



## Out And About In Southwestern Ontario

### Tomatoes:

- Spider mites are starting to show up around posts. See our article about mite controls in tomato.
- Low numbers of whiteflies are being spotted. Early introductions of *Encarsia* and *Eretmocerus* (for low light) are an excellent way of getting your in-house parasite population started.



Encarsia Card On String



Powdery Mildew In Tomato

- Powdery mildew has been detected at a few farms. Constant fluctuations of humidity are prime conditions for mildew.
- Loopers have hit a few farms. Cocoons left over in the greenhouse have now hatched; moths have laid eggs and tiny caterpillars are on their way. Since there is little likelihood of overlapping generations, you should be able to get them under control with some timely sprays aimed at the larvae. Assure good coverage since many varieties have curled leaves and the caterpillars are on the underside.



Looper Eggs Are Very Tiny, But Distinctly Round

### Cucumbers:

- Spider mites, especially the orange phase from last fall, are making their way into the crop at most farms. *Californicus* applications on plants near posts, end walls and hoses are eating early populations of mites and can handle the high temperature and dry humidity of the post rows and walls. *Persimilis*, in the proper spots, are doing very well; eggs and nymphs are easy to find in colonies. Note: Applying one large pile predators onto a single leaf will only cause problems in a few weeks. *Persimilis* particularly, will not tend to move onto new leaves until all the mites are gone. Many small piles distributed onto many leaves takes longer to introduce but results are exceptionally better. Not to mention the investment that ends up on the floor.



Pouring A Large Pile Of *Persimilis* Onto One Leaf Per Plant Is Not Effective

- Gummy stem blight has infected some plants. Nova and Prestop are all registered for gummy stem blight management.



Another Way  
We Are  
Helping You Grow

## Peppers:

- Thrips are present but few are having problems early this year. *Degenerans* can be introduced early and allowed to build on pollen; it can handle lower temperatures and humidity as well. *Orius* can be introduced when the daylight hours are longer and the lifecycle is shorter. *Cucumberis* populations look excellent and are well on their way to spreading evenly throughout the ranges.



*Amblyseius Degenerans*



*Orius* Establishing In Flowers

- Aphids have popped up as expected. This is one of the easiest pests to miss at low levels; a few days of heat or sunshine and they tend to explode. *Aphidius* populations are doing very well as are lacewings and ladybugs. Banker plants need to be tended to. They get over-run with aphids easily under low light conditions since the plants grow slowly. A few farms have introduced some preventative levels of parasites directly into the greenhouse and are holding off on using banker plants until they can grow more effectively. So far, the majority of aphids are green-peach aphids; although some Potato and Foxglove aphids have been detected.



Lacewing Egg Up Close



*Aphidius* Mummies Starting

## Pollination Update



Pollination has been excellent. Bee activity has been really good despite some dark days. Vegetative plants that are producing large, irregular flowers are not attractive to bees; they have a hard time holding on to collect pollen.

# Two-Spotted And “Carmine-Type” Spider Mites In Tomatoes



Orange Phase Spider Mites



Spider Mite Damage In Tomatoes

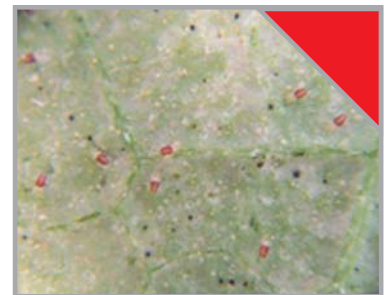


Feltiella Cocoon

- Optimum development occurs at 31-32°C.
- An average adult female will live 30 days and potentially lay 90-200 eggs in that time.
- Almost 200 host plants can sustain populations of TSSM and carmine mites.
- Weeds inside and around the greenhouse must be controlled.
- First signs of infestation are difficult to find; look for stippling on the upper leaf surface. More advance infestations will turn yellow and webbing between leaves/plants may occur. These Carmine-type mites are very aggressive, but start infesting one or two plants at a time. If this can be found and tackled quickly, damage can be minimized.
- On first sighting, QUARANTINE the affected rows and REMOVE ALL infested leaves or plants if pest population is high; left unchecked, carmine mites can kill a plant. Control measures should be implemented on first sighting, especially if considering biological control.
- Introduce *Phytoseiulus persimilis* after leaves have been removed. If the leaves are too small or the carrier falls off the leaves, considering using Bioboxes as your introduction points. Predators should be placed on every infested plant and on as many leaves as possible in that area. Preventatively apply *P. persimilis* to neighbouring plants (in the same row and in adjacent rows).
- Introductions will need to occur weekly until it is evident that predators outnumber carmine mites.
- Due to the sticky and potentially toxic glandular trichomes on tomato leaves, predatory mites have a more difficult time establishing on tomatoes than peppers.
- The predatory midge, *Feltiella*, should also be introduced when the first hot spots are found. *Feltiella* adults are winged and are good searchers for mite hot spots. Trays should be introduced weekly for 3-4 weeks for optimum control.
- We have exciting new packaging and pricing for *Feltiella* introductions this year. It can be one of the mainstream predators for your tomato and pepper range.



A Biobox Can Be Used In A Tomato Or Pepper Crop



A Colony Of “Carmine-type” Mites

## Scout's Corner



### Be Faithful To Your Sticky Cards

It's time to set-up some sticky cards! The dedicated user will find these cards extremely useful in finding pest issues before they become a problem. Place a few cards in various locations in your greenhouse. Be sure to scatter them enough so that some cards are near the beginning of rows and some close to the walls, and keep notes on where they are. In order for this method of scouting to be useful you need to *be faithful to your sticky cards!* Ideally, each week you should count the number of each type of pest caught and mark them with a permanent marker, or replace the card. Always count the same cards each week. For practical reasons, it is more important to put up a small number of cards you can monitor each week (10-15 per acre) rather than many that will never get looked at. If you have a scout that is allotted time each week they should ideally be checking 30-40 cards per acre. The 3"x5" cards are excellent size and the waxed paper makes them easier to handle and change regularly. It is important to learn what whitefly, thrips, and aphids look like when on sticky cards because they often appear different when they are dried out and/or covered in glue. You can always use a hand-lens to be sure. Keep the data and compare numbers to previous weeks. This is your Early Warning System, it is common to find a trace amount of pests on the cards long before the pest becomes a problem.



Sticky Card, Marked Weekly