

## PHYTOPHARMACY AND ECOTOXICOLOGY (Master –Plants Protection., Ith Year of study, Ith Sem)

**Credit value (ECTS): 7**

**Course category: mandatory**

**Course holder:**

Phd. MIHAI T LMACIU

### **Discipline objectives (course and practical works)**

- It aims to provide the master's students with up-to-date information on the methods and techniques of applying phytopharmaceuticals to different agricultural and horticultural plants;
- It is planned to master knowledge of plant protection products.

### **Contents (syllabus)**

<b>Course (chapters/subchapters)</b>
1. Phytopharmaceuticals Phytopharmacy and agropharmacy: definitions and the purpose of phytopharmacy. Phytopharmaceutical divisions: Pesticide chemistry, pesticide use, pesticide circulation and action. The importance of chemical control and trends in the chemical control of diseases and pests.
2. General characteristics of pesticides. Classification of pesticides. Formulation of pesticides. Dosages and technique of pesticide application.
3. Pesticide residues. Storage and coating of pesticide treated organs. The biological significance of pesticides. Factors that determine the evolution of residues. Elements of pollution. Soil pollution
4. The agri-availability of pesticides. Factors influencing pesticide agri-availability. Bioavailability of pesticides. Types of agri-availability. Pathways through pesticides to parasitic fungi.
5. The mode of action of pesticides. Compatibility, synergism and antagonism of pesticide mixtures. Mixtures of pesticides used to combat diseases and pests within the framework of comprehensive control schemes. Recommended break intervals for pesticides used in plant protection and maximum permissible limits (IMAs) for pesticide residues in food and feed products.

<b>Practical works</b>
1. The chemistry of pesticides and the importance of chemical control of pathogens and pests.
2. Forms of conditioning of pesticide products.
3. The risk of environmental chemization, environmental toxicology and toxicity.
4. The toxicological characteristics determined by the chemical structure of fungicides, insecticides, mites and nematocides.
5. Pollution with pesticides, their spread, physical and chemical processes that cause the disappearance of pesticides, the remnants of pesticides
6. Toxicity of pesticide products, mode of action and determination of optimal doses.
7. Establishing the need for chemical treatments, their application times and recommended pesticide quantities
8. Methods of pesticide products application
9. Knowledge of pesticidal action on pathogens and pests.

### **Bibliography**

1. Perju Teodosie, L c tu u Matilda; Cat C., Andriescu I., Musta Ghe., 1989 - Entomophages and their use in integrated protection of horticultural ecosystems. Ceres Publishing House, Bucharest

2. Filipescu C., Georgescu T., T Imaciu M., 1989 - Practical works of Entomology. The general part. Internal use, Iasi.
3. Georgescu T., T Imaciu M., 1994 - Protection of vine and apple plants. Entomology course. Special Part and Combat Technologies. Internal use, Iasi.
4. Perju T., 1995 - Agricultural entomology, component of integrated protection of agrosystems. Ceres Publishing House, Bucharest.
5. T Imaciu M., Georgescu T., Badeanu Marinela, 1998 - Entomology. The special part. Internal use, Iasi.
6. Talmaciu M., 2002 - Plant protection - Entomology, course, internal use. , U.S.A.M.V. Iasi.
7. Boguleanu Gh. 1994- Fauna harmful to agricultural and forestry crops in Romania, Ceres Publishing House, Bucharest.

### **Evaluation**

<b>Evaluation form</b>	<b>Evaluation Methods</b>	<b>Percentage of the final grade</b>
Course	Exam: Test with various items	70%
	presence	
Practical works	Oral, case study, investigation, evaluation during the semester	30%

### **Contact**

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## **PHYTOPHARMACY AND ECOTOXICOLOGY (Master –Plants Protection., Ith Year of study, Iith Sem)**

**Credit value (ECTS): 8**

**Course category: mandatory**

**Course holder:**

Phd. MIHAI T LMACIU

**Discipline objectives (course and practical works)**

- It aims to provide the master's students with up-to-date information on the methods and techniques of applying phytopharmaceuticals to different agricultural and horticultural plants;
- It is planned to master knowledge of plant protection products.

**Contents (syllabus)**

<b>Course (chapters/subchapters)</b>
1. The risk of environmental chemization, environmental toxicology and toxicity Toxicological characteristics determined by the chemical structure of fungicides, insecticides, acaricides. Pesticide pollution, their spread, physical and chemical processes that cause the disappearance of pesticides, the remnants of pesticides.
2. Phytopharmaceuticals used in the treatment of seeds against diseases and pests. Presentation of the fungicides and insecticides used in the treatment of seeds of wheat grains: wheat, barley, oats, corn, sunflower seeds, beetroot glomeruli, legume seeds for grains: peas, beans, soy.
3. Foliar treatments in cereals. Phytopharmaceuticals used in foliar treatments in grain crops and technical plants.
4. Treatments in tree plantations. Phytopharmaceuticals used to fight diseases and pests in apple plantations. Presentation of fungicides, insecticides and acaricides used in apple, pear, plum, cherry, cherry and peach plantations.
5. Treatment in plantings of vines. Phytopharmaceuticals used in vine plantations. Presentation of fungicides, insecticides and acaricides used in vine plantations for the prevention and control of diseases and pests.
6. Treatments in vegetable crops. Phytopharmaceuticals used to prevent and control diseases and pests in vegetable crops. Presentation of the main fungicides, insecticides, acaricides and nematocides used in tomato, eggplant, pepper, cabbage, cauliflower, onion and cucumber crops.

<b>Practical works</b>
1. Residues of pesticides: identification, tolerances, methods for their determination.
2. The qualitative parameters of agricultural products following the application of pesticides
3. Presentation of fungicides and insecticides used to treat seeds of wheat grains: wheat, barley, oats, rye, corn, sunflower seeds, beetroot glomeruli and legume seeds for beans: peas, beans and soy.
4. Presentation of fungicides in foliar treatments from cereals.
5. Presentation of insecticides used in foliar treatments of cereals.
6. Presentation of fungicides, insecticides and acaricides used in tree plantations.
7. Presentation of fungicides, insecticides and acaricides used in vine plantations.
8. Presentation of fungicides, insecticides, acaricides and nematocides used in vegetable crops.

**Bibliography**

1. Perju Teodosie, L c tu u Matilda; Cat C., Andriescu I., Musta Ghe., 1989 - Entomophages and their use in integrated protection of horticultural ecosystems. Ceres Publishing House, Bucharest

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