

Update on Whiteflies
Story Sparks
Extension Entomologist
University of Georgia

As everyone knows, we have plenty of whiteflies and it is likely to get worse as cotton is defoliated.

No single insecticide is likely to stand up to the pest pressure we are facing. Various options and their activity and weaknesses are:

Neonicotinoids:

Admire - we MAY be experiencing some resistance problems, but under this pressure it could simply be a numbers game (99.9% control still leaves a lot of whiteflies). I have never recommended Provado for whiteflies. In the root zone, imidacloprid (Admire) is picked up and gets in the plant and should give about 4 weeks control (depending on the rate used and pest pressure). As a foliar spray (Provado), it does not get into the leaf fast enough and is broken down by sunlight.

Platinum. Similar strengths and weaknesses as Admire. The foliar formulation, **Actara**, does work well on whiteflies and has re-registered on a variety of crops recently.

Venom - appears to be working well, but don't expect as long a residual. Similar to Admire, at the high rate (6 ozs) it should last 4 weeks or more when applied in the soil, but right now I would count on 2 or so. As a foliar, it also works well, but no more than one week under this pressure (normally two weeks).

Assail. Has worked well as a foliar insecticide for whiteflies. Again, probably about one week of control under this pressure (normal about two weeks).

Caution - while we have no documentation, it is possible that we may have some resistance to Admire. We have been using it a long time and Florida has documented resistance in some populations. Of interest - populations in Florida resistant to admire were still susceptible to Venom and Assail.

It is still a general recommendation to NOT use a foliar neonicotinoid insecticide if you have used a soil applied neonicotinoid.

Growth regulators:

Knack gives excellent control of eggs and last instar nymphs. Adults will continue to lay eggs, but they will not hatch; thus, you should see an accumulation of eggs after a Knack treatment. Nymphs present at the time of treatment will continue to develop, but will not reach the adult stage. This is tricky to evaluate.

Courier gives good control of nymphs. Mortality occurs when they attempt to molt to the next stage. Courier is heavily used in Florida and Arizona with reported great success. I personally have had better results with Knack.

Knack and Courier are growth regulators. They do not cause significant direct mortality of adults (but do reduce reproduction, etc.). If adult populations are heavy (and they are), growers need to add something to knock down the adults (endosulfan, bifenthrin, etc.).

Oberon. I still have relatively little experience with Oberon on whiteflies. My impression is that it has good activity on whiteflies, but not great. It will very likely require multiple (at least two) applications to get the best results.

Pyrethroids:

Bifenthrin (at high labeled rates; 5 to 6+ oz/ac) is the **only** pyrethroid that will provide good control of whiteflies when used alone; and even then, it can fail about 10 to 15 percent of the time. Addition of an organophosphate usually boosts the activity when failures occur. **Any** pyrethroid tank mixed with an organophosphate (Orthene, etc.) should provide decent control of whiteflies. Tests conducted ten+ years ago indicated that bifenthrin and Danitol were slightly better than the other pyrethroids when mixed with Orthene. Orthene and Monitor were slightly better than other organophosphates when mixed with Danitol.

Endosulfan (at 1 qt. or more) should give good control of adults, but no activity on immatures.

Viral Disease:

As we have heavy whitefly populations, we are likely to have some viral disease problems. Whiteflies generally transmit gemini viruses. The most likely diseases to be associated with whiteflies are tomato yellow leaf curl (which we are having problems with) and cabbage leaf curl (which we had last time we had heavy whitefly populations). When whitefly pressure is high, it is very difficult to suppress losses to these viruses. Roguing plants and use of insecticides may help some, but under severe pressure there is simply too much inoculum to deal with.

BROAD MITES ARE IN GEORGIA

Last time we had heavy whitefly pressure, we had broad mites. We have broad mites again. They are associated with whiteflies because they can move about by hanging on to whitefly adults.

They have a very wide host range, but damage appears most severe on peppers.

Damage on peppers (and other plants) can be easily mistaken for viral disease. You get a discoloration (bronzing or yellowing) of the terminal, twisted growth, and deformation of fruit.

A common symptom on pepper is an “s” shaped mid-vein on leaves (see picture on last page).

The key to identifying a broad mite infestation is to find the eggs. Look at the terminal growth.

Once leaves open up, broad mites move to the terminal. You will have to look under at least a 40X magnification. The eggs are easily identified as they are clear with white specks (see picture on last page; mites can also be seen on the picture of the leaf; for reference, the leaf shown is less than ½ inch long)

As far as I know, the best treatment we have for broad mites is Agrimek. Control is difficult to evaluate, as damage can continue to appear for two weeks after the mites are controlled. To get a good evaluation, you have to check terminals under the microscope.

