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# Thinking Broadly About Mites

*Broad mite problems are appearing in greenhouses. Know what to look for, how to confirm an infestation, and distinguish damage from other problems causing similar symptoms.*



Broad mite samples are appearing in our diagnostic lab once again. Decades ago broad mite was a rarity on greenhouse plants but now is a more common pest in our annuals like New Guineas and sometimes foliage plants, such as English ivy, as well. Rarely widespread when it occurs, one or a few plant varieties are typically affected at a time. Although relatively uncommon outdoors on Long Island in ornamentals (seen in azalea, vinca, English ivy, lysimachia), vegetables (peppers in particular), potatoes, and even weeds, those of you living in warm and humid climates probably encounter it more often. After an unusually cold and long winter here in the Northeast, through gritted teeth we can acknowledge one advantage: broad mite

doesn't normally overwinter outdoors in New York. Almost certainly it travels in on vegetatively propagated plant material, much of

which now originates in tropical climates.

Unlike twospotted and other familiar spider mites,



*Broad mite damage to ornamental pepper fruit and stems.*

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*Broad mite and dotted eggs. Eggs are almost the size of the adult mite!  
(Photo N. Catlin)*

broad mite adults are practically microscopic. The pale, almost white mites may escape notice but the damage they cause can be quite dramatic, including stunting, leaf and flower distortion, pale flecking on flowers, scabby stems or (on peppers) fruit, and even death of growing points. Growers often report the damage appearing suddenly and usually the newest growth is most affected. Many samples I see that show some of these symptoms are NOT infested with broad mite. This season in particular we're seeing evidence of cold temperature-related stunting or distortion. New Guineas are among those that don't like cold conditions and

will develop strap-like or abnormal foliage. Boron and/or calcium deficiencies can manifest as stunted terminal growth very much like that caused by broad or cyclamen mite. In African violets foliar nematode infestation causes severe stunting of young leaves too. Chilli thrips injury looks remarkably like broad mite damage. Sorting these out may involve considering the distribution of symptoms in the crop - if all plants are affected it is probably not broad mite, which usually appears somewhat spotty, and recent environmental conditions (including night temperatures) over the last two to three weeks. You can also try looking for the mites themselves. Check tops and bottoms of youngest

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leaves with a good 10X - 20X handlens or other magnifier like and Opti-Visor. The mites are extremely small but with practice you'll be able to see them. Under humid conditions they seem to wander more, but when dry more likely they'll be found in the protection of unexpanded leaves. In the diagnostic lab we look for the distinctive dotted, oval eggs usually under the

leaves. When the eggs hatch the 'eggshell' flattens against the leaf surface but retains its dotted appearance, so even when the mites are not there the presence of the eggs or 'eggshells' is a dead giveaway. Submit samples to your diagnostic lab where they can help you out.

The good news is that broad mite is easily controlled, even if not all miticides



New Guinea impatiens with typical stunting due to broad mite infestation. (Photo N. Catlin)



*Gerbera showing stunting and bronzing from broad mite.*

work. Some that do and are labeled for greenhouse ornamentals include Pylon, Judo, Sanmite, Avid (or generic abamectin), and Akari. One application may suffice if coverage is very thorough, otherwise two around 7 to 10 days apart may be needed or if the population is high. Note that some plants are sensitive to Pylon (dianthus, kalanchoe, poinsettia, rose, salvia and zinnia), Judo (geranium, peperomia, dracaena, New Guineas, some roses, and more - see label for full list), and Avid (ferns, Shasta daisy). Magus and Kontos are the newest labeled products; both are foliar sprays and Kontos can also be used as a drench. We have had good

results with both including Kontos as a drench, but two applications are suggested

for either if applying as sprays. Kontos should not be used on pelargonium, orchids, hoyo, dracaena, cordyline, schefflera, neathe bella palm, and ferns; only one application is suggested on some other plants (see label). Magus should not be applied to roses. The pyrethroid insecticides Talstar S Select (or generic bifenthrin), and Scimitar GC are also labeled for broad mite on greenhouse ornamentals; we have tested Scimitar and found it will provide some suppression but for high infestations the specific miticides above may be more effective. SuffOil-X is also generally labeled for 'mites' on



*Gerbera flower with injury from broad mite. Damage sometimes resembles thrips injury.*

ornamentals; we found with good coverage it worked quite well though growers should expect no residual activity. Two applications would be necessary, but test any oil on a small scale first particularly when using multiple applications, be sure plants are well-watered, and consider possible oil incompatibilities with some products. We recently completed some dip tests with several products. They're not labeled for this application method but

based on our results we plan to pursue 2ee labeling for these. There is some risk of spreading plant diseases this way so we'll advise caution before use. We also found placing cuttings under mist on a propagation bench seemed to control the mites very well too.

Biological control is more often used in longer-term crops. The predatory mite *Neoseiulus cucumeris* will feed on broad mite as well as immature thrips, but

prefers humidity around 65%+. Other predatory mites, *Amblyseius swirskii* and *Neoseiulus californicus*, have been used successfully to control broad mite. These three mites will also feed on pollen and may benefit from having flowering plants present. Predator mites should be released preventively. Check with suppliers or your Extension specialist on release rates and other guidelines.

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