

**І.О. ПИЛИПЕНКО, Ю.І. ЧЕРНИЩУК**

# **AGRARIAN ENGLISH**

Навчальний посібник



**Біла Церква  
2022**

**І.О. ПИЛИПЕНКО, Ю.І. ЧЕРНИЩУК**

# **AGRARIAN ENGLISH**

Навчальний посібник

*Рекомендовано Вченою Радою*

*Білоцерківського національного аграрного університету*

*як навчальний посібник для студентів закладів вищої освіти*

Біла Церква

2022

Автори: Пилипенко І.О., Чернищук Ю. І.

Пилипенко І.О., Чернищук Ю. І. “Agrarian English” навчальний посібник з англійської мови для здобувачів вищої освіти – спеціальності 035 «Філологія» ОП Германські мови та літератури (переклад включно), перша – англійська/Пилипенко І.О., Чернищук Ю. І. Біла Церква, 2022. – 94с.

Навчальний посібник призначений для практичних та самостійних занять за темою «Agrarian English» з дисципліни «Практичний курс першої іноземної мови» для 1-го курсу філологічних спеціальностей. Зміст та структура навчального посібника побудовані за тематичним принципом і включають 4 частини. Робота за темою в межах кожної частини організовується на базі оригінальних англомовних текстів. До кожного тексту обов'язково додається необхідний словниковий матеріал з перекладом та післятекстові вправи, метою яких є вироблення мовленнєвих навичок і вмінь використання лексичного матеріалу, що вивчається в ситуаціях реального спілкування. Пропонується граматичний довідник, поданий у вигляді таблиць, який має практичну спрямованість та тестові завдання, призначені для самостійної перевірки здобувачами опрацьованої лексики.

Навчальний посібник може бути корисним для осіб, що вивчають мову самостійно чи вдосконалюють свої знання з англійської фахової мови, а також для викладачів та здобувачів аграрних вищих закладів.

*Рецензенти:*

**В.І. Кульчицький** кандидат філологічних наук, доцент кафедри іноземної філології факультету лінгвістики та соціальних комунікацій Національного авіаційного університету.

**І.С. Синельникова** кандидат філологічних наук, старший викладач кафедри іноземних мов соціально-гуманітарного факультету Білоцерківського НАУ.

# ЗМІСТ

1.	<b>ПЕРЕДМОВА</b> .....	4
2.	<b>UNIT 1. AGRICULTURE IN UKRAINE AND ABROAD.</b> .....	7
	1.1. Agriculture in Ukraine. ....	7
	1.2. Agriculture in Great Britain. ....	11
	1.3. Agriculture in the USA. ....	16
3.	<b>UNIT 2. TYPES OF CROPS.</b> .....	23
	2.1. Food, feed and fiber crops. ....	23
	2.2. Oil, ornamental and industrial crops. ....	29
	2.3. Grain. ....	36
4.	<b>UNIT 3. PLANTING, GROWING AND HARVESTING CROPS.</b> .....	42
	3.1. No-tillage method of planting. ....	42
	3.2. Methods of cultivation. ....	46
	3.3. Harvesting grain. ....	50
5.	<b>UNIT 4. WONDERS IN THE FIELD OF AGRONOMY.</b> .....	56
	4.1. Plants for the future. ....	56
	4.2. China tries organic farming for a change. ....	61
	4.3. Chemicals in our food – two sides of an argument. ....	66
6.	<b>ГРАМАТИЧНИЙ ДОВІДНИК</b> .....	71
7.	<b>CONTROL TESTS</b> .....	77
8.	<b>ДОДАТКИ</b> .....	87
	Додаток А. Fruit names in English. ....	87
	Додаток Б. Vegetable names in English. ....	88
	Додаток В. Types of nuts / Cereals. ....	89
	Додаток Г. Flower names in English. ....	90
	Додаток Д. Whole grains. ....	91
9.	<b>СПИСОК ВИКОРИСТАНИХ ДЖЕРЕЛ</b> .....	92

# ПЕРЕДМОВА

З появою процесів глобалізації та інтеграції світової спільноти в аграрній галузі, в Україні виникла потреба у фахівцях з перекладу аграрної тематики. Таким чином, першочерговим завданням дисципліни «Практичний курс першої іноземної мови» в аграрному виші є формування готовності до іншомовного професійно-орієнтованого спілкування в аграрній сфері. Саме тому в процесі навчання англійської мови має приділятися досить велика увага відповідності рівня та якості кваліфікації майбутнього перекладача. Перед здобувачем постає завдання засвоєння і опанування як загальноживаних слів і понять, так і вузькоспеціалізованої фахової лексики. Отже, виклики сьогодення вимагають від викладача ефективних методів та сучасних підходів до процесу навчання та вивчення англійської мови.

Відповідно до освітньо-професійної програми (ОПП) зі спеціальності 035 «Філологія» ОП Германські мови та літератури (переклад включно), перша – англійська, навчання дисципліни «Практичний курс першої іноземної мови», передбачають формування наступних загальних та спеціальних компетентностей:

## **Загальні компетентності:**

- ЗК 04** Здатність бути критичним і самокритичним.
- ЗК 05** Здатність учитися й оволодівати сучасними знаннями.
- ЗК 06** Здатність до пошуку, опрацювання та аналізу інформації з різних джерел.
- ЗК 07** Уміння виявляти, ставити та вирішувати проблеми.
- ЗК 08** Здатність працювати в команді та автономно.
- ЗК 09** Здатність спілкуватися іноземною мовою.
- ЗК 10** Здатність до абстрактного мислення, аналізу та синтезу.
- ЗК 11** Здатність застосовувати знання у практичних ситуаціях.

## **Спеціальні компетентності:**

- СК 06** Здатність вільно, гнучко й ефективно використовувати мови, що вивчаються, в усній та письмовій формі, у різних жанрово-стильових різновидах і реєстрах спілкування (офіційному, неофіційному,

нейтральному), для розв'язання комунікативних завдань у різних сферах життя.

**СК 09** Усвідомлення засад і технологій створення текстів різних жанрів і стилів державною та іноземними мовами.

**СК 11** Здатність до надання консультацій з дотримання норм літературної мови та культури мовлення.

**Формування вищезазначених компетентностей передбачає досягнення низки програмних результатів навчання (ПРН):**

**ПРН 01** Вільно спілкуватися з професійних питань із фахівцями та нефахівцями державною та іноземними мовами усно й письмово, використовувати їх для організації ефективної міжкультурної комунікації.

**ПРН 02** Ефективно працювати з інформацією: добирати необхідну інформацію з різних джерел, зокрема з фахової літератури та електронних баз, критично аналізувати й інтерпретувати її, впорядковувати, класифікувати й систематизувати.

**ПРН 03** Організовувати процес свого навчання й самоосвіти.

**ПРН 10** Знати норми літературної мови та вміти їх застосовувати у практичній діяльності.

**ПРН 11** Знати принципи, технології і прийоми створення усних і письмових текстів різних жанрів і стилів державною та іноземними мовами.

**ПРН 14** Використовувати мови, що вивчаються, в усній та письмовій формі, у різних жанрово-стильових різновидах і регістрах спілкування (офіційному, неофіційному, нейтральному), для розв'язання комунікативних завдань у побутовій, суспільній, навчальній, професійній, науковій сферах життя.

Метою навчального посібника – забезпечити ефективне засвоєння користувачами базової термінології і понятійного апарату аграрної сфери, а також здійснити розвиток на його основі мовних знань і комплексу мовленнєвих навичок.

Навчальний посібник складається з 4 розділів, кожен з яких включає текст для вивчаючого читання та післятекстових вправ, що дозволяють ознайомитися з професійною термінологією. Метою всіх вправ (переклад з англійської на українську мову та навпаки, вправи на тлумачення окремих термінів, на правильність твердження, відповіді на проблемні питання та вправи комунікативного характеру) є закріплення лексичних структур базових текстів до рівня їх запам'ятовування і продуктивного використання в усному спілкуванні за фахом. Обов'язковим елементом кожного розділу є наявність проєктної роботи творчого характеру, спрямована на самостійний пошук інформації. В кінці навчального посібника пропонуються граматичний довідник, а також тести множинного вибору для самоконтролю, які дозволяють систематизувати вивчений матеріал. Контроль над виконанням завдань та сформованість комунікативних умінь може оцінюватися викладачем на практичних заняттях, консультаціях або дистанційно із залученням університетської платформи Moodle.

Автори висловлюють глибоку вдячність рецензентам кандидату філологічних наук, доценту В.І. Кульчицькому та кандидату філологічних наук І.С. Синельниковій, які люб'язно погодились провести ґрунтовний аналіз навчального матеріалу і надали низку слушних зауважень та цінних порад, врахування яких сприяло вдосконаленню змісту навчального посібника.

# UNIT 1. AGRICULTURE IN UKRAINE AND ABROAD.

## 1.1. AGRICULTURE IN UKRAINE.

### BASIC WORD LIST

*Study the following words and expressions.*

crop production	рослинництво
animal husbandry	тваринництво
grain and industrial crops	зернові та технічні культури
cereals	хлібні злаки
dairy and beef cattle breeding	розведення молочної та м'ясної худоби
pig raising	свинарство
sheep farming	вівчарство
bee-keeping	бджільництво
poultry industry	птахівництво
state farms	державні підприємства
collective farms	колективні підприємства

Ukraine has very favourable conditions for the development of agricultural production: fertile soils, temperately warm climate, a well-developed industry processing



agricultural raw materials. Ukraine is one of the world's most productive farming regions and is known as the breadbasket of Europe.

There are two main branches of agricultural production in Ukraine: **crop production** and **animal husbandry**. Crop production is the practice of growing and harvesting crops. It includes: **grain and industrial crops**, meadow culture, fruit and vegetable raising. Almost half of the cropping area is occupied by **cereals** such as winter wheat, maize and legumes, rye, oats and barley. Among the industrial crops such as sugar beet, sunflower, flax the leading position is occupied by sugar beet. Close to 40 types of vegetable crops are grown in Ukraine: potatoes, cabbage,



tomatoes, cucumbers, red beets, carrots, onions, garlic, etc. Melon-growing is practiced mainly in the south.

Animal husbandry is the practice of breeding of farm animals and their use. The most widespread branches of animal husbandry are: **dairy and beef cattle breeding, pig raising, sheep farming** and **bee-keeping**. The **poultry industry** is spread through all the provinces. Birds farmed include chicken, duck, goose, turkey. There are large mechanized poultry farms to produce eggs and meat.

Most farms in Ukraine are owned and controlled by the government. They include **state farms** and **collective farms**. State farms are managed entirely by the government, which pays wages to farmworkers. Collective farms are owned and managed in part by the workers, who



receive wages as well as a share in the farm's profits. State farms are larger and have more mechanical farm equipment than collective farms. In order to increase crop yields and animal products collective and state farms apply widely intensive technologies.

### **ANSWER THE FOLLOWING QUESTIONS:**

1. Does Ukraine have favourable conditions for the development of agricultural production?
2. What are the main branches of agricultural production in Ukraine?
3. What is crop production?
4. What does crop production include?
5. What cereals occupy half of the cropping area?
6. What vegetable crops are grown in Ukraine?
7. What is animal husbandry?
8. What are the most wide-spread branches of animal husbandry?

9. Where is the poultry industry spread?
10. What birds are farmed in Ukraine?
11. What forms of farm enterprises do you know?
12. What is the difference between state and collective farms?

***Exercise 1. Translate into English.***

1. Україна має дуже сприятливі умови для розвитку сільськогосподарського виробництва.
2. Є дві головні галузі сільськогосподарського виробництва в Україні: рослинництво та тваринництво.
3. Рослинництво — це вирощування та збирання сільськогосподарських культур.
4. Рослинництво включає вирощування зернових та технічних культур, луківництво, плодівництво та овочівництво.
5. Майже половину посівної площі країни займають хлібні злаки.
6. Найважливішою технічною культурою в Україні є цукровий буряк.
7. Тваринництво — це розведення сільськогосподарських тварин та їх використання.
8. Розведення молочної та м'ясної худоби, свинарство, вівчарство, бджільництво та птахівництво — найпоширеніші галузі тваринництва в Україні.
9. Більшість сільськогосподарських підприємств в Україні контролюється урядом.

***Exercise 2. Give the Ukrainian equivalents for the following words and word-combinations. Use them in the sentences of your own:***

Favourable conditions; agricultural production; fertile soils; agricultural raw material; crop production; animal husbandry; grain crops; industrial crops; temperately warm climate; dairy and beef cattle breeding; poultry industry; state and collective farms.

***Exercise 3. Translate the sentences paying attention to the italicized words:***

1. ***Most*** of the farms in our region are animal breeding farms.
2. There are some ***plants*** that are used only in medicine.
3. Intensification of agricultural production is the ***most*** important problem now.

4. In our *country* there are some *plants* producing chemical fertilizers.
5. Our farm *plants* some of the *crops* in autumn.
6. Many people go to the *country* in summer.
7. That bird has a large *crop*.
8. Grain *crops* are widely grown by farmers.
9. Animal husbandry is more important on this farm than *crop* production.

**Exercise 4. Complete the following sentences:**

1. Ukraine has very favourable conditions .....
2. There are two main branches of agricultural production in Ukraine .....
3. Crop production is .....
4. It includes .....
5. Almost half of the cropping area is occupied by cereals such as .....
6. Close to 40 types of vegetable crops are grown in Ukraine: .....
7. Animal husbandry is .....
8. Birds farmed include .....
9. In order to increase crop yields and animal products collective and state farms apply .....

**Exercise 5. Memorize the meanings of the word « agriculture » and its derivatives.**

**Translate the sentences paying attention to the italicized words:**

*agriculture* — сільське господарство; землеробство; агрономія;

*agricultural* — сільськогосподарський; землеробський;

*agriculturist* — агроном; сільський трудівник; землевласник.

1. This farm has different *agricultural* machines.
2. Cooperation with other countries is favourable to *agriculture* of Ukraine.
3. *The agriculturist* of today wants to have better and higher-yielding crops which can produce more food of good quality.

**Exercise 6. Answer if the sentences are true or false. Correct the false ones.**

1. Ukraine does not have favorable conditions for the development of agricultural production.

2. Ukraine is known as the breadbasket of Europe.
3. Crop production is the practice of breeding of farm animals and their use.
4. About 40 types of vegetable crops are grown in Ukraine.
5. Animal husbandry is the practice of growing and harvesting crops.
6. The state fully manages state farms and pays wages to agricultural workers.
7. Ukraine has small mechanized poultry farms producing eggs and meat.
8. Intensive technologies are widely used in collective and state farms to increase the yield of crops and livestock products.
9. State farms are not large, but have more mechanical equipment for farms than collective farms.
10. Melon-growing is practiced mainly in the south.

***Exercise 7. Put the words and phrases in the right order to make complete sentences.***

1. two, in, are, main, agricultural, Ukraine, branches, there, production, of.
2. owned, in, most, Ukraine, and, government, the, farms, by, controlled, are.
3. Melon-growing is practiced mainly in the south.
4. poultry, the, all, industry, the, through, provinces, spread, is.
5. larger, state, are, farm, and, more, equipment, farms, mechanical, farms, collective, than, have.

## **1.2. AGRICULTURE IN GREAT BRITAIN**

### **BASIC WORD LIST**

*Study the following words and expressions.*

acreage	площа землі в акрах
fertile soils	родючі ґрунти
self-sufficient	самодостатній
pastoral	пасовищне скотарство
arable	орне землеробство
dairying or beef cattle	молочне або м'ясне скотарство
sheep raising	вівчарство
pig breeding	свинарство
arable farms	орні господарства

cereal crops	зернові культури
rye	жито
cattle fodder	корм для худоби
seed	насіння
fishing industry	рибна промисловість



Agriculture, one of Britain's most important industries, supplies nearly two-thirds of the country's food. British agriculture is efficient, for it is based on modern technology and research.

