

MSc Biology FU Berlin

"Introduction to Advanced Biology" / Einführungsmodul

Week 7: Biodiversity, Evolution, Ecology

Winter term 2012/13: Lecture 9:00 to 10.45 h and Tutorium: 10:45 – 11.30 h

Day	Date	Lecturer	Topic
1	Monday, Dec. 3	Prof. Dr. Monika Hilker	Lecture: Biocommunication in Food Webs: Introduction to Chemical and Molecular Ecology Tutorium: Biocommunication in Food Webs: Experimental Studies
2	Tuesday, Dec. 4	Jun.Prof. Dr. Anke Steppuhn	Lecture: Chemical and Molecular Ecology: Interactions among Plant Defences against Herbivores Tutorium: Experimental study: Resistance management in a native plant
3	Wednesday, Dec. 5	Jun.Prof. Dr. Susanne Wurst, Jun.Prof. Dr. Britta Tietjen	Lecture: Plants and Their Environment: Understanding Interactions in Terrestrial Ecosystems - above- and belowground interactions - biotic and abiotic interactions Tutorium: - spatial vegetation patterns in drylands - introduction to modelling
4	Thursday, Dec. 6	Prof. Dr. Matthias Rillig, Dr. Stefan Hempel, Dr. Tancredi Caruso, Dr. Stavros Veresoglou	Lecture: Plant and Mycorrhizal Ecology Tutorium: Introduction into ecological synthesis

Literature:

Day 1:

- (a) Review:
Dicke, M. (2009). Behavioural and community ecology of plants that cry for help. *Plant, Cell and Environment* 32: 654-665.
- (b) Original Research:
Beyaert, I. et al. (2012). Can insect egg deposition „warn“ a plant of future feeding damage by herbivorous larvae? *Proc. Roy. Soc. London, Ser. B* 279: 101-108.

Day 2:

- (a) Review :
Rasmann, S. and Agrawal, A.A. (2009). Plant defense against herbivory: progress in identifying synergism, redundancy, and antagonism between resistance traits. *Current Opinion in Plant Biology* 12, 473-478.
- (b) Original Research:
Steppuhn, A. and Baldwin, I.T. (2007). Resistance management in a native plant: nicotine prevents herbivores from compensating for plant protease inhibitors. *Ecology Letters*. 10, 499-511.

Day 3:

- (a) Review:

Wardle et al. (2004). Ecological linkages between above and belowground biota. *Science* 304 (5677): 1629-1633.

Rietkerk, M., S. C. Dekker, et al. (2004). Self-organized patchiness and catastrophic shifts in ecosystems. *Science* 305 1926-1929.

(b) Original Research:

Wolfe et al. (2005). Effects of a belowground mutualism on an aboveground mutualism. *Ecology Letters* 8: 218-223.

Gilad, E., J. Von Hardenberg, et al. (2007). A mathematical model of plants as ecosystem engineers. *Journal of Theoretical Biology* 244(4): 680-691.

Day 4:

(a) Review: Verbruggen et al. (2012) Mycorrhizal fungal establishment in agricultural soils: factors determining inoculation success. *New Phytologist* DOI: 10.1111/j.1469-8137.2012.04348.x

(b) Original Research: Caruso et al. (2012). Compositional divergence and convergence in arbuscular mycorrhizal fungal communities. *Ecology* 93: 1115–1124.