

Master's exam-work available for 2017

in Integrated Pest Management of Swedish Apple orchards

Agricultural production in general, and EU production of vegetables and fruit in particular, have changed into integrated production (IP) during the last decade. As part of IP, pest management has changed from the usage of toxic pesticides into integrated pest management (IPM) where more or less specialised biologic agents are used. Higher specialisation requires generally higher application precision, which in turn requires higher levels of orchard monitoring and control. SLU is at the forefront with studying the effects of IPM on factors such as damage level, biologic diversity, and production economy.

In order to create a detailed understanding of IPM effects on pest populations, a number of pest species (mainly the Tortricidae family) have been studied in-field through their various life-stages, and through various management strategies. Based on the resulting information, web-based on-line decision support systems for IPM (IPM DSS) of Swedish apple orchards are being constructed. The precision of IPM DSS is, however, dependent on the quality of such empirical in-field information. Therefore, this suggested master's exam work intends to increase IPM DSS precision by combining the empirical results of two separate field efforts whereof one is actively ongoing.

The following steps are suggested:

1. Immediately join ongoing south-Swedish field-work for learning experience.
2. Combine an older existing database with new features identified in the ongoing field effort.
3. Fill up the resulting re-specified database with a combined set of data (which will double the amount of Swedish compatible empirical information).
4. Participate in a statistical re-evaluation of the combined dataset, for updated precision of IPM DSS algorithms.
5. Publish a master thesis on the inner life of Tortricidae moth populations.

The following combination of skills and interests is desired:

1. Biology
2. Agriculture/horticulture
3. Statistics

The following is offered:

1. Free project travel within Sweden
2. Highly relevant, and very cool, entomology
3. Project right in the middle of strategies for sustainable agricultural production

Where, when, and how:

Contact person: Dr. Tomas Thierfelder, Department of Energy and Technology, SLU Ultuna: Tomas.Thierfelder@slu.se, 018-671793. In collaboration with the Department of Plant Protection Biology, SLU Alnarp. Welcome to make contact through the spring of 2017, with project completion around Christmas 2017.