

Документ подписан простой электронной подписью

Информация о владельце:

ФИО: Ястребов Олег Александрович

Должность: Ректор

Дата подписания: 19.05.2023 12:25:31

Уникальный программный ключ:

ca953a0120d891083f939673078ef1a989dae18a

Federal State Autonomous Educational Institution of Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA
NAMED AFTER PATRICE LUMUMBA
RUDN University

Agrarian - Technological Institute

educational division (faculty/institute/academy) as higher education programme developer

COURSE SYLLABUS

Forecast of development of agricultural pests and diseases

course title

Recommended by the Didactic Council for the Education Field of:

35.04.04 Agronomy

field of studies / speciality code and title

The course instruction is implemented within the professional education programme of higher education:

Integrated Plant Protection

higher education programme profile/specialisation title

1. Goals and objectives of the discipline:

The purpose of mastering the discipline "Forecast of the development of pests and diseases" is the formation of ideas of theoretical knowledge and the acquisition by students of practical skills and abilities on methods for predicting the appearance and development of pests and diseases of agricultural plants.

The task of studying the discipline is to study:

- the modern structure of the state service for signaling and forecasting of pests and diseases of crops in the Russian Federation;
- theoretical foundations of the emergence and dynamics of the development and spread of harmful organisms;
- approaches to methods for assessing the phytosanitary state of crops and plantations of agricultural crops;
- principles for the development of long-term forecasts of the appearance and development of plant pests and diseases;
- methods of making short-term forecasts of the appearance of the most dangerous pests and diseases.

; PC-4.5; PC-4.6

REQUIREMENTS FOR THE RESULTS OF MASTERING THE DISCIPLINE

Mastering the discipline "Forecast of the development of pests and diseases" 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-1	Able to carry out search, critical analysis of problem situations on the basis of a systematic approach, to develop an action strategy	UK-1.1 Performs the search for the necessary information, its critical analysis and summarizes the results of the analysis to solve the task
		UK-1.3 Develops a strategy for achieving the set goal as a sequence of steps, anticipating the result of each of them and assessing their impact on the external environment of the planned activity and on the relationships of the participants in this activity
OPK-1	Able to solve the problems of development of the field of professional activity and (or) organization on the basis of	OPK-1.1 Demonstrates knowledge of the main methods of analyzing the achievements of science and production in agronomy

	analysis of the achievements of science and production	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-4.3 Formulates the results obtained in the course of solving research problems
PK-1	Able to collect, process, analyze and systematize scientific and technical information, domestic and foreign experience in the field of agronomy	PC-1.1 Performs critical analysis of the information received
PK-4	Able to develop methods of conducting experiments, master new research methods	PC-4.5 Carries out work to protect plants from harmful objects
		PP-4.6 Develops and improves plant protection measures against harmful objects

3. THE PLACE OF DISCIPLINE IN THE STRUCTURE OF THE OP VO

The discipline "Forecast of the development of pests and diseases" refers to the part formed by the participants of the educational relations of block B1.B. OP VO.

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 Quarantine".

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-1	Able to carry out search, critical analysis of problem situations on the basis of a systematic approach, to develop	Information Technologies History and method-	Organization of integrated plant protection systems

	an action strategy	ology of scientific agronomy	Work with scientific literature Phytopathology risk analysis Research work Research Practice Pre-diploma practice Biotechnology in plant protection
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	Bacterial diseases Nematode diseases Molecular methods for diagnosing phytopathogens Phytopathology risk analysis	Instrumental research methods Mathematical Modeling and Design Biological method of plant protection Biotechnology in plant protection Plant protection in organic farming Plant immunity Organization of integrated plant protection systems Virology Biology of weedy vegetation Research work Research Practice
OPK-4	Able to conduct research, analyze results and prepare reporting documents	Molecular methods for diagnosing phytopathogens Nematode diseases Phytopathology risk analysis Fundamentals of Scientific Communication	Plant immunity Organization of integrated plant protection systems Biological method of plant protection Virology Bacterial diseases Biotechnology in plant protection Plant quarantine Biology of weedy vegetation Plant protection in organic farming Prognosis of pests and diseases Research work Research Practice Pre-diploma practice
PK-1	Able to collect, process, analyze and systematize scientific and technical information, domestic and foreign	Phytopathology risk analysis	History and methodology of scientific agronomy

	experience in the field of agronomy		Plant immunity Organization of integrated plant protection systems Biotechnology in plant protection Plant quarantine Research work Research Practice Pre-diploma practice
PK-4	Able to develop methods of conducting experiments, master new research methods	Bacterial diseases Phytopathological risk analysis	Plant immunity Biological method of plant protection Virology Biology of weedy vegetation Nematode diseases Research Practice

4. SCOPE OF DISCIPLINE AND TYPES OF EDUCATIONAL WORK

The total labor intensity of the discipline "Prognosis of the development of pests and diseases" is 4 credits for full-time education.

