Sveučilište u Zagrebu Agronomski fakultet
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Plant viruses transmitted by vectors (226416)

Nositelj predmeta

prof. dr. sc. Darko Vončina

Opis predmeta

The main objective of course is to give Knowledge about different plant viruses that are transmitted by vectors (fungi, pseudofungi, insects, mites, nematodes). Through the course students will learn about structure, ecology and epidemiology of economically most important plant viruses which vectors are mentioned organisms, learn about virus-vector-plant interactions that are happening on molecular level and possibilities of their control or slowing down their spread.

ECTS: **3.00**

E-učenje: **R2**

Sati nastave: 30
Predavanja: 24
Auditorne vježbe: 4
Seminar: 2

Izvođač predavanja

- prof. dr. sc. Tanja Gotlin Čuljak
- prof. dr. sc. Dinka Grubišić

Izvođač vježbi

- prof. dr. sc. Darko Vončina

Izvođač seminara

- prof. dr. sc. Darko Vončina

Ocjenjivanje

Dovoljan (2): 60 – 69,9%
Dobar (3): 70 – 79,9%
Vrlo dobar (4): 80 – 89,9%
Izvrstan (5): 90 – 100%

Uvjeti za dobivanje potpisa

Attendance to instructions is obligatory. To get the right for signature students must be present on minimum 80% of all types of instructions. Reasonable absence must be documented. Final grade is consisted of activity on instructions, grade from seminar work and grades on oral and written exams.

Vrsta predmeta

- Graduate studies / MS Courses taught in English (Izborni predmet, 1. semestar, 1. godina)

Oblici nastave

- Lectures
- Seminars
- Exercises

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Ishodi učenja i način provjere

Ishod učenja	Način provjere
Explain adversity of plant viruses transmitted by vectors and their pathogenesis.	
Classify plant viruses transmitted by vectors.	
Distinguish main groups of vectors that are transmitting plant viruses.	
Explain types of transmission of plant viruses by aphids.	
Explain interactions virus-vector-host plant on molecular level.	
Explain ecology, epidemiology and specific of vector transmission for certain plant viruses.	
Choose the most suitable method for control or slowing down vector transmission of some plant viruses.	
Conduct transmission of viruses by insect vectors in laboratory conditions.	

Tjedni plan nastave

1. Adversity of plant viruses transmitted by vectors, role of vectors in pathogenesis of plant viruses
2. Review of the most important vector species of plant viruses (aphids, mealybugs, thripses, cicadas), their characteristics; main transmission types by aphids (persistent, semi-persistent and non-persistent way of transmission)
3. Review of the most important plant pathogenic nematodes - vectors of viruses, species from genus Xiphinema, Longidorus, Paralongidorus, Trichodorus and Paratrichodorus and their characteristics; review of mites, vectors of plant viruses.
4. Review of the most important fungi and pseudofungi species which are vectors of plant viruses, their ecology, epidemiology and control possibilities.
5. Detail review of plant virus genus transmitted by vectors: structure, ecology, epidemiology, transmission specificity.
6. Factors that determine specificity of transmission and virus-vector-host plant interactions on molecular level.
7. Detail review of the economically most important plant viruses transmitted by vectors in Croatia, their ecology, epidemiology and control strategies in annual and perennial crops.
8. Practical work (literature review) and presentation of spreading of viruses from the grapevine leafroll complex.
9. Practical/laboratory transmission of viruses from the grapevine leafroll complex from infected to healthy grapevine plants using mealybugs.
10. Presenting the seminars with subjects connected to course topics.

Obvezna literatura

1. Juretić, N. (2002). Osnove biljne virologije, Školska knjiga, Zagreb.
2. Agrios, G. N. (2004). Plant Pathology, fifth edition, Elsevier academic press, New York
3. Krstić, B.; Bulajić, A. (2007). Karantenski virusi povrća i ukrasnih biljaka u zaštićenom prostoru, Univerzitet u Beogradu - Poljoprivredni fakultet, Beograd.
4. Oštrec, Lj., Gotlin Čuljak T. (2005). Opća entomologija. Zrinski d. d., Čakovec
5. Course written and PowerPoint material

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Preporučena literatura

1. Khan j. A.; Dijkstra J. (2006). Handbook of Plant Virology, Food products press, New York
2. Harris K. F., Smith O. P., Duffus J. P. (2001).Virus-Insect-Plant Interactions, 1st Edition. Academic Press, New York
3. Hadidi A., Khetarpal R. K., Koganezawa H. (1998). Plant virus disease control, APS Press, New York.