



by Dan Girein  
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## Those Tiny Mites

*"Faith" is a fine invention for Gentlemen who see! But Microscopes are prudent in an Emergency!"*

*- E. Dickinson*

Judging from the surge of calls - and pests - spring has arrived in earnest. One sample in the Diagnostic Lab this week is a reminder to watch for signs of infestation even before planting. In this case unrooted cuttings arrived with scarring and distortion seen on the foliage. Under high magnification the damage was even more apparent, visible even on the youngest unexpanded leaves. The amount of white spray residue present suggested a treatment had been made recently possibly in response to the symptoms.

The symptoms are consistent with those caused by one of the tarsonemid (broad or cyclamen) mites, but could also be from phytotoxicity (spray injury), chilli thrips and/or possibly other pests. It can be difficult to impossible to identify the culprit with certainty especially if the treatment was effective, but in this case we found low numbers cyclamen mites and eggs still on the foliage. The eggs can be hard to find and are often placed within or on unexpanded leaves at the growing tip. When broad mite is responsible I usually can find the eggs or the 'eggshells,' which persist as

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Cyclamen mite

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wispy flattened and whitish objects, still with their characteristic dots (those from cyclamen mite are not as distinctive). Where thrips were involved there are sometimes dead individuals present. I may need more than a plant or two to find evidence. These mites and chilli thrips are just barely visible with the unaided eye or even with a 10X lens, so most growers will need to submit samples to confirm. In this case the symptoms were confined to one variety and the grower made the decision to reject the cuttings before they were even introduced to the growing area. The grower will also share our findings with the propagator, a helpful step and of course necessary for any claim. In a system that relies heavily on vegetative propagation it is almost inevitable to see issues like these, but watching for them and responding promptly is good for everyone. It also alerts us to watch for any trends since other growers may receive the same material. We'll also try to find out from the propagator what chemicals may have been applied, though when produced offshore it may be difficult to obtain information.

It is important to select the right tools for management. That is especially true for these mites. Among biological controls, *Neoseiulus cucumeris* and *Amblyseius swirskii* are used and can be effective, particularly against



Broad mite damage to African violet



Broad mite injury to gerbera flower

broad mite. Knowing the history of chemical applications to the cuttings would help decide whether to release these predatory mites immediately or wait for new untreated growth to appear, since the predators can be sensitive to some kinds of residues. Among miticides Sanmite (broad mite only), Akari, and Avid (or generic version) are effective. Judo, Pylon, Magus, and Kontos can be as well, but check labels for sensitive crops before application (Avid labels also note sensitivity in ferns and Shasta daisy). In one trial we had very good results with horticultural oil, but expect it to work only on contact with little to no residual activity, but it would be an option for organic growers. M-Pede will also kill the mites on contact but has no significant residual activity too. Note label cautions about sensitive plants with these products as well. Some pyrethroids (Scimitar, Talstar, etc.) are labeled for broad mite but will probably be just suppressive, at least based on results from one trial here.

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If using biological control many of these miticide options will not be compatible or are better used closer to sale to avoid disrupting the predators early in production.

Scan vegetative cuttings frequently as they grow for any stunting, distortion or unusual growth, particularly if confined to one or a few varieties. Broad mite has been more common than cyclamen mite, causing a scabby bronzing and scarring to stems and leaves, sometime to the point of killing terminal growth. Where flower buds are infested petals can be stunted and with paler areas or flecking. Keep some yellow sticky cards up to monitor thrips and other pests that may be present. Submit samples to a diagnostic lab to confirm causes of symptoms, including information on application history, so the right treatment is used. The good news is plants can often recover from broad and cyclamen mite to become salable, though some abnormal foliage may remain.



Bronzing and distortion of leaves on *Salvia farinacea* from broad mite



Stunting on New Guinea impatiens from broad mite (photo N. Catlin)