Course Unit Descriptor

Study Programme: Phytomedicine

Course Unit Title: *Biological Contamination of Agricultural Products*

Course Unit Code: 19.FT2001

Name of Lecturer(s): Prof. Ferenc Bagi, prof. Aleksandra Popović, Asst. Prof. Miloš Petrović, Teaching Assistant Tatjana Dudas

Type and Level of Studies: Undergraduate academic studies

Course Status (compulsory/elective): Compulsory

Semester (winter/summer): summer

Language of instruction: Serbian/English

Mode of course unit delivery (face-to-face/distance learning): face-to-face

Number of ECTS Allocated: 6

Prerequisites: Microbiology, Outlines of Entomology, Insect Systematics and Medical Entomology

Course Aims: Familiarization with the risks of contamination of agricultural products by biological pollutants. Sources of biological contamination of food. Introduction to biological contaminants in food, the conditions that support their development, and preventive measures for reducing the formation of harmful metabolites (mycotoxins) in agricultural products, as well as measures for eliminating pests and possibilities for food decontamination.

Learning Outcomes: Production of safe food for both humans and animals, free from pests and mycotoxins.

Syllabus:

Theory – Entomology: Economic importance and specificity of pests; assessment of losses. Major pests of stored grains, flour, legume seeds, medicinal plants, dried and nut fruits, and cured meat products. Key pests of fruit crops and root/tuber vegetables. Lectures will cover species names, taxonomic position, morphology, biology, economic importance, and symptoms of damage. Phytopathology: Morphological and cultural characteristics of the most important mycotoxigenic fungal species belonging to the genera *Aspergillus*, *Fusarium*, *Alternaria*, *Penicillium*, and *Claviceps*. Disease symptoms. Conditions enabling colonization of plant organs and products and the formation of harmful metabolites. Mycotoxins. Possibilities for preventing contamination of plants and their products.

Practice - Entomology: Specific methods for detecting pests in storage facilities, including visible and hidden infestations. Identification of harmful insect species; morphology and symptoms of damage — examination of prepared and preserved specimens and characteristic injury patterns. Phytopathology: Practical training (microscopy) and identification of toxigenic microorganisms.

Required Reading:

Milićević, D. (2016): Mycotoxins in the food chain – chemical, biological and health aspect (in Serbian). Institute of Meat Hygiene and Technology, Belgrade

Sinovec,Z.J., Resanović, R.M., Sinovec, S.M. (2006): Mycotoxins, presence, effects and prevention (in Serbian). University of Belgrade, Faculty of Veterinary Medicine

Lević, T.J. (2008): Species of the Genus Fusarium (in Serbian). The Maize Research Institute, Zemun Polje

Almaši, R., Injac, M., Almaši, Š. (2004): Harmful and beneficial organisms of pome fruits (in Serbian). Faculty of Agriculture, Novi Sad

Štrbac, P. (2002): Stored products pests (in Serbian). Faculty of Agriculture, Novi Sad

Study materials will be provided in English on request.

Weekly Contact Hours: 6	**Lectures: 4**	**Practical work: 2**

Teaching Methods:

Teaching is carried out using modern techniques. Visual - didactic methods with the use of modern teaching aids and laboratory equipment. Practical classes - management of individual work of students and demonstrative - illustrative methods

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	**Final exam**	points
Active class participation (seminars)	5	written exam	60
Practical work		oral exam	
Preliminary exam(s)	35	…….	

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.