Nearly 80 % of the land is used for agriculture. The total agricultural **acreage** of Great Britain is about 45 000 000 acres. Soils vary from the poor ones of highland Britain to the rich **fertile soils** in the eastern and south-eastern parts of England.

Britain is **self-sufficient** in milk, eggs, to a very great extent in meat, potatoes, wheat. However, it needs to import butter, cheese, sugar and some other agricultural products. There are about 55 000 farms in Britain. They are not large. An average sized farm is about 30–40 acres.

There are three main types of farming in Great Britain: **pastoral**, **arable**, and mixed. 60 % of farms are developed mainly for **dairying** or **beef cattle** and **sheep raising**. Sheep and cattle are reared in the hill and moorland areas of Scotland, Wales, Northern Ireland and south-western England. Milk production is of the first importance in the structure of British agriculture.

**Pig breeding** is carried out in most areas but is particularly important in southern England, north-eastern Scotland and Northern Ireland.

**Arable farms** are mainly in the eastern part of the country. The main **cereal crops** in Great Britain are wheat, barley and oats. **Rye** is grown in small quantities for use as **cattle fodder**.

Great Britain produces different kinds of fruit: apples, pears, cherries, gooseberries, strawberries, raspberries and others. Potatoes are grown for sale, for fodder and for **seed**.

Modern machines: tractors, combines and other equipment are used on British farms. But today the main tendency in British agriculture is that small traditional farms are gradually disappearing because they cannot compete with big industrial farms.

Private woods make up 56 % of the total forest area in Great Britain.

Woodlands cover an estimated 2,2 million hectares. Britain's second major source of food is the surrounding sea. The **fishing industry** provides about 70 % of British fish supplies.

### **ANSWER THE FOLLOWING QUESTIONS:**

1. What is Britain self-sufficient in?
2. Are the farms large in Great Britain?
3. What is of the first importance in the structure of British agriculture?
4. What are the main grain crops in Great Britain?
5. Is rye grown in the country?
6. Where are sheep and cattle reared?
7. Is British agriculture efficient?
8. What do you know about cattle-breeding in Great Britain?
9. What is Britain's second major source of food?
10. Is agriculture one of Britain's most important industries?
11. Is it based on modern technology?
12. Does the country import butter, cheese and sugar?
13. How many types of farming are there in Britain? What are they?
14. Does British agriculture specialize in milk and meat production?
15. What are the main cereal crops in Great Britain?
16. What is rye used for?
17. What kinds of fruit does Great Britain produce?
18. What is the main tendency in British agriculture today?
19. What is Britain's second major source of food?

**Exercise 1. Make sure that you know the English equivalents for the following words and word combinations.**

Сучасні технології та дослідження, загальна площа с/г угідь, багаті родючі ґрунти, ферма середнього розміру, виробництво молока, свинарство, основні зернові культури, малі кількості, невеликі традиційні господарства, великі промислові ферми, приватні ліси, основне джерело їжі.

**Exercise 2. Put in the missing words using appropriate words from the text.**

1. The total agricultural acreage of Great Britain is about ..... acres.
2. In hill countries large areas are used for .....
3. An ..... farm is about 30–40 acres.
4. There are three main types of ..... in Great Britain.
5. .... and ..... are reared in the hill and moorland areas of Scotland, Wales, Northern Ireland and south-eastern England.
6. Small farms are ..... disappearing nowadays.
7. Potatoes are grown for ..... for ..... and for .....

**Exercise 3. Answer if the sentences are true or false. Correct the false ones.**

1. Wheat, barley, oats are vegetables.
2. British agriculture is based on modern technology and research.
3. Great Britain doesn't import agricultural products.
4. British farms are large.
5. Meat production is more profitable than milk production.
6. Arable farms are mainly in the northern part of the country.
7. Potatoes are grown for sale, for fodder and for seed.
8. Britain's second source of food is the seas.

**Exercise 4. Read the text and find.**

- 1) the words which denote climate and topography
- 2) the words dealing with cattle-breeding
- 3) the words dealing with crop-sowing

**Exercise 5. Find in the list below the words corresponding to the following definitions.**

Arable farms	mixed farming	crops	soil
fodder	to import	pastoral farming	cereal

- 1) farms used (or suitable) for growing crops;
- 2) farming which involves keeping sheep, cattle, etc.;
- 3) the method of farming in which crops are grown and animals are kept on the same farm;
- 4) a type of grass which is cultivated to produce grain, or food made from grain which is eaten;
- 5) to buy or bring in products from another country;
- 6) the material on the surface of the ground in which plants grow;
- 7) food that is given to cows, horses or other farm animals;
- 8) a plant such as grain, fruit or vegetable grown in large amounts by farmers.

**Exercise 6. Fill in the blanks with the suitable words from the following list.**

Agriculture	profitable	horticultural	sheep	grazing
self-sufficient	supply	average	farming	produced

1. Britain today is ..... in milk, eggs, potatoes, barley, oats.
2. Great Britain is a country with a highly developed industry and .....
3. In hill countries large areas are used for .....
4. An ..... sized farm is about 30–40 acres.
5. British farmers ..... milk and milk products, meat, wool and eggs for the population.
6. Before the Second World War Britain ..... one-third of its total food requirements.
7. .... crops are fruit, vegetables and flowers.
8. .... farming is concentrated in the hill moorland areas of highland Britain.



9. It is more ..... to import cheaper products from overseas, mainly from Australia, New Zealand and Canada.

10. The land utilized for ..... is about 251.000 hectares.

**Exercise 7. Answer if the sentences are true or false. Correct the false ones.**

1. British agriculture is not efficient.
2. Nearly 80 % of the land is used for agriculture.
3. Britain does not need to import sugar, butter, and cheese.
4. The farms are large in Great Britain.
5. There are two main types of farming in Great Britain.
6. Modern machines are used on British farms.
7. Potatoes are grown only for fodder.
8. There are no private woods in Great Britain.
9. Small traditional farms are gradually disappearing.
10. The fishing industry is not developed in the country.

**Exercise 8. Put the words and phrases in the right order to make complete sentences.**

1. farms, machines, modern, British, on, used, are.
2. and, fertile, soils, rich, vary, ones, poor, the, from, to.
3. seed, are, fodder, grown, sale, for, potatoes, and.
4. production, milk, of, is, structure, the, of, agriculture, British, first, importance, in, the.
5. are, small, nowadays, farms, disappearing.

### **1.3. AGRICULTURE IN THE USA**

#### **BASIC WORD LIST**

*Study the following words and expressions.*

permanent	постійний
beef	яловичина
corn	кукурудза; зерно
soybeans	соя
nursery	розсадник

cotton	бавовна
hog	свиня
consume	споживати
cash crop	прибуткова культура
peanuts	арахіс
sugarcane	цукрова тростина
sorghum	сорго
celery	селера
lettuce	салат (рослина)
cantaloupe	канталупа (сорт дині)
prune	чорнослив
almond	мигдаль
pecan	пекан (горіх)
lamb	ягня
walnut	грецький горіх
livestock-farming	тваринництво
widespread	широкорозповсюджений
lamb	ягня, баранина



Agriculture is one of the largest and most important branches of national economy in the United States. 47% of the land area of the USA is farmland, of which 152 million hectares are harvested cropland and 560 million hectares are **permanent** pasture land. The USA leads the world in many

aspects of agricultural production. The country exports more farm products per year than any other nation in the world.

Leading agricultural crops are **corn**, **soybeans**, wheat, vegetables, fruits and nuts, greenhouse and **nursery** products, **cotton** and tobacco. The USA has been occupying the leading position in the production of corn and wheat for many years. Corn is a major crop in many parts of the United States, but most is produced in the Midwest, where it is the

main feed for the cattle and **hogs** raised there. Iowa, Illinois, Nebraska, Minnesota, and Indiana together produce about two-thirds of the annual U.S. corn crop.

Soybeans are grown primarily in the Midwest, especially in Iowa and Illinois, as well as in the Lower Mississippi Valley and other parts of the South. The Midwest is the most important agricultural region in the United States (though California is the number one state in terms of the value of its agricultural products) and alone produces almost twice as much as the American people can **consume**.

Wheat is another important U.S. crop. Kansas usually leads all states in early wheat production. North and South Dakota, Montana, Oklahoma, Colorado, Texas, Minnesota, and Nebraska also are major wheat producers.

Cotton growing is now concentrated in the lower Mississippi Valley, the plains of Texas, and the valleys of California and Arizona. Tobacco remains an important **cash crop**. The leading tobacco-producing states are North Carolina, Virginia, Maryland, and Kentucky.

Other leading crops include **peanuts, sugarcane, rice, sorghum**; such vegetables as tomatoes, potatoes, broccoli, cabbage, beans, carrots, **celery**, cucumbers, **lettuce**, onions, green peppers, **cantaloupes**, and watermelon. California grows nearly one-half of the nation's fresh vegetables; about two-thirds of the potatoes are grown in Idaho and Washington.

Valuable fruit crops grown in the USA are apples, pears, cherries, plums and **prunes**, grapes, oranges, peaches, pineapples and strawberries. More than three-quarters of the oranges are produced in Florida; about five-sixths of the grapes are raised in California; and about half of the commercial apples come from orchards in Washington. Pineapples are mainly grown in Hawaii.

Major nut crops include **almonds, pecans, peanuts, and walnuts**.

**Livestock-farming** is also carried out on a large scale.

Beef cattle are the most valuable product of the nation's farms. Many of the cattle are raised on large ranches in southwestern states. Texas produces more beef cattle than any other state, and states such as Nebraska, Kansas, Oklahoma, Colorado, and Iowa also raise many cattle.

Dairy products are the second most valuable item coming from American farms. California, Pennsylvania, and Minnesota are leading dairy states. Hogs and broiler chickens are other major livestock raised on U.S. farms. In terms of market value, 68 percent of the hogs are produced in Iowa, North Carolina, Illinois, Minnesota, Nebraska, and Indiana. Poultry farming is **widespread** in the country-side near all big cities.

Other major livestock and livestock products include chicken eggs, turkeys, sheep and **lambs**. Sheep farming is highly developed in the western regions of the country and in the prairies.

### **ANSWER THE FOLLOWING QUESTIONS:**

1. Agriculture is one of the largest and most important branches of national economy, isn't it?
2. Does the USA lead the world in many aspects of agricultural production? What agricultural products does it export?
3. What are leading crops of the U.S.?
4. Where is corn grown in the USA?
5. What is the most important agricultural region in the USA?
6. Where are soybeans mainly grown?
7. What state is "the number one" in terms of the value of its agricultural products?
8. What states are major wheat producers?
9. Where is cotton grown?
10. What vegetables (fruits) are grown in the U.S.?
11. What nut crops are grown in the country?
12. What is the most valuable livestock product of the nation's farms?
13. Where are hogs raised?
14. Where is poultry farming widespread in the country?

### ***Exercise 1. Translate into English.***

1. Країна експортує більше сільськогосподарської продукції на рік, ніж будь-яка інша країна світу.

2. Кукурудза є основною культурою в багатьох частинах Сполучених Штатів.
3. Середній Захід є найважливішим сільськогосподарським регіоном у США, і лише він виробляє майже вдвічі більше, ніж може спожити американський народ.
4. Канзас зазвичай лідирує в усіх штатах з виробництва ранньої пшениці.
5. Тютюн залишається важливою прибутковою культурою.
6. Каліфорнія вирощує майже половину свіжих овочів країни.
7. Цінними плодовими культурами, які вирощуються в США, є яблука, груші, вишні, сливи і чорнослив, виноград, апельсини, персики, ананаси і полуниця.
8. Багато великої рогатої худоби вирощують на великих ранчо в південно-західних штатах.
9. У сільській місцевості поблизу всіх великих міст поширене птахівництво.
10. Дуже розвинене вівчарство в західних регіонах країни і в преріях.

***Exercise 2. Complete the sentences and translate into Ukrainian.***

1. 47% of the land area of the USA is ....., of which 152 million hectars are harvested ..... and 560 million hectares are ..... pasture land.
2. The USA ..... the world in many ..... of agricultural .....
3. Corn is a ..... crop in many parts of the United States, but most is produced in the .....
4. Soybeans are grown ..... in the Midwest, especially in ..... and ....., as well as in the lower ..... Valley.
5. The Midwest is the ..... important agricultural region in the United States (though California is the number ..... state in terms of the value of its agricultural products) and alone ..... almost ..... as much as the American people can .....
6. .... usually leads all states in ..... wheat production.
7. Livestock-farming is also ..... on a large scale.
8. Poultry farming is ..... in the country-..... near all big cities.

**Exercise 3. Find in the list below the words corresponding to the following definitions.**

branches	permanent	pasture land	valuable
widespread	livestock-farming	orchard	consume

1. a piece of land planted with fruit trees;
2. smth. important, useful, or beneficial;
3. lasting for a long time or forever;
4. raising of animals for use or for pleasure;
5. a large area of land where animals feed on the grass;
6. a part of something larger;
7. to use something such as fuel, energy, money, food or time, especially in large quantities;
8. existing or happening in many places or among many people.

**Exercise 4. Answer if the sentences are true or false. Correct the false ones.**

1. The United States is a world leader in many aspects of agricultural production.
2. The United States has been a leader in sunflower seed and beet production for many years.
3. Corn is the main feed for cattle and pigs raised in the United States.
4. Tobacco remains an important cash crop. The leading tobacco-producing states are Kansas, Colorado and Texas.
5. California grows nearly one-half of the nation's fresh vegetables.
6. Half of commercial apples and pineapples are mostly grown in Hawaii.
7. Cattle are the most valuable product of the US economy.
8. Dairy products are produced in small quantities on American farms.
9. Poultry farming is common in rural areas near all major cities.
10. Sheep breeding is very developed in the eastern regions of the country and in the prairies.

**Exercise 5. Put the words and phrases in the right order to make complete sentences.**

1. world, the, USA, leads, agricultural, the, in, many, of, production, aspects.
2. is, many, a, major, produced, in, corn, parts, of, the, but, most, is, in, crop, the, Midwest, United States.
3. an, remains, crop, tobacco, cash, important.
4. grows, California, the, one-half, vegetables, of, nation's, fresh, nearly.
5. American, item, products, dairy, are, the, valuable, from, farms, most, coming, second.

<b><i>IDIOMS:</i></b>	<b>Use the idioms to complete the sentences.</b>
	<ul style="list-style-type: none"> <li>• bark up the wrong tree</li> <li>• nip it in the bud</li> <li>• go to seed</li> <li>• to go bananas</li> </ul>

1. I was starting to drink too much alcohol, so I \_\_\_\_\_ and stopped drinking altogether before it became a serious problem.
2. Wow, Tim's really started \_\_\_\_\_ ever since he had kids.
3. Archana \_\_\_\_\_ when she heard that I had lost her keys.
4. But even a watchdog can lose the scent – and \_\_\_\_\_.



**Project work**

***SUPPOSE you are taking part in the students' conference. Speak on:***

1. The Agricultural Development in the USA & in Ukraine.
2. The Experience of Successful Agricultural Practices in Developed Countries.
2. The Difference between Ukraine & British Agriculture.

## UNIT 2. TYPES OF CROPS.

### 2.1. FOOD, FEED AND FIBER CROPS.

#### BASIC WORD LIST

*Study the following words and expressions.*

subsistence	існування
food crops	продовольчі культури
feed crops	кормові культури
fiber crops	луб'яні культури
oil crops	олійні культури
ornamental crops	декоративні культури
industrial crops	технічні культури
alfalfa	люцерна
pasture	пасовище
forage crops	кормові культури
hay	сіно
silage	силос
property	особлива риса
digest	засвоювати/ перетравлювати
hull	шкаралупа
underground aquifer	підземний водоносний горизонт
graze	випасатися
cotton	бавовна
hemp	конопля
flax	льон
linen	ляне полотно
fluffy	пухнастий
rope	канат, мотузка
net	сітчатий матеріал
versatile	різноманітний
marijunana	марихуана
drug	наркотик
illegal	незаконний



A crop is a plant or plant product that can be grown and harvested for profit or **subsistence**. By use, crops fall into six categories: **food crops**, **feed crops**, **fiber crops**, **oil crops**, **ornamental crops**, and **industrial crops**.



