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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

Plant quarantine

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 "Plant Quarantine" is the formation of ideas, theoretical knowledge, practical skills and abilities:

- to protect the plant resources of Russia and products from importation from foreign countries and the spread of quarantine and other especially dangerous pests;

- on methods of identification and diagnosis of quarantine organisms, technologies of inspection and examination of plant cargoes, survey of plantations, crops and warehouses.

The course considers:

- the main quarantine facilities (pests, diseases and weeds) that, if imported into the country, can significantly affect the yield of crops.

- biology and ecology of quarantine objects;

- methods of detection and identification of quarantine objects.

- basic provisions, concepts, requirements, methods of inspection and examination of quarantine materials;

- the procedure and features of the inspection of various objects and materials.

2. REQUIREMENTS FOR THE RESULTS OF MASTERING THE DISCIPLINE

Mastering the discipline "Plant Quarantine" is aimed at the formation of the following competencies (parts of 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
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	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

	of science and production	OPK-1.3 Applies available technologies, including information and communication technologies, to solve the problems of professional activity in agronomy
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
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-2	Able to develop methods of conducting experiments, master new research methods	PK-2.1 Develops methods for conducting experiments
PK-7	Able to carry out phytosanitary control at the state border in order to protect the territory of the Russian Federation from the penetration of quarantine and other dangerous pathogens and plant pests, weeds	PC-7.1 Recognizes quarantine objects and identifies quarantine pests and pathogens
		PC-7.2 Conducts examination of crops and crop products for the presence of quarantine facilities

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

The discipline "Plant Quarantine" refers to the mandatory part of block B1 of the 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
OPK-1	Able to solve the problems of development of the field of professional activity and (or) organ-	Organization of integrated plant protection sys-	Plant immunity Biotechnology in plant protection

	ization on the basis of analysis of the achievements of science and production	tems Biological method of plant protection Virology Bacterial diseases Biology of weedy vegetation Plant protection in organic farming Molecular methods for diagnosing phytopathogens Nematode diseases Prognosis of pests and diseases Phytosanitary risk analysis Research work Research Practice Information Technologies	
OPK-4	Able to conduct research, analyze results and prepare reporting documents	Organization of integrated plant protection systems Biological method of plant protection Virology Bacterial diseases Biology of weedy vegetation Plant protection in organic farming Molecular methods for diagnosing phytopathogens Nematode diseases	Plant immunity Biotechnology in plant protection

		<p>es</p> <p>Prognosis of pests and diseases</p> <p>Phytosanitary risk analysis</p> <p>Research work</p> <p>Research Practice</p>	
PK-1	Able to collect, process, analyze and systematize scientific and technical information, domestic and foreign experience in the field of agronomy	<p>History and methodology of scientific agronomy</p> <p>Organization of integrated plant protection systems</p> <p>Prognosis of pests and diseases</p> <p>Phytosanitary risk analysis</p> <p>Research work</p> <p>Research Practice</p>	<p>Plant immunity</p> <p>Biotechnology in plant protection</p> <p>Pre-diploma practice</p>
PK-2	Able to develop methods of conducting experiments, master new research methods	<p>Organization of integrated plant protection systems</p> <p>Biological method of plant protection</p> <p>Molecular methods for diagnosing phytopathogens</p> <p>Research work</p> <p>Research Practice</p>	<p>Plant immunity</p> <p>Biotechnology in plant protection</p>
PK-7	Able to carry out phytosanitary control at the state border in order to protect the territory of the Russian Federation from the penetration of quarantine and other dangerous pathogens and plant pests, weeds	<p>Virology</p> <p>Bacterial diseases</p> <p>Molecular methods for diagnosing phytopathogens</p> <p>Nematode diseases</p>	

4. SCOPE OF DISCIPLINE AND TYPES OF EDUCATIONAL WORK

The total labor intensity of the discipline "Plant Quarantine" is 4 credits for full-time education.