Table 4.1 – Types of educational work by periods of mastering the OP HE for full-time education

Type of educational work	Total, aca. hrs.	Semesters	
		1	
<i>Contact work</i>	34	34	
including:			
Lectures (LC)			
Laboratory works (LR)			
Practical/Seminar Classes (FPs)	34	34	
<i>Independent work of students</i>	59	59	
<i>Control (exam/test with grade)</i>	15	15	
Overall labor intensity of the discipline	108	108	108
	3	3	3

5. CONTENTS

Table 4 – Content of the discipline (module) by types of educational work

Name of the discipline section	Contents	Type of educational work
Section 1. Introduction. The Scientific Basis for Making Predictions. Types of Predictions.	Topic 1.1. Methods of compilation of short-term forecasting of development of crop pests Topic 1.2. Forecast by the method of establishing the average long-term date of occurrence of the pest	Ave
Section 2. Phytosanitary monitoring and prognosis of quarantine diseases.	Topic 2.1. Use of the integral indicator of the SCC in the forecast Topic 2.2. Development of long-term forecasts	Ave
Section 3. Effective heat and its importance in the development and spread of harmful quarantine facilities.	Topic 3.1. Using the date the temperature has passed through a certain limit	Ave
	Topic 3.2. Using the sums of effective temperatures in the zone Topic 3.3. Forecasting with the help of temperature and phenological nomogram of A.S. Podolsky	

6. MATERIAL AND TECHNICAL SUPPORT OF DISCIPLINE

Table 5 – Discipline Logistics

Audience type	Equipping the classroom	Specialized educational/laboratory equipment, software and materials for mastering the discipline
Lab	An auditorium for laboratory work, individual consultations, current control and intermediate certification, equipped with a set of specialized furniture and equipment.	List of specialized laboratory equipment, installations, stands, etc.
Computer Lab	Computer class for classes, group and individual consultations, current control and intermediate certification, equipped with personal computers (in the amount of _____ pieces), a whiteboard (screen) and technical means of multimedia presentations.	List of specialized software installed on computers for mastering the discipline (module)

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.	
Audience type	Equipping the classroom	Specialized educational/laboratory equipment, software and materials for mastering the discipline

7. EDUCATIONAL, METHODOLOGICAL AND INFORMATION SUPPORT OF THE DISCIPLINE

(a) Main literature:

1. *Educational and methodical manual on the discipline "Forecast of the development of timers and diseases" [Text] : for laboratory and practical classes / Comp. Sh. A. Gulmagomedova. - Makhachkala : DGSKHA, 2011. - 41 p. - (Ka-phaedra of ecology and plant protection).*

2. *Bondarenko, N. V. Practicum on general entomology [Text] : uchebnoe posobie, dopushch. Min. s.-kh. RF / N. V. Bondarenko. - 3rd ed. - SPb. : "Pro-spect Nauki", 2010. - 344 p. - ISBN 978-5-903090-34-1:*

3. *Bey-Bienko, G. Y. Obshchaya entomologiya [Text] : uchebnik, dopushch. Min. s.-kh. RF / G. Y. Bey-Bienko. - Ed. , v. Erased. - SPb : "Prospekt Nauki", 2008. - 486 p. - ISBN 978-5-903090-13-6:*

4. *Minkevich, I. I. Phytopathology. Diseases of tree and shrub species [Text] : textbook, rivers. UMO for education in the field of forestry by direction. "Lesnoe delo" / I. I. Minkevich, T. B. Dorofeeva, V. F. Kovyazin ; under the general editorship of I. I. Minkevich. - SPb. : Izd-vo "Lan", 2016. - 160 p. : (+ gluing, 32p.). - (Textbooks for Universities. Special Literature). - ISBN 978-5-8114-1177-1:*

b) Additional literature:

1. *Protection of plants from diseases [Text] : textbook, recom. Min. s/kh RF / V. A. Shkalikov, O. O. Beloshapkina, D. D. Bukreev et al.; ed. by V. A. Shkalikov. - 2-e ed., ispr. i dop. - Moscow : "Koloss", 2004. - 225 p. : il. - (Textbooks and ucheb. manuals for stud. higher educational institutions). - ISBN 5-9532-0074-9:*

2. *Educational and methodical manual on the discipline "Forecast of the development of hazards and diseases" [Text] : for laboratory and practical classes / Comp. Sh. A. Gulmagomedov. - Makhachkala : DSAA, 2011. - 41 p. - (Department of Ecology and Plant Protection).*

2. *Educational and methodical manual on the discipline "Agricultural entomology and phytopathology" [Text] : for independent work of students in special. "Agronomy" / Comp.A. A, Rimikhanov, Sh. A. Gulmagomedova. - Makhachkala : DGSKHA, 2009. - 23 p. - (Department of Plant Protection).*

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
- EBS "Lan" <http://e.lanbook.com/>
- EBS "Trinity Bridge"

2. Databases and search engines:

- electronic fund of legal and normative-technical documentation of the <http://docs.cntd.ru/>
- Yandex <https://www.yandex.ru/> search engine
- Google search engine <https://www.google.ru/>
- abstract database SCOPUS <http://www.elsevierscience.ru/products/scopus/>
- <http://quakes.globalincidentmap.com/>,
- <http://www.globalincidentmap.com/>,
- ScienceDirect: <http://www.sciencedirect.com>
- EBSCO: <http://search.ebscohost.com>
- Sage Publications: <http://online.sagepub.com>
- Springer/Kluwer: <http://www.springerlink.com>
- University Information System RUSSIA: <http://www.cir.ru/index.jsp>

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

1. Educational and methodical manual on the discipline "Prognosis of the development of harm-killers and diseases" [Text] : for laboratory and practical classes / Comp. Sh. A. Gulmagomedova. - Makhachkala : DGSKHA, 2011. - 41 p. - (Department of Ecology and Plant Protection).
2. Bondarenko, N. V. Practicum on general entomology [Text] : uchebnoe posobie, dopushch. Min. s.-kh. RF / N. V. Bondarenko. - 3rd ed. - SPb. : "Pro-spect Nauki", 2010. - 344 p. - ISBN 978-5-903090-34-1:
3. Bey-Bienko, G. Y. Obshchaya entomologiya [Text] : uchebnyk, dopushch. Min. s.-kh. RF / G. Y. Bey-Bienko. - Ed. , v. Erased. - SPb : "Prospekt Nauki", 2008. - 486 p. - ISBN 978-5-903090-13-6:
4. Minkevich, I. I. Phytopathology. Diseases of tree and shrub species [Text] : textbook, rivers. UMO for education in the field of forestry by direction. "Lesnoe delo" / I. I. Minkevich, T. B. Dorofeeva, V. F. Kovyazin ; under the general editorship of I. I. Minkevich. - SPb. : Izd-vo "Lan", 2016. - 160 p. : (+ gluing, 32p.). - (Textbooks for Universities. Special Literature). - ISBN 978-5-8114-1177-1:
5. Educational and methodical manual on the discipline "Agricultural entomology and phytopathology" [Text] : for independent work of students on special. "Agronomy" / Comp. A. A. Rimikhanov, Sh. A. Gulmagomedova. - Makhachkala : DGSKHA, 2009. - 23 p. - (Department of Plant Protection).

8. EVALUATION MATERIALS AND POINT-RATING SYSTEM OF LEVEL ASSESSMENTFORMATION OF COMPETENCIES IN THE DISCIPLINE

Evaluation materials and a point-rating system for assessing the level of formation of competencies (parts of competencies) based on the results of mastering the discipline "Agrochemistry" are presented in the Appendix to this Work Program of the discipline.

DEVELOPERS:

Professors of the Agrobiotechnology
Department

(position, BCD)

(Signed)

Astarkhanova T.S.

(Surname: F.I.)

(position, BCD)

(Signed)

(Surname: F.I.)

(position, BCD)

(Signed)

(Surname: F.I.)

HEAD OF BCD:

Director of Agrobiotechnology De-
partment

Pakina E. N.

(position, BCD)

(Signed)

(Surname: F.I.)

HEAD OF EP HE:

Director of Agrobiotechnology De-
partment

(position, BCD)

(Signed)

Pakina E. N.

(Surname: F.I.)