**Food crops**, such as fruit and vegetables, are harvested for human consumption. Grains, such as corn, wheat, and rice, are the world's most popular food crops.

Food crops were the first crops to be harvested through agriculture. Agricultural development and the growth of civilizations led to the diversity of other types of crops.

### **Feed Crops.**

Feed crops, such as oats and **alfalfa**, are harvested for livestock consumption. These crops contain nutrients that animals need to develop. They are grown in agricultural fields but can also be found in natural meadows and **pastures**.

The most popular type of feed crop is a **forage crop**. Animals feed directly on forages, such as grasses. Forages that are cut and fed to livestock while they are still fresh are called green chop. Alfalfa is a popular crop fed to livestock as green chop.

Some forages are cut, allowed to dry in the field, and stored. These are called **hay** crops.

Another type of forage crop is **silage**. Silage crops are harvested, then stored under conditions that allow the forage to break down (ferment) into acids. The wet, acidic silage is fed to livestock such as cattle.



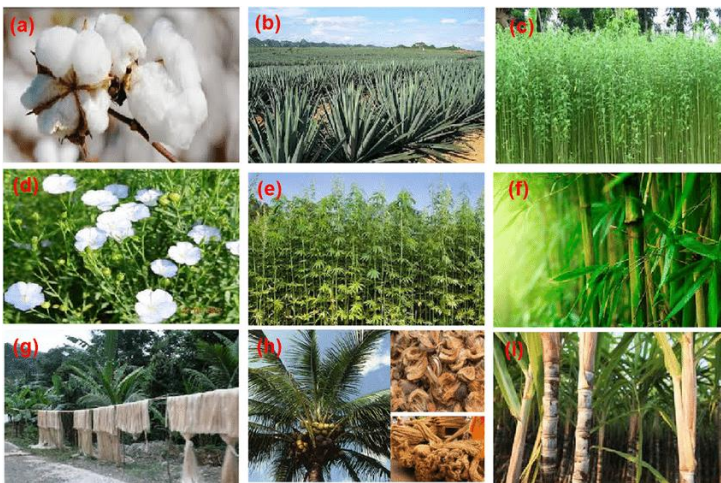
Principle feed crops include corn, barley, wheat, and oats. Each of these crops has different **properties** that are better suited for some animals' diets over others. Barley, which is harder to **digest**, is most often

fed to beef and dairy cattle because they have a tough, four-chambered stomach. **Hull-**less barley, which is easier to digest, is fed to swine and poultry.

The production of feed crops has risen dramatically with increased demand for meat worldwide. Increased production of feed crops has changed the agricultural landscape.

The Food and Agriculture Organization (FAO) says 33 percent of arable land on Earth is used to produce food for livestock. This limits the production of crops for human consumption, especially for the world's poorest people. Feed crops and grazing pastures disturb natural water cycles, drawing away water from **underground aquifers** that provide the earth with a constant and balanced supply of water.

Forests have been cleared to create pastures where livestock can **graze**. Almost 70 percent of land cleared from the Amazon rain forest, for instance, has been turned over to grazing.



### Fiber Crops.

Fiber crops, such as **cotton** and **hemp**, are harvested for textile and paper products. Textiles, or cloth, are made from the dried and processed fibers of certain plants. Most fibers used to make textiles are taken from the stem or roots of plants such as **flax**.

Flax is used to make **linen**.

Other parts of a plant can be harvested for fiber. Cotton, the most popular fiber crop in the world, is harvested from the light, **fluffy** “boll” of fiber that surrounds the plant’s seeds. Textiles made from bamboo are manufactured from the pulp of bamboo plants.

Pulp from other fiber crops can be used in a variety of products. Fiber pulp may be used instead of wood pulp to manufacture paper products.

The hemp plant is an interesting and controversial example of a fiber crop. The fibers of the hemp plant are strong and durable, perfect for products such as paper,

textiles, **ropes**, **nets**, and sailcloth for ships. Hemp advocates see the plant as a **versatile** and ecological source of fiber.

But some varieties of the hemp plant are used to make **marijuana**, a narcotic **drug**. Marijuana is **illegal** to grow and use in most parts of the United States. (The drug is legally grown and sold for medical use in some places.) Opponents of hemp argue that increased harvesting of hemp crops will lead to increased production and use of marijuana.

### **ANSWER THE FOLLOWING QUESTIONS:**

1. What is a plant or a plant product that can be grown and harvested for profit or subsistence?
2. Which are six categories of crops?
3. What for feed crops are grown?
4. Where are feed crops grown?
5. What is the most popular type of feed crop?
6. What is hay crops?
7. What is the principle feed crops?
8. What does the food and agriculture organization say?
9. What do feed crops and grazing pasture?
10. Why forests have been cleared?
11. What is clothes made from?
12. What from is cotton harvested?
13. What properties do the fibers of the hemp have?
14. Why some varieties of the hemp are illegal to grow?

### ***Exercise 1. Translate into English.***

Кормові культури, для людського існування, продовольчі культури, декоративні культури, технічні культури, споживання, розвиток сільського господарства, різноманіття культур, містити поживні речовини, потрібні для розвитку, силос, в умовах, розпадатися на кислоти, різні властивості, важко перетравлювати, чотирикамерний шлунок, свійська птиця, збільшення попиту, збільшення обсягів

виробництва, порушувати кругообіг води, корені рослин, виготовляти лляне полотно, насіння рослин, замість деревини, нелегальний, у медичних цілях.

***Exercise 2. Complete the translation of the sentences.***

1. A crop is a plant or plant product that can be grown and harvested for profit or (існування).
2. Grains, such as corn, wheat, and rice, are the world's most popular food (культури).
3. These crops contain nutrients that animals need to (розвиватися)
4. They are grown in agricultural fields but can also be found in natural meadows and (пасовацях).
5. The most popular type of feed crop is a (кормові культури).
6. Silage crops are harvested, then stored under conditions that allow the forage to break down (ferment) into (кислоти).
7. Principle feed crops include corn, barley, wheat, and (овес).
8. Barley, which is harder to digest, is most often fed to beef and dairy cattle because they have a tough, four-chambered (шлунок).
9. Hull-less barley, which is easier to digest, is fed to swine and (свійська птиця).
10. Most fibers used to make textiles are taken from the stem or roots of plants such as (льон).
11. Other parts of a plant can be harvested for (волокно).

***Exercise 3. Answer if the sentences are true or false. Correct the false ones.***

1. By use, crops fall into four categories: food crops, oil crops, ornamental crops, and industrial crops.
2. Grains, such as corn, wheat, and rice, are the world's most popular industrial crops.
3. Feed crops, such as oats and alfalfa, are harvested for birds consumption.
4. Alfalfa is a popular crop fed to livestock as green flowers.
5. Silage crops are harvested, then stored under conditions that allow the forage to join into acids.
6. Principle feed crops include cabbage, tomatoes, turnip.

7. Barley, which is harder to digest, is most often fed to chicken because they have a tough, four-chambered stomach.
8. Feed crops and grazing pastures help natural water cycles, drawing in a water from underground aquifers that provide the earth with a constant and balanced supply of water.
9. Most fibers used to make textiles are taken from the stem or roots of plants such as flax.
10. Opponents of hemp argue that increased harvesting of hemp crops will lead to decreased production and no-use of marijuana.

***Exercise 3. Find in the list below the words corresponding to the following definitions.***

digest	consumption	oat	hemp
cattle	pasture	graze	pulp

1. the cannabis plant, especially when grown for fiber.
2. a cereal plant cultivated chiefly in cool climates and widely used for animal feed as well as human consumption.
3. large ruminant animals with horns and cloven hoofs, domesticated for meat or milk, or as beasts of burden; cows.
4. break down (food) in the alimentary canal into substances that can be absorbed and used by the body.
5. the using up of a resource.
6. a soft, wet, shapeless mass of material.
7. land covered with grass and other low plants suitable for grazing animals, especially cattle or sheep.
8. (of cattle, sheep, etc.) eat grass in a field.

***Exercise 5. Translate into Ukrainian.***

1. By use, crops fall into six categories: food crops, feed crops, fiber crops, oil crops, ornamental crops, and industrial crops.

2. Agricultural development and the growth of civilizations led to the diversity of other types of crops.
3. Alfalfa is a popular crop fed to livestock as green chop.
4. Silage crops are harvested, then stored under conditions that allow the forage to break down (ferment) into acids.
5. Each of these crops has different properties that are better suited for some animals' diets over others.
6. Barley, which is harder to digest, is most often fed to beef and dairy cattle because they have a tough, four-chambered stomach.
7. The Food and Agriculture Organization (FAO) says 33 percent of arable land on Earth is used to produce food for livestock.
8. Feed crops and grazing pastures disturb natural water cycles, drawing away water from underground aquifers that provide the earth with a constant and balanced supply of water.
9. Forests have been cleared to create pastures where livestock can graze. Almost 70 percent of land cleared from the Amazon rain forest, for instance, has been turned over to grazing.
10. Textiles, or cloth, are made from the dried and processed fibers of certain plants.
11. Cotton, the most popular fiber crop in the world, is harvested from the light, fluffy "boll" of fiber that surrounds the plant's seeds.
12. The fibers of the hemp plant are strong and durable, perfect for products such as paper, textiles, ropes, nets, and sailcloth for ships.

## **2.2. OIL, ORNAMENTAL AND INDUSTRIAL CROPS.**

### **BASIC WORD LIST**

*Study the following words and expressions.*

canola	ріпак
consumption	споживання
enable	сприяти
soybean	соєві боби

edible	їстівний
paint	фарба
lubrication	мастило
fuel	паливо
global warming	глобальне потепління
self-sufficiency	самозабезпеченість
starch	крохмаль
sugar cane	цукровий очерет
additive	добавка, присадка
emissions	викиди
facilitate	спряти
coconut	кокос
macadamia	макадамія
pecan	горіх-пекан
large scale	великий обсяг
decrease	зменшуватися
dogwood	кизил
azalea	азалія
tulip	тюльпан
carnation	гвоздика
abundant	рясний
rubber	каучук
tobacco	табак (тютюн)
premidonantly	переважно
fluid	рідина
inner bark	луб, внутрішня кора
moisture	волога
medical supplies	медикаменти

### **Oil Crops.**

Oil crops, such as **canola** and corn, are harvested for **consumption** or industrial uses. Technologies developed in the past century have **enabled** crops to be processed and broken down into their primary components, including oil. **Soybeans**, for example, represented 56 percent of world oilseed production and 79 percent of all **edible** oil consumed in the United States in 2000.





Oil crops are harvested for use in cooking, such as olive oil and corn oil. Oil crops are also harvested for industrial use, such as oil **paints**, soaps, and **lubrication** for machinery.

**Fuel** made from oil crops is called biofuel. The demand for biofuels has grown in recent years. Rising gas

prices, concerns about **global warming**, and a desire for **energy self-sufficiency** have led governments and businesses to invest in biofuel research.

There are two main types of biofuel that use oil crops: bioethanol and biodiesel.

Bioethanol is an alcohol made from fermented materials that come from sugar and **starch** crops. These crops include **sugar cane**, corn, and wheat. Bioethanol can be used as a fuel for vehicles, but it is usually used as a gasoline **additive** to improve vehicle **emissions**. Bioethanol is used widely in the United States and Brazil, where an abundance of corn and sugar cane crops **facilitate** its production.

Biodiesel is made by combining vegetable oils with alcohol. Nuts, such as **coconuts**, **macadamias**, and **pecans**, are excellent sources of oil used to manufacture biodiesel. Biodiesel can be used in diesel engines, such as those used by buses. Brazil, the United States, and the European Union (particularly Germany) manufacture and use biodiesel on a **large scale**.

Biofuels provide almost 2 percent of the world's transport fuel. Many scientists and economists predict that number will rise as oil production **decreases** in the next century.

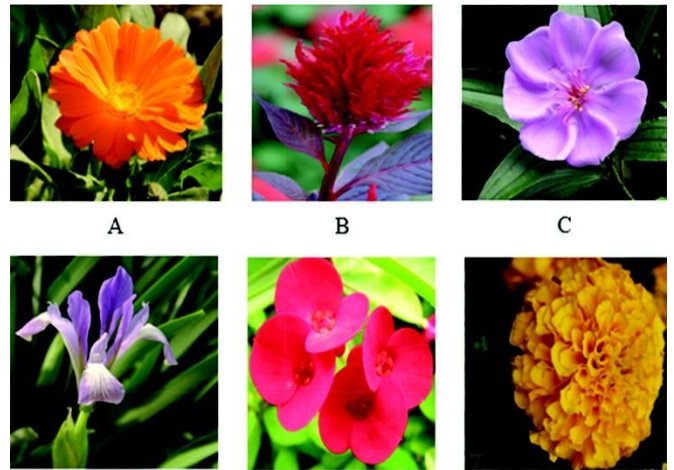
### **Ornamental Crops.**

Ornamental crops, such as **dogwood** and **azalea**, are harvested for landscape gardening. Ornamental crops are most often grown in nurseries, where they are purchased for residential or commercial settings.

Ornamental crop production has deep historical roots. The **tulip** crop of the Netherlands, for example, has become a symbol of that country.



Today, ornamental crop production is an important economic activity in many developing countries. Kenya, for example, is a major exporter of roses and **carnations**. Kenyan flower growers have situated their greenhouses near the shores of Lake Naivasha and Lake Victoria, where the soil is fertile and the water is **abundant** and fresh.



### **Industrial Crops.**

Industrial crops, such as **rubber** and **tobacco**, are harvested for their products' use in factories or machines. Industrial crops include all crops used in the production of industrial goods, such as fiber and fuel products.

Rubber is produced naturally from a wide variety of plants, but **predominantly** from the Hevea tree indigenous to Brazil. Rubber is harvested for its latex. Latex is an extremely tough **fluid** found in the **inner bark** of the Hevea tree. Latex is obtained by tapping-cutting or shaving the bark with a sharp knife and collecting the latex in cups.

When mixed with chemicals, latex creates solid rubber blobs, called curds. Rubber curds are pressed between rollers to remove excess **moisture** and to form sheets. The sheets are packed and shipped for use in tires, machine belts, shoe soles, and other products.



Rubber has been used by civilizations for thousands of years. One of the earliest uses of rubber was to create balls for use in games in the Olmec Empire in what is today Mexico. Today, rubber is still used to manufacture durable toys, as well as boots, flooring, balloons, and **medical supplies**.

## ANSWER THE FOLLOWING QUESTIONS:

1. What are oil crops harvested for?
2. Why crops are enabled to be processed and broken down into their primary components?
3. What does represent 56% of world oil seed production?
4. What is an olive oil?
5. What is the name of the fuel made from oil crops?
6. Why do governments and businesses invest in biofuel research?
7. Which are two main types of biofuel?
8. What is bioethanol?
9. Why bioethanol is used widely in the United States?
10. What is the principle of biodiesel manufacturing?
11. What does provide almost two percents of the world's transport fuel?
12. What crops are harvested for landscape gardening?
13. Where are ornamental crops most often grown?
14. What crops are harvested for their products' use in factories or machines?
15. Why is rubber harvested?
16. What is rubber used for?

