

FOCUS on South Plains Agriculture

[Preparing for Sugarcane Aphid Part I, Early Season](#)

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Sugarcane aphid will most likely return for another run at the High Plains sorghum crop in 2017, and this is the first in a series of articles to compile management suggestions based on what we learned from our 2015 and 2016 research and general field experiences. Contributors to this work include Dr. Ed Bynum, Extension Entomologist in Amarillo, Dr. Katelyn Kesheimer and Blayne Reed, Extension Agents IPM in Lubbock and Crosby counties and Hale, Swisher and Floyd counties, respectively, and Dr. Pat Porter, Extension Entomologist in Lubbock.

Beneficial insects cleaned up the overwintering aphids in 2016

In our 2015/2016 overwintering studies we found successful aphid survival as far north as Tulia. This was a bit of a surprise as our studies the previous year found survivorship only as far north as Hale Center. In 2016 we found SCA on Johnsongrass in Lubbock and Swisher counties in early May. At the time we were concerned that it would be a long aphid season, but fortunately there were abundant aphids in 2016 wheat. These served as food sources for the large number of beneficial insects that went in to overwintering in the fall of 2015 after feeding on sugarcane aphids. After the initial 2016 aphid finds on Johnsongrass we intensified our search, only to discover that the small sugarcane aphid populations were no longer to be found. It seems that the beneficial insects finished eating aphids in wheat and then moved over and wiped out the overwintering and colