MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE BILA TSERKVA NATIONAL AGRARIAN UNIVERSITY

FACULTY OF AGROBIOTECHNOLOGY

Department of Genetics, Breeding and Seed Production of Crops

TECHNOLOGICAL EXPERTISE OF FRUIT AND VEGETABLE PRODUCTION

Methodical instructions for practical classes and self-education of applicants of the first (bachelor's) level of higher education in the specialty «Agronomy»

Bila Tserkva 2024 UDC 634/635:614.31

Approved by by the scientific and methodological Commission of the Bila Tserkva National Agrarian University (protocol №, 4, 17.12. 2024.)

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Technological expertise of fruit and vegetable growing products: methodical instructions for practical classes and self-education of applicants for the first (bachelor's) level of higher education in the specialty "Agronomy" compiled by: I.M. Sidorova and others. Bila Tserkva, 2024. 122 p.

The guidelines contain the main theoretical provisions, materials for practical classes, control questions to test the knowledge gained, and a list of recommended reading. The proposed methodological guidelines will facilitate the mastery of theoretical material and practical skills in the study of technological expertise of fruit and vegetable production.

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INTRODUCTION

Fruits and vegetables are unique foods that strengthen the blood vessels of the heart and brain and the body's defences, remove heavy metal ions, and have detoxifying properties. Fruit and vegetable products are extremely important in human nutrition, supplying the body with all the necessary substances: carbohydrates, water- and fat-soluble vitamins, minerals, as well as carotenoids, chlorophylls, phenolic compounds, tannins and aromatic substances that help to strengthen the immune system.

According to the recommendations of the international health organisations FAO/WHO, the daily human diet should consist of 70 % of plant-based raw materials and processed products. In Ukraine, the need for fruits is currently met by only 50 %, vegetables by 70 %, and vitamins and other biologically active substances by 50 %.

Fruits and vegetables are an indispensable source of easily digestible carbohydrates and physiologically active substances, but their shelf life is limited. To meet the population's demand for fruit and vegetable products, it is necessary not only to increase their production, but also to ensure a steady supply of vegetables and fruits throughout the year in the recommended range for consumption.

The issue of determining quality and safety indicators for raw materials and finished fruit and vegetable products is relevant for both large and small enterprises of various forms of ownership. The use of elements of cultivation, processing, storage and processing technologies ensures the highest quality and safety of food products using appropriate technologies and provides an opportunity to obtain a significant economic effect.

Name of indicators	Field of study, educational level	Characteristics of the discipline	
		full-time education	part-time study
Number of credits corresponding to ECTS – 3	field of knowledge 20 – agricultural sciences and food	selective	
Content modules – 2	speciality: 201 'agronomy'	a year of preparation:	
		3d	3d
		semester	
Total number of academic hours – 90		5–th	6–th
		lectures	
Weekly hours for full-time study: classroom – 3 (1/2)	first (bachelor's) level of higher education	14 h	4 h
		practical	
		28 h	6 h
		independent work	
		48 h	80 h
		type of control: test	

Description of the subject «Technological expertise of fruit and vegetable production»

Aims and objectives of the discipline

The main objective of the discipline is to develop knowledge and skills in technological expertise of fruit and vegetable production, the basics of proper organisation of quality assessment for maximum profit.

In the course of studying the discipline students should **know**: requirements for indicators of fruit and vegetable products; commodity and target classification of fruit and vegetable productsa; methods of examination of various types of fruit and vegetable products; basics of consumer quality of products; **be able to**: conduct technological expertise and assess the safety of fruit and vegetable products; determine the qualitative and quantitative composition of raw materials and finished products, indicators of their quality and safety; choose equipment, the use of which ensures.

EXPECTED LEARNING OUTCOMES

Symbol of learning outcomes in the speciality 'Agronomy' in accordance with the educational and professional programme	Learning outcomes for the discipline
RS 9. To be able to observe, describe, identify, classify, and cultivate objects at the operational level and maintain the stability of agrocenoses while preserving natural diversity.	RS 9.1 To have operational knowledge of methods for determining the compliance of fruit and vegetable raw materials and finished products with the requirements of regulatory documents of Ukrainian and international standards, rules for preparing supporting documents RS 9.2. Know the methods of technological examination of fruits and vegetables
RS 10. Analyse and integrate knowledge from general and specialised professional training to the extent necessary for specialised professional work in the field of agronomy.	RS 10.1. Analyse and integrate knowledge from specialised training in technological expertise of fruit and vegetable production necessary for specialised professional work in the field of processing and storage of fruits and vegetables. RS 10.2. Analyse quality and safety indicators of raw materials and finished products of fruit and vegetable growing, characteristics of elements of growing, storage and processing technologies,

Module 1: THEORETICAL ASPECTS OF TECHNOLOGICAL EXAMINATION OF FRESH FOOD AND VEGETABLE PRODUCTS

Topic 1: Sampling and evaluation of batches of different types of fruits and vegetables

Aims: to master the procedure for sampling fruits and vegetables, the

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Technological expertise of fruit and vegetable production

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