### *Exercise 1. Translate into English.*

Олійні культури збирають для використання в кулінарії, наприклад, оливкова і кукурудзяна олія. Олійні культури також збирають для промислового використання, наприклад, олійні фарби, мило та мастило для машин. Для садівництва збирають такі декоративні культури, як кизил і азалія. Декоративні культури найчастіше вирощують в розплідниках, де їх купують для житлових або комерційних об'єктів. Технічні культури, такі як каучук і тютюн, збирають для використання на фабриках або в машинах. До технічних культур належать усі культури, що використовуються у виробництві технічних товарів, наприклад волокно та паливні продукти.

**Exercise 2. Answer if the sentences are true or false. Correct the false ones.**

1. Oil crops, such as canola and corn, are harvested for landscape gardening.
2. Fuel made from oil crops is called biodiesel.
3. There are two main types of rubber crops: bioethanol and biodiesel.
4. Bioethanol is a carbohydrate made from fermented materials that come from sugar and starch crops.
5. Bioethanol can be used as an oil for personal use, but it is usually used as a gasoline additive to improve vehicle emissions.
6. Biodiesel is made by combining fruits and sugar oils with nitrates.
7. Ornamental crops, such as flax and coconut, are harvested for landscape gardening.
8. Today, tulip crop production is an important economic activity in many advanced countries.
9. Industrial crops, such as silk and cotton, are harvested for their products' use in factories or machines.
10. Rubber is produced in nurseries from a wide variety of plants, but predominantly from the dogwood tree indigenous to Brazil.
11. Today, rubber is useless to manufacture durable toys, as well as T-shirts, ceiling, balloons, and medical supplies.

**Exercise 3. Find in the list below the words corresponding to the following definitions.**

soybean	lubricate	dogwood	azalea
bark	emission	carnation	medical supplies

1. to use a substance such as oil to make a machine operate more easily, or to prevent something sticking or rubbing.
2. a plant or bush with brightly coloured flowers, grown in gardens. azaleas are a type of rhododendron.
3. any item that is essential for treating illness or injury.

4. a type of bean grown especially in Asia and the us, used as a food for people and animals.
5. the hard outer covering of a tree.
6. a bush or small tree that has flowers, growing either wild or in gardens.
7. (a plant with) a small flower with a sweet smell, usually white, pink, or red in colour.
8. the act of sending out gas, heat, light, etc.

***Exercise 4. Put in the missing words using appropriate words from the text.***

1. Oil crops, such as ..... and ....., are harvested for ..... or industrial uses.
2. Oil crops are also harvested for industrial use, such as ....., ....., and .....
3. There are two main types of biofuel that use oil crops: ..... and .....
4. These crops include sugar ....., ....., and .....
5. Bioethanol is used widely in the United States and Brazil, where an abundance of ..... and ..... facilitate its production.
6. Nuts, such as ....., ....., and ....., are excellent sources of oil used to manufacture biodiesel.
7. Biofuels provide almost 2 percent of the world's transport fuel. Many ..... and ..... predict that number will rise as oil production decreases in the next century.
8. Ornamental crops, such as ..... and ....., are harvested for landscape gardening.
9. Kenya, for example, is a major exporter of ..... and .....
10. Industrial crops, such as ..... and ....., are harvested for their products' use in factories or machines.
11. The sheets are packed and shipped for use in ....., ....., ....., and other products.
12. Today, rubber is still used to manufacture ....., as well as ....., ....., ....., and .....

***Exercise 5. Translate into Ukrainian.*** Canola and corn, for consumption or industrial use, developed technologies, primary components, oilseed production, edible oil, oil crops, lubrication for machinery, biofuel, demand, in recent year, rising prices, global

warming, a desire for energy self-sufficiency, governments and businesses, to invest in biofuel research, fermented materials, sugar cane, gasoline additive, to improve vehicle emissions, on a large scale, many scientists and economists, oil production decreases, for landscape gardening, for residential or commercial settings, deep historical roots, a symbol of a country, an important economy activity, in many developing countries, a major exporter, the soil is fertile, industrial goods, a wide variety of plants, an extremely tough fluent found, to remove excess moisture.

## 2.3. GRAIN.

### BASIC WORD LIST

*Study the following words and expressions.*

grain	зернові культури
sorghum	сорго
food energy	поживна цінність
fuel	паливо
flour	мука
steam rice	пропарений рис
meal	трапеза
lack	нестача
legumes	бобові
wheat bread	пшеничний хліб
peanut	арахіс
vehicle	транспортний засіб
annual plant	однорічна рослина
maturity	стиглість, повний розвиток
humid	вологий
paddies	плантації
arid climate	посушливий клімат

**Grain** is the harvested seed of grasses such as wheat, oats, rice, and corn. Other important grains include **sorghum**, millet, rye, and barley. Around the globe, grains, also called cereals, are the most important staple food. Humans get an average of 48 percent of their calories, or **food energy**, from grains. Grains are also used to feed livestock and to manufacture some cooking oils, **fuels**, cosmetics, and alcohols.



Almost half of the grains grown around the world are harvested for people to eat directly. People turn wheat **flour** into bread, **steam rice**, and make corn tortillas. Grains are a food staple in almost every culture on Earth. A food staple is food that is eaten frequently, often at every **meal**. Staple

foods can be eaten fresh or stored for use all year. Rice, corn, and wheat are the most common staple foods on Earth.

Grains are so important because they are a good source of important nutrients called carbohydrates. Carbohydrates are a type of sugar that provides energy for organisms to function. Grains have carbohydrates as well as other important nutrients, such as vitamins. While grains fill many nutritional needs, they often **lack** some important proteins. In many cultures, grains are part of a staple diet when combined with protein-rich **legumes**, such as beans. Together, grains and legumes make a healthy diet: corn and beans, rice and tofu, **wheat bread** and **peanut** butter.

A third of the world's grain supply is fed to animals. Most domestic animals, from cattle to dogs, are fed food rich in grains and grain products.

The rest of the world's grain supply is used in the manufacture of industrial products. Biodiesel is a fuel used for **vehicles**. One type of biodiesel is ethanol, which can be made from corn.

Grains are **annual plants**. This means they have only one growing season per year, yielding one crop. Every growing season, grasses grow, reach **maturity**, produce seeds, and then die. Grains are harvested from dead, or dry, grasses.

Some grains are winter grains, such as rye. They are able to withstand cold, wet climates. Others are summer grains, such as corn. Corn usually grows best in warm weather.

Grains can grow in almost any climate. Rice is the most important grain in many tropical areas, where it is hot and **humid** year-round. Rice is especially common in Asia.

In Southeast Asia, rice is grown and harvested in flooded fields called **paddies**. Rice paddies can be flat or terraced. Terraced rice paddies look like steps on a green hill. This type of grain agriculture has been used for centuries.

Unlike rice, sorghum does not grow well in a wet climate. Sorghum favors an **arid climate**. The nations of West Africa, including Senegal, the Gambia, Burkina Faso, and Cape Verde, are the world's largest producers of sorghum.

In temperate areas – those with warm summers and cold winters – wheat is the most common grain. Wheat fields are common in the Great Plains of the United States and Canada, for instance. Corn, which is native to the Americas, is now grown in many temperate areas throughout the world. Oats, another grain that grows in temperate areas, are also used as a livestock feed.

### **ANSWER THE FOLLOWING QUESTIONS:**

1. What is grain?
2. How do people also call grains?
3. What is staple food?
4. What do people get from grains?
5. How do they also use it?
6. How can be staple foods eaten?
7. What are carbohydrates?
8. What are grains often lack of?
9. What does make a healthy diet?
10. What is biodiesel?
11. What is ethanol made from?
12. Which type of plants are grains: annual or summer?
13. Which type of grains is rye?
14. How are flooded fields called?
15. Where does sorghum grow?

**Exercise 1. Translate into English.**

Зібране насіння, важливі зернові, основні продукти харчування, виробництво деяких кулінарних олій, перетворити пшеничне борошно на хліб, поживні речовини, забезпечувати живлення організмів енергією потреби, брак деяких важливих білків, багаті білком бобові, домашні тварини, промислова продукція, однорічні рослини, вегетаційний період, досягти зрілості, виробляти насіння, озимі зерна, витримувати холод, вологий клімат, затоплені поля, рисові поля, посушливий клімат.

**Exercise 2. Answer if the sentences are true or false. Correct the false ones.**

1. Grain is the harvested seed of trees such as wheat, oats, rice, and corn.
2. Humans get an average of 48 percent of their fat, or food energy, from grains.
3. People turn oats flour into bread, steam rice, and make corn tortillas.
4. A food staple is food that is eaten rarely.
5. Carbohydrates are a type of fat that provides energy for organisms to function.
6. Grains have carbohydrates as well as other important nutrients, such as sugar.
7. The rest of the world's grain supply is used in the manufacture of clothes.
8. Grains are winter plants.
9. Corn usually grows best in cold weather.
10. In Southeast Asia, rice is grown and harvested in flooded fields called meadow.
11. Corn, which is native to the Americas, is now grown in many west areas throughout the world.

**Exercise 3. Find in the list below the words corresponding to the following definitions.**

tofu	paddies	maturity	corn
peanut	legumes	rice	grass

1. a plant that has its seeds in a pod, such as the bean or pea.
2. the state of being completely grown physically.
3. an oval-shaped nut that grows underground in pairs inside a thin brown shell.



4. the small seeds of a particular type of grass, cooked, and eaten as food.
5. (the seeds of) plants, such as wheat, maize, oats, and barley, that can be used to produce flour.
6. a soft, pale food that has very little flavour but is high in protein, made from the seed of the soya plant.
7. a low, green plant that grows naturally over a lot of the earth's surface, having groups of very thin leaves that grow close together in large numbers.
8. a specially irrigated or flooded field where rice is grown.

***Exercise 4. Complete the translation of the sentences.***

1. Grain is the harvested seed of grasses such as wheat, oats, rice, and (кукурудза).
2. Around the globe, grains, also called cereals, are the most important (основний продукт харчування).
3. Grains have carbohydrates as well as other important nutrients, such as (вітаміни).
4. In many cultures, grains are part of a staple diet when combined with protein-rich legumes, such as (боби).
5. The rest of the world's grain supply is used in the manufacture of (технічних культур).
6. In Southeast Asia, rice is grown and harvested in flooded fields called (плантації).

***Exercise 5. Translate into Ukrainian.***

1. Around the globe, grains, also called cereals, are the most important staple food.
2. Grains are also used to feed livestock and to manufacture some cooking oils, fuels, cosmetics, and alcohols.
3. A food staple is food that is eaten frequently, often at every meal.
4. Rice, corn, and wheat are the most common staple foods on Earth.
5. Grains have carbohydrates as well as other important nutrients, such as vitamins.
6. In many cultures, grains are part of a staple diet when combined with protein-rich legumes, such as beans.
7. Most domestic animals, from cattle to dogs, are fed food rich in grains and grain products.

8. One type of biodiesel is ethanol, which can be made from corn.
9. Every growing season, grasses grow, reach maturity, produce seeds, and then die.
10. They are able to withstand cold, wet climates.
11. Rice is the most important grain in many tropical areas, where it is hot and humid year-round.
12. Terraced rice paddies look like steps on a green hill.
13. Oats, another grain that grows in temperate areas, are also used as a livestock feed.

<b><i>IDIOMS:</i></b>	<b>Use the idioms to complete the sentences.</b>
	<ul style="list-style-type: none"> <li>• everything's coming up roses.</li> <li>• old chestnut</li> <li>• be full of beans</li> <li>• to bear fruit</li> </ul>

1. \_\_\_\_\_ this year. Our business is doing well, our son Brett got into college, and Josie's had her first baby - so we're grandparents as well!
2. All the effort we put in on the software is finally beginning \_\_\_\_\_ – sales for our department are up 20 percent.
3. You can imagine how I felt when I first heard that \_\_\_\_\_.
4. I've never known anyone be so \_\_\_\_\_ before breakfast.



**Project work**

***CHOOSE one of these questions to research and be ready to present it in the classroom.***

1. Different Types of Crops & Seasons: Kharif, Rabi and Zaid.
2. What Is the Role of Different Types of Soil In Agriculture?
3. How to Control Crop Diseases with Smart Agriculture. Crop Disease: Types, Causes and Symptoms.

## UNIT 3. PLANTING, GROWING AND HARVESTING CROPS.

### 3.1. NO-TILLAGE METHOD OF PLANTING.

#### BASIC WORD LIST

*Study the following words and expressions.*

row crops	просапні культури
sod	дерен
zero-tillage no-tillage	нульовий обробіток
furrow	борозна
coulter	ніж плуга, різак
tilled area / to till	оброблена площа / орати, обробляти землю
weed	бур'ян
residual	залишковий
tolerance	стійкість, витривалість
cornfield	поле, нива
to spray	розпилювати, оббризкувати
vegetation	рослинність
tillage	оранка, розпушування, обробіток ґрунту
crop residue	пожнивні рештки
moisture loss	втрата вологи
moldboard	відвал плуга
double-cropping	збирання подвійного врожаю
footing	опора, основа
vegetative	рослинний, вегетативний



Planting corn and other **row crops** directly into **sod** is new practice. More and more growers are using this easy and economical method of planting row crops. The idea of planting row crops without plowing goes back to at least 1943. But **no-**

**tillage** or **zero-tillage** remained largely experimental until several effective herbicides have been developed.

Crops are planted in unprepared soil in a narrow seed **furrow** opened with a **coulter**. **Tilled area** is only 2 or 3 inches wide. Using this tillage system one should be very careful in applying the proper amount of herbicides for **weed** control. They should include both a contact herbicide to kill early weeds or sod and a **residual** herbicide. By combining a contact herbicide with a residual one to which corn has a high **tolerance**, nearly all **vegetation** present in **cornfields** before planting can be killed. The residual herbicide also controls weeds during the corn growing season, making cultivation unnecessary.

While **spraying** the sod one should use enough water with the herbicide to cover all the **vegetation**. As much as 150 gallons per acre may be needed in very heavy **vegetative** cover.

At present the scientists agree that zero-tillage is quite a promising method but it will never fit all farms and all conditions. It is not used on heavy or poorly drained soils, because these soils need aeration that is provided by plowing.

Advantages of no-tillage planting:

- no-tillage corn yields 20 per cent more than corn grown with conventional tillage;
- the **crop residue** and untreated upper soil layer reduce **moisture loss**;
- conventional  **moldboard** ploughing - especially spring ploughing – cannot often be done early enough because of weather or soil conditions;
- due to early planting it is possible to practice **double-cropping**;
- the presence of crop residue on the soil surface protects the soil from wind and water erosion;
- corn is very cheap to grow with zero-tillage method;
- no-tillage planting also provides a better **footing** for heavy harvest machines if there is much rain at the time of harvest.

### **ANSWER THE FOLLOWING QUESTIONS:**

1. What easy and economical method of planting do you know?

2. When did the idea of planting row crops without ploughing appear?
3. What is tilled area when no-tillage method is used?
4. What herbicides are used?
5. What quality of water is needed while spraying the sod?
6. In what cases cannot no-tillage method be used?
7. Why isn't it used on heavy or poorly drained soils?
8. What advantages of no-tillage planting do you know?
9. Why is it possible to practice double-cropping if no-tillage method is used?
10. What is the significance of crop residue on the soil surface?

***Exercise 1. Translate into English.***

Просапні культури, ефективні гербіциди, система обробітку, відповідна кількість гербіцидів, період росту зернових культур, перспективний метод, забезпечується оранкою, відвальний обробіток ґрунту, весняна оранка, поживні рештки, краща опора для важких комбайнів.