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

Type of educational work		Total, aca. hrs.	Semesters	
			4	
<i>Contact work</i>		45	45	
including:				
Lectures (LC)		18	18	
Laboratory works (LR)				
Practical/Seminar Classes (FPs)		27	27	
<i>Independent work of students</i>		87	87	
<i>Control (exam/test with grade)</i>		12	12	
Overall labor intensity of the discipline	aca. hrs.	144	144	
	Zach. Units.	4	4	

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. The subject and tasks of plant quarantine	Topic 1.1. The subject and tasks of plant quarantine, its relationship with other agronomic and biological sciences. Historical overview of the development of plant quarantine. External and internal quarantine	LC
Section 2. Pests, pathogens and weeds, weeds of quarantine importance for the Russian Federation.	Topic 2.1. Pests of quarantine importance for the Russian Federation. Topic 2.2. Causative agents of diseases of quarantine importance for the Russian Federation. Topic 2.3 Weeds, weeds of quarantine importance for the Russian Federation.	LR, LC
Section 3. 3. Pests, pathogens and weeds not registered in the territory of the Russian Federation	Topic 3.1. Pests not registered in the territory of the Russian Federation Topic 3.2. Causative agents of diseases not registered in the territory of the Russian Federation Topic 3.3. Weeds not registered in the territory of the Russian Federation	LR, LC
Section 4. Methods for identifying, scaling and disposing of and quarantine facilities	Topic 4.1. Methods of detection and diagnosis of quarantine pests, pathogens and weeds Plants Topic 4.2. Methods of calcination and liquidation of quarantine facilities	LR, LC

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
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.	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

1. EDUCATIONAL, METHODOLOGICAL AND INFORMATION SUPPORT OF THE DISCIPLINE

Main literature:

1. Voronkova L.V., Smetnik A.I., Shamonin M.G. et al. Plant quarantine in the USSR/Comp. Shamonin M.G., Smetnik A.I. M.: Agropromizdat, 1986.
2. Plant quarantine in the Russian Federation. Ed. by A.S. Vasyutin and A.I. Smetnik. M.: Kolos, 2001.
3. Pospelov S.M., Shestiperova Z.I., Dolzhenko I.K. Basics of karentin of agricultural plants. M.: Agropromizdat, 1985.

Further reading:

1. Rules for the protection of the territory of the Russian Federation from karentin pests, plant diseases and weeds // Protection and quarantine of plants, No 2, 1997.
2. List of pests, plant diseases and weeds of caranous importance for the Russian Federation. M.: Gosinspektsiya po karan-tinu MSH Rossiiskoi Federatsii, 1993.
3. Handbook on pests, plant diseases and weeds of quarantine importance for the Russian Federation / Comp. Savotikov Yu.F., Smetnik A.I. Nizhny Novgorod: Arnika. 1995.
4. Collection of guidance and instructional documents on the punishment of races in the Russian Federation. Ed. by A.S. Vasyutin. M: JSC «Astra seven», 1999.

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. Plant quarantine in the Russian Federation. Ed. by A.S. Vasyutin and A.I. Smetnik. M.: Kolos, 2001.

2. Pospelov SM., Shestiperova Z.I., Dolzhenko I.K. Osnovy karentina selkhoznykh ztenovii. M.: Agropromizdat, 1985.

**1. EVALUATION MATERIALS AND POINT-RATING SYSTEM OF LEVEL ASSESSMENT
FORMATION OF COMPETENCIES IN THE DISCIPLINE
Specialty: 35.0 4.04 Agronomy 4 semester**

Code of a supervised competency or part of it	Controlled discipline section	Controlled theme of discipline	Name of the appraisal tool				Certification		Points Themes	Points Section
			Current control				Maximum	Total		
			Performing Home Job	Execution laboratory assistant Of work	Report, presentation	Tests				
OPK-1 OPK-4 PK-1 PK-2 PK-7	Pests, pathogens and weeds of quarantine importance for the Russian Federation.	Pests of quarantine importance for the Russian Federation.	1	4	2	1	10		15	45
		Causative agents of diseases of quarantine importance for the Russian Federation.	1	4	2	1			15	
		Weedy plants of quarantine importance for the Russian Federation.	1	4	2	1			15	
	Pests, pathogens and weeds not registered in the territory of the Russian Federation	Pests not registered in the territory of the Russian Federation	1	4	2	1	10		15	45
		Causative agents of diseases not registered in the territory of the Russian Federation	1	4	2	1			15	
		Weeds not registered in the territory of the Russian Federation	1	4	2	1			15	
	Methods for identifying, revitalizing and disposing of quarantine facilities	Methods of detection and diagnosis of quarantine pests, pathogens and weeds.	1	2	2	1	10		5	10
		Methods of localization and elimination of quarantine objects	1	1	1	1			5	
			TOTAL	8	27	15	8	10	10	100

