

Modulnummer	Modulname Ecological Roles of Plant Secondary Metabolites – with focus on PAs	
Studiengang M.Sc. Forstwissenschaften/Forest Sciences M.Sc. Umweltwissenschaften/ Environmental Sciences	Profillinie (PL)/Wahlpflicht (WP) PL Landnutzung und Naturschutz PL Waldwirtschaft PL Wildlife, Vegetation a. Biodiversity PL Forest Ecology and Management PL Biomaterials and Bioenergy PL Umweltmodellierung und GIS PL Ökologie des Klimawandels WP	Fachsemester / Turnus 3 / jedes WiSe 3 / jedes WiSe
Lehrform practical lab-work, lectures	Teilnahmevoraussetzung interest in ecology and chemistry	Sprache englisch
Prüfungsform (Prüfungsdauer) report in the style of a manuscript		ECTS-LP (Workload) 5 (150 h, davon 50 Präsenz)
Modulkoordinator/in Prof. Dr. Michael Boppré		
Weitere beteiligte Lehrende PD Dr. Jürgen Kreuzwieser, Dr. Tim Burzclaff		
<p>Inhalte</p> <p>This module integrates a broad set of approaches to understand plant secondary metabolites and their ecological roles in depth; we use pyrrolizidine alkaloids (= PAs) and their metabolites / degradation products as a fascinating example for insect-plant relationships. Chemo-ecological research combines knowledge from various disciplines: natural product chemistry (e.g. analytics, pheromones, volatile organic compounds (VOCs)), biology (e.g. ethology, communication, morphology), ecology (e.g. trophic relations, mutualisms).</p> <p>We will perform a small research project with a group of secondary plant metabolites (pyrrolizidine alkaloids, PAs) which are touching all the fields mentioned above. Students will learn to collect and analyse volatile compounds released by plants with modern techniques; and to interpret the raw data obtained. Moreover, bioassays will be conducted to study the attraction of PAs for Lepidoptera. For this purpose, choice-experiments will be performed in the greenhouse with an array of PAs and several lepidopteran species. The data derived from these experiments will be evaluated and integrated into our knowledge of 'PA-ecology'; e.g. specificity, intra- and interspecific variability of PAs, by writing a report in the style of a manuscript.</p> <p>In addition, lectures are presented providing the chemical and ecological background.</p>		
<p>Qualifikations- und Lernziele</p> <p>Students learn to</p> <ul style="list-style-type: none"> • understand complex chemo-ecological contexts (1,2) • understand the technology of chemical analyses of VOCs(1,2,3) • plan and perform ethological experiments (biotest) (3) • evaluate results of both, chemical analyses and bioassays (4,5) • write report in the style of a manuscript (4,5) <p>Klassifikation der Qualifikations- und Lernziele nach BLOOM (1973): 1= Kenntnisse: Wissen reproduzieren können; 2= Verständnis: Wissen erläutern können; 3= Anwendung: Wissen anwenden können; 4= Analyse: Zusammenhänge analysieren können; 5= Synthese: eigene Problemlösestrategien angeben können; 6= Beurteilung: eigene Problemlösestrategien beurteilen können</p>		

Literatur und Arbeitsmaterial

Pflichtlektüre

Weiterführende Literatur

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Zusätzliche Angaben:

Zeitliche Lage: KW 49 – 51 (2013)

Prüfer/in: Boppré

Prüfungstermin: 20.12.2013

Maximale Teilnehmerzahl: 5

Raumbedarf: ---

Englischer Titel (bei neuen Modulen): s.o.