***Exercise 2. Answer if the sentences are true or false. Correct the false ones.***

1. Planting crops directly into sod is a very old practice.
2. Effective herbicides are not needed when no-tillage method is used.
3. The use of residual herbicide makes cultivation absolutely necessary.
4. Crops are planted in the prepared soil in a narrow seed furrow, opened by an opener.
5. Untreated upper soil layer enlarges moisture loss.
6. The residual herbicide also controls weeds during the corn growing season, making cultivation unnecessary.
7. Spraying the sod you need 50 gallons of water per acre if no-tillage method is practiced.
8. Zero tillage is used on heavy or poorly drained soils.
9. Corn is very cheap to grow with zero-tillage method.
10. No-tillage corn yields 20% less than maize grown by conventional cultivation.

**Exercise 3. Find in the list below the words corresponding to the following definitions.**

sod	coulter	cornfield	aeration
plow	weed	spray	furrow

1. a wild plant growing where it is not wanted and in competition with cultivated plants.
2. a field in which corn is grown.
3. apply (liquid) to someone or something in the form of a shower of tiny drops.
4. a large farming implement with one or more blades fixed in a frame, drawn by a tractor or by animals and used for cutting furrows in the soil and turning it over, especially to prepare for the planting of seeds.
5. a long narrow trench made in the ground by a plow, especially for planting seeds or for irrigation.
6. a vertical cutting blade fixed in front of a plowshare.
7. the surface of the ground, with the grass growing on it.
8. the introduction of air into a material.

**Exercise 4. Complete the translation of the sentences.**

1. Aeration is provided by (оранкою).
2. The crop residue and untreated upper soil layer reduce (втрату вологи).
3. No-tillage method makes possible double-cropping due to (ранній сівбі).
4. The farmer must be careful in applying the proper amount of herbicides for (боротьби з бур'янами).
5. Corn is very cheap to grow with (нульовим обробітком ґрунту)

**Exercise 5. Translate into Ukrainian.**

Planting corn, unprepared soil, narrow seed furrow, contact herbicide, residual herbicide, a high tolerance, the corn growing season, while spraying the sod, heavy vegetative cover, heavy or poorly drained soils, untreated upper soil layer, reduce moisture loss.

## 3.2. METHODS OF CULTIVATION.

### BASIC WORD LIST

*Study the following words and expressions.*

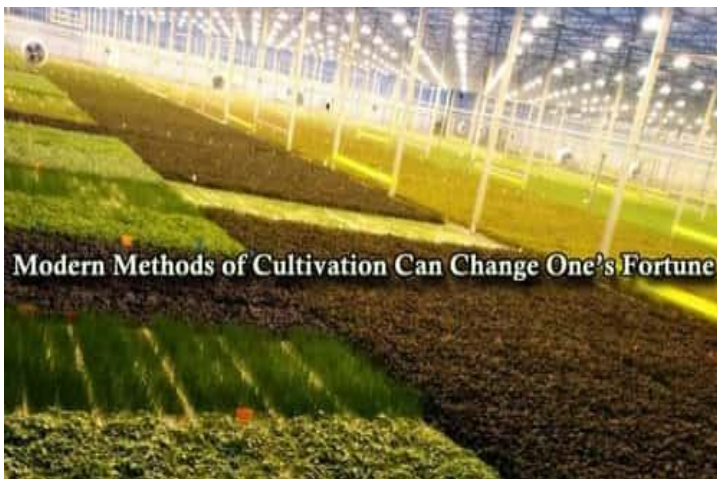
intensive farming	інтенсивне землеробство
extensive farming	екстенсивне землеробство
output	результат
inputs	витрати
yield	врожайність
insecticides	інсектициди
pesticides	пестициди
weedicides	бур'яни
improved methods	вдосконалені методи
crop rotation	сівозміни
irrigation	зрошення
tools	інструменти
implements	знаряддя
accelerate	прискорювати
tracts of land	масиви землі, земельні ділянки
vacant	пустий, незайнятий
backward	відсталий
fertility	родючість
terrain	місцевість
fertilizer	добриво
environment-friendly method	екологічно чистий метод
contaminate	забруднювати, заражати,

Farming is not a one-day affair; rather it requires several days of hard work and proper agricultural procedure to be followed to get the intended **output**. A range of farming practices has been emerged to increase the productivity, of the agricultural land. Two such farming practices are **intensive farming** and **extensive farming**.

**Intensive Farming** is a farming method that uses higher **inputs** and advanced agricultural techniques to increase the overall **yield**. This method of cultivation is adopted in those countries where land is scarce and its area is limited. This method of cultivation is used in old countries of Europe like England, Germany, France, etc.

Intensive farming refers to the intensification and mechanization of the agriculture, with the objective of increasing the productivity of a particular land. This is possible through the high-level use of inputs such as capital, labour, fertilizers, **insecticides**, **pesticides**, **weedicides** etc., which results in increased yield of the crop per hectare. In intensive cultivation, the farmer uses **improved methods** of cultivation like better seeds, fertilisers, timely **crop rotation** and **irrigation**, modern **tools** and **implements**, etc.

In this system, the use of inputs is comparatively higher than the land area. The essence of intensive farming is that it depends on the chemicals to **accelerate** the growth and increase the crop yield.



**Extensive Farming** is one in which more and more land is brought under cultivation to increase the output produced. In new countries like the United States, Australia and Canada, vast **tracts of land** are lying **vacant** and uncultivated. They are easily available at cheap rates but labour is

not available to cultivate them. The farmers bring more and more land under cultivation in order to increase production. Extensive cultivation methods are also used in **backward** countries in Africa and Asia, as they do not use modern production techniques.

Extensive Farming is a system of cultivation, which uses limited inputs, i.e. labour, investment, machinery etc., in comparison to the land under cultivation. In this method, traditional methods of farming are given preference. Further, the productivity is based on the natural **fertility** of soil, climate and **terrain** of the area and so it is practiced in large farms to achieve higher yields and to achieve profitability. The total crop production is high, due to large land holding, but the low in terms of per unit production.

Due to less use of chemical **fertilizers** and pesticides, it is an **environment-friendly** method, as it does not damage the environment.

To sum up, the primary focus of intensive farming is on the quantity of the crop produced, whereas extensive farming stresses on quality. Intensive farming causes



damage to the environment, as there is a high usage of chemicals which not only reduces the fertility of soil but also **contaminates** the food, which is not in the case of extensive farming.

### **ANSWER THE FOLLOWING QUESTIONS:**

1. What are the two methods of cultivation?
2. Why did farming methods emerge?
3. How do farmers choose the method of cultivation? What does it depend on?
4. What is intensive farming?
5. What is extensive farming?
6. Which method of agriculture uses high inputs and advanced agricultural techniques?
7. What resources leads to increased crop yields per hectare?
8. What are chemicals used for?
9. In which countries is the intensive method of farming used?
10. In which countries is the extensive method of farming used?
11. Which method of farming is considered environmentally friendly? Why?

#### ***Exercise 1. Give the Ukrainian equivalents for the following word-combinations.***

Farming methods, agricultural land, advanced agricultural techniques, a particular land, the high-level use, timely crop rotation, modern tools and implements, vast tracts of land, backward countries, natural fertility of soil, crop production, an environment-friendly method, causes damage to the environment, contaminate the food.

#### ***Exercise 2. Put in the missing words using appropriate words from the text.***

1. Intensive farming is a farming method that uses higher ..... and advanced agricultural ..... to increase the overall yield.
2. In intensive cultivation, the farmer uses ..... methods of cultivation like better ....., fertilisers, timely ..... and ....., modern ..... and ....., etc.
3. The essence of intensive farming is that it depends on the ..... to accelerate the growth and increase the crop yield.

4. In new countries like the United States, Australia and Canada, vast ..... of ..... are lying ..... and uncultivated.
5. Further, the productivity is based on the natural ..... of soil, climate and ..... of the area and so it is practiced in large farms to achieve higher ..... and to achieve profitability.
6. The total crop production is high, due to large land ....., but the low in terms of per unit .....

***Exercise 3. Answer if the sentences are true or false. Correct the false ones.***

1. A number of farming methods have emerged to increase the productivity of agricultural land.
2. Intensive farming is a method of farming that requires small inputs to increase the overall yield.
3. Intensive agriculture is accepted in those countries where land is scarce and its area is limited.
4. Resources such as capital, labor, fertilizers, insecticides, pesticides, and weeds help increase crop yields per hectare.
5. Chemicals are not used in intensive farming because they inhibit growth.
6. Extensive farming is one in which more and more land is brought under cultivation to increase the output produced.
7. Extensive cultivation methods are used in backward countries in Africa and Asia, as they use modern production technologies.
8. In the extensive method of cultivation, preference is given to traditional farming methods.
9. Due to the extensive use of chemical fertilizers and pesticides, extensive farming is an environmentally friendly method.
10. Total crop production in extensive farming is high due to large land holdings, but low per unit of output.

***Exercise 4. Find in the list below the words corresponding to the following definitions.***

implements	irrigation	terrain	contaminate
accelerate	tract	yield	fertilizer

1. the full amount of an agricultural or industrial product;
2. an area of land, when considering its natural features;
3. a tool, utensil, or other piece of equipment, especially as used for a particular purpose;
4. the supply of water to land or crops to help growth;
5. make (something) impure by exposure to or addition of a poisonous or polluting substance.;
6. a chemical or natural substance added to soil or land to increase its fertility;
7. (of a vehicle or other physical object) begin to move more quickly;
8. an area of indefinite extent, typically a large one.

***Exercise 5. Translate into English.***

Спосіб вирощування, капітал та робоча сила, високі витрати та передові агротехніки, сівозміни, зрошення, сільське господарство, збільшити виробництво, обмежені витрати, акцент на якості, знижують родючість ґрунту, екологічно чистий метод, справа не одного дня.

### **3.3. HARVESTING GRAIN.**

#### **BASIC WORD LIST**

*Study the following words and expressions.*

emmer	еммер
ancestor	предок
einkorn	однозернянка
grain silos	зерновий силос
remnants	рештки, залишки
mash	змішувати
beverage	напій
carbohydrates	вуглеводи
currency	валюта, грошовий обіг

winnow	просівати
stalk	стебло, стержень
thresh	МОЛОТИТИ
edible grain	їстівні зерна
chaff	полова
sickle	серп
tissue	тканина
germ	ембріон, зародок (зав'язь)
endosperm	ендосперма
bran	висівки

People first began eating grains about 75,000 years ago in western Asia. These grains, including **einkorn** and **emmer**, were **ancestors** of today's wheat. Einkorn and emmer grew wild near the banks of rivers.

People harvested the grasses that grew naturally near their communities. People began cultivating, or growing, grain more recently. In 2009, scientists announced that they had discovered the world's oldest known **grain silos** at Dhra in what is now the nation of Jordan. The silos, which date back 11,000 years, contained **remnants** of barley and an early type of wheat.



Ancient people ate grains in much the same way we do today. Wheat grains were made into flour and used in breads. Rice was steamed and eaten hot or cold. Oats were **mashed** with water or milk to make oatmeal. Beer, one of the oldest manufactured **beverages** in the world, is made from

grain such as barley. Ancient beers had a very low alcohol content, but were good sources of **carbohydrates**. In some ancient civilizations, grain products served as wages or forms of **currency**. Many of the workers who built Egypt's pyramids at Giza, for instance, were often paid in bread and beer.

Today, grain silos are a familiar sight to many people in the developed world. Harvesting is done almost entirely with enormous, expensive machinery. The most important piece of agricultural machinery for grain crops is the combine harvester. This remarkable machine does three jobs: it cuts the grain, **threshes** the grain, and **winnows** the grain. Cutting, of course, is removing the grain from the **stalk** of grass. **Threshing** is loosening the **edible grain** from its casing, called the **chaff**. (Chaff is inedible; organisms cannot digest it.) Winnowing is the process of removing the grain from the chaff. Combine harvesters help farmers expand the amount of grains they can harvest by combining three activities into one.



In the developing world, few farmers have the huge fields of grain that agribusinesses in the developed world do. Farmers in the developing world typically have a few acres, and provide grain for their local community. These farmers usually thresh and winnow with separate machines (threshers and winnowers) after harvesting the field. In many places, harvesting is still done with hand tools such as the **sickle**, a long, curved blade used for cutting many stalks of grain at once.

Whole grains are cereals that have not been processed to remove their natural **tissues: germ** (the seed's embryo), **endosperm** (nutrition for the embryo), and **bran** (outer layer).

### ANSWER THE FOLLOWING QUESTIONS:

1. What was the ancestor of the today's wheat?
2. Where did it grow?
3. What did scientists discover in 2009?
4. What was the oldest manufactured beverage?
5. What was it made from?
6. For what grain products served in some ancient civilizations?
7. What is the most important piece of agricultural machinery?

8. What does it do?
9. What is the principle of winnowing process?
10. What kind of hand tools are still used for harvesting?

***Exercise 1. Give the Ukrainian equivalents for the following word-combinations.***

Einkorn and emmer, grow wild, near the communities, scientists announced, contain remnants, early type of wheat, in match the same way, make into flour, hot or cold, mash with water or milk, is made from grain, a very low alcohol content, source of carbohydrates, ancient civilizations, grain products, form of currency, bread and beer, developed world, enormous machinery, combine harvester, thresh the grain, remove the grain from the stock, edible grain, digest, expand the amount of grains, huge fields, the seed's embryo, nutrition for the embryo, outer layer.

***Exercise 2. Put in the missing words using appropriate words from the text.***

1. These grains, including einkorn and emmer, were .....of today's wheat.
2. People began cultivating, or growing, ..... more recently.
3. In 2009, scientists announced that they had discovered the world's oldest known .....  
..... at Dhra in what is now the nation of Jordan.
4. The silos, which date back 11,000 years, contained remnants of barley and  
an early type of .....
5. Wheat grains were made into flour and used in .....
6. Beer, one of the oldest manufactured beverages in the world, is made from grain such  
.....
7. In some ancient civilizations, grain products served as wages or forms of .....
8. The most important piece of agricultural ..... for grain crops is the combine  
harvester.
9. This remarkable machine does three jobs: ..... the grain, ..... the  
grain, and ..... the grain.
10. Winnowing is the process of removing the grain from the .....
11. In many places, harvesting is still done with hand tools such as the ....., a

long, curved blade used for cutting many ..... of grain at once.

12. Whole grains are cereals that have not been processed to remove their natural tissues: ..... (the seed's embryo), ..... (nutrition for the embryo), and ..... (outer layer).

**Exercise 3. Answer if the sentences are true or false. Correct the false ones.**

1. People first began eating grains about 75,000 years ago in South America.
2. People harvested the grasses that blew naturally near their hands.
3. Modern people are eating grains in much the same way they do centuries ago.
4. Corn was made into beer and used in breads.
5. Vodka, one of the oldest manufactured beverages in the world, is made from grain such as barley.
6. Many of the workers who built Egypt's pyramids at Giza, for instance, were often paid in clothes.
7. Harvesting is done almost entirely with enormous, cheap manufacturing.
8. Farmers in developing countries tend to have huge fields and supply grain to the whole world.

**Exercise 4. Find in the list below the words corresponding to the following definitions.**

germ	winnow	bran	thresh
beverage	sickle	remnants	chaff

1. a short-handled farming tool with a semicircular blade, used for cutting grain, lopping, or trimming.
2. pieces of grain husk separated from flour after milling.
3. a portion of an organism capable of developing into a new one or part of one.
4. blow a current of air through (grain) in order to remove the chaff.
5. a drink, especially one other than water.
6. a small remaining quantity of something.
7. separate grain from (a plant), typically with a flail or by the action of a revolving mechanism.

8. the husks of corn or other seed separated by winnowing or threshing.

**Exercise 5. Translate into English.**

Зернові культури, на берегах річок, обробляти землі, нещодавно, науковці, містити рештки, давні люди, таким самим чином, як і сьогодні, змішувати з водою або молоком, найстаріший напій у світі, джерело вуглеводів, слугувати валютною одиницею, наприклад, вартісний, найважливіша частина, комбайн, просівати, відділяти стебло, їстівні зерна, об'єднувати у три дії, ручні знаряддя праці, перероблятися, природні тканини.

