Federal State Autonomous Educational Institution
Higher Education "Peoples' Friendship University of Russia"

Agrarian-Technological Institute
(name of the main training unit (PMO) - the developer of the EP HE)

WORK PROGRAM OF THE DISCIPLINE

Plant protection in organic farming
(name of discipline/module)

Recommended by ISSS for the direction of training/specialty:

35.0 4.04 Agronomy
(code and name of the direction of training/specialty)

The development of the discipline is carried out within the framework of the implementation of the main professional educational program of higher education (EP HE):

Integrated Plant Protection
(name (profile/specialization) ep he)

2022

1. THE PURPOSE OF MASTERING THE DISCIPLINE

The purpose of mastering the discipline "Plant Protection in Organic Farming" is to familiarize with the possibilities and methods of practical use of natural regulators of the development of populations of pests, pathogens and weeds.

2. REQUIREMENTS FOR THE RESULTS OF MASTERING THE DISCIPLINE

Mastering the discipline "Plant Protection in Organic Farming" is aimed at the formation of the following competencies (part of the competencies) among students:

Table 1 - The list of competencies formed by students during the development of the discipline (the results of mastering the discipline)

Code	Competence	Competency Achievement Indicators
UK-2	Able to manage the project at all stages of its life cycle	UK-2.1 Develops the concept of the project within the framework of the designated problem, formulating the goal, objectives, relevance, significance (scientific, practical, methodological and other depending on the type of project), expected results and possible areas of their application
		UK-2.2 Forms a schedule for the implementation of the project as a whole and a plan for monitoring its implementation, organizes and coordinates the work of project participants
		UK-2.3 Offers possible ways (algorithms) of implementation of the project results into practice (or implements it)
OPK-1	Able to solve the problems of development of the field of professional activity and (or) organization on the basis of analysis of the achievements of science and production	OPK-1.1 Demonstrates knowledge of the main methods of analyzing the achievements of science and production in agronomy
		OPK-1.2 Uses methods of solving problems in the development of agronomy based on the search and analysis of modern achievements of science and production
OPK-4	Able to conduct research, analyze results and prepare reporting documents	OPK-4.2 Uses information resources, scientific, experimental and instrumental base for research in agronomy
OPK-5	Able to carry out feasibility studies of projects in professional activities	OPK-5.1 Owns the methods of economic analysis and accounting of project indicators in agronomy
		OPK-5.2 Analyzes the main production and economic indicators of the project in agronomy
		OPK-5.3 Develops proposals to improve the efficiency of the project in agronomy
PK-2	Able to develop methods of conducting experiments, master new research methods	PP-2.2 Applies modern types and methods of observation and accounting in field experiments

PK-4	Able to create models of crop cultivation technologies, plant protection systems, varieties	PK-4. 3 Implements the creation of plant protection systems for specific production conditions

3. THE PLACE OF DISCIPLINE IN THE STRUCTURE OF THE EP HE

The discipline "Plant protection in organic farming" refers to the elective part of block B1.B.DV.02.02.

Within the framework of the OP HE, students also master other disciplines and / or practices that contribute to the achievement of the planned results of the development of the discipline "Plant Protection in Organic Farming".

Table 2 – List of components of the HE OP that contribute to the achievement of the planned results of the discipline

Code	**Competence**	**Previous disciplines/modules, practices**	**Subsequent disciplines/modules, practices**
UK-2	Able to manage the project at all stages of its life cycle	-	Organization of integrated plant protection systems Biotechnology in plant protection Research Practice
OPK-1	Able to solve the problems of development of the field of professional activity and (or) organization on the basis of analysis of the achievements of science and production	Phytosanitary risk analysis Bacterial diseases Biology of weedy vegetation Molecular methods for diagnosing phytopathogens	Instrumental research methods Mathematical Modeling and Design Biotechnology in plant protection Research Practice Plant immunity Organization of integrated plant protection systems Virology Biotechnology in plant protection Plant quarantine Research Practice
OPK-4	Able to conduct research, analyze results and prepare reporting documents	Bacterial diseases Biology of weedy vegetation Molecular methods for diagnosing phytopathogens Phytosanitary risk analysis	Plant immunity Organization of integrated plant protection systems Virology Biotechnology in plant protection Plant quarantine Research Practice
OPK-5	Able to carry out feasibility studies of projects in professional activities	-	Management & Marketing

			Organization of integrated plant protection systems
PK-2	Able to develop methods of conducting experiments, master new research methods	Molecular methods for diagnosing phytopathogens	Plant immunity Organization of integrated plant protection systems Biotechnology in plant protection Plant quarantine Research Practice Instrumental research methods
PK-4	Able to create models of crop cultivation technologies, plant protection systems, varieties	Bacterial diseases Biology of weedy vegetation Phytosanitary risk analysis	Plant immunity Organization of integrated plant protection systems Research Practice Virology Research Practice

4. THE SCOPE OF DISCIPLINE AND TYPES OF EDUCATIONAL WORK

The total labor intensity of the discipline "Plant protection in organic farming" is 3 credits.

