

ask? us

About Pests

Q

When I make treatment decisions for mites, can I consider the Eriophyid mites and the Tarsonemid mites as if they are the same?

A

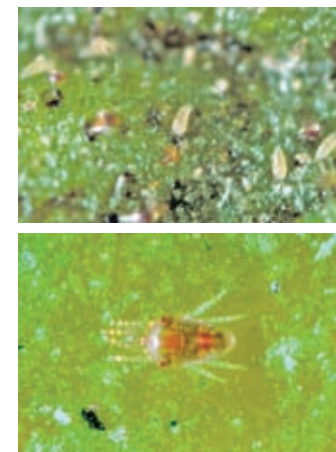
This is a very thoughtful question and shows the grower knew there was a difference between Eriophyids and Tarsonemids and that there may be a difference in the chemistry needed to control them. It also shows that these mites are so difficult to see and identify that the grower wanted to save time and effort in their control. First, let me cover a few basics about the more common mite groups.

There are too many species of mites that are pests to cover herein, so to shorten the discussion, I'm going to limit the groups to four: the Tetranychids or spider mites; the Tenuipalpids, flat or false spider mites; the Tarsonemids, broad or cyclamen mites; and the Eriophyids, rust or gall mites.

Spider mites are the biggest mites of these groups. They usually live on the underside of leaf surfaces, pierce individual plant cells and feed on the contents causing visible stippling on leaf surfaces, which can be diagnostic for their presence. Their eggs are round and vary in color. Of the four groups, they are the only ones that produce webbing much like a spider, but it can be hard to see unless heavy populations are present. Flat mites or false spider mites look similar to spider mites; however, their bodies are flat instead of oval. In addition, Tenuipalpid eggs are bright red, oval shaped and are laid in clusters on both surfaces of leaves. Adults, usually reddish in color, cause the silvery of leaves and stunting of terminal growth. These two groups can be treated similarly with the majority of miticides on the market (see page 28).

Tarsonemids, the thread-footed mites such as broad and cyclamen mites, are very small and need higher magnification to identify. They are found in tight spaces in plant tissues and usually are diagnosed by the type of damage they cause, such as leaf cupping, stunting, thickening and deformation of flowers. Under a scope, they look clear or white and are somewhat oval shaped. In contrast, the Eriophyids such as rust or gall mites, are long and skinny, red or white, and look much like a very small maggot or worm. These two groups of mites, due to their size and propensity to be in very tight spaces such as growing terminals, buds, leaf folds or galls, are very difficult to contact with miticides. Therefore, systemic or translaminar miticides typically work best against them, or the addition of a surfactant to contact miticides is necessary to aid in coverage.

Can these two groups be treated similarly? I believe they can. Unfortunately, there are fewer products registered for control of these mites. The key is to positively identify the pest mite and read the miticide label to make an informed treatment decision.



Top: Tomato russet mites. **Bottom:** Citrus flat mite. (Photos: Jack Kelly Clark, courtesy UC Statewide IPM Program)



By
Jim Bethke

Insects

bethke@citrus.ucr.edu

Jim Bethke is staff research associate in the Department of Entomology, University of California, Riverside, and floriculture farm advisor with the University of California Cooperative Extension in San Diego County.

Q

What products can I use against leaf-feeding beetles?

A

A phrase I've heard all too often lately is, "I've never had to treat for that before." This grower had a serious infestation of leaf beetles in a greenhouse on brugmansia.

The Chrysomelidae, leaf-feeding beetles, are the fourth largest family of beetles with about 175 genera and about 1500 species in North America. Two of the most notorious are the elm leaf beetle and the Colorado potato beetle, but there are many other pest species such as striped and spotted cucumber beetles, tortoise beetles, the viburnum leaf beetle and the eucalyptus leaf beetle.

Both adults and larvae feed on leaf tissue. When larvae are small, they will chew only part way through the leaf leaving what is commonly known as a "window" of epidermal tissue. When larger, they will chew a complete hole through the middle of the leaf rather than feed on leaf edges. Since they are leaf chewers, they will readily contact and ingest treated foliage. Azadirachtin (Ornazin or Azatin), however, may be repellent and/or toxic. Broad-spectrum products like the organophosphates, carbamates and pyrethroids should work well. Another option recently available is formulations of Bt, *Bacillus thuringiensis* var. *san diego* and var. *tenebrionis*, which are toxic to certain beetles.

Do you have a question for our panel of experts? Send your disease, pest or growth-control questions to the appropriate person, and look for the answer in an upcoming issue of GPN.



A.R. Chase
Diseases
archase@chasereasearch.net



Jim Barrett
PGR — Annuals
jbarrett@ufl.edu



Joyce Latimer
PGR — Perennials
jlatime@vt.edu