<b>IDIOMS:</b>	<b>Use the idioms to complete the sentences.</b>
	<ul style="list-style-type: none"><li>• broken reed.</li><li>• not give a fig</li><li>• beat around the bush   beat about the bush</li><li>• make hay while the sun shines</li></ul>

1. You can do what you want. I don't \_\_\_\_\_.
2. I thought I could count on my best friend for support during this difficult time, but she proved to be a \_\_\_\_\_ and never returned my calls.
3. We've got a few days off work so let's \_\_\_\_\_ and do some landscaping around the back of the house.
4. Stop \_\_\_\_\_ and tell me what you want.



**SUPPOSE you are taking part in the students' conference. Speak on:**

1. "Crops Harvested In My Native Area"
2. Methods of Planting: Comparison of Broadcasting, Hill & Drill.
3. Two Methods of Cultivating Medicinal Plants: Sexual & Asexual. Advantages & Disadvantages of these Methods.



## UNIT 4. WONDERS IN THE FIELD OF AGRONOMY.

### 4.1. PLANTS FOR THE FUTURE.

#### BASIC WORD LIST

*Study the following words and expressions.*

alter the genes	змінювати гени
heredity	спадковість
to develop plants with traits	вирощувати рослини з необхідними властивостями
resistance to disease	опір хворобі
ventures	ризикований захід, нововведення
custom-designed agriculture	с/г, що вирощує на замовлення, згідно з потребами споживача
protein-rich crops	культури, багаті на білок
grown on a large scale	у великих масштабах
fertilizer	добрива
annual savings	щорічні заощадження
amaranth	щириця, амарант
prohibit	забороняти
sesame seeds - /sesemi/	насіння сезаму
nutty taste	горіховий смак
pop	підсмажувати
steam	готувати на пару
flatten	розкачувати, розплющувати
foliage	листя
strawberry	полуниця
melon	диня
predict enormous success	передрікати великий успіх

The world is entering the age of biotechnology, where scientists can **alter the genes** that carry the biological codes controlling **heredity** in living things.

Scientists at more than 200 companies and universities in the United States work to **develop plants with traits** such as larger size or **resistance to disease**. Scientists believe these new **ventures** will lead to the beginning of an era of **custom-designed agriculture**.

**Biotechnology at work.** In a matter of weeks scientists can grow the plants that take years to produce in nature. And by controlling the growth environment, they can



cause the plants to grow in specific ways. Scientists are also experimenting with **protein rich crops**, such as soybeans. **Grown on a large scale** these crops could dramatically improve the world's supply of protein.

Another research group has created several healthy snack foods. These biotechnologically developed snacks include extra sweet and crunchy carrots, varieties of both common and exotic fruits, and popcorn so flavorful that popcorn lovers will enjoy it without adding salt or butter.

**Increasing food supplies.** Other plant scientists work to make tropical plants grow faster so that they will grow during the shorter summer growing season of cooler regions. Similarly, scientists are trying to develop a corn that has the soybean's ability to produce **fertilizer** from the nitrogen in the air. The potential **annual savings** in fertilizer bills for corn could amount to millions of dollars.

While some plant scientists seek to increase the world's food supply through biotechnology, others look to the past for plants that may once again become important. One such plant - **amaranth** - was the principal grain of the Aztecs and Incas. After the Spanish conquered those civilizations, they **prohibited** the growing and eating of amaranth because it had been used in Indian ceremonies.

However, amaranth survived in a few remote highland villages. Today several research centers in the United States work to develop its use again.

**GMO Foods**

For more information go to [olmag.co/gmo-foods](http://olmag.co/gmo-foods)

- Tomato:** Tomatoes have been genetically modified, but they are not being grown commercially at this time.
- Rice:** GMO rice has been approved but is not yet being used commercially.
- Sweet Corn:** More than 79 percent of corn grown in the United States has been genetically engineered.
- Summer Squash:** Farmers don't like GMO squash but some experts say GM squash have blended with wild squash.
- Canola Oil:** 87% of canola grown commercially, and 90% of wild canola is GMO.
- Yeast:** GMO yeast for wine has been approved.
- Alfalfa:** GMO alfalfa is contaminating non-GMO alfalfa crops at a rapid rate.
- Wheat:** Unapproved GMO has contaminated wheat fields, and we don't yet know the extent of it.
- Sugar Beets:** 90% of Sugar Beets (used to make 50% of our sugar) are GMO.
- Soy:** More than 93% of soybeans the United States produces are genetically modified.
- Peas:** Peas have been genetically modified but are not approved or available.
- Hawaiian Papaya:** Most Hawaiian papaya is GMO, even many organic crops are contaminated.
- Cotton:** At least half of cotton grown in the world is GMO.

organic lifestyle MAGAZINE

Amaranth is a particularly exciting food possibility for the future because it requires little water or fertilizer and will grow almost anywhere. Even more importantly, amaranth seeds are richer in protein than any other grain now cultivated. They look much like **sesame seeds**, have a pleasant **nutty taste**, and can be **popped** like corn or **steamed** and **flattened** into flakes.

Some plant scientists believe that a plant called the pepino will gain popularity. It, too, is an ancient South American plant. It grows tomatolike **foliage**, and the fruit tastes like a cross between a **strawberry** and a **melon**. The first North American fields of pepino were planted in California in 1985. The first people to taste pepino **predicted enormous success**. Now researchers are working to develop a pepino that grows in cooler climates and that will be easy to pick, pack, and store.

These plants offer hope for adding significantly to the world's food supply. Biogeographers and biotechnicians continue to have success. Within just a few years a wide variety of custom-designed products will be ready for use.

#### **ANSWER THE FOLLOWING QUESTIONS:**

1. What are scientists working on in the United States?
2. What are genetically-modified foods?
3. What crops can significantly improve the world's supply of protein?
4. What healthy snack foods did another research team create?
5. What could be the potential annual savings on corn fertilizer bills?
6. Which of the plants was the main grain of the Aztecs and Incas, but was forbidden to grow and eat? Why?
7. Why do some plant scientists believe that a plant called pepino will gain popularity?
8. What are some of the advantages of GM foods?
  - pest resistance
  - herbicide tolerance
  - disease resistance
  - cold tolerance
  - drought tolerance/salinity tolerance
  - nutrition

- pharmaceuticals
- phytoremediation

9. How prevalent are GM crops? What plants are involved?

**Exercise 1. Give the Ukrainian equivalents for the following word-combinations.**

tomatolike foliage, predict enormous success, alter the genes, protein-rich crops, resistance to disease, an era of custom-designed agriculture, the growth environment, healthy snack foods, extra sweet and crunchy carrots, to produce fertilizer from the nitrogen in the air, amaranth survived in a few remote highland villages, food supply.

**Exercise 2. Put in the missing words using appropriate words from the text.**

1. Scientists at more than 200 companies and universities in the United States work to ..... plants with traits such as larger size or resistance to disease.
2. Grown on a large scale these crops could dramatically improve the world's supply of .....
3. These biotechnologically developed ..... include extra ..... and ..... carrots, varieties of both..... and ..... fruits, and popcorn so flavorful that popcorn lovers will enjoy it without adding salt or butter.
4. Similarly, scientists are trying to ..... a corn that has the soybean's ability to produce ..... from the nitrogen in the air.
5. One such plant - ..... - was the principal grain of the Aztecs and Incas.
6. Today several research centers in the United States work to ..... its use again.
7. Even more importantly, amaranth ..... are richer in ..... than any other grain now cultivated.
8. The first North American ..... of ..... were planted in California in 1985.
9. Now researchers are working to develop a pepino that grows in .....climates and that will be easy to ....., ....., and .....
10. Within just a few years a wide variety of .....-..... products will be ready for use.

**Exercise 3. Answer if the sentences are true or false. Correct the false ones.**

1. Genes carry biological codes that control the heredity of living things.
2. Scientists believe that plants that are larger or more resistant to disease have no future.
3. Scientists can grow plants in a short time, which take years to create in nature.
4. Scientists are experimenting with protein-rich crops such as soybeans.
5. Biotechnological snack foods are products that do not require the addition of salt or butter.
6. Scientists are trying to develop such tropical plants that have the ability of soybeans to produce fertilizers from nitrogen in the air.
7. Amaranth is one such plant that may become important again.
8. Amaranth grows almost everywhere.
9. Pepino is a South American plant on which tomato leaves grow, and the taste of the fruit resembles something between strawberries and melons.
10. Biogeographers and biotechnologists continue to succeed. In a few decades, a wide range of specially designed products will be ready for use.

**Exercise 4. Find in the list below the words corresponding to the following definitions.**

gene	resistance	biotechnology	snack
nitrogen	heredity	improve	fertilizer

1. the chemical element of atomic number 7, a colourless, odourless unreactive gas that forms about 78 per cent of the earth's atmosphere.
2. the exploitation of biological processes for industrial and other purposes, especially the genetic manipulation of micro-organisms for the production of antibiotics, hormones.
3. a simple meal that is quick to cook and to eat.
4. the passing on of physical or mental characteristics genetically from one generation to another.
5. the part of a cell in a living thing which controls its physical characteristics, growth,

and development.

6. to make or become better in quality.

7. a chemical or natural substance added to soil or land to increase its fertility.

8. the ability not to be affected by something.

***Exercise 5. Put the words and phrases in the right order to make complete sentences.***

1. plants, in, of, can, weeks, grow, the, that, take, in, matter, produce, scientists, to, nature, a, years.

2. healthy, has, snack, created, several, foods, another, group, research.

3. savings, annual, dollars, fertilizer, for, corn, to, could, in, the, millions, of, potential, bills, amount.

4. in, amaranth, few, villages, remote, highland, a, however, survived.

5. some, that, plant, popularity, called, the, pepino, believe, scientists, will, a, gain, plant.

***Exercise 6. Translate into English.***

Змінювати гени, спадковість, виводити рослини з необхідними характеристиками, опір хворобам, с/г, що вирощує на замовлення, у великих масштабах, покращувати, легка закуска, додавати сіль чи масло, азот, щорічна економія на добривах, зерно, завойовувати цивілізації, віддалені гірські села, здобувати популярність, дослідники, полуниця, диня, збирати, пакувати, зберігати.

## **4.2. CHINA TRIES ORGANIC FARMING FOR A CHANGE.**

### **BASIC WORD LIST**

*Study the following words and expressions.*

abundance	велика кількість
invisible threat	невидима загроза
haphazard	випадковий, безсистемний
poisonous residues	отруйний осад, залишок
contamination-free	без забруднення
dizziness, vomiting	запаморочення голови та нудота
negligible	незначна кількість

encourage	сприяти, стимулювати
repel insects	відганяти комах
logo	ЛОГОТИП, ЕМБЛЕМА
per capita	на душу населення
rely on	покладатися на
estimate	ОЦІНЮВАТИ, ВВАЖАТИ
night soil	людські фекалії
canned bamboo shoots	консервовані бамбукові пагінці



Almost any vegetable can be found in perfect form in China's open-air markets. In all this **abundance**, however, is an **invisible threat**: **haphazard** use of farm chemicals that leave **poisonous residues**. The Ministry of Agriculture is responding to rising concerns about food quality

by promoting "green food", fresh and processed food certified as **contamination-free**. Living standards have gone up. Grain production has been basically solved and people are more concerned with the quality of their food. Many Chinese farmers and consumers have been sickened by fertilizers and pesticides in recent years. Chinese newspapers report cases like one in Guangzhou in 1996 when 112 people were hospitalized with **dizziness**, **vomiting** and stomach pains after eating fertilizer-tainted vegetables. China has farm chemical regulations that if followed precisely would leave only a **negligible**, safe residue on market vegetables. But authorities are unable to monitor and control chemical use on China's small family farms. When farmers find pesticides or fertilizers don't work, they tend to apply them more frequently or use something stronger. Rising use of chemical fertilizers also has caused environmental damage: hardened soil, polluted water and fish kills.

The Ministry of Agriculture's Green Food Development Center **encourages** farmers to supply safer food. It trains them to use traditional farming methods, such as

compost for fertilizer, and biological controls, such as planting crops that **repel insects** next to crops the insects attack.

The center also puts its green and white **logo** on foods it certifies as having been grown with minimal amounts of non-toxic or low-toxic chemicals on land that is free of industrial pollution. With only one-third the world's average farmland **per capita**, China must **rely on** agricultural chemicals to farm intensively.

But it can replace chemicals with other methods on a limited scale and meet a growing demand for safer food. The Chinese are concerned about residues of farm chemicals on their food, so the market is very good for the Liuminying organic farm, a national model farm outside Beijing. People buy vegetables raised in the farm's greenhouses at a new organic foods market in Beijing. Some of the products go to restaurants that are trying to become competitive by advertising pollution-free food. The market has started because there are many people who are afraid to buy the vegetables because of chemicals and **night soil** - human waste used as fertilizer. But food certified as **uncontaminated** still represents less than one per cent of all food grown in China. Agricultural officials **estimate** consumers will pay no more than five per cent extra for it. Chinese companies are also trying to build a reputation for clean vegetables and other foods. The Ministry of Agriculture's "Green Food" logo appears on hundreds of products, including Happy Longlife coffee, Lightning River milk powder and Clear Water **canned bamboo shoots**.

### **ANSWER THE FOLLOWING QUESTIONS:**

1. Why is it dangerous to buy fruit and vegetables in China?
2. Who is trying to promote “green food”, certified as contamination-free?
3. What about food are most people concerned with?
4. What damage did rising use of chemicals cause to environment and people as well?
5. In what way does the Ministry of Agriculture encourage farmers to supply safer food?
6. How are GM foods regulated and what is the government's role in this process?
7. What are some of the criticisms against GM foods?
  - environmental hazards



- human health risks
- economic concerns

8. How are GM foods labeled?

**Exercise 1. Give the Ukrainian equivalents for the following word-combinations.**

quality of their food, poisonous residues, fertilizer-tainted vegetables, safe residue, hardened soil, repel insects, pollution-free food, agricultural officials, canned bamboo shoots, insects attack, encourage farmers, dizziness, vomiting and stomach pains.

**Exercise 2. Put in the missing words using appropriate words from the text.**

1. Grain production has been basically ..... and people are more .....with the quality of their food.
2. Chinese newspapers report cases like one in Guangzhou in 1996 when 112 people were hospitalized with ....., ..... and ..... pains after eating fertilizer-tainted vegetables.
3. Rising use of chemical fertilizers also has caused environmental damage: ..... soil, ..... water and fish .....
4. The Ministry of Agriculture's Green Food Development Center ..... farmers to supply safer food.
5. Almost any vegetable can be found in perfect form in China's ..... markets.
6. People buy vegetables raised in the farm's ..... at a new organic foods market in Beijing.
7. Agricultural officials ..... consumers will pay no more than five per cent extra for it.
8. Chinese companies are also trying to build a ..... for clean ..... and other foods.

**Exercise 3. Answer if the sentences are true or false. Correct the false ones.**

1. All vegetables that can be found in Chinese markets are safe.
2. The Ministry of Agriculture promotes "green food", which is certified as free from contamination.

3. People do not care about the quality of food.
4. Eating contaminated vegetables leads to a number of diseases.
5. Authorities are in full control of the use of chemicals on China's small family farms.
6. Farmers use traditional farming methods.
7. A green and white logo is placed on food that does not contain industrial pollution.
8. Restaurants that try to become competitive promote pollution-free food.
9. Certified food accounts for 50 percent of all food grown in China.
10. Agricultural officials estimate consumers will pay no more than five per cent extra for it.

