Course Unit Descriptor

Study Programme: Phytomedicine

Course Unit Title: Fungicides

Course Unit Code: 19.FT1005

Name of Lecturer(s): Full Professor Slavica Vuković
Name of Associate(s): Assistant with a Ph.D Antonije Žunić

Type and Level of Studies: Undergraduate academic study

Course Status (compulsory/elective): Compulsory

Semester (winter/summer): Winter

Language of instruction: English

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

Number of ECTS Allocated: 4

Prerequisites: Basics of Phytopharmacy

Course Aims:
The aim of the course is to provide students with knowledge about: fungicide properties (physical-chemical, biological spectrum of action, side effects, risk assessment of resistance), the assessment of biological effects (toxicity, efficacy, phytotoxicity) and strategies in the application of fungicides.

Learning Outcomes:
Acquired knowledge will contribute to training of individuals for work in the field of contemporary applications of fungicides in the production of crops, vegetables, fruits and wine and horticulture.

Syllabus:
Theory
The history, significance, systematization and application, inorganic fungicides for plant treatment (copper, sulphuric compounds). Synthetic fungicides – physical-chemical and biological properties, mechanism and spectrum of action (FRAC code list): A:nucleic acids metabolism; B:cytoskeleton and motor protein; C:respiration; D:amino acids and protein synthesis; E:signal transduction; F:lipid synthesis or transport/membrane integrity or function; G:sterol biosynthesis in membranes; H:cell wall biosynthesis; I:melanin synthesis in cell wall; P:host plant defence induction; U: unknown mode of action; M:chemicals with multi-site activity; BM:biologicals with multiple modes of action; Biofungicide, significance, division and conditions for application; Monitoring of resistance of phytopathogenic fungi to fungicides, causes and strategies to overcome resistance, with emphasis on prophylactic measures; Plant protection programs against diseases of small grains, maize, industrial plants, vegetables; stone fruit, grapes, berries and nuts, medicinal, ornamental and forage crops, stored products; Possibilities of preparing fungicide preparations by mixing several compounds; Application of fungicides in conventional, integral and organic agriculture.
Practice
Methods of fungicide application; fungicide efficacy assessment; toxicity-LD_{50} or LC_{50}, LT_{50} of fungicides; probyt analysis (p-ld, lc-p lines and the level of toxicity); effects of preparations for seed treatment; testing the difference of effects of fungicides; systemic effect of fungicides; prophylactic and curative effects of fungicides in fruit; phytotoxicity tests; effect of biofungicides; development of programs for protection of cultivated plants from diseases.

Required Reading:

1. Inđić, D., Vuković, S.: Praktikum iz Fitofarmacije (fungicidi, zoocidi), Poljoprivredni fakultet, Novi Sad, 2012.
2. Vuković, S., Šunjka, D.: Biopesticidi, Poljoprivredni fakultet, Novi Sad, 2022.
3. Kolektiv autora: Pesticidi u poljoprivredi i šumarstvu u Srbiji 2024, Društvo za zaštitu bilja Srbije, Beograd, 2024.
4. Janjić, V.: Fitofarmacija. Društvo za zaštitu bilja Srbije, Beograd, 2005.
5. Copping, L.G.: The Manual of Biocontrol Agents, BCPC, UK, 2009.
6. MacBean, C. (Ed): The Pesticide Manual, Sixteen Edition. British Crop Protection Council, Farnham, 2012.

Weekly Contact Hours:3+2	**Lectures:** 45	**Practical work:** 30

Teaching Methods:
Lectures, Practical classes, Research work

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	**Final exam**	points
Active class participation	5	written exam	50
Practical work	20	oral exam	25
Preliminary exam(s)		…….	

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