

## Outfoxing Foxglove Aphid

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Signs of spring are everywhere on Long Island, with warmer days and flowering spring crops. The garden centers are busy and homeowners are planting tender annuals now that, for our area, risk of frost is nearly past. Like clockwork, there have also been some calls and field photos to the Entomology Diagnostic Lab about aphid infestations that typically show up this time of year.

Aphids are often dismissed as a monolithic issue and in the 'old days' there weren't too many reasons to go deeper since the various kinds were generally controlled the same way. Now, however, there is more interest in using biological controls, which don't necessarily work against all kinds of aphids. With the greater diversity of plants, use of vegetatively propagated material from distant locations, and broader array of insecticides comes more interest in knowing what we're actually dealing with. Research suggests diversity may be more than skin deep, that some aphid species may actually be a complex with different strains or 'biotypes' having varying host

preferences, biologies, and tolerances to insecticides. Who said biology has to be simple?

In recent years foxglove aphid has surfaced as a more significant pest than ever. One Northeastern US survey found it to be one of the two (along with green peach aphid) most common species in greenhouses now. Over a decade ago I started getting unusual reports of aphid problems in zonal and ivy geraniums. Unlike most other aphids in greenhouses, this one was causing leaves to become distorted. It wasn't difficult to control with insecticides but the dramatic



*Foxglove aphids - note darker green spots at base of cornicles*



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damage would persist well after the aphids had been controlled. In Asia foxglove aphid is notorious for transmitting a devastating virus in soybeans, but so far the aphid hasn't shown a fondness for the crop in the US.

Now we have been getting reports of foxglove aphid on a wide range of greenhouse crops and even in high tunnels on spring lettuce. We found it doesn't cause leaf distortion on all hosts – in one trial astilbe plants suffered no apparent injury. This aphid seems to thrive in cool spring conditions, fading out in summer heat. It can apparently overwinter outdoors on two species of hawkweeds, orange hawkweed (*Pilosella aurantiaca*, formerly *Hieracium auranticum*) and meadow hawkweed (*P. x floribunda*, formerly *H. floribundum*)<sup>1</sup>. In New Jersey it was found overwintering as live aphids, though in Maine only their eggs were found on the plants. Foxglove aphid utilizes many other weed hosts as well. Of course, populations can remain active all winter in greenhouses, undetected at low levels on these weeds, moving to crops during favorable spring conditions. Sticky cards are not reliable for detecting aphids as winged individuals may not appear until populations are already



*Distorted leaves on alstroemeria from foxglove aphid*



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very high. Watch for early signs of plant damage, honeydew, their cast 'skins' on leaves below and of course the aphids themselves. Look closely as they are otherwise well-camouflaged.

If depending upon biological control for managing aphids it is important to know when foxglove aphid is present. As shown in the photo, they tend to be pale green in color with two darker green blotches at the base of the cornicles ('tailpipes'). On adult aphids these are fairly easy to see even without a handlens. The parasitoid wasp *Aphidius colemani*, used for green peach and melon aphids, does not control foxglove aphid so one or two other parasitoids (*A. ervi* or *Aphelinus abdominalis*) should be incorporated.



*Yellow spotting and cast 'skins' from foxglove aphid on zonal geranium*



*Stunting and distortion on calibrachoa due to foxglove aphid*

When using insecticides the good news is that so far this aphid appears to be easy to control. Any in the long list of the usual labeled products should work, though consider plant sensitivity with some products, possible residue on flowers or foliage, need for some systemic or translaminar activity on dense plant canopies, and compatibility with biocontrol if natural enemies are also being used.

<sup>1</sup>Wave, H. E., W. A. Shands and G. W. Simpson. 1965. Biology of the foxglove aphid in the Northeastern United States. Washington: U.S. Dept. of Agriculture, Tech. Bull. 1338.