

Top: Lewis mite is very controllable; the mite is so far (mostly) confined to poinsettia, and when it appears, it is often confined to a single or few cultivars. **Middle:** This close up of Lewis mite injury shows a flecking or stippling in foliage. **Bottom:** These poinsettias show Lewis mite injury. (Photos: Daniel Gilrein)

Managing Lewis Mites On Poinsettia

The Lewis mite is still a threat, but the good news is it is quite controllable. From detection to useful miticides — find out more about controlling this pest on poinsettias.

By Daniel Gilrein

It used to be that poinsettia crops had relatively few pest problems, among them greenhouse whitefly and fungus gnats. I have also seen two spotted spider mite, citrus mealybug and brown soft scale on poinsettias, but only rarely. Usually, I would see such pests in crops grown near infested material or held in a range or interiorscape for much longer than normal.

Unfortunately, in 1986, the sweet potato whitefly (what we called it then) appeared in Florida, and recently, the related Q biotype whitefly has been confirmed in at least 21 states, often on poinsettia. In 1995, Lewis mite (*Eotetranychus lewisi*) appeared in some Maryland ranges and was soon found in other areas, including New York. Lewis mite is among the more insidious pests I have encountered in my career.

When Lewis mite appears, it is often at a bad time (late in production), the population is high and the damage does not disappear. It cannot be detected with sticky cards. Lewis mite is still not something growers regularly or preventively treat for, unlike whitefly infestations. The good news is Lewis mite is very con-

trollable. It is so far (mostly) confined to poinsettia, and when it appears, it is often confined to a single or few cultivars.

Learn About Lewis Mite

Lewis mite has actually been around for a long time. In 1958, it was reported as a pest on poinsettia in Chicago, Maryland and the Pacific Northwest and was reported in Florida in 1960. Lewis mite is a minor citrus pest because it can damage the surface of fruit. It will also feed on a few other hosts including snow-on-the-mountain (*Euphorbia marginata*), papaya, castor bean, burclover and ceanothus.

There was one report of Lewis mite in Mexico on squash and on zonal geranium 'Aurora' in Pennsylvania a few years ago. We followed up the latter by infesting a variety of zonal (including 'Aurora'), ivy and scented geranium cultivars with Lewis mites taken from a colony on poinsettia. We could never get them to "take," although they did seem to persist for a short time on some cultivars.

There may be other common alternate hosts in the greenhouse that could serve as bridges to a poinsettia crop, but no infestations ♦

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except those on poinsettia have come to my attention to date. Our next project may be to investigate other euphorbia species (poinsettia relatives) to see if Lewis mite can establish and maintain itself on these other plants. A few euphorbia species are becoming popular

vegetative annuals and would be among the first to include.

Understanding The Symptoms

Symptoms of Lewis mite infestation are frustratingly subtle, which makes early detection difficult. As it feeds, the mite causes a very faint flecking or stippling in foliage, leaving the foliage with a chlorotic appearance in advanced stages. As the mite population increases, the upper foliage begins to turn brown, and the mites form webbing around the growing points on which they collect and gain altitude in an attempt to blow or move to new feeding spots. During early bract color, the last green leaves also have a stippled appearance that very much resembles early Lewis mite injury. Usually, the damage becomes obvious in October, but we have also seen problems pop up in August and September.

The mites themselves are similar in color to the familiar two spotted spider mites, but they tend to be a bit smaller and narrower with several small, greenish spots, rather than just the two of the two spotted spider mite. Lewis mites can be found primarily on the undersides of leaves.

I suggest walking through the crop while watching for early symptoms of yellowing or

Lewis Mite Totals And Injury Ratings

| Treatment | Company | Rate per 100 gal. | Number of mites per plant | Damage rating |
|---------------|--------------------------------|-------------------|---------------------------|---------------|
| Hexygon 50WP | Gowan Company | 1 oz. | 298 c | 5.3 c |
| Akari 5SC | SePRO Company | 16 fl.oz. | 1.3 a | 1.9 ab |
| Floramite 50W | Chemtura Corp. | 2 oz. | 126.3 c | 2.4 b |
| Avid 0.15EC | Syngenta Professional Products | 4 fl.oz. | .4 a | 1.4 a |
| Control | n/a | Water only | 1972.2 d | 6.8 c |

Figure 1. This represents the numbers of Lewis mites and injury ratings following one spray application. Means followed by the same letter are not significantly different. The damage rating is based on a scale of 0-10, with 0 = no damage and 10 = completely defoliated plant.



It is easy to see a difference when comparing Lewis mite damaged and normal poinsettia leaves.

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stippling. If you notice the early symptoms, check the underside of suspect leaves for the presence of mites. Often, the problem will be confined to a single cultivar or spot on the bench.

What To Do

The question, of course, is what to do about Lewis mite. Preventive applications would be one option, but since the pest is not often present and resistance can be a problem, it might make sense to plan for treatments if needed based on detection. Fortunately, there are some very effective controls that work well even after mites have reached a moderate to high level.

We have not yet evaluated all of the many new miticides, but of those tested, we found Floramite (Chemtura Corp.), Akari (SePRO

Corp.) and Avid (Syngenta Professional Products) quite effective. Sanmite (The Scotts Company), which has a mode of action similar to Akari, would probably also work equally well. Since Avid has translaminar (a kind of localized systemic) activity, it might be a good option where coverage is difficult on full-canopy plants. Hexygon (Gowan Company) also provided some control but was not quite as effective as the other materials and would probably perform much better if applied earlier in the infestation (more as a preventive), as is generally recommended for this material.

We have not looked at biological controls, but if they can be used for this particular mite, the controls would need to be

released early, of course, and not after mite populations are already very high. Some growers have found it best to discard highly infected plants and follow up with a miticide application to all plants around where the problem was detected.

We have tested these materials on a variety of poinsettias cultivars in full color and not seen any phytotoxicity. In particular, we have applied Avid at the highest label rate to 48 poinsettia cultivars in full bract color with no symptoms of damage. This assumes products are applied alone and not in a tank mix or with any adjuvants or additives. The new Floramite (Chemtura Corp.) liquid formulation would be expected to perform similarly.

Although Lewis mite seems to

be a little less common than in the past, the several cases we see each year remind us to be watchful for early indications of infestation and be ready to treat as soon as the pest is detected. **GPN**

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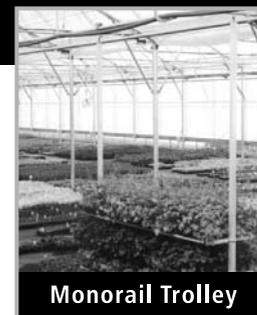
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