

Position: PhD student for studying spotted wing drosophila management

Dr. Justin Renkema, London Research and Development Centre – Vineland Campus, Agriculture and Agri-Food Canada

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Start date: September 2019 or sooner

Project description:

Spotted wing drosophila (SWD) (*Drosophila suzukii*) is a recent, invasive pest (in Ontario since 2010) of soft fruit and berry crops. Adult females possess a serrated ovipositor that enables egg-laying into ripening fruit, resulting in soft, unsaleable fruit due to the presence and feeding of larvae. Fruit growers rely on frequent application of insecticides (sometimes at < 7 day intervals during fruit ripening) to kill adult SWD. Therefore, there is a critical need to find alternatives for SWD management. Preliminary research has shown that volatiles from sweet alyssum (*Lobularia maritima*) repel SWD from ripe fruit and attract *Drosophila*-parasitic wasps. The goal of the project is to evaluate the effectiveness of sweet alyssum for managing SWD and develop readily-implementable solutions for berry crop growers.

Objectives:

- Determine the volatile profile of sweet alyssum flowers using GC-MS and profile variability due to cultivar or growing conditions
- Determine the strength and mechanisms of repellency/deterrence of sweet alyssum flowers and/or their volatile constituent compounds to SWD and their attractiveness/benefit to *Drosophila* parasitoids
- Determine effects of sweet alyssum plantings in berry crops on SWD and parasitoid populations

Expectations:

- Completion of coursework and other graduate student requirements at University of Guelph
- Development of a research proposal and literature review
- Completion of field and laboratory experiments as described in the research proposal
- Composition of a thesis that meets the requirements of PhD program at University of Guelph and consists of publishable scientific findings

Requirements:

- Completion of a MSc by thesis in biology, entomology, plant pathology, agriculture or related field
- Academic record sufficient for acceptance into the University of Guelph graduate program at a PhD level
- Reliability status (mandatory security clearance required by the Government of Canada)
- Valid driver's licence
- Canadian citizenship or permanent residency as per the *Public Service Employment Act*

Interested individuals should contact Justin Renkema (justin.renkema@canada.ca) for more information about the project, requirements and application process