

Master theses in functional biodiversity

Yield performance and biodiversity-based ecosystem services in mixed cropping systems with novel genotypes: implications for plant breeding



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The biodiversity within agricultural systems (functional agrobiodiversity) can facilitate ecosystem functions and enhance agricultural productivity. Innovative breeding approaches aim to optimize crop plant traits to design efficient crop mixtures that have synergistic effects on multiple ecosystem services and agricultural production.

Within the framework of the IMPAC³ Project (<https://www.uni-goettingen.de/en/528245.html>) we will

- (1) investigate the beneficial effects of mixed cropping and plant functional diversity on taxonomic and functional diversity of pollinators, predators and herbivores
- (2) identify sets of plant traits that facilitate positive effects on ecosystem services and that can be targeted in innovative breeding programs for mixed cropping systems
- (3) test the hypothesis that functional complementarity within and across trophic levels will increase the yield performance and biodiversity-based ecosystem services in mixed cropping systems

In mixed cropping systems (arable land and grassland) we will quantify flower-visitors (standardized observations), epigeic predatory arthropods (pit fall traps) and pest species and their natural enemies (standardized ratings). Effects of plant functional diversity (based on plant traits) on taxonomic and functional diversity of mutualists and antagonist will be analyzed. The field work will be conducted in spring/summer 2018 near Göttingen (Reinshof and Deppoldshausen).

If you are interested in these master theses please contact:

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