucleus).
Цитокініни	Cytokinins	phytohormones; they promote the activation of cell division and the differentiation of stem buds in calli, and delay the ageing of detached leaves of herbaceous plants.
Цитологічний метод дослідження	Cytological research method	the study of cellular structures – carriers of hereditary information, principally the chromosomes of the nucleus and the self-reproducing cytoplasmic organelles. The study of chromosome structure in conjunction with hybridological analysis forms the basis of cytogenetics.
Цитологічні карти хромосом	Cytological chromosome maps	tchematic representations of chromosomes showing the locations of genes on them, obtained by cytological methods. In contrast to genetic chromosome maps derived from recombinational analysis, the localisation of genes on cytological maps is established by

Термін українською	Термін англійською	Визначення англійською
		means of minor chromosomal rearrangements (spontaneous or induced).
Цитологія	Cytology	the science that studies the cell, its structure, and its functions.
Цитоміксис	Cytomixis	the process of transfer of nuclear material, cytoplasm, and organelles from one cell to another through cytomictic channels – cytoplasmic strands of varying diameter formed in the process. Cytomixis occurs in plants in both vegetative and generative cells, and is most frequently observed in pollen mother cells.
Цитоплазма	Cytoplasm	protoplasm without the cell nucleus, possessing a complex hydrophilic colloidal system. The basis of the cytoplasm is the hyaloplasm (matrix), and its structure is the endoplasmic reticulum. All cell organelles are located in the cytoplasm.
Цитоплазматична спадковість (позаядерна, материнська, нехромосомна)	Cytoplasmic heredity (extranuclear, maternal, non-chromosomal)	a system of carriers of hereditary properties in the cytoplasm (in the plant cell associated principally with plastids and mitochondria) that are discrete, self-replicating structures maintaining genetic continuity across cell generations.
Цитоплазматична чоловіча стерильність (ЦЧС)	Cytoplasmic male sterility (CMS)	the inability of the male organs of a flower to produce viable sex cells, conditioned by hereditary elements of the cytoplasm. The genetic factors of the cytoplasm – plasmids controlling the expression of CMS – are localised predominantly in cell mitochondria. CMS commonly occurs in plants, including maize, wheat, sugar beet, and onion. As a result of CMS, completely or partially sterile pollen is formed. When CMS plants are pollinated with pollen from normal plants, pollen-sterile

Термін українською	Термін англійською	Визначення англійською
		plants also arise. Upon repetition of such crosses over several generations, the CMS trait is maintained, being transmitted exclusively through the maternal line. In the great majority of plants, CMS is conditioned not only by the properties of the «sterile» cytoplasm but also by the action of one or more recessive nuclear genes. Heterozygosity for these genes in combination with «sterile» cytoplasm causes semi-sterility. Four types of CMS are currently known and utilised in heterosis breeding in maize Texas (T), Moldavian (M), Paraguayan (P), and Bolivian (B). The complementary genes Rf1Rf2 are restorers of fertility for the T-type; the gene Rf3 for the M-type; Rf4, Rf5, Rf6 for the P-type; and the gene Rfvar for the B-type. Complete sterility in sugar beet is determined by sterile cytoplasm and recessiveness for genes x and z in the homozygous state.
Цитоплазматичний чинник	Cytoplasmic factor	a genetic factor localised in the cytoplasm.
Цитоплазмон	Cytoplasmon	the totality of carriers of cytoplasmic heredity. Together with the plastome (hereditary elements of plastids), it constitutes the plasmon.
Цитоскелет	Cytoskeleton	the structural and contractile apparatus of cells, ensuring the maintenance and alteration of cell shape, cytoplasmic density, and movement of cells and cytoplasmic components. It comprises microtubules, microfilaments, and intermediate filaments.
Цитотипи	Cytotypes	chromosomal races of a single species.

Термін українською	Термін англійською	Визначення англійською
Цитохромоксидаза	Cytochrome oxidase	an enzyme of the oxidoreductase class; the catalyst of the terminal stage of electron transfer in the process of biological oxidation.
Цільовий таксон	Target taxon	a distinct group of organisms to which GMOs belong, united by common traits and properties as a result of which such organisms may be assigned a taxonomic category.
ЦЧС-джерела	CMS sources	fertile or sterile forms whose cytoplasm carries the factors of cytoplasmic male sterility.
Ч		
Чаргафа правило	Chargaff's rule	the principle of molecular genetics formulated by Chargaff, stating that in DNA molecules the sum of purine bases equals the sum of pyrimidine bases (A+G) / (T+C) = 1. From Chargaff's rule it follows that the nucleotide composition of DNA of different species can vary only with respect to the sums of complementary bases A+G / T+C.
Час подвоєння клітинної популяції	Cell population doubling time	the time interval during which the number of cells in a population doubles; it substantially exceeds the generation time, since not all cells in the population can divide stably – they may exit the mitotic cycle, undergo lysis, etc.
Частота алельного гена	Allele frequency	the ratio of the number of a given allele in all individuals of a population to the total sum of genes at that locus in those individuals.
Частота генотипів	Genotype frequency	the proportion of a genotype in the total assemblage of individuals of a population.
Чашечка	Calyx	the calyx; the collective whorl of sepals forming the outer part of the double perianth.
Чашолистки	Sepals	modified leaves forming the calyx.