Criteria for the evaluation of controlled types of work

№ p/n	Estimated parameters	Scores	
		Matches Parameters	Does not match the parameters
1	2	3	4
1	Doing homework for lab work - executed completely, carefully -partially executed, carelessly	1 0.5	0 0
2	Perform lab work -made by yourself completely, carefully decorated -made independently, carelessly designed -made partially independently -performed with an error in the result of the work	4 3 2 1	0 0 0 0
3	Report, presentation of the section -Clearly lined up, well illustrated -the report and presentation are well designed, but there are inaccuracies -answers all questions -can't answer most questions -conclusions are entirely derived from the work - conclusions are fuzzy	1 0.5 1 0.5 1 0.5	0 0 0 0 0 0
4	Tests -Correctly answered 95-100% of the questions -Correctly answered 80-94% of questions -Correctly answered 50-79% of questions	2 1 0.5	0 0 0
5	Milestone attestation 1) <i>Quality of oral answer to questions</i> (a) Completeness of the response -Replied in full -Answered most of the questions -Didn't answer most of the questions b) Consistency of the answer - The answer is built logically - The answer is built illogically 2) <i>Test part</i> -Correctly answered 95-100% of the questions -Correctly answered 80-94% of questions -Correctly answered 50-79% of questions	2.5 1.5 0.5 2.5 0.5 5 4 2	0 0 0 0 0 0 0 0

Total:	10	0
6 Final attestation		
<i>1) Quality of oral answer to questions</i>		
(a) Completeness of the response		
-Replied in full	2.5	0
-Answered most of the questions	1.5	0
-Didn't answer most of the questions	0.5	0
b) Consistency of the answer		
- The answer is built logically	2.5	0
- The answer is built illogically	0.5	0
<i>2) Test part</i>		
-Correctly answered 95-100% of the questions	5	0
-Correctly answered 80-94% of questions	4	0
-Correctly answered 50-79% of questions	2	0
Total:	10	0

Questions for self-assessment and discussions on topics.

Topic 1. Pests of quarantine importance for the Russian Federation

1. Quarantine pests: nightshade and industrial crops – Asian cotton armyworm, Potato moth;
2. Quarantine pests: fruit and berry crops - American white butterfly, Oriental moth, California shield, Phylloxera, Peach moth;
3. Quarantine pests: grains, products of its processing – Kapra beetle, Polyvorous grain

Topic 2. Causative agents of diseases of quarantine importance for the Russian Federation

1. Southern helminthosporiosis of corn, race T.
2. Sunflower phomopsis (gray spotting of the stem).
3. Potato cancer.
4. Brown potato rot.
5. Golden potato nematode.
6. Smallpox (shard) plum.

Topic 3. Weeds, weeds of quarantine importance for the Russian Federation and

1. Thorny nightshade
2. Field povilika

3. Creeping mustard
4. Ragweed
5. Low-flowered tsenkhrus

Topic 4. Pests not registered in the territory of the Russian Federation

1. Western black-headed leafroller
2. Eastern black-headed leafroller
3. Gall mite fuchsia
4. Bronze birch goldenrod
5. Spiny mountain whitefly
6. Oriental fruit fly

Topic 5. Pathogens not registered in the territory of the Russian Federation

1. Bacterial wilt of grapes
2. Bacterial wilt (wilt) of corn
3. Brown potato rot
4. Yellow mucous bacteriosis of wheat
5. Bacterial spotting of pumpkin crops

