

MODERN METHODS OF IDENTIFICATION OF PHYTOPATHOGENS

Department of plant protection

<i>Academic term</i>	2
<i>Educational level</i>	<i>The third (educational and scientific)</i>
<i>Number of ECTS credits</i>	4
<i>Form of control</i>	credit
<i>Audit hours</i>	120 (12 hrs. of lectures, 24 hrs. of practical classes, 84 hrs. of individual work)

A general description of the discipline

The program of the course Modern methods of identification of phytopathogens aims to help postgraduate students to acquire theoretical knowledge of modern methods of determining pathogens of plants of different etiology. Postgraduate students will be able to practice some techniques in special laboratories (phytosanitary of laboratory, PCR laboratory). The acquired skills and knowledge will be useful for conducting scientific research.

The course consists of the following parts: basic methods of diagnostics of plant diseases, determination of pathogens of diseases of different etiology.

Topics for learning:

Visual diagnostics of plant diseases.

Biological analysis for diagnostics of plant pathogens.

Luminescent method for diagnostics of plant diseases.

Diagnostic methods based on the interaction of antibodies with antigens of phytopathogens.

Diagnostic methods based on the analysis of phytopathogen nucleic acids.

Diagnosis of non-contagious plant diseases.

Topics of practical classes:

(seminars, practical and laboratory classes)

Study of types of symptoms of non-contagious diseases.

Study of the types of mycosis symptoms.

Study of types of bacteria symptoms.
Study of the types of symptoms of the virus.
Sterilization of laboratory glassware.
Preparation of nutrient medium for the determination of mushrooms.
Preparation of the nutrient medium for the detection of bacteria.
Study of the selection area for identification of phytopathogenic bacteria.
Isolation of mushrooms in a humid area.
Physical diagnosis of buckwheat seeds.
The essence of PCR diagnostics of fungi of the genus *Alternaria*.
The study of molecular methods of diagnosis of fungi of the genus *Fusarium*.
Study of visual diagnostics of non-contagious maize diseases
Study of the diagnosis of fungus fungi.
Study of features of diagnostics of soot diseases of cereals.
Study of the diagnosis of rusty cereal diseases.
Study of the diagnosis of rusty diseases of fruit and berry crops.
Study of the features of barley spotting diagnostics.
Study of the diagnostics of Cladosporiosis of different plants.
Study of the features of diagnostics of phomoses of different plants.
Introduction to the diagnostics of anthracnose of different plants.
Study of the diagnostics of alternative plants of different plants.
Study of features of diagnostics of phyto-bacteria of the genus *Erwinia*.
Study of the diagnostics of phyto-bacteria of the genus *Rhizobium*.
Study of features of diagnostics of phyto-bacteria of the genus *Pseudomonas*.
Study of features of diagnostics of VZKY in cereals.