Термін українською	Термін англійською	Визначення англійською
Чергування поколінь	Alternation of generations	the regular alternation of generations reproducing sexually with one or more generations reproducing asexually.
Черезззерниця	Blind grain (grain sterility)	the absence of grain in certain spikelets of the inflorescences of cereal plants. Observed more frequently in cross-pollinated (rye, maize, sorghum, etc.) than in self-pollinated (barley, wheat, etc.) plants. Blind grain results from the non-fertilisation of egg cells of individual flowers, caused by adverse weather during flowering, lodging of plants, etc.
Чиста лінія	Pure line	a genotypically uniform progeny obtained from a single homozygous individual in self-pollinated plants by individual selection followed by self-pollination, which maintains genetic homogeneity over subsequent generations. In practice, a pure line does not long remain genetically uniform. As a result of spontaneous mutations, individuals with other genotypes accumulate within it.
Чистота гамет	Purity of gametes	the non-mixing of alleles of each pair of alternative traits in the gametes of a hybrid organism.
Чоловіча стерильність	Male sterility	the absence of the capacity to form viable and functional pollen.
Чутливість	Sensitivity	the property of living organisms to respond to the action of environmental factors. The minimum intensity of a factor perceptible to an organism constitutes its sensitivity threshold; the lower this threshold, the greater the sensitivity of the organism.
Ш		
Шаперони	Chaperones	proteins that assist the non-covalent folding/unfolding or assembly/disassembly of

Термін українською	Термін англійською	Визначення англійською
		other molecular structures without interacting with those structures when they are performing their normal biological functions. Chaperones interact with both proteins and other molecules, typically complexes of proteins with nucleic acids. A considerable proportion of chaperones consists of heat-shock proteins.
Шкала	Scale	a sequence of values of indicators of plant infection/damage levels (in percentages or scores), used for determining the degree of infection/damage and evaluating plant resistance.
Шкала ВВСН	BBCH scale	an international unified coding system for the phenological developmental phases of plants (from 00 to 99), used in agronomy for the precise determination of macro- and micro-stages of growth and development.
Шкала екологічна	Ecological scale	a score-based evaluation of the relationship of species to ecological factors.
Шкідливий організм	Harmful organism	a living organism (microorganisms, insects, nematodes, mites, rodents, weeds) that reduces plant yield and its quality.
Шкідники	Pests	living organisms capable of causing damage to plants and to grain and other products during storage. Nematodes, insects, mites, and rodents are classified as plant pests.
Шпилька	Hairpin	a double-stranded region of a single-stranded DNA or RNA molecule, formed as a result of complementary interactions between adjacent inverted nucleotide sequences.
Штам	Strain	a genetically homogeneous culture within a specific microorganism species, possessing its own specific characteristics and traits. Different strains of the same species differ in

Термін українською	Термін англійською	Визначення англійською
		properties (e.g. virulence, sensitivity to antibiotics, etc.).
Штучне запилення	Artificial pollination	the transfer of pollen from anthers to the stigma of the pistil by mechanical means, applied during hybridisation for the creation of new source material and plant varieties.
Штучне зараження	Artificial inoculation	the process or result of the application by a researcher of specific techniques for infecting plants and ensuring the development of the infectious process.
Штучний андрогенез	Artificial androgenesis	the production of exclusively male offspring.
Штучні хромосоми	Artificial chromosomes	chromosomes smaller in size than native (natural) chromosomes, capable of carrying a single gene controlling a specific trait. They were first obtained in yeast. For a microchromosome to be stable, replicate in the cell, and behave in meiosis and mitosis similarly to native chromosomes, it must possess at least three structural components a replicator or ARS segment – the region from which DNA replication (doubling) is initiated; a centromere, to which the spindle fibre proteins attach and without which chromosomes cannot segregate to the cell poles during division; and a telomere – the terminal chromosome fragment containing a specific nucleotide sequence enriched in GC pairs.
Щ		
Щавлева кислота	Oxalic acid	the simplest natural dibasic carboxylic acid; it occurs in plant cells in the form of crystals and druses.
Щавлевооцтова кислота	Oxaloacetic acid	a dicarboxylic keto acid; present in all plant tissues and in microorganisms.

