

## Master thesis

### Resource utilization of bumblebees in faba bean landscapes



Pollination is an important ecosystem service, which is endangered by wild pollinator declines due to agricultural intensification. Mass flowering crops, like oilseed rape or faba beans can contribute to biodiversity conservation and restoration in agricultural landscapes, since they provide pollen and nectar resources for insects.

We will analyze the effect of the legume *Vicia faba* on the resource utilization of bumblebees at a landscape scale. We aim to investigate, whether bumblebees benefit from additional flowering crops in the landscape and whether there is a temporal shift in pollen load composition in relation to the flowering of faba bean and oilseed rape, whose flowering periods overlap slightly.

We will set up bumblebee colonies in different 1km x 1km landscapes in Germany with faba beans as well as in nearby landscapes without grain legumes. Bumblebees returning to the hive will be caught during the mass flowering of both crops and the corbicular pollen will be removed. Afterwards pollen analyses will be conducted and the proportion of faba bean and oilseed rape pollen in the pollen samples will be determined using light microscopy.

This study is part of the RELEVANT project (Regulating ecosystem services in crop rotations with faba beans (*Vicia faba*) and peas (*Pisum sativum*): Quantification, evaluation and realization) (<https://www.thuenen.de/index.php?id=6817&L=0>).

Field work will be conducted from April until July. Overnight stays for several days in different parts of Germany will be necessary.

If you are interested in this master thesis please contact:

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