

Faculty of Biological, Agronomic and Environmental Engineering

BRPP2203 Phytopharmacy

[22.5h] 2 credits

This course is taught in the 1st semester

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

Aims

Provide the students with a specialized training for integration and optimisation of pesticide use in integrated crop protection. Capacity development in unbiased analyses of the main risk factors associated with pesticide use in agriculture, as well as with their potential side effects.

Main themes

Basic concepts of phytopharmacy, as well as trends in the pesticide use and market. Elements of toxicology and systems of assessment of fate and impact of pesticides in the plant and the environment, as well as the risk of undesirable side effects. Systematic analysis of the main insecticide, acaricide, herbicide or fungicide active ingredients with their mode of action, their uses, the risk of resistance development. Formulation and methods of pesticide application. Methodology of development of new active compounds. National and international legislation for pesticide registration and use. Actions for a sustainable use of pesticides in integrated pest management systems.

Content and teaching methods

In introduction the concepts of pesticide, crop protection compound, and biocide are clarified and the importance and the constraints of the crop protection industry are documented and discussed. The evolution in fungicides, insecticides¹ and herbicides² are analysed, with for the various families of active ingredients the mode of action, the uses, the risk of resistance development as well as the anti-resistance strategies. Advantages and constraints of the various types of formulations and methods of pesticide applications¹. Side effects, elements of pesticide toxicology and residues, fate of pesticides in the environment and ecotoxicology. Legislation and regulation for registration and pesticide use³. Good pesticide use practices and systems integrated crop protection. Professor W. Steurbaut¹ and R. Bulcke² of Universiteit Gent and Mr. G Houins³ of the AFSCA contribute to this teaching.

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

Basic concepts in physicochemistry, ecology, crop science and plant health are required. The PowerPoint presentations in PowerPoint used as teaching support are made available to the students. A list of books, available for consultation at the library of the Unit of Phytopathology and allowing the deepening of the course, is provided. The evaluation is based on a written 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
-----------------	---	-------------	-----------