

GROWERTALKS

Columns

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It's a Bug Eat Bug World

Chris Fifo

My 17-year-old daughter hates bugs and is deathly afraid of spiders in particular. Just the sight of one throws her into a fit as she screams for someone to get it. Naturally, her brother sees this as an opportunity not to pass up. This is usually when I have to step in.

I tell her she shouldn't kill spiders and she asks why. Well, what do spiders eat? "Bugs," she says. Duh! That's a no-brainer then. The same goes for us in the greenhouse. If we've got bugs we don't want, why not bring in something that will eat them? There are several companies supplying good bugs, information and technical support to help anyone have a successful biocontrol program.

Our program began several years ago out of necessity. We couldn't control spider mites. Despite following all cultural recommendations, spraying regularly, rotating chemical classes and proper applicator training to ensure thorough coverage, we had populations we couldn't control to our satisfaction.

So we decided to give the good bugs a chance. We started in one of our smallest houses, which had a concentration of salvia with two-spotted spider mites. We bought several shaker bottles of persimilis mites, released them on the salvia and prayed as we skipped our regularly scheduled miticide sprays.

Within a week we were seeing healthy new growth on the crops and were amazed at our successful program! Using our IPM scope (a must-have tool), we were able to find dead spider mite eggs and adults on leaves of our most heavily infested crops. Unfortunately, it didn't take long for the spider mites to return and for us to realize that just sprinkling some beneficial mites on our problem crops didn't constitute a biocontrol program.

Since that time, we've done our homework, consulted with experts and have a successful biocontrol program for managing spider mites. However, managing thrips has been more challenging.

With the release of beneficials targeting spider mites, our options for pesticide sprays are limited and we had difficulty keeping our thrips counts as low as we would like. Over and over populations would escalate and we would have to come in with a "clean up" spray. Often it was SuffOil-X, but occasionally something stronger was used. Either way, it would wipe out our beneficials and we would have to start over.

Obviously, a successful biocontrol program must be comprehensive and not target just one pest. It's an all or

nothing program and this summer we've gone all in and are just beginning to reap the benefits, which I measure by how often I put on a spray suit. Here are the key points we've learned:

- Many pesticide residues—especially pyrethroids—are persistent and can be harmful to beneficials for many weeks. Until these residues have dissipated, it's difficult to establish a beneficial population. Even some fungicides are detrimental. We created a compatibility chart for quick reference using information provided by our suppliers, but there are still many unknowns.
- It takes time and a sufficient population of beneficials to get past the “clean up” phase. After that it takes regular, smaller maintenance releases for consistent control.
- An effective program utilizes several types of beneficials targeting all life cycles of multiple pests. Currently, we're using *swirskii*, *persimilis*, *cucumeris*, *Hypoaspis*, *Orius* and occasionally *Atheta* beetles. These are in addition to the nematodes we use for fungus gnat and shore fly larvae.
- Beneficials must eat! When pest populations are depleted as a food source, they must have an alternate source to maintain a stable population. Some, including *swirskii* and *cucumeris*, feed on pollen, which can be provided by “banker” plants or can be purchased from a supplier and sprinkled or blown onto the crops. Others, such as *persimilis*, don't have an alternative food source and must be re-introduced as needed.

A biocontrol program is easy to set up, but does take commitment. A “release” of beneficials usually consists of hanging pre-packaged sachets within the crop or sprinkling a tube of beneficials containing vermiculite on the crop. Very easy.

The best part of the program—pests can't build up a resistance to being eaten. But I suppose if that were to ever happen, we could always try spiders! **GT**

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