Topic 6. Weeds not registered in the territory of the Russian Federation

1. Hairy series
2. Milkweed toothed
3. California sunflower
4. Ciliated sunflower
5. Ipomoea ivy
6. Ipomoea dimplata
7. Elderberry axillary

Topic 7: Methods of detection and diagnosis of quarantine pests, pathogens and weeds

1. Method for identifying soil pests
2. Method of accounting for the number of pests leading a hidden lifestyle
3. The main purpose of identifying harmful organisms

Topic 8. Methods of calcination and liquidation of quarantine facilities

1. Destruction of plant waste littered with viable willow seeds by burning or burying in pits at least 0.5 m deep

1. Treatment with approved herbicides

3. Carrying out regular mowing before fruiting of the willow from three to four times during the growing season
4. Cleaning of tools and implements, equipment, vehicles, clothing and footwear.

Tests in the discipline "Plant Quarantine"

1. Among the dangerous pests of quarantine importance for the territory of the Russian Federation shall include...

- Kapra beetle
- Colorado beetle
- harmful turtle
- migratory locusts

2. Among the dangerous pests of quarantine importance for the territory of the Russian Federation shall include...

- four-spotted grain
- Colorado beetle
- harmful turtle
- migratory locusts

3. The number of dangerous pests of quarantine importance for the territory of the Russian Federation includes...

- corn beetle diabrotica
- Colorado beetle
- bug harmful turtle
- Asian migratory locusts

4. The number of dangerous pests of quarantine importance for the territory of the Russian Federation includes...

- Mediterranean Fruit Fly
- southern beet flea
- bug harmful turtle
- Asian migratory locusts

5. The number of dangerous pests of quarantine importance for the territory of the Russian Federation includes...

- grape phylloxera
- Colorado beetle
- harmful turtle
- migratory locusts

6. The number of dangerous pests of quarantine importance for the territory of the Russian Federation includes...

- California Thrips
- Colorado beetle
- harmful turtle
- migratory locusts

7. The number of dangerous pests of quarantine importance for the territory of the Russian Federation includes...

- California Shield
- Colorado beetle
- harmful turtle
- migratory locusts

8. The number of dangerous pests of quarantine importance for the territory of the Russian Federation includes...

American White Butterfly
Swedish oatmeal fly
bug harmful turtle
Asian migratory locusts

9. Among the dangerous pests of quarantine importance for the territory of the Russian Federation is...

potato moth
Colorado beetle
seed nutcracker
migratory locusts

10. Among the dangerous pests of quarantine importance for the territory of the Russian Federation is...

oriental moth
cabbage white
harmful turtle
migratory locusts

11. Among the quarantine pests that have a limited distribution on the territory of Russia is...

American White Butterfly
corn beetle diabrotica
Egyptian Cotton Armyworm
Asian migratory locusts

12. Among the quarantine pests that have a limited distribution on the territory of Russia is...

oriental moth
corn beetle diabrotica
Egyptian Cotton Armyworm
Asian migratory locusts

13. Among the quarantine pests that have a limited distribution on the territory of Russia is...

grape phylloxera
corn beetle diabrotica
Egyptian Cotton Armyworm
Asian migratory locusts

14. Quarantine pests with limited distribution in Russia include...

Western Flower Thrips
corn beetle diabrotica
Egyptian Cotton Armyworm
Asian migratory locusts

15. Among the quarantine pests that have a limited distribution on the territory of Russia is...

California Shield
corn beetle diabrotica
Egyptian Cotton Armyworm
Asian migratory locusts

16. Among the quarantine pests that have a limited distribution on the territory of Russia is...

potato moth
corn beetle diabrotica
Egyptian Cotton Armyworm
Asian migratory locusts

17. Among the quarantine pests that have a limited distribution on the territory of Russia is...

golden potato nematode
corn beetle diabrotica
Egyptian Cotton Armyworm
Asian migratory locusts

