FOCUS on South Plains Agriculture

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Cotton Insects

Cotton Aphids Everywhere but Don't Panic

Just about every field I've stepped into this week has aphids; some fields with aphids averaging over 200 per leaf. However, most fields have had light infestations but we need to be extremely cautious. Everyone is anxious to get some fertilizer on this crop and nitrogen will feed the aphid population. I suspect we will see our largest aphid outbreak in the next 10-14 days. Currently, the heavy aphid populations appear to be in the areas that received the most rainfall, and in that area the heaviest aphid populations appear to be in skippy cotton. Skippy cotton will often have more aphids because there is more nitrogen available on a per plant basis.

Cotton aphids have a huge reproductive capacity and a single female may give birth to 30 to 80 live offspring. Aphid nymphs are born pregnant and will begin asexual reproduction within 4 to 7 days. A large number of green or dark colored aphids are indicative of a healthy aphid population. The smaller yellow forms are most often associated with a declining population or when the population is under some sort of environmental stress such as higher temperatures.

We are seeing aphids much earlier this year than normal. Most years when we see aphid outbreaks they occur in early to mid-August. In cotton that is filling bolls we can see a yield loss due to aphids. Yield reduction in pre-bloom cotton is much less certain. Aphids are a stress factor to plants and as you can imagine, when filling bolls aphids rob energy that would normally go to the bolls. But is pre-bloom cotton, aphids are really robbing what would go to growth rather than what would go to lint. So essentially, in pre-bloom cotton,

large populations of aphids will slow the plant's growth, delay development and may push harvest back a little. If we have an early cold snap, we may see some hit on mic and an outside chance of a hit on yield.

Keep in mind that cotton that is already under stress is the cotton we need to worry about most when it comes to aphids. Dryland cotton will typically be damaged by fewer aphids than something that has plenty of water. Fortunately most of our cotton has plenty of good soil moisture and should be able to tolerate quite a few aphids. As moisture runs out we need to be more diligent.

Many of the fields I have been in with aphids also have a good many lady beetles and other beneficial critters that eat aphids. As a general rule, if you can find 0.3 lady beetle adult, or 0.2 lady beetle per ft of row, then your aphid population will decline within a week. The lady beetles I am seeing most are the larvae of convergent lady beetle and the scymnus lady beetle. The larvae of the convergent lady beetle look like small black and orange alligators, while the larvae of the scymnus lady beetle look like small white fuzzy masses.

Convergent lady beetle larva

Scymnus lady beetle larva

In my opinion I would treat pre-bloom cotton under the following circumstances:

You are averaging at least 50 aphids per leaf (sampling the top fully expanded leaf).

AND

a. The cotton is under some other stress event such as low soil moisture.

OR

b. The cotton is far enough behind that you are concerned that some delay in maturity might cost you.

If you have enough lady beetles around and you are not overly concerned with a little stunting then hold off on spraying; chances are the aphid population will decline sharply within a week.

What are some of the risks associated with treating aphids in pre-bloom cotton?

Because these aphids are several weeks earlier than normal, we stand a good chance that they will return and you will have to treat for them again. Most of the insecticides we use for aphid control are hard on lady beetle larvae (click here to view impact of aphid insecticides on lady beetle larvae). Carbine is the only aphid product we have that tends to be soft on lady beetle larvae. Additionally, getting 100% control of an aphid population with any insecticide is difficult. Thus we end up with a few lingering aphids, no lady beetles, and a lot of season left for those few aphids to make a new popula-

tion. Also on top of that, there are reports where some people thought that the second aphid infestation was harder to control than the first. Whether this is only a perceived event or due to difficulty in obtaining good spray coverage, or perhaps selecting aphids that are more tolerant of the insecticide is not certain, but does warrant attention.

What is the best product to treat cotton for aphids?

In my tests over the past 3 years I would rank the insecticide for aphid efficacy as: Intruder ≥ Carbine = Bidrin > Centric > Trimax Pro.

Below is a set of slides from our 2009 aphid tests. All treatments included crop oil concentrate at 1% v/v, and bear in mind that this was on 3-ft high cotton beginning in late August. On smaller cotton, good coverage will be easier and control may be better.

- 0 DAT slide
- 3 DAT slide
- 7 DAT slide

Under the humid conditions we are currently experiencing do not expect Carbine to work quickly. It prevents the aphids from feeding so they have to starve and dry up to die. When hot and dry you may see decent kill in 3 days, but when humid and/or cool, it may require a week. Also, Intruder, Centric and Trimax Pro need to be given 3 to 5 days fully work. Bidrin typically works much faster, but has a short residual.

When possible, apply the insecticide by ground. When going by ground, you should shoot for a spray volume of at least 10 gallons per acre and include an adjuvant such as crop oil concentrate at 1% v/v spray solution. Other spray adjuvants and non-ionic surfactants can also help with coverage, but currently crop oil concentrate seems to be helping the most. If going out by air, coverage is more difficult. A spray volume of 3 to 5 gallons per acre is recommended. Lower volumes may result in less than adequate results. When spraying by air, the addition of an adjuvant is even more critical; the addition of crop oil concentrate at 1 pint per acre is a good choice.

Spraying sunflowers near Olton

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