

Syllabus for:

PNS0079 Plant-microbe interactions, 6hp

Växt-mikrobinteraktioner

Syllabus approved: 7 December 2010

Subject: Biology

Course type: Subject course

Language: English

Prerequisites: The course is primarily for PhD students within the SLU Graduate School in Organism Biology but will be open for all interested PhD students/researchers.

Objectives: After completion of the course the student is expected to be able to:

- comprehensively discuss interactions between plants and pathogenic fungi, bacteria and viruses as well as the defence reactions of the host plant (biotic stress)
- comprehensively discuss interactions between plants and non-pathogenic/symbiotic bacteria and fungi
- create hypotheses for why plants and microbes react in certain ways in pathogenic and symbiotic interactions
- demonstrate insight into the consequences, on population and ecosystem level, of compatible and incompatible interactions

Content: In the course, interactions between plants and microbes are discussed on general and detailed level for both pathogenic and symbiotic interactions. Infection mechanisms, defence of plants and stress responses and a large number of important problems within agriculture, horticulture and forestry are taken up. Examples are brought from ongoing research at SLU, Helsinki University and Norwegian University of Life Sciences and are presented by the researchers themselves. Topics that are covered are:

- infection mechanisms; attachment; enzymes; the role of toxins and other compounds; invasion of plant tissue
- establishment of symbiotic relations (mycorrhiza, rhizobium)
- resistance mechanisms against attack by plant pathogens (including nematodes) and insects; gene-for-gene interactions; induced resistance; non-host resistance

Examination: Approved attendance in all activities and passed written exam.

Contact for application and further information:

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Literature: Review articles.

Additional Information: This course is given as a postgraduate course within the SLU Graduate School in Organism Biology in collaboration with Helsinki University and Norwegian University of Life Sciences. The lectures are given by the three universities and shown through videoconference equipment. The postgraduate course is arranged as a part of an MSc course at SLU.