18. Only _
 - golden potato
 - stem onion
 - strawberry
 - Southern Gall
19. Quarantine for the Russian Federation corn disease...
 - diplodiosis
 - cob linen
 - bubble smut
 - rust
20. Quarantine for the Russian Federation corn disease...
 - southern helminthosporiosis
 - cob linen
 - bubble smut
 - rust
21. Quarantine for the Russian Federation corn disease, affecting mainly heterosis varieties with cytoplasmic male sterility...
 - southern helminthosporiosis
 - diplodiosis
 - bubble smut
 - rust
22. Quarantine for the Russian Federation sunflower disease...
 - phomopsis
 - white rot
 - contagion
 - false powdery mildew
23. Quarantine potato disease for the Russian Federation...
 - cancer
 - false cancer
 - late blight
 - wrinkled mosaic
24. The object of internal quarantine for the Russian Federation on potatoes...
 - cancer
 - false cancer
 - smut
 - late blight
25. The object of external quarantine for the Russian Federation on potatoes...
 - smut
 - rust
 - cancer
 - late blight
26. Potato bacterial disease – a quarantine facility for the Russian Federation...
 - brown rot
 - smut
 - wet rot
 - ring rot
27. Potato fungal disease – a quarantine object for the Russian Federation...
 - smut
 - brown rot
 - wet rot
 - alternariasis

28. The main area of pathogens of potato diseases that have quarantine status in the territory of the Russian Federation...
- Americas
 - Western Europe
 - border states of Eastern Europe
 - Southeast Asia
29. Quarantine for the Russian Federation wheat disease...
- Indian smut
 - hard smut
 - dusty smut
 - stem rust
30. Protective measure, most often used in case of suspected detection of diseases in batches of grain...
- fumigation
 - dusting
 - Spraying
 - pickling
31. Quarantine for the Russian Federation plum disease...
- sharka
 - rust
 - coccomycosis
 - Pockets
32. Quarantine pests of potatoes include...
- potato moth
 - Colorado beetle
 - bear
 - nutcracker beetle
33. Quarantine pests of potatoes include...
- golden potato nematode
 - stem potato nematode
 - field nutcracker
 - Common bear
34. What disease of grain crops is not registered in the territory of the Russian Federation?
1. Texas root rot
 2. Indian wheat smut.
 3. Southern corn helmithosporiosis
35. What potato disease is not registered in the territory of the Russian Federation?
1. Pale potato nematode
 2. Potato cancer
 3. Golden potato nematode
36. What disease of fruit crops is not registered in the territory of the Russian Federation?
1. Sharka (smallpox) plums
 2. Burn of fruit trees
 3. Sunflower phomopsis
37. What disease of spinning crops is not registered in the territory of the Russian Federation?
1. Texas root rot
 2. Brown potato rot
 3. Bacterial wilt of grapes
38. What disease of grapes is not registered in the territory of the Russian Federation?
1. Phylloxera

2. Golden yellowing of grapes
39. What disease of flowers is not registered in the territory of the Russian Federation?
 1. Ascochitic chrysanthemums
 2. Western (Californian) flower thrips
40. What disease of tree crops is not registered in the territory of the Russian Federation?
 1. California shield
 2. Pine stem nematode
 3. Sharka (smallpox) plums
41. What disease of grain crops is limited in the territory of the Russian Federation?
 1. Bacterial wilt of corn
 2. Bacterial striping of rice
 3. Southern corn helminthosporiosis
42. What potato disease is limited in the territory of the Russian Federation?
 1. Potato cancer
 2. potato smut
3. Colombian gall potato nematode
43. What disease of oilseeds is limited in the territory of the Russian Federation?
 1. Texas root rot
 2. Sunflower phomopsis
 3. Corn diplodiosis
44. What disease of fruit crops is limited in the territory of the Russian Federation?
 1. Burn of fruit trees
 2. Cancer of pine trunks and branches
 3. Sharka (smallpox) plums
45. What pest of potatoes and other nightshades is limited in the territory of the Russian Federation?
 1. Peach moth
 2. Potato moth
 3. California shield
46. What pest of fruit and berry and tree crops is limited in the territory of the Russian Federation?
 1. American white butterfly
 2. Phylloxera
 3. Western (Californian) flower thrips
47. What pest of vegetable and ornamental crops is limited in the territory of the Russian Federation?
 1. Phylloxera
 2. Potato moth
 3. Western (Californian) flower thrips
48. What pest of grapes is limited in the territory of the Russian Federation?
 1. Oriental moth
 2. Phylloxera
 3. American white butterfly