Table 4 – Types of educational work by periods of mastering the EP HE for full-time education

Type of educational work		**Total, aca. hrs.**	**Semester**
			2
Contact work		33	33
including:			
Lectures (LC)		11	11
Laboratory works (LR)		-	-
Practical/Seminar Classes (FPs)		22	22
Independent work of students		71	71
Control (exam/test with grade)		4	4
Overall labor intensity of the discipline	aca. hrs.	108	108
	Zach. Units.	3	3

*Table 4. 2. Types of educational work by periods of mastering the EP HE for **full-time and part-time** education*

Type of educational work		**TOTAL,** aca. hrs.	**Semester(s)**			
			3	**4**		
Contact work, ac.ch.		**34**	**34**			
Including:						
Lectures (**LC**)		17	17			
Laboratory works *(***LR***)*						
Practical/Seminar Classes (**FPs**)		17	17			
Independent work of students, ac.ch.		49	49			
Control (exam /test with grade), ac.ch.		25	25			
Overall labor intensity of the discipline	aca. hrs	**108**	**108**			
	Hrs.ed.	**3**	**3**			

*Table 4. 3. Types of educational work by periods of mastering the OP HE for **part-time** education*

Type of educational work		TOTAL, aca.hrs.	Semester(s)			
			Winters.	Years.		
Contact work, ac.ch.		**20**		**20**		
Including:						
Lectures (**LC**)						
Laboratory works *(***LR***)*						
Practical/Seminar Classes (**FPs**)		20		20		
Independent work of students, ac.ch.		79		79		
Control (exam /test with grade), ac.ch.		9		9		
Overall labor intensity of the discipline	aca. hrs.	**108**		**108**		
	Hrs.ed.	**3**		**3**		

5. CONTENTS

Table 6 – Content of the discipline (module) by types of educational work

Name of the discipline section	Contents	Type of educational work
Section 1. History of development and current state of plant protection in organic farming	Topic 1.1. The main factors in the regulation of the number of harmful organisms. Topic 2.1. Ecological bases of plant protection in organic farming. Forms of relationships of organisms in biocenoses.	LR, LC
Section 2. Entomophages	Topic 2.1. Methods of using entomophages. Topic 2.2. Trichogramma, gabrobracon, encarsia, sirphids, rhodolia	LR, LC
Section 3. Acarifagi	Topic 3.1. Phytoseyulus. Ambiseyulus	LR, LC
Section 4. Phytophages	Topic 4.1. Prospects for use. Phytomisa	LR, LC
Section 5. Genetic methods of insect control	Topic 5.1. Methods of sterilization. Chemosterilants. Methods and conditions of application	LR, LC
Section 6. Production technology and methods of control over the effectiveness of biological products in organic farming	Topic 6.1. Biopesticides; biologically active substances in plant protection. Conditions of use; efficiency; ecological compatibility	LR, LC

6. MATERIAL AND TECHNICAL SUPPORT OF DISCIPLINE

Table 7 – Discipline Logistics

Audience type	Equipping the classroom	Specialized educational/laboratory equipment, software and materials for mastering the discipline
Lecture Hall	Auditorium for lecture-type classes, equipped with a set of specialized furniture; whiteboard (screen) and	

	technical means of multimedia presentations.	
Laboratory	An auditorium for laboratory work, individual consultations, current control and intermediate certification, equipped with a set of specialized furniture and equipment.	
Seminary	An auditorium for seminar-type classes, group and individual consultations, current control and intermediate certification, equipped with a set of specialized furniture and technical means of multimedia presentations.	
For independent work of students	An auditorium for independent work of students (can be used for seminars and consultations), equipped with a set of specialized furniture and computers with access to EIOS.	

7. EDUCATIONAL, METHODOLOGICAL AND INFORMATION SUPPORT OF THE DISCIPLINE

Main literature:

1. Chulkina V.A. et al. Ecological foundations of integrated plant protection, M.: Kolos, 568p.

Further reading:

1. Protection of plants from diseases. Under the joy. Shkalikova V.A., Moscow. Kolos Publishing House, 2001

2. Protection of plants from pests. Under the joy. Isaicheva V.V., Moscow. Kolos Publishing House, 2001

Resources of the information and telecommunication network "Internet":

1. RUDN University EBS and third-party EBS, to which university students have access on the basis of concluded contracts:

– Electronic library system RUDN University – EBS RUDN University http://lib.rudn.ru/MegaPro/Web

– EBS "University Library Online" http://www.biblioclub.ru

- EBS Jurait http://www.biblio-online.ru

– EBS "Student Consultant" www.studentlibrary.ru

2. Databases and search engines:

- electronic fund of legal and normative-technical documentation http://docs.cntd.ru/
- Yandex https://www.yandex.ru/ search engine
- Google https://www.google.ru/ search engine
- abstract database SCOPUS http://www.elsevierscience.ru/products/scopus/
- http://bvi.rusf.ru/sista/alf_1047.htm
- www.cnshb.ru
- http://quakes.globalincidentmap.com/,
- http://www.globalincidentmap.com/, http://earthquake.usgs.gov/earthquakes/recenteqsww/Quakes/quakes_all.php,
- http://www.tesis.lebedev.ru/forecast_activity.html
- National digital resource "RUKONT": http://rucont. ru

- IQlib: http://www.iqlib.ru
- ScienceDirect: http://www. sciencedirect. com
- EBSCO: http://search.ebscohost.com
- Sage Publications:http://online.sagepub.com
- Springer/Kluwer:http://www.springerlink.com
- Tailor & Francis: http://www.informaworld.com
- Web of Science: http://www.isiknowledge.com
- University Information System RUSSIA: http://www. cir. ru/index. jsp
- Http://www.studmedlib.ru Student Advisor
- IQlib: http://www. iqlib. ru

Educational and methodical materials for independent work of students in the development of the discipline / module:

1. A course of lectures on the discipline "Plant protection in organic farming".
2. Laboratory workshop on the discipline "Plant protection in organic farming" (if laboratory work is available).

DEVELOPERS:

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