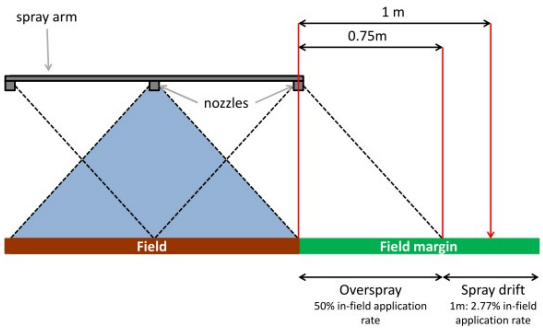
14.12.15

Research Project course (RPC) or Master thesis in the research group „Community Ecology & Ecotoxicology"

The research of the group "Community Ecology & Ecotoxicology" which is headed by Dr. Carsten Brühl is concerned with multiple stressors in landscapes and focuses also on the effects of pesticides on biodiversity and communities. Pesticides as well as biocides are considered to have effects that are responsible drivers for changes in terrestrial and aquatic food webs. Amongst other things, we currently researching the effects of common pesticides and agricultural practice on wild bee species and insect pollinators in general.



Overspray/drift scenario of a field margin (Figure from Hahn et al. (2015)).

Master thesis:

Pesticide exposure assessment of flowering plants in field margins

Start: Februar/March 2016


Spray application using edge nozzles (Photo: Dr. Heribert Koch, DLR Rheinhessen).

To assess the risk of in-field pesticide application for non-target pollinator species in off-field habitats an understanding of the exposure of flowering plants in field margins is necessary. The current agricultural practice in Germany is to overspray part of the first meter of off-field habitat to ensure a 100% application rate in-field. Therefore, high pesticide doses are input in a non-target area. Flowers may be especially exposed since they are generally situated above the grass canopy and might therefore collect a higher amount of pesticide residues. So far no information is available on this aspect. In this study you will quantify pesticide inputs to flowering plants in field margins. Furthermore, you will assess the efficiency of drift reducing measures such as edge nozzles.

Some initial information can be found in: Hahn, M., Schmidt, T. & Brühl, C.A. (2015). Pesticides and non-target terrestrial invertebrates. In: Brühl, C.A., Alscher, A., Berger, G, Bethwell, C., Graef, F., Hahn, M., Schmidt, T., Weber, B. (2014). Protection of Biodiversity in the Risk Assessment and Risk Management of Pesticides (Plant Protection Products & Biocides) with a Focus on Arthropods, Soil Organisms, and Amphibians. Main Report of UBA Research and Development Project Nr. 3709 65 421.
http://www.umweltbundesamt.de/publikationen/protection-of-biodiversity-in-the-risk-assessment
Have a look into section 3.2.

The technical supervisor for all aforementioned studies will be Philipp Uhl who will also provide you background information, literature and guidance during all tasks.

If you are interested in joining the project team please contact him (uhl@uni-landau.de). Please also don't hesitate to propose you own research ideas.