

Master thesis project

Sustainable pest control strategies against *Pentastiridius leporinus*

Pentastiridius leporinus (Hemiptera: Cixiidae) is a **threatening pest** for **sugar beet cultivation** in **Germany**. It is a phloem-sucking hemimetabolic insect and the **vector** of two phloem-restricted bacteria associated with the *Syndrome des basses richesses* (**SBR**), a sugar beet disease whose symptoms include a **drop of the taproot's sugar content**. The adult stage of *P. leporinus* feeds on the sugar beet's petiole, while the nymphs' diet consists of the side roots of the plant.

In Germany and other European countries, it is known that *P. leporinus* **nymphs** perform well on the **sugar beet – winter wheat crop rotation system**. Nymphs first feed on sugar beet side roots. After sugar beet is harvested, wheat is sowed for the winter. Nymphs survive by feeding on wheat roots and can complete their life cycle. Adults emerge the next summer to infest a new sugar beet field and lay eggs.

The aim of this project is to look into the **development** and **survival** of *P. leporinus* nymphs on **alternative winter crops** like rye, oat or pea, possibly also catch crops. The goal is to find crops that are able to reduce the presence of *P. leporinus*.

Another aspect of the project is the testing of **natural insecticides** like pyrethrins, azadirachtin and fatty acid-based soaps against the **adults** of *P. leporinus*.

In this project, you will have the opportunity to work with different life stages of *P. leporinus* and gain extended knowledge in their life cycle. You will learn about pest control strategies and do applied research in controlled conditions. You will participate in the experimental design, conduct the experiments and analyse the data. Your results will contribute to the development of sustainable pest control strategies against *Pentastiridius leporinus*.

If you are interested, please contact Aurélie Rosset, PhD student in the Agricultural Entomology division.

aurelie.rosset@uni-goettingen.de

