ENTOMOLOGY PANEL – BELTWIDE COTTON CONSULTANTS CONFERENCE-JANUARY 2020

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Introduction

My comments today will be based on what we saw and heard from the half-a-million acres of cotton in Alabama. I have not surveyed the other entomologists in the Southeast, but I do know from reading weekly newsletters, AgFax reports and Pest Patrol reports that what we experienced in Alabama was similar to the other Southeastern states on most insects. This leads me to the next point I wish to make and that is we had extreme variability in insect pressure in Alabama from region to region and sometimes with certain species even from field to field on the same farm. In my forty-seven years as an Extension Entomologist (and I hope to make at least one more) I have never experienced a year when insect monitoring was more important. It was not uncommon for adjacent fields to require drastically different insect management inputs in 2019. At this point, I would like to begin with thrips and walk through the season to stink bugs and make a few comments and statements about what we experienced in 2019 and what we might use to take home going into the 2020 season.

Thrips

Thrips migrated from wild hosts unusually late in 2019 (peak was from mid-May on) and in extremely high numbers (highest in 8-10 years) caused by an extended May-June drought following an early spring. Our later planted cotton encountered the heaviest pressure but earlier planted cotton had heavy thrips damage even beyond the fifth true leaf stage (Figure 1). Some fields required two or more foliar sprays on top of an at-plant seed treatment. The thrips prediction model, developed at NCSU, was highly accurate in predicting this late thrips pressure and will help us be more prepared in future years. Multiple foliar sprays with acephate aggravated the spider mite situation under the extremely hot, dry conditions. In the future, I would not advise more than one foliar application of acephate and that needs to be prior to the third true leaf.

Figure 1

Plant Bugs

This extended drought coupled with excessive temperatures also caused an early and heavy movement of adult tarnished plant bugs into cotton (Figure 2). Our primary early season wild host for plant bugs is daisy fleabane, which is sensitive to drought and heat. Growers that treated economic levels of these migrating adults in June had sub-economic levels of hatching immatures in July. Over most of Alabama and the southeastern U.S., the pyrethroid chemistry will still suppress plant bugs. Our other options include acephate, Bidrin (post bloom), imidacloprid (at maximum label rates), Diamond, Transform and Centric.

Figure 2

Aphids

Aphid pressure varied from very light in the northern areas of our state to extremely heavy in southern Alabama. Many of the heavy aphid infested fields did receive foliar treatments, not because of concerns about the new virus disease that is transmitted by aphids, but because many fields were planted late (June) and under severe drought stress at that time. The only point I will make about aphids relates to their impact on the incidence of the cotton leafroll dwarf virus (CLRDV). We saw no correlation between aphid numbers and the presence of CLRDV detection or symptoms. Furthermore, we discovered that total control of aphids could not be accomplished with insecticides. As many as 8 aphid sprays in research plots did not zero out aphids but instead just created spider mite problems.

Spider Mites

Mites are an old historical pest of cotton. Their impact was minimal during the era of aldicarb (1970-????). At present they are present in most all fields season long just waiting for certain weather conditions (hot, dry) or to be flared by the use of certain insecticides. Mites flared early in 2019 (June) due to the heat and drought and remained with us through the season. They would go from barely detectable to heavy field-wide during every 7-14 day period when no rainfall occurred and the temperatures were 95-100° each day.

Escape Bollworms on 2 Gene Cotton

2019 was the second consecutive year where escape bollworms were extremely low over most of the state and the southeastern U.S. Bollworms began depositing eggs in cotton in low numbers about July 10 in south Alabama. This low egg lay continued well into August in the northern counties. The number of eggs and/or number of escape larvae were never enough to pull the trigger for an overspray in most fields. At harvest time, worm damaged bolls could be found in 2 gene cotton, but the percent was 0-1% in most fields (Figure 3).

Figure 3

Stink Bug Complex

The most economically damaging insect over most of the state was the stink bug complex, which included both the brown marmorated (BMSB) species (Figure 4) and the leaf-footed bug (LFB), *Leptoglossus* (Figure 5). Stink bugs overwintered in high numbers and brown stink bugs were already in cotton prior to bloom. Just as a side note, stink bugs required 3-4 sprays in corn in the southern counties. The BMSB can now be found in cotton throughout most of the state. They continue to be heavy border feeders, concentrating in the first 50 feet into fields. This pest is going to present a major problem in future years in smaller 10-20 acre fields scattered throughout the farmscape. In years like 2019, these smaller fields will require a stink bug spray every 10-14 days from early bloom to maturity. Growers with fields spread over multiple counties will not be able to get around that often. The leaf footed bug, which damages bolls just as stink bugs do, were present in fields statewide in August. Consultants and other fieldmen had noted in past years that the pyrethroid chemistry that is often used for stink bug control will not control the leaf-footed bug. Growers were alerted to that fact and Bidrin became the product of choice for the boll feeding bug complex in late season. Stink bugs, of all insects, do the most economic damage to cotton each season in Alabama. It is advisable for growers to have a stink bug insecticide in the tank every time a sprayer goes across a field from the third week of bloom to maturity.

Figure 4

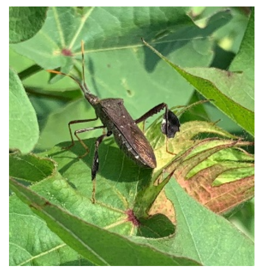

Figure 5