

# OMAFA RESEARCH IN ACTION WEBINAR SERIES

## Biological Controls and IPM



**March 4th, 2026**



**Virtual (Zoom)**



**10:00 – 11:30 AM**

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### **Dr. Rose Buitenhuis, Vineland Research and Innovation Centre**

- *Mistaken identity: the hidden threat of onion thrips to greenhouse floriculture IPM programs*
- *Development of biological control tactics for use in an IPM program for multiple thrips species in Ontario greenhouse crops*

### **Dr. Rebecca Hallett, University of Guelph**

- *Determining the biology and impact of the canola flower midge on spring canola in Ontario*
- *Improved management of swede midge with biological and chemical control tactics*



**Dr. Rose Buitenhuis** is Director of the Biological Crop Protection Program at the Vineland Research and Innovation Centre. She is responsible for the development and implementation of integrated pest management (IPM) technologies against pests and diseases, supporting sustainable crop management practices for ornamental and production horticulture.

Rose received her MSc in Biology at the University of Leiden in the Netherlands in 1997, and her PhD in Entomology at Laval University, Québec in 2003. She worked as a post-doctoral fellow at Agriculture and Agri-Food Canada in Harrow and the University of Guelph. She has been at Vineland since 2010.



## **Dr. Rose Buitenhuis,** *Vineland Research and Innovation Centre*



### ***Mistaken identity: the hidden threat of onion thrips to greenhouse floriculture IPM programs***

This project aims to help Ontario greenhouse flower growers manage two major thrips pests: western flower thrips and onion thrips. Currently, onion thrips are causing serious damage because they are not well controlled by existing biological programs, forcing growers to use insecticides that disrupt sustainability efforts. The research will measure how big the onion thrips problem is and create an integrated pest management (IPM) plan that works for both species. This plan will combine knowledge of thrips life cycles and movement with cultural practices, biological controls, and, if needed, safer insecticides. Benefits include less insecticide use, slower resistance, safer workplaces, and cleaner, high-quality plants - making growers more sustainable and competitive.

### ***Development of biological control tactics for use in an IPM program for multiple thrips species in Ontario greenhouse crops***



Greenhouse growers have relied on biological control to manage western flower thrips, but in recent years onion thrips have become more common, causing serious crop damage and making current pest management programs less effective. Many growers turn to chemical sprays, which can harm beneficial insects, lead to pesticide resistance, and pose risks to workers and the environment. Since 2019, research focuses on creating an integrated pest management (IPM) strategy that works for both thrips species - testing biological control products and practices in labs and greenhouses. The goal is to produce high-quality crops without pesticide residues, using sustainable and cost-effective methods.



**Dr. Rebecca Hallett** is a professor in the School of Environmental Sciences, University of Guelph, where her research program focuses on agricultural entomology and the development of integrated pest management programs for insect pests of vegetable and field crops. Her research interests include the ecology of invasive insect species, the chemical ecology of insect-host plant interactions, impacts of climate change on agricultural pests, and biological control. A major goal of her research is the development of integrated pest management programs that help to reduce reliance on pesticides and that conserve natural enemies. She is also the Interim Associate Vice-President, Research (Agri-Food Partnership) at the University of Guelph. In this role, she leads the Ontario Agri-Food Innovation Alliance, providing strategic management and support to the OMAFA - U of G Agreement.

## Dr. Rebecca Hallett

### *University of Guelph*

#### ***Determining the biology and impact of the canola flower midge on spring canola in Ontario***

The canola flower midge (CFM) is a newly detected insect in Ontario canola fields. Its larvae develop inside flower buds, preventing them from opening and reducing seed production. This damage could lower canola yields, but we don't yet know how serious the impact is in Ontario. Most research on CFM has been done in western Canada, where growing conditions differ from Ontario. These differences may affect the insect's timing, behaviour, and overall risk to crops. Current management advice for a related species, the swede midge, may not work for CFM if the two insects respond differently. This project aims to study CFM in Ontario to learn about its life cycle, how it affects canola here, and what management options will be effective for local growers.

#### ***Improved management of swede midge with biological and chemical control tactics***

Swede midge (*Contarinia nasturtii*) is a major pest of canola in Ontario, causing yield losses through larval feeding on meristematic tissues. Management is difficult due to concealed larval feeding and season-long presence. This project focuses on integrating biological and chemical control tactics to improve management. Research will assess the distribution and biological control potential of the parasitoid *Synopeas myles*, evaluate its seasonal abundance, and determine susceptibility to insecticides. Optimal insecticide application protocols will be developed to maximize efficacy and minimize harm to beneficial organisms. Surveys will also monitor for a newly identified flower-galling midge species. Results will strengthen integrated pest management systems, reduce reliance on insecticides, and help restore canola productivity.

