

To:

Date:

Tuesday August 30, 2016

3 pages from Mario Lanthier

## NURSERY BIOCONTROL FIELD DAY



The event was organized by the BC Landscape Nursery Association and the BC Ministry of Agriculture, as part of a week of activities in town with the Canadian Nursery Landscape Association (CNLA).

The field day was held at Byland's Nurseries in West Kelowna and attended by about 30 persons, mostly nursery growers from the BC Interior and the Lower Mainland.

Our company helped with the biocontrol component of the program. The guest speaker was Suzanne Wainwright-Evans of Buglady Consulting, Pennsylvania.

## **BANKER PLANTS FOR APHIDS**

*By Margaret Baker, CropHealth Advising & Research*

The use of banker plants is designed to supply a constant source of parasitic wasps, such as *Aphidius colemani*, to manage aphids commonly found in greenhouses, such as the peach aphid *Myzas pericae* and the cotton aphid *Aphis gossypi*.

Banker plants are not grown commercially in the greenhouse. For example, barley grass is infested with aphids feeding only on grasses. Parasitic wasps are released on the banker plants to increase their number before spreading on the commercial crop. Once the banker plants are established, they are easy to maintain and are cost effective as they replace the need for repeated purchases of parasites.

Successful biocontrol using banker plants depends on early implementation – the plants must be started ahead of growing the commercial crop, so the parasitic wasps are present at the start of aphid infestation. More banker plants means more control.

## **BIOCONTROL OF THRIPS IN GREENHOUSE PRODUCTION**

Suzanne Wainwright-Evans, Buglady Consulting (<http://www.bugladyconsulting.com/>)

“Biocontrol programs do not stay constant all year. They change over time.”

### Thrips in greenhouse crops

The Western flower thrips is the main species found in greenhouse production. It is not a home owner problem - once the plants leave the greenhouse, the pests dissipate rapidly. Thrips larvae and adults can be managed with biocontrol and pesticides, whereas pupae are managed only with biocontrol.

Echinothrips remains on the leaf surface to pupate and is thus not effectively controlled with predatory mites and nematodes. Management requires spraying the pesticide Botanigard. The active ingredient is *Beauveria bassiana*, a fungal pathogen of thrips. The product must be applied under high humidity.

### Biocontrol agents

*Neoseiulus cucumeris* and *Amblyseius swirskii* feed on 1<sup>st</sup> instar larvae of thrips and *Swirskii* also feeds on whitefly eggs. Studies show that with predatory mites, the number of thrips may not be reduced but the visible plant damage is substantially reduced as thrips cannot feed as much or do not lay as many eggs.

Ambient temperatures are key to the success of predatory mites.

- *Cucumeris* prefers 18 to 25°C with egg hatch occurring at relative humidity over 65%;
- *Swirskii* prefers 25 to 28°C with relative humidity below 70%.

*Swirskii* can be applied with slow-release mini-sachets that provide a continuous release of mites on the plants. Cattail pollen can be used as supplemental feeding.

*Hypoaspis miles* is a soil-dwelling predatory mite that can be released under benches and in soil debris, where it will feed on thrips pupae that fell from the plants.

The minute pirate bug *Orius* feeds on all stages of thrips and on flower pollen as an alternate food source. Ornamental peppers can be used as banker plants.

*Steinernema feltiae* is a predatory nematode is applied as a drench to the soil. “If you have Western flower thrips and fungus gnats, you are crazy not to use nematodes”.

### For more information

An excellent review of thrips management was prepared by the Ontario Ministry of Agriculture (<http://www.omafra.gov.on.ca/english/crops/facts/14-001.htm>). A guide to quality control of commercial products is available from the Vineland Research and Innovation Centre in Ontario ([http://www.vinelandresearch.com/sites/default/files/grower\\_guide\\_pdf\\_final.pdf](http://www.vinelandresearch.com/sites/default/files/grower_guide_pdf_final.pdf)).

## PICTURES FROM THE EVENT



Above left: Guest speaker Suzanne Wainwright-Evans addressed the field day event.  
Right: She also toured commercial greenhouses to review insect biocontrol programs.

*Pictures below from Suzanne Wainwright-Evans, Buglady Consulting*

During the field day, participants were invited to tour five stations on different topics.



Above left: Native beneficial insects (Susanna Acheampong, BC Ministry of Agriculture)  
Right: Banker plants for aphid biocontrol (Margaret Baker, CropHealth Advising & Research)

Below left: Commercial biocontrol products (Amanda Brown, Biobest Biologicals)

Below right: Diagnosing plant problems (Mario Lanthier, CropHealth Advising & Research)

