

Insect Chemical Ecology

The main objective of the course is to give the students a broad knowledge of chemical ecology. Focus will be on: The impact of chemical stimuli on insect behaviour, function of smell and taste in insects, evolutionary aspects, behaviourally active chemicals, chemical analyses and the use of behaviourally active compounds in plant protection.

Prerequisites Courses corresponding to 120 ECTS (80 SUC) of which at least 90 ECTS (60 SUC) in Biology.

Credits 15 ECTS

Placement 14 January - 14 March 2008, 100%, daytime

Application code SLU-30093

Level and depth Master CD

Subjects Chemistry, Biology

Language English

Course organiser [Plant Protection Biology](#)
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Kemisk ekologi hos insekter

Marking scale: Pass / Failed

Objective On completion of the course, students will be able to:

- describe the general morphology of the chemosensory system in insects and make comparisons with the system in vertebrates
- explain how chemical signals are processed from detection to behaviour
- explain the influence of chemical stimuli on insect behaviour from an ecological and evolutionary perspective
- describe biosynthesis pathways for behaviour-activating substances
- describe the process of isolation and chemical identification of behaviour-activating substances
- evaluate the use of behaviour-activating substances, pheromones and plant compounds, within crop protection
- plan and design an experiment and implement methods relevant for the area
- discuss relevant scientific articles within chemical ecology.

Content The course will begin with a short introduction to basic ecological concepts and principles and an introduction to chemical ecology and the behaviours in insects that are controlled by chemical stimuli. It will then discuss our own sense of smell and taste and link this to the sense of smell in insects and how smell and taste affect insect behaviour. The course will also deal with the use of pheromones and plant compounds within crop protection. The subjects dealt with include:

- how chemical substances, pheromones and plant compounds, affect insect behaviour
- from nerve stimulation to behaviour - how chemical signals are processed
- fundamental smell and taste chemistry - isolation and chemical identification of behaviour-activating substances

- insect sense of smell - morphology and function
- learning in insects
- how pheromones and plant compounds can be used within crop protection.

Implementation	Lectures approx. 30 hours Practicals/laboratory work approx. 40 hours (compulsory) Project work approx. 180 hours (compulsory) Literature seminars approx. 10 hours (compulsory) Examination approx. 10 hours Literature studies/Independent study approx. 135 hours Total approx. 405 hours
Literature	Required reading is assigned by the responsible department. Current information about course literature should be available at the latest one month before the start of the course.
Examination	Written/oral examination plus reporting of practical tasks and laboratory work.
Course credit	Pass in the examination and assignment work, plus approved participation in compulsory course components.
Responsible department	Plant Protection Biology (from 1 January 2007)
Location	Alnarp