Термін українською	Термін англійською	Визначення англійською
Щиток	Scutellum	the part of the embryo located between the bud and the endosperm; a modified cotyledon adapted for absorption of nutrients from the endosperm.
Щільність покриття	Ground cover density	the degree of coverage of the soil surface by plants; the surface arrangement of the plant cover.
Щільність популяції	Population density	the mean number of individuals in a population per unit area. An important indicator of the spatial arrangement of population individuals.
Ю		
Ювенільність	Juvenility	the period from seedling emergence to the onset of flowering in plants. The duration of the juvenile state of plants may be regulated by adaptive responses to vernalisation or changes in the light regime.
Я		
Яблучна кислота	Malic acid	an organic dicarboxylic hydroxy acid.
Ядерна оболонка	Nuclear envelope	the envelope of the nucleus that separates it from the cytoplasm. The nuclear envelope consists of inner and outer membranes. The outer nuclear membrane is connected to the channels of the endoplasmic reticulum. The nuclear envelope has numerous pores with an average diameter of 200–300 Å. Through these pores, the karyoplasm enters into direct contact with the cytoplasm.
Ядерний дуалізм	Nuclear dualism	a characteristic feature of protozoa; the coexistence in a single cell-organism of the so-called generative nucleus – the diploid micronucleus – and a highly polyploid (up to several hundred n) vegetative nucleus – the macronucleus. The generative nucleus – the carrier of genetic information – performs its

Термін українською	Термін англійською	Визначення англійською
		functions during the sexual process of conjugation. The polyploid vegetative nucleus functions in the course of vegetative clone reproduction.
Ядерно-цитоплазматична взаємодія	Nuclear-cytoplasmic interaction	the processes of interaction between nucleus and cytoplasm that ensure the morphological-functional unity of the cell. Regulators of gene activity (generally proteins) entering the nucleus from the cytoplasm bring about the activation of specific nuclear genes. The nucleus also receives precursors and enzymes required for DNA replication and RNA synthesis, as well as proteins forming part of chromatin, nucleoli, and other nuclear structures. From the nucleus, products of gene activity – various forms of RNA and RNP – pass into the cytoplasm, where they subsequently ensure protein synthesis and determine its specificity. Thus, the nucleus governs all protein syntheses and through them the physiological and morphological processes in the cell, whilst the cytoplasm (on the feedback principle) regulates the activity of the nucleus's genetic apparatus and supplies it with substances and energy. In the broader sense, nuclear-cytoplasmic interaction also encompasses the interaction of the genomes of the nucleus and mitochondria, and of the nucleus and plastids (intergenomic interactions). The principal method of studying nuclear-cytoplasmic interaction is the production of nuclear-cytoplasmic hybrids.
Ядерце, нуклеола	Nucleolus	a compact, spherical body within the nucleus of most eukaryotic cells. It consists of ribonucleoproteins (RNPs) – ribosome

Термін українською	Термін англійською	Визначення англійською
		precursors. A cell nucleus contains one nucleolus, more rarely several or many. The nucleolus is formed at specific chromosomal loci (nucleolar organisers) where series of genes encoding ribosomal RNA are located. In the nucleolus, precursors of the large and small ribosomal subunits are synthesised, containing rRNA. Pre-ribosomal granules from the nucleolus migrate into the cytoplasm, where ribosomes are assembled. The nucleolus disappears during nuclear division and re-forms upon its completion.
Ядерцеве домінування	Nucleolar dominance	a phenomenon in which, in distant hybrids at the interphase stage, a nucleolus is formed only of one of the parental forms. It is conditioned by the selective suppression of transcription of rDNA clusters through intensive methylation of rDNA of one of the hybrid's genomes.
Ядерцеві організатори	Nucleolar organisers	certain secondary constrictions that are specialised chromosomal regions associated with nucleolus formation; also termed nucleolar zones of nucleolar organisers.
Ядро	Nucleus	an indispensable part of every complete, division-capable cell in many unicellular and all multicellular organisms. On the basis of the presence or absence in cells of a true, structurally defined nucleus, all organisms are divided into eukaryotes and prokaryotes. The principal differences lie in the degree of isolation of the genetic material (DNA) from the cytoplasm and in the formation in eukaryotes of complex DNA-containing structures – chromosomes. Through the realisation of hereditary information contained in genes, the nucleus regulates protein

Термін українською	Термін англійською	Визначення англійською
		syntheses and the physiological and morphological processes in the cell. The number, form, and size of the nucleus depend on the type and functional state of the cell. The function of the nucleus is carried out in close interaction with the cytoplasm. In a non-dividing nucleus, the nuclear envelope, nucleolus, chromatin, and karyolymph are distinguished.
Яйцеклітина	Egg cell	the female sex cell (gamete) from which a new organism develops as a result of fertilisation or parthenogenesis. Egg cells are formed in the course of megasporogenesis.
Якісні ознаки	Qualitative traits	traits that for the most part lack quantitative measurements and are alternative. Differences between qualitative traits can be established by direct visual observation. For example, pea seed may be yellow or green, and the wheat spike may be awned, semi-awned, or awnless.
Якість зерна та продуктів його переробки	Quality of grain and grain processing products	the totality of consumer properties of grain and grain processing products that comply with the requirements of regulatory-legal acts, phytosanitary, and veterinary-sanitary standards.
Якість насіння	Seed quality	the totality of seed properties characterising the degree of its suitability for sowing.
Яруси	Tiers (in field experiments)	parallel sections of a field experiment with a complete set of varieties or replications.
Ярусність	Stratification (vertical structure)	is the vertical arrangement (layering) of a plant community or terrestrial ecosystem into strata and other structural or functional layers.

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