Pest e-alerts

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Sugarcane Aphids Numbers are Building in Oklahoma.

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On July 12, 2016, we found sugarcane aphids in a sorghum field in Caddo county that had exceeded treatment thresholds. Jerry Goodson, Extension Assistant in Altus, reported finding a sparse colony of sugarcane aphids in Tillman county last week. Most of the sugarcane aphid infestations that we have observed so far are located south of Interstate 40. We will continue to provide weekly reports of sugarcane activity throughout the rest of the summer growing season.

Figure 1. Sugarcane aphid

Oklahoma's "Sugarcane Aphid Team" (which also includes Dr. Ali Zarrabi, Mr. Kelly Seuhs, Dr. Kristopher Giles from the Department of Entomology and Plant Pathology, USDA researchers Dr. Norm Elliott and Dr. Scott Armstrong, and Dr. Josh Loftin and Dr. Tracy Beedy from the Department of Plant and Soil Sciences), is conducting research to identify effective insecticides, resistant sorghum varieties, best cultural practices to avoid sugarcane aphid, and develop improved sampling and decision-making rules for treatment thresholds.

When scouting, make sure you are finding sugarcane aphid, as it can be confused with yellow sugarcane aphid. The sugarcane aphid (Fig.1) is light yellow, with dark, paired "tailpipes" called cornicles and dark "feet" called tarsi. The yellow sugarcane aphid (Fig. 2) is bright yellow with many hairs on its body and no extended cornicles.

Figure 2. Yellow sugarcane aphid

Currently the suggested treatment threshold for sugarcane aphid is to treat when 20-30 percent of the plants are infested with one or more established colonies of sugarcane aphids. An established colony is an adult (winged or wingless) accompanied by one or more nymphs (Fig 3).

Figure 3. Sugarcane aphid colony

Two insecticides, Sivanto 200 SL, and Transform WD, provide superior control of sugarcane aphid. Sivanto can be applied at 4-7 fluid ounces per acre. Transform WG can be applied at 0.75-1.5 oz. per acre. It is important to achieve complete coverage of the crop in order to obtain the most effective control. Consult CR-7170, *Management of Insect and Mite Pests in Sorghum* http://pods.dasnr.okstate.edu/docushare/dsweb/HomePage for additional information on sorghum insect pest management.

Sorghum "Whorlworm" and "Headworm" Decisions

Tom A. Royer, Extension Entomologist

This week, I received several reports of "worms" feeding in the whorls of sorghum (Fig 4) which I identified as fall armyworms. I rarely recommend that a producer treat for fall armyworms infesting whorl stage sorghum. Why? because available research suggests that under rain-fed production, whorl feeding rarely caused enough yield loss to warrant treatment costs, AND more importantly, most insecticide applications provide poor control. The poor control is a result of difficult delivery of the insecticide into the whorl allowing the caterpillars to avoid contact. However, recent unpublished research shows that some new

Figure 4. "Whorlworm" damage

insecticides may provide effective control of fall armyworm in the whorl, so it is time to revisit my recommendations.

Recent unpublished research results conducted in **irrigated sorghum** out of Lubbock suggest that Prevathon®, Besiege®, and Belt® can provide acceptable control of the caterpillars in the whorl (even large caterpillars). Therefore, the second of the two reasons I listed above may no longer be true; they can be controlled. However, 1: these products were tested on irrigated sorghum 2: they are quite expensive 3: applying control may flare sugarcane aphids and spidermites and 4: WE STILL DON'T KNOW HOW THEY IMPACT YIELD, thus, we are still "guessing" with regard to return on investment for control.

How has this information changed my recommendations? Keep in mind that the research in Texas was conducted in irrigated sorghum with a very high yield potential. Since Oklahoma growers typically grow rain-fed sorghum which has lower yield potential, my suggestion is to examine 30 plants (5 consecutive plants in 6 different locations) **and** split a few stalks to see where the panicle is located. **If the panicles are close to emerging (boot stage), my "best guess" is to consider treating if 70% or more of the whorls are infested and there are an average of 1-2 live caterpillars present.** Under this scenario, you would be protecting physical damage to the emerging head.

On choosing an insecticide I offer some things to consider. 1: the effective products may or may not be available. 2: some have the potential to flare sugarcane aphids and spidermites. 3: they are all expensive. Belt is still available for use, but EPA recently requested that Bayer voluntarily remove it from the market. Bayer refused, and asked for an administrative hearing. On June 1, an administrative law judge upheld EPA's decision to cancel registration of Belt. Bayer is appealing and is scheduled to receive another review from the Environmental Appeals Board before July 6. If EPA prevails in the appeal process, Belt will no longer be available. However, Bayer says that Belt can still be sold, purchased and used during the appeals process.

I have little information on how Belt affects sugarcane aphids or spidermites. Besiege is a mixture of the active ingredient in Prevathon with an added pyrethroid. Research in Lubbock suggests that spidermites may flare with Besiege. We also know that any pyrethroid will flare sugarcane aphid. Prevathon has not shown the propensity to flare either spidermites or sugarcane aphids.

We are attempting to obtain data on the effectiveness of, and yield returns obtained from Prevathon to control fall armyworm in the whorl. Until I have more data, I can only say that a producer should carefully consider a decision to control "whorlworms". The jury is still out as to whether controlling them is economically justified.

With regard to headworms, we have well-designed decision making capability coupled with solid treatment thresholds. USDA and University scientists developed a computer-based program that can calculate an economic threshold for headworms (Fig.5) and provide a simple sampling plan that tells the producer if threshold is reached (Fig.6).

Figure 5. Sorghum headworm


Figure 6. Bucket sampling for headworm

Called the ***Headworm Sequential Sampling and Decision Support System*** (http://entoplp.okstate.edu/shwweb/index.htm), it uses input on the plant population, the crop's worth and the control costs to calculate a treatment threshold.

Now, prepare for the tricky part! If we only had to consider one pest, I would advise selecting the insecticide that works best on that pest. However, we now have to consider sugarcane aphid in all of our sorghum pest management decisions. In my opinion, if sugarcane aphid is already starting, a producer must consider using either Transform or Sivanto. That narrows the choice options for combining another product to control headworms because pyrethroids could flare the aphids.

I have reviewed data from multiple years of insecticide trials throughout the SE US. The data suggests that products containing chlorpyrifos provide spotty control of headworms. Data that I have reviewed from other insecticide trials suggests that Prevathon and Blackhawk provide excellent control of headworms and Diamond® was also effective on headworms. For information on spray mix compatibility, talk to the local sales representatives for the products you have chosen.
Consult CR-7170, *Management of Insect and Mite Pests in Sorghum* http://pods.dasnr.okstate.edu/docushare/dsweb/HomePage for more information.

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