***Exercise 4. Find in the list below the words corresponding to the following definitions.***

contaminate	logo	repel	estimate
threat	poisonous	residue	encourage

1. a small amount of something that remains after the main part has gone or been taken or used.
2. drive or force (an attack or attacker) back or away.
3. a person or thing likely to cause damage or danger.
4. a symbol or other small design adopted by an organization to identify its products, uniform, vehicles.
5. to do or continue to do something by giving support and advice.
6. make (something) impure by exposure to or addition of a poisonous or polluting substance.
7. something that will kill you or make you ill if you swallow or absorb it.
8. an approximate calculation or judgment of the value, number, quantity, or extent of something.

***Exercise 5. Put the words and phrases in the right order to make complete sentences.***

1. production, their, people, been, has, solved, and, are, basically, more, food, with, concerned, the, quality, of, grain.

2. China's, be, vegetable, any, almost, in, perfect, can, form, in, open-air, markets, found.
3. fertilizers, use, caused, chemical, also, has, environmental, rising, damage, of.
4. Beijing, in, vegetables, market, buy, the, farm's, at, a, organic, foods, in, greenhouses, raised, new, people.
5. Chinese, and, also, to, a, reputation, foods, vegetables, are, other, companies, build, clean, for, trying.

***Exercise 6. Translate into English.***

відкриті ринки, багатство, невидима загроза, отруйні залишки, зростаюче занепокоєння, рівень життя, екологічно чистий, заохочувати фермерів, відганяти комах, теплиця, сухе молоко, підраховувати.

### **4.3. CHEMICALS IN OUR FOOD – TWO SIDES OF AN ARGUMENT.**

#### **BASIC WORD LIST**

*Study the following words and expressions.*

undergo	пройти, зазнавати, перенести
ground	перемелений
flour	мука
pepper	перець
garlic	часник
herbs	трава, рослини
spices	спеції
flavorings	смакові добавки
dyes	фарба, барвник
thickener	згущувач
enhancer	посилювач
to be concerned	хвилюватися
cause diseases	бути причиною захворювання
cancer	рак
processors	переробники
to justify	виправдовувати
additives	добавки
ban	забороняти



Much of the food that leaves a farmer's field **undergoes** several processing steps before it reaches our tables. Grain is **ground** into **flour** or meal, often enriched with vitamins and minerals lost in processing, and then turned into cereal or bakery products. Meat is smoked, pickled, or

otherwise treated to keep it from spoiling. Salt, **pepper**, **garlic**, other **herbs** and **spices**, and **flavorings** improve the taste of food. **Dyes** injected into fruit or added to other foods make taste of food. Dyes injected into fruit or added to other foods make them more eye-appealing. Vitamins, minerals, smoke, dyes, stabilizers, **thickeners**, salt, and other flavor **enhancers**, substances with chemical sounding names - all these things are food additives.

In the past, most - if not all - food additives came from nature. Today, technology has made it possible for many natural additives to be replaced with manufactured ones - additives made by putting chemicals together.

Some people say we should **be** just as **concerned** with the effects these manufactured additives have on our bodies as we are with the effects of chemicals on the land, in the water, and in the air. These people fear we are polluting our bodies with too many chemicals. They think these chemicals may **cause diseases** such as **cancer**.

Food **processors** try to **justify** their use of manufactured **additives**. They point out that every living and non-living thing on earth is made up of chemicals or combinations of them. Even when eating "natural" foods, people are eating chemicals. Processors argue that manufactured additives do all the things that natural additives do, but they do them with less cost to the consumer. They also point out that manufactured additives do some things that natural ones cannot do. For example, they enrich milk, flour, and other foods with vitamins and minerals lost in processing. Additives make foods tastier for people who cannot eat salt or sugar.

Food companies admit that large doses of some manufactured additives can cause diseases. At present, the use of some of them is **banned**. Words of **caution** on the packaging of some products are added.

**ANSWER THE FOLLOWING QUESTIONS:**

1. What are the steps undergo food processing before it reaches our tables?
2. What do dyes injected into fruits or added to other foods do?
3. What substances are food additives?
4. What technological opportunities have emerged today?
5. What effect do chemicals have on our body?
6. How do processors justify the use of manufactured additives?
7. Why is the use of some manufactured additives banned at the moment?

***Exercise 1. Give the Ukrainian equivalents for the following word-combinations.***

enriched with vitamins and minerals, herbs and spices, improve the taste of food, injected into, food additives, to be concerned, manufactured additives, living and non-living thing, cause diseases, enrich milk, to be banned.

***Exercise 2. Put in the missing words using appropriate words from the text.***

1. Much of the food that leaves a farmer's field ..... several processing steps before it reaches our tables.
2. Dyes injected into fruit or added to other foods make them more .....
3. Today, technology has made it possible for many ..... additives to be replaced with ..... ones - additives made by putting chemicals together.
4. People think these chemicals may ..... diseases such as .....
5. Food processors try to..... their use of manufactured additives.
6. Even when eating "natural" foods, people are eating .....
7. Manufactured additives enrich milk, flour, and other foods with ..... and ..... lost in processing.
8. Words of ..... on the packaging of some products are added.

***Exercise 3. Answer if the sentences are true or false. Correct the false ones.***

1. Nowadays all food additives come from nature.
2. Chemicals cannot make any harm to our bodies.
3. Every living and non-living thing is made up of chemicals or combinations of them.
4. Food additives are vitamins and minerals.
5. Food processors justify the use of manufactured additives.
6. Salt, pepper, garlic, other herbs and spices and flavors spoil the taste of food.
7. Chemicals can cause diseases such as cancer.
8. Additives do not enrich milk, flour and other products with vitamins and minerals that are lost during processing.
9. At the moment, the use of all additives is prohibited.
10. It is forbidden to add warnings about the use of additives on product packaging.

***Exercise 4. Find in the list below the words corresponding to the following definitions.***

additives	caution	ban	process
flavoring	concern	thickener	stabilizer

1. a series of actions that produce a change or development.
2. a substance added to something in small quantities to improve or preserve it.
3. warning.
4. make (someone) anxious or worried.
5. officially or legally prohibit.
6. a substance used to give a different, stronger, or more agreeable taste to food or drink.
7. a thing used to keep something steady or stable.
8. a substance added to a liquid to make it firmer, especially in cooking.

***Exercise 5. Put the words and phrases in the right order to make complete sentences.***

1. foods, added, injected, fruit, or, dyes, to, other, taste, into, of, food, make.
2. pickled, is, smoked, to, treated, otherwise, meat, keep, it, spoiling, or, from.
3. cause, these, may, diseases, such, cancer, think, as, they, chemicals.
4. packaging, of, some, of, products, are, caution, words, the, on, added.

5. bodies, people, are, these, polluting, our, with, we, fear, chemicals, many, too.

**Exercise 6. Translate into English.**

проходити декілька стадій обробітку, молоти, сіль, часник, перець, спеції, смакові добавки, барвники, привабливі, підсилювачі смаку, харчові добавки, замінити, забруднювати організм, штучні добавки, виділяти, збагачувати, заборонити, застереження, викликати захворювання.

<b>IDIOMS:</b>	<b>Use the idioms to complete the sentences.</b>
	<ul style="list-style-type: none"><li>• hot potato</li><li>• in a nutshell</li><li>• a bite at the cherry</li><li>• the cream of the crop</li></ul>

1. I tried to explain the problem to my boss \_\_\_\_\_ .
2. \_\_\_\_\_ of this year's high-school graduates will get into the best universities, as usual.
3. The issue of part-time workers is a \_\_\_\_\_ that we must deal with.
4. He definitely wants \_\_\_\_\_ .



**CHOOSE one of these questions to research and be ready to present it in the classroom.**

1. Advantages & Disadvantages of Chemical Pesticides.
2. Soybeans & Soybean Products.
3. Should we Genetically Modify Food & What is the Purpose of Such Products?

# CONTROL TEST

## UNIT 1

**Choose the correct answer. Consult the text if necessary.**

1. What are the two main branches of agricultural production in Ukraine?
  - a) bee-keeping and poultry industry.
  - b) crop production and animal husbandry.
  - c) sheep farming and pig raising.
2. In Ukraine, almost half of the cropping area is occupied by ... .
  - a) cereals.
  - b) legumes.
  - c) industrial crops.
3. Close to ... of vegetable crops are grown in Ukraine.
  - a) 60 types
  - b) 40 types
  - c) 50 types
4. In Ukraine, among the industrial crops such as sugar beet, sunflower, flax the leading position is occupied by... .
  - a) flax.
  - b) sunflower.
  - c) sugar beet.
5. Agriculture in Great Britain supplies ... of the country's food.
  - a) one-third
  - b) two-thirds
  - c) a half
6. Nearly ... Britain's land is used for agriculture.
  - a) 30 %
  - b) 50 %
  - c) 80 %
7. Arable farms are mainly in the ... part of Britain.
  - a) Southern
  - b) Western
  - c) Eastern
8. The main cereal crops in Britain are ... .
  - a) rye, millet, and sorghum.
  - b) wheat, barley, and oats.
  - c) buckwheat, millet, and rye.



9. The USA has been occupying the leading position in the production of ... for many years.
- a) corn and wheat
  - b) fruits and nuts
  - c) cotton and tobacco
10. California grows almost ... of all fresh vegetables in the country.
- a) a third
  - b) one-sixth
  - c) half
11. The second most valuable product of American farms is... .
- a) livestock products.
  - b) dairy products.
  - c) agricultural products.
12. ... of the land area of the USA is farmland.
- a) 47 %
  - b) 57%
  - c) 67%

## UNIT 2

**Choose the correct answer. Consult the text if necessary.**

1. ... are harvested for human consumption.
- a) Feed crops
  - b) Food crops
  - c) Industrial crops
2. A type of forage crop that is harvested and then stored under conditions that allow the feed to break down (ferment) to acids.
- a) Alfalfa
  - b) Silage
  - c) Oats
3. The Food and Agriculture Organization says ... of arable land on Earth is used to produce food for livestock.
- a) 23 percent
  - b) 43 percent
  - c) 33 percent
4. The fibers of the hemp plant are ... , perfect for products such as paper, textiles, ropes, nets, and sailcloth for ships.
- a) strong and durable
  - b) light and durable
  - c) strong but not durable

5. Bioethanol is an alcohol made from fermented materials that come from sugar and ... ..
  - a) fiber crops.
  - b) starch crops.
  - c) forage crops.
6. ... .. , such as canola and corn, are harvested for consumption or industrial uses.
  - a) Ornamental crops
  - b) Industrial crops
  - c) Oil crops
7. ... .. are most often grown in nurseries, where they are purchased for residential or commercial settings.
  - a) Ornamental crops
  - b) Feed crops
  - c) Industrial crops
8. ... is harvested for its latex.
  - a) Tobacco
  - b) Fuel
  - c) Rubber
9. Humans get an average of 48 percent of their calories, or food energy, from ... ..
  - a) plants.
  - b) grains.
  - c) flour.
10. Grains are so important because they are a good source of important ... called carbohydrates.
  - a) nutrients
  - b) proteins
  - c) vitamins
11. What kind of grain grows in many tropical areas, where it is hot and humid all year round?
  - a) Sorghum
  - b) Wheat
  - c) Rice
12. The most common grain in temperate regions with warm summers and cold winters is ... ..
  - a) wheat.
  - b) corn.
  - c) rye.

### UNIT 3

**Choose the correct answer. Consult the text if necessary.**

1. What is no-tillage method of planting?

- a) A method that involves planting seeds in a flat or seedling tray instead of directly into the ground.
  - b) Method of planting using pre-grown seedlings or plants that have been propagated from seeds.
  - c) Method of growing crops on land with minimal soil disturbance.
2. Using this tillage system one should be very careful in applying the proper amount of herbicides for ... .. control.
    - a) Weed or pests
    - b) weed and sod
    - c) weed and insects
  3. The ... .. also controls weeds during the corn growing season, making cultivation unnecessary.
    - a) residual herbicide
    - b) contact herbicide
    - c) systemic herbicide
  4. Due to early planting it is possible to practice ... .. .
    - a) double-cropping
    - b) zero- cropping
    - c) triple- cropping
  5. Intensive farming is a farming method that uses ... .. and advanced agricultural techniques to increase the overall yield.
    - a) limited inputs
    - b) higher inputs
    - c) medium inputs
  6. In intensive cultivation, the farmer uses ... .. of cultivation.
    - a) traditional methods
    - b) productive methods
    - c) improved methods
  7. Extensive cultivation methods are also used in ... countries.
    - a) backward
    - b) developed
    - c) high-tech
  8. Extensive Farming method is an environment-friendly method due to the lower use of chemical ... .. .
    - a) herbicides and pesticides
    - b) fertilizers and pesticides
    - c) nutrients and fertilizers
  9. The ancestors of today's wheat were: ... .. .
    - a) Silos and barley
    - b) Chaff and emmer
    - c) Einkorn and emmer

10. Ancient beers had a very low alcohol content, but were good sources of ... .
- a) vitamins
  - b) proteins
  - c) carbohydrates
11. .... is loosening the edible grain from its casing, called the chaff.
- a) Cutting
  - b) Threshing
  - c) Winnowing
12. ... is the process of removing the grain from the chaff.
- a) Winnowing
  - b) Threshing
  - c) Cutting

## UNIT 4

**Choose the correct answer. Consult the text if necessary.**

1. Genes that carry biological codes control the ... of living things.
  - a) longevity
  - b) heredity
  - c) mortality
2. Grown on a ... .. protein rich crops, such as soybeans could dramatically improve the world's supply of protein.
  - a) large scale
  - b) big scale
  - c) high scale
3. Scientists are trying to develop corn, which has the ability of soybeans to produce ... from nitrogen in the air.
  - a) oxygen
  - b) protein
  - c) fertilizers
4. The main grain of the Aztecs and Incas was ...
  - a) pepino
  - b) amaranth
  - c) corn
5. China's Ministry of Agriculture is responding to rising concerns about food quality by promoting "green food", fresh and processed food certified as ...-... .
  - a) environment-friendly
  - b) contamination-free
  - c) environment-free
6. The Ministry of Agriculture's Green Food Development Center ... farmers to supply safer food.

- a) encourages
  - b) asks
  - c) requires
7. Green and white ... is placed on food that is grown with a minimum amount of non-toxic or low-toxic chemicals on the ground.
- a) tag
  - b) logo
  - c) label
8. What night soil means?
- a) Human feces used especially for fertilizing the soil.
  - b) Hard and dry soil that is compacted and used as fertilizer.
  - c) Soil that is kept in the dark and used as fertilizer.
9. ... injected into fruit or added to other foods make them more eye-appealing.
- a) Flavorings
  - b) Thickeners
  - c) Dyes
10. Chemicals can cause diseases such as ... .
- a) dizziness
  - b) cancer
  - c) vomit
11. Manufactured additives enrich milk, flour and other products with ... .. that are lost during processing.
- a) vitamins and minerals
  - b) nutrients and proteins
  - c) vitamins and carbohydrates
12. Much of the food that leaves the farmer's field ... several stages of processing before reaching our table.
- a) goes through
  - b) undergoes
  - c) goes past

# ГРАМАТИЧНИЙ ДОВІДНИК

## Present Simple and Present Continuous

### **We use the Present Simple:**

#### **- for routines and habits:**

e.g. I go to the bank twice a week;

#### **- for permanent situations:**

e. g. My friend works in a bank;

#### **- for facts:**

e. g. Water boils at 100 centigrade;

#### **- for timetable or fixed events in the future:**

e. g. The train leaves in 10 minutes.

### **We use the Present Continuous:**

#### **- for actions happening now:**

e.g. I am working on my reporting at the moment;

#### **- for temporary actions or situations:**

e.g. I am staying with my friends till I find a new flat;

#### **- for changing or developing situations:**

e.g. The economic situation is getting worse in this country;

#### **- to talk about something that happens often and is unpleased or irritating (with always):**

e.g. She is always grumbling and complaining.

## Present Perfect Tense

### **We use the Present Perfect:**

#### **- for the action or situation that began in the past and continue in the present:**

e.g. We have painted the whole house.

