

GROWERTALKS

Growing With Griffin

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Spider Mites & the Summertime Blues

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For some of us, battling spider mites all summer brings on a case of the summertime blues. The hot, dry weather that's typical across so much of the country each summer contributes to the difficulties that many growers experience attempting to protect their crops from these eight-legged feeding machines. (In the interest of full disclosure, newly hatched larvae have only six legs.)

Pictured: Spider mites attacking roses.

The reproductive rate of spider mites climbs right along with the temperature, serving to highlight any deficiencies in our control efforts. Spider mites have a well-deserved reputation for overcoming miticides through reduced sensitivity and increased resistance. Miticide programs demand careful attention to scouting for early detection, rotating modes of action, what life stage(s) each product controls and up-to-date efficacy information.

This article will help to set a course for growers who are contemplating whether a miticide-only approach to controlling spider mites is the best way forward. So what might a transition to biological control of spider mites look like at your growing operation?

Scouting

“Beating a dead horse” alert: Of course, you’ve heard all of this before, but there’s a reason we keep talking about scouting! Think of it this way—your smartphone is only as good as the data it receives and displays. The data you receive from a well-designed scouting program is crucial to the outcome of your pest control programs. Early detection of mites is crucial given how rapidly they reproduce.

Biological control agents (BCAs) are best suited to prevention and early intervention rather than trying to come from behind. Unlike miticides, which we can store on-site for quick use, there’s some delay between placing an order for BCAs and deploying them into the crop. Don’t give the mites any more of a head start by inadequate scouting.

Scouting includes searching for the spider mites and their predators. This will require becoming familiar with the appearance of the various predators as seen through a hand lens or other magnification devices. Entomologists tell us that spider mites are likely to first be found in areas with good air movement, and therefore, the lower humidity

they prefer. Scout more intensively along walkways, adjacent to intake louvers and similar locations along with your random scouting.

Some growers have found it useful to produce a single bush bean plant in a 6-in. pot to serve as an early warning plant. Spider mites are uniquely attracted to bush beans and the flat leaves show feeding damage easily to aid in early detection. Scatter a few throughout the greenhouse, especially in areas of high air movement.

Miticide transition

Some of the pesticides commonly used in greenhouses have negative impacts on BCAs for weeks or even months. A transition from a miticide-based control system to one emphasizing BCAs starts with a review of all pesticides applied over the past eight weeks. It may be necessary to begin the transition by employing miticides with shorter residuals while more persistent residues are breaking down.

Don't view this as a setback; it's just a part of preparing for success. Check with your supplier regarding pesticide compatibility with BCAs to help you make informed decisions.

Planning to succeed

Attempting to begin a BCA program in the middle of the crop when mite pressure is already high is setting your crop up for a rough ride. Your years of experience have helped you to understand which crops are highly susceptible to mites.

Before the crop arrives is the time to do your homework. Work with your BCA advisor to have a plan in place from the beginning of the crop. Ordering BCAs in advance gives your supplier the best chance of having the product delivered when you need and expect it. This also gives you a chance to consult with your plant suppliers to find out which pesticides they use in production, so residual side effects can be anticipated.

Spider mite predators

Understanding the strengths and weaknesses of the various predators available will help you create a plan with those BCAs best suited for your crops and production conditions. Below is a quick look at some of the allies in your corner as you face off with your spider mite competitors:

- ***Phytoseiulus persimilis* (Phytoline, PERSIMILISforce)**—A predator mite that aggressively tracks down and consumes all life stages of spider mites. They don't have any alternate hosts, so the ideal release time is at the first sign of spider mite activity. They can be used under cover or outdoors when night temps are 65F (18C) or higher. Persimilis have been used successfully on a wide variety of crops. They're shipped in a bottle or vial for tapping out onto the lower leaves of affected plants.

- ***Amblyseius andersoni* (Anderline)**—This predator mite has a wider temperature range than most BCAs. They're active and effective from 43 to 100F (6 to 37C). They'll also feed on pollen and thrips larvae to survive when mite populations are low. Because of the low temperature tolerance, they can be established in the crop much earlier in the season than other predators to help keep spider mites from getting established in the crop in the first place. *A. andersoni* are available in bulk for distribution or mini-sachets. The mini-sachets are breeding stations that produce large numbers of mites for four to six weeks. Check with your supplier for proper placement of the mini-sachets to ensure maximum effectiveness.

- ***Amblyseius californicus* (Californiline)**—This BCA has a well-deserved reputation for staying active at higher temperatures and lower humidity than other predator mites. In many parts of the country, this makes *A. californicus* an important part of spider mite control programs. They can feed on pollen and some other pests to sustain themselves during times of low mite pressure. *A. californicus* are available in bulk for distribution or mini-sachets.

Other *Amblyseius* species of mites, including *cucumeris* and *swirskii*, also contribute to spider mite control, even though thrips are their primary target. This is especially true when they're being used at high rates either through bulk applications or mini-sachets. *Feltiella acarisuga* is a predatory midge that's sometimes used as part of a spider mite control program as well. Be encouraged—there are several natural enemies of spider mites!

The next step for those new to BCAs—or for those who have a few seasons under their belt, but could use some further guidance—is to contact your BCA expert to set you on the right path. **GT**

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