Evaluation criteria:

(in accordance with the current regulatory framework)

Compiled by _

Director of department ____

" _ " _

EXAM TICKETS

TICKET No1

1. Procedure for import, transit and export of vegetable cargoes.
Quarantine inspection.
2. Quarantine organisms, unregistered and limited-distributed on the territory of the Russian Federation.
3. Quarantine diseases not registered on the territory of the Russian Federation
Federation

TICKET No2

1. Economic efficiency of quarantine measures.
2. Modern structure of the state quarantine service
plants of Russia. Functions of the Rosselkhoz nadzor on plant quarantine with
quarantine laboratories and fumigation squads.
3. The role of agronomists for plant protection of farms in the implementation of quarantine
Functions.

TICKET No3

1. Coordinating role of all russian research Institute of Plant Quarantine (VNIIKR).
2. External and internal quarantine.
3. Structure of quarantine measures. Their inclusion in the technology cultivation of crops.

TICKET No4

1. Direct and indirect crop losses, decreased product quality.
2. Quarantine weeds not registered on the territory of the Russian Federation.
3. Potentially dangerous organisms for the Russian Federation

TICKET No5

1. Phytosanitary control of quarantine weeds.
2. Name the pests of grain crops that are not registered in the territory of the Russian Federation.
3. Name the pests of potatoes (other nightshades) and leguminous crops that are not registered in the territory of the Russian Federation.

TICKET No6

1. Phytosanitary control of pests, diseases and weeds technical Cultures
2. Phytosanitary control of pests, diseases and weeds of fruit Cultures.
3. Name the pests of spinning crops that are not registered in the territory of the Russian Federation

TICKET No7

1. Concepts of plant quarantine and quarantine facilities.
2. Phytosanitary control of pests, diseases and weeds of cereals and cereals.
3. Name the pests of fruit and woody plants that are not registered in the territory of the Russian Federation.

TICKET No8

1. Structure of quarantine measures. Their inclusion in the technology cultivation of crops.
2. Quarantine weeds not registered on the territory of the Russian Federation.
3. Potentially dangerous organisms for the Russian Federation

TICKET No9

1. Potentially dangerous organisms for the Russian Federation
2. Phytosanitary control of quarantine weeds.
3. Name the pests of grain crops that are not registered in the territory of the Russian Federation.

TICKET No10

1. Name pests of spinning crops that are not registered in the territory of the Russian Federation
2. Concepts of plant quarantine and quarantine objects.
3. Phytosanitary control of pests, diseases and weeds of cereals and cereals.

TICKET No11

1. The role of agronomists for plant protection of farms in the implementation of quarantine Functions.
2. Coordinating role of vserrussian research Institute of Plant Quarantine (VNIKR).
3. External and internal quarantine.

TICKET No12

1. Name the pests of potatoes (other nightshades) and leguminous crops that are not registered in the territory of the Russian Federation.
2. Phytosanitary control of pests, diseases and weeds technical to the Ulu.
3. Quarantine organisms, not registered and limited-distributed on the territory of the Russian Federation.

TICKET No13

1. Quarantine diseases not registered on the territory of the Russian Federation Federations.
2. The role of agronomists for the protection of plant farms in the implementation of quarantine Functions.
3. Phytosanitary control of pests, diseases and weeds of fruit Cultures.

TICKET No14

1. Tasks and main methods of laboratory quarantine examination.
2. Measures for internal quarantine of plants.
3. International cooperation in the field of plant quarantine. Cooperation with CIS countries.

TICKET No15

1. The importance and tasks of plant quarantine in the conditions of scientific and technical progress, changes in the principles of management, increase in requirements for

- environmental protection.
- 2. Biological basis of plant quarantine.
- 3. Organizational foundations of plant quarantine.

TICKET №16

- 1. Economic basis of plant quarantine.
- 2. Ways and ways of distribution of quarantine objects.
- 3. Economic damage from quarantine facilities.

Compiled by _

Director of department ____

" ____ " ____

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.

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