



Take Home Tips from the 2017 Biological Control Workshop at UConn Storrs

Here are a few take home tips from the Biological Controls Workshop held on June 22, 2017 that featured Suzanne Wainwright-Evans, Buglady Consulting, Doug Barrow from Biobest, Debbie Palumbo-Sanders from Bioworks and Shelley Durocher from UConn.

As demand for biological controls is increasing, it is a good idea to talk to other growers and ask lots of questions from your suppliers.

Here are some **general guidelines** to check for quality control when you receive your natural enemies:

- Open the package and look for condensation or a fermentation smell
- Check temperature with an infrared gun available from Amazon
- Look for movement
- Keep good records including the species name, packaging type and size, date received, company batch number, date tested, supplier
- Keep records of rate used, where released and on what crops

If there is an issue, contact your supplier immediately, so they can help you resolve the problem so you can have a successful program.

Applying Nematodes

After taking the nematodes from your dedicated refrigerator, allow the nematodes to warm a little at room temperature (1 to 2 hours) to "wake them up" before mixing them in the tank solution. Avoid drastic changes in temperature from 40° F to 70° F that will stress them.

If you are applying nematodes in the summer months, be careful of warm temperatures! Avoid applying when soil temperatures are above 80°F! Optimum media temperatures are between 60-70°F. (Use a soil thermometer to monitor temperatures)

Shelly Durocher uses a battery operated portable aerator that you can get from a bait store or online to keep the nematodes agitated and oxygenated as she moves from greenhouse to greenhouse.

Checking Sachets for Use against Thrips:

Make sure that the exit hole is not pinched or blocked. Place in a similar environment for a quality check.



Figure 1: Checking Sachets. Photo by L. Pundt

Proper placement of sachets is important. It is best to place the mite sachets within the plant canopy, where they will be shaded from the sun so relative humidity is the highest. Do not place on the outside of the pot, where they will not have enough humidity. More mites will emerge and they will last longer (6 weeks compared to 1 to 2 weeks) when sachets are protected from sunlight than when they are exposed to direct sunlight. Do a loose application first, until the plant canopy is large enough to shade the sachets.

Using Nutrimite as a supplemental food source is especially helpful when the more expensive *A. swirskii* is used on gerbera daisies.

Using *P. persimilis* against spider mites

Many predatory mites are available in tubes. Suzanne recommended storing tube bottles on their side, for a more even distribution of the predatory mites. This is because many of the predatory mites, especially *P. persimilis*, tends to move toward the top of the bottle. *P. persimilis* is also shipped without any supplemental food source, (this specialist only feeds on two-spotted spider mites), so it important to obtain *P. persimilis* as quickly as possible, i.e. from companies that produce *persimilis* on the west coast (for the field strawberry producers) and can ship it to you in 24 hours. If *persimilis* is moving too quickly, it may be starving! Ask your supplier, how many *persimilis* should be in a tablespoon, because the companies mix them differently.

Utilizing Dips of Biopesticides

Clean and disinfect the dipping tank and equipment before use. Prepare only as much dip suspension that can be used in one day. Test small batches of plants for potential phytotoxicity before use. Change the dip solution periodically and use in small batches to prevent the potential build-up of plant pathogens to infectious levels.

Resources for additional information:

Grower Guide: Quality Assurance of Biocontrol Products Compiled by Rose Buitenhuis, PhD, Research Scientist, Biological Control, Vineland Research and Innovation Centre, 2014
http://www.vinelandresearch.com/sites/default/files/grower_guide_pdf_final.pdf

Biological Control Agents – use with Bioworks Products:
<http://www.bioworksinc.com/products/shared/BiologicalControlAgents.pdf>

Utilizing Dips: Clean up Incoming Plant Material by Utilizing Dips
<http://www.bioworksinc.com/products/shared/Utilizing-Dips.pdf>

Success with Cutting Dips How to Video (from Vineland Research and Innovation Centre, June 2017)
<https://www.greenhousecanada.com/inputs/biocontrols/success-with-cutting-dips-31968>

Take your Poinsettia Cuttings for a Dip
http://vinelandresearch.com/sites/default/files/growertalks_-_take_your_poinsettia_cuttings_for_a_dip.pdf

Editor's note: Mineral oil or Suff Oil X is not labeled as a dip in the US!

Boosting Predatory Mites with Nutrimite
<http://www.biobestgroup.com/en/biobest/products/supporting-products-4465/supporting-products-4485/nutrimite%E2%84%A2-4841/>

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