You have broken the window.

#### **Time express or expressions which are often used with the Present Perfect:**

since, already, yet, this time (morning), ever, never, recently, yet.

## Present Perfect Continuous

**We use the Present Perfect Continuous:**

**- to talk about actions or situations that began in the past and continue in the present:**

e.g. He has been working for Loyads since 1998;

**- to talk about a recent action that has a result in the present:**

e.g. I have been working on the project – that's why I am so tired.

## Past Simple and Past Continuous

**We use the Past Simple:**

**- for events or actions in the past:**

e.g. In her youth she worked hard at English.

**We use the Past Continuous:**

**- for actions in progress past:**

e.g. I was doing the translation all afternoon.

**- for actions that was in progress when another action happened. The second action is in the Past Simple:**

e.g. When we came she was interviewing a new secretary.

## Past Perfect Tense

**We use the Past Perfect:**

**- to talk about an action or event in the past that happened before another action in the past. The second action in the past is in the Past Simple:**

e.g. He had abandoned his business by that time I arrived in this city;

**- to give a reason for a past event or action:**

e. g. He didn't come because he had missed the train

## Past Perfect Continuous

**We use the Past Perfect Continuous:**

**To talk about an action which had been in progress before another.**

**We often use it with for and since:**

e. g. I had been visiting this company for several weeks before they solved my problem.

### **Future Continuous and Future Perfect**

**We use the Future Continuous to talk about:**

- **actions or events that will be in progress at a specific time in the future:**

e. g. This time next week I'll be flying to London;

- **something that will definitely happen in the future, either because it is already planned or because it is part of a normal routine:**

e.g. We'll be using the Internet in ten years' time.

**We use the Future Perfect to talk about actions or events that will be finished before a certain time in the future:**

e. g. I'll have written the report by Sunday.

### **The sequence of Tenses**

**The sequence of tenses is a dependence of the tense of the verb in a subordinate clause on that of the verb in the principal clause:**

- **the actions take place at the same time:**

e. g. I see that you know her well;

- **the action in the subordinate clause precedes that in the principal clause:**

e.g. She knows that she has met us;

- **the action in the subordinate clause follows the action in the principal clause:**

e. g. I hoped you would stay at home;

e. g. I knew that you were staying here;

e.g. I knew that he had stayed.

### **Passive Voice**

**Passive Voice Simple**



**We use the Passive Voice in three main ways:**

- **to describe a process;**

- **when the action is more important than who does it:**

e.g. The computer **was repaired** in 3 hours;

- **when we don't know, or do not want to say who does the action:**

e. g. The letter **was received** a week ago;

- **when something is done by somebody:**

e. g. America **was discovered** by Columbus in 1942;

- **when some action done with the help of somewhat:**

e.g. The letter **was written** with my pen.

**Grammar Structure for Simple**

**Tenses: to be + 3f.v/ed**

**Passive Voice (Perfect)**

**Grammar Structure**

**Present: has + been + 3f.v/ed** e.g. the letter has been written

**Past: had+ been + 3f.v./ed** e.g. the letter had been written

**Future: will + have + been + 3f.v./ed** e.g. the letter will have been written

**Modal Verbs**

1. **Ability: can, could, to be able to** is an equivalent of the verb can but can be used in all tenses especially in future tense:

e.g. I will be able to arrive tomorrow.

2. **Permission: may, be allowed to** is permission of some actions or situation:

e.g. I think I am not allowed to put off the payment.

**Obligation and Necessity: must, have to, should, ought to, need;**

a) **Must** is used for strong obligations:

- **rules or laws:** e.g. Investors must pay taxes;

- **advice or recommendations:**

e.g. You must take your medicine regularly if you want to get better;

**- obligations that the speaker imposes on him or herself:**

e. g. I must get up early tomorrow;

**b) Have to is used when the obligation comes from someone else or an external authority:**

e. g. You have to wear a uniform – that is the company rule;

**c) Need, need to is used to talk about necessities, rather than obligations: e.g. I need to get my hair cut;**

**d) Should, ought to are used to express milder obligations, they are often used when giving advices:**

**e. g. You should always keep receipts when you buy clothes.**

**1. Obligation and Necessity: must, have to, should, ought to, need;**

**a) Must is used for strong obligations:**

**- rules or laws: e.g. Investors must pay taxes;**

**- advice or recommendations:**

e.g. You must take your medicine regularly if you want to get better;

**- obligations that the speaker imposes on him or herself:**

e. g. I must get up early tomorrow;

**b) Have to is used when the obligation comes from someone else or an external authority:**

e. g. You have to wear a uniform – that is the company rule;

**c) Need, need to is used to talk about necessities, rather than obligations: e.g. I need to get my hair cut;**

**d) Should, ought to are used to express milder obligations, they are often used when giving advices:**

**e. g. You should always keep receipts when you buy clothes.**

**Modal Verbs with the Perfect Infinitive: Certainty, Possibility, Probability:**

**- We use must to indicate positive certainty:**

e. g. She must be very happy. He has finished her experiments.

Вона, напевно, дуже щаслива. Вона закінчила свої експерименти;

**- We use may, might when we speculating that something is possible:**

e.g. She might pass her exam this time. (It's possible that she will pass her exam).

Можливо, що вона здасть свій екзамен;

**- We use can't (couldn't) when we have some doubt as for the actions or situations:**

e. g. He couldn't have done it. Не може бути, щоб він це зробив.

**Couldn't he have done it? Невже він це зробив?**

**Modal Verbs with the Perfect Infinitive: Certainty, Possibility, Probability:**

**- We use must to indicate positive certainty:**

e. g. She must be very happy. He has finished her experiments.

Вона, напевно, дуже щаслива. Вона закінчила свої експерименти;

**- We use may, might when we speculating that something is possible:**

e.g. She might pass her exam this time. (It's possible that she will pass her exam).

Можливо, що вона здасть свій екзамен;

**- We use can't (couldn't) when we have some doubt as for the actions or situations:**

e. g. He couldn't have done it. Не може бути, щоб він це зробив.

**Couldn't he have done it? Невже він це зробив?**

### **Second Conditional**

**(if, when) Past Simple – would + 1ф.д.**

**We use the second conditional:**

**- to talk about an unlikely or imaginary situation and its result:**

e. g. If the weather were fine, we would have gone for a walk.

Якби погода була гарною, ми б пішли на прогулянку

**- in the expression: « If I were, I'd ...» to give advice**

e.g. If I were you I would retire.

### **Third Conditional**

**(when, if) had +3 ф.д. (Past Perfect) – would + have + 3ф. гл./ed**

**We use the second conditional:**

**- to talk about of unreal condition referring to the past**

e. g. If the weather had been fine yesterday. we would have gone for a walk.

### The verb «I wish» expressing wishes and regrets

#### The verb «I wish» expressing wishes and regrets:

- **to wish can be used as a simple verb:**

e.g. I wish you Happy New Year!

Бажаю щасливого Нового року!

- **wish + could or past simple/continuous is used to talk about something you would like to be different, but can't change:**

e.g. I wish I could speak Italian fluently!

Якби я говорила вільно італійською!

- **wish + past perfect is used to express past regrets:**

e. g. I wish I had attended that conference.

Шкода, що я не була присутня на конференції;

- **wish + would is used to express annoyance at the habits of others:**

e.g. I wish you wouldn't take my car!

Я б хотіла, щоб ти більше не брав мою машину!

### Complex Object

The Complex Object has the following forms:

Active voice	Simple	Continuous	Perfect	Perfect Continuous
	to 1 f.v.	to be v+ing	to have +3f.v./ed	to have+ been+ v+ing
Passive voice	to be 3f.v./ed		to have +been+3f.v./ed	_____

We use Complex Object:

- after verbs denoting perceptions of senses;

- after verbs denoting wish, intention, emotions;

- after verbs denoting mental activity;

- after verbs denoting order, request, permission, advice, compulsion;

verbs followed by an object + Infinitive without «to»:

*advice, allow, ask, expect, forbid, force, get, hate, intend, invite, permit, order, prefer, recommend, remind, tell, want, persuade, like, warn, wish, would like;*

e.g. My boss always ask me to work as hard as I could;

verbs followed by an object + Infinitive without «to»:

*let, make, feel, see, hear, watch, notice, and sometimes know and help, had better;*

e. g. Let me explain the rule.

### Complex Subject

Complex Subject consists of a noun in the common case (загальний відмінок) or a pronoun (займенник).

We use Complex Subject:

- in statement some facts: to know, to think, to state, to report;

- in suspicion: to expect, to suppose, to believe, to consider;

- in perception: to see, to hear;

and such verbs as:

- to be (not) likely to – скоріш за всього (наврядчи);

- appear – здаватися;

- happen – сталось;

- turn out – виявилось;

перекладається на українську мову як: *говорять, бачили, думали, чули, виявилось і т.д.*

**Grammar structure:**

smb. is heard, seen, expected to do smth.

Was ordered, asked, allowed to be done

will be likely to, appear, happen to have done smth.

e. g. She is thought to have done mistake.

Думали, що вона зробила помилку.

## Gerund

**The gerund has the following forms:**

	Active	Passive
<b>Indefinite</b>	Ing	being +3. /ed
<b>Perfect</b>	having + 3/ed	Having+ been+ 3/ed

**We use the gerund:**

- **as the subject of a sentence:** *Exporting will be our main objective next year;*

- **as the object of a sentence:** *I've always enjoyed reading;*

- **after verbs:**

*admit, mind, appreciate, avoid, consider, can't stand, can't help, delay, enjoy, finish, imagine, involve, postpone, propose, risk, stop, suggest, to be worth;*

- **after prepositions:**

*after, before, by, when, while, without;*

- **after verbs and expressions followed by prepositions:**

*be interested in; be good at smth., be fond of, be for/against, be used to, instead of, feel like, think of/about, look forward to, succeed in, approve of, insist on, object to, it's no use;*

e. g. It's no use asking him.

## Participle

**The Participle has the following forms:**

	Active	Passive
<b>Present Participle I</b>	дієслово + ing	being + 3ф.д./ed
<b>Past Participle</b>	3f.v./ ed	-----
<b>Perfect Participle II</b>	having + 3ф.д./ed	having + been+ 3ф.д. /ed

**We use Participle:**

**- Participle I:**

**- as adjective:**

e.g. I saw smiling girl;

**- Present Participle I is used in function of Adverbial Modifier (обставини):**

e.g. Walking home she didn't hurry;

**- Present Participle I Passive:**

e.g. The music being performed was quite new.

**- Past Participle: verb+3f.v./ed = adjective:**

*discussed – обговорений;*

e.g. Written letter is on the table;

**- Perfect Participle II:**

e.g. Having written the letter he left.

Написавши листа, він вийшов;

**- Perfect Participle Passive II:**

e.g. Having been written the letter, he left.

Після того як листа написали, він вийшов.

# FRUIT NAMES IN ENGLISH



Apple



Watermelon



Orange



Pear



Cherry



Strawberry



Grape



Mango



Pomegranate



Plum



Apricot



Grapefruit



Melon



Banana



Damson



Papaya



Coconut



Peach



Avocado



Custard Apple



Guava



Pumpkin



Lychee



Sapodilla



Dates



Fig



Grewia



Carambola



Cranberry



Hanepoot



Jackfruit



Jamunfruit



Mulberry



Persimmon



Quince



Red currant



Jujube



Elderberry



Olive



Tamarind



Cashew apple



Sugarcane



Shaddock



Gooseberry



Durian



Raspberry



Kiwi



Dragon fruit



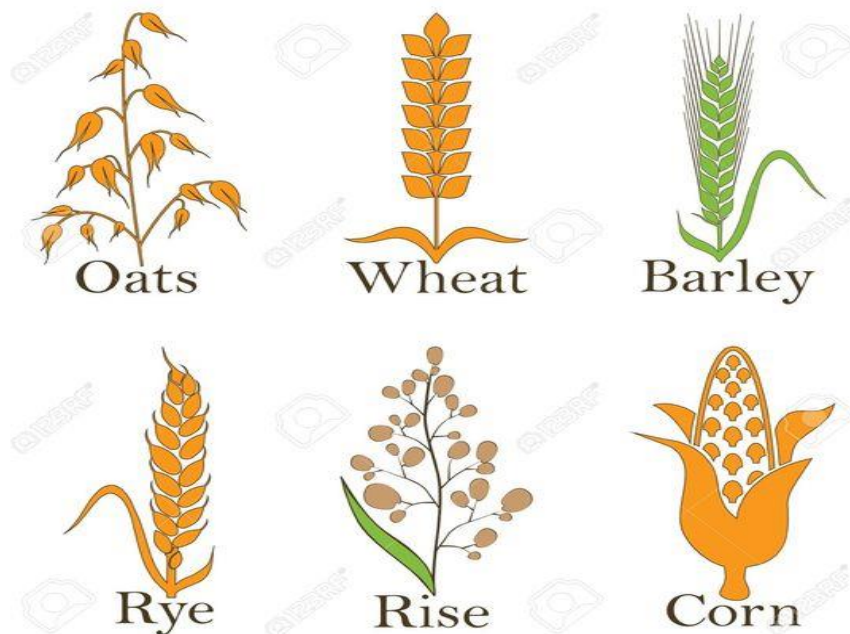
## VEGETABLE NAMES IN ENGLISH



## TYPES OF NUTS



## CEREALS





## FLOWER NAMES IN ENGLISH



## WHOLE GRAINS



WHEAT BERRIES



OATMEAL



QUINOA



BROWN RICE



BUCKWHEAT



CORN



BARLEY



AMARANTH



KANIWA



FREEKEH



WILD RICE



TRITICALE



SORGHUM



BULGUR



BLACK RICE



SPELT

## СПИСОК ВИКОРИСТАНИХ ДЖЕРЕЛ

1. Гужва Т. Английский язык. Разговорные темы. К.: Тандем, 2000. 214 с.
2. English: Тексти. Підручник. Для студентів інженерних, аграрних, медичних вищих навчальних закладів. Укладач Є.О.Мансі. К.: Видавничий центр «Академія», 2004. 432с. (Альма-матер).
3. Верба Л. Г. Граматика сучасної англійської мови: Довідник. Л. Г. Верба, Г. В. Верба. Київ: Логос, 2004. 352 с.
4. Зайцева А. П. Граматика англійської мови в таблицях і схемах. А. П. Зайцева. К.: Логос, 2000, 2002. 112 с. (Бібліотека школяра).
5. Small Business Development Opportunities. Ronco Consulting Corporation, Agricultural Land Share Project Bulletin, 1999-2000.
6. Redman S. English Vocabulary in Use (pre-intermediate and intermediate). Cambridge University Press, 1997. 266 p.
7. Petts, J. Urban Agriculture in London. 2001.

### Інтернет - ресурси:

1. Learning English. URL: <https://learningenglish.voanews.com/>
2. Lingo Star. URL: <https://www.yourarticlelibrary.com/cultivation/methods-of-cultivation-adopted-by-farmers-for-increasing-production/10797>
3. Rey Differences. URL: <https://keydifferences.com/difference-between-intensive-and-extensive-farming.html>

**“Agrarian English”**

**для здобувачів вищої освіти – спеціальності 035 «Філологія» ОП Германські мови та літератури (переклад включно), перша – англійська**

*Навчальний посібник*

**Пилипенко Інна Олександрівна**

**Чернищук Юлія Іванівна**

*Редактор І.М. Вергелес*

*Комп'ютерна верстка: В.С. Мельник*

Здано до складання. Підписано до друку **10.05.2022**

Формат 60×84 <sup>1</sup>/<sub>16</sub>. Ум. друк. арк. . Тираж 20.

Р. В. відділ, Сектор оперативної поліграфії БНАУ

09117, м. Біла Церква, Соборна площа, 8/1; тел. 3-11-01

