

Bachelor/Master thesis opportunity

How does aestivation (summer diapause) affect the Cabbage Stem Flea Beetle's host plant preference?

Cabbage stem flea beetle, *Psylliodes chrysocephala* is an important pest of winter oilseed rape. In September/October, adult beetles feed on cotyledons and young leaves of emerging plants, causing major economic damage. The larvae mine within the petioles and stems from October until the following spring. New-generation adults emerge from pupae in June/July to feed on pods and stems for some days. Shortly afterwards they enter a period of aestivation (summer diapause) at shaded places, reappearing and invading new oilseed rape crops in September.

The host plant spectrum is limited to the family Brassicaceae, but host selection and acceptance of adult cabbage stem flea beetles varies between different species and accessions. We have developed a bioassay for phenotyping large numbers of genotypes under lab conditions, however, we need to verify whether the host preference and host discrimination behavior differs between pre-aestivated and post-aestivated beetles.

In this study the leaf feeding of adult cabbage stem flea beetles on genotypes of known low and high palatability will be assessed using pre-aestivation and post-aestivation beetles. Adults obtained from a lab colony will be tested (1) directly after emergence before aestivation or (2) after 6 weeks, following their aestivation in the lab. The leaf area consumed will be measured by using an image analysis software (ImageJ).

Additionally, similar bioassays for feeding preference will be conducted using adult cabbage stem flea beetles that have went through their aestivation in the field.

Start: September/October 2024

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