

Take-Away Tips from Biological Control Conference

The UConn Extension and UMass Extension Biological Control Conference was held on June 18th in Storrs CT. There was a lot of good information presented. Here are a few take-away tips that might be helpful:

Margery Daughtrey, Cornell University (LIHREC) on Biological control of diseases.

Biological fungicides are useful because they work in so many different ways and are less likely to create resistance in the target pathogens than conventional fungicides.

- Leave a block of plants untreated, as a control treatment, to better evaluate how the biological fungicides are working in a specific situation.
- Do not to rely exclusively on biologicals to protect against *Phytophthora* root and stem rots, *Fusarium* wilts and *Thielaviopsis* (black root rot), since these pathogens are especially aggressive.
- Consider alternating biologicals with other chemical or biorational products such as bicarbonates (Milstop, Kaligreen); neem oil (Trilogy) or botanicals (Regalia Biofungicide) or to reduce the total amount of chemical materials applied in a long-term disease management situation.

Suzanne Wainwright-Evans, Buglady Consulting on Evaluating your biological control program and using biological controls in outdoor production.

- Maintain detailed scouting records of the life stages for both the pest and beneficial insects.
- Maintain good records of natural enemy releases, recording numbers, rates and where they were released. Packing slips can be used for this, just add where they are being released on the saved slip and keep in a file.
- When using sachets containing predatory mites, do not tear larger holes in the sachets thinking that the holes are not large enough for predatory mites to emerge. This will change the relative humidity level in the packets and may cause the mites to die.
- When scouting for parasitic wasps for whitefly management, learn to recognize the exit hole on the empty pupal case. A T-shaped hole indicates that a whitefly has emerged and a round hole indicates a parasite has emerged. If mainly round holes are observed, then parasites are present and working. If empty pupal cases have mostly T-shaped exit holes than adult whiteflies have emerged. Learn the difference between eggs (very small and round) vs the nymph and pupal stages. Nymph stages are often confused with eggs.

Note: Here are some photos: <http://biocontrol.ucr.edu/bemisia.html> T-shaped exit holes on bemisia pupae (by Mark Hoddle, UCalif Riverside) and <https://negrthouseupdate.info/photos/empty-vs-parasitized-whitefly-pupa> Round-shaped exit hole (by Leanne Pundt, UConn). *Tina*

- Biodiversity attracts native natural enemies. Plant texture and a diversity of plant material matters most.

Grant Jones, IPM Specialist, Longwood Gardens on Implementing a Biological Control Program at Longwood Gardens.

- IPM scouts use an IPAD and Google Drive to keep records as they scout.

- Scouts use color coded flags to mark hot spots of pest activity.
- Plants are monitored every two weeks with an emphasis on key plants and when shipments of beneficials arrive.
- *Cryptolaemus montrouzieri* is used for mealybugs and vedalia beetles for cottony cushion scale. Banker plants include barley for *Aphidius* wasps, 'Purple Flash' pepper for *Orius* and mullein for *Dicyphus*.

Note: It was noted at the conference that Vedalia beetles may not be readily available - Tina

Steven Courcy, DS Cole Growers, Grower panel and audience

- *Neoseiulus (Amblyseius)* mite is released every two weeks on crops susceptible to two-spotted spider mites and *Phytoseiulus persimilis* is released in hot spots. A mite blower is used to distribute the predatory mites.
- When used in the blower, mites in a vermiculite carrier work better than bran. Rates may need to be increased and if adding more vermiculite be sure to use the same size particles that the biological control company uses.
- Cereal aphids on banker plants will infest ornamental monocots such as cordyline, cypress, dracaena and pennisetum.

Michael Calhoun, IPM Scout from Broken Arrow Nursery, Grower panel and audience.

- Takes photos of diseases on leaves using a flatbed scanner to record diseases.
- Uses plant phenology to track emerging outdoor pests.

Note: this led to discussion about sources of information to learn about emerging outdoor pests. UMass Extension Landscape, Nursery and Urban Forestry program sends a weekly pest message with emerging pests in MA and information on plant phenology and growing degree days. See: <https://ag.umass.edu/landscape/landscape-message> Tina

- As a retail nursery, Broken Arrow emphasizes selecting disease and pest resistant cultivars that will do well in the home landscape. They educate their customers to tolerate certain pest damage in their home landscape that cause cosmetic damage such as Willow Leaf Beetle on black pussy willow. If it is of concern to a customer, they advise to choose one of the more resistant cultivars.

Additional Highlights of the Conference by UConn Extension:

<http://ipm.uconn.edu/documents/view.php?id=795>