BRPP2201 Biological control and integrated protection

[22.5h] 2 credits

This course is taught in the 1st semester

Teacher(s): Thierry Hance, Henri Maraite
Language: French
Level: Second cycle

Aims

The aim of the course is to provide the scientific and technical base for understanding the development of biological control methods of pests and diseases and to valorise them in integrated crop protection strategies. The capacity of critical analysis of the possibilities and limitations of the current products and of strategies under development will also be developed.

Main themes

The course is structured in a part devoted to biological control of pests and another to that of diseases. The content is complementary to that of the other courses of integrated crop protection.
Control of insects and mites. In depth analyses of the mechanisms underlying population growth and fluctuation. Studies of the plant-insects, prey-predatory and host-parasitoid systems. Modelling of these systems for their use in biological control. Systems of production, diffusion and quality control of the beneficials.
Control of diseases. Analyses of the possibilities and constraints related to the limitation of the development of plant pathogenic viruses, bacteria or fungi by the introduction and/or the stimulation of competitors or parasites, as well as through induced resistance in the plant. Technical and legal parameters to be taken into account.

Content and teaching methods

Biological control of insects and mites. In depth analyses of the mechanisms underlying population growth and fluctuation. Studies of the plant-insects, prey-predatory and host-parasitoid systems. Modelling of these systems for to their uses in biological control. Systems of production, diffusion and quality control of beneficials.
Biological control of diseases. Analyses of the possibilities and constraints related to the limitation of the development of plant pathogenic viruses, bacteria or fungi by the introduction and/or the stimulation of competitors or parasites, as well as through induced resistance in the plant. Technical and legal parameters to be taken into account.
After the presentation of these elements by the lectures, seminars are organized during which the students present scientific articles illustrating these elements, as starting point for thorough analyses and discussions allowing to place the biological control methods within the framework of the integrated crop protection.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Knowledge of the basic concepts provided through the entomology, microbiology and phytopathology courses is required. It can also be acquired or supplemented by personal reading. A copy of the PowerPoint presentations as well as of the scientific papers used as teaching support is made available. A list of books allowing the deepening of allowing the deepening of the course is provided. The evaluation is on the basis of the individual seminar and on oral examination.

Other credits in programs

BIR23/9A	Troisième année du programme conduisant au grade de bio-ingénieur : sciences agronomiques (Protection intégrée des plantes)	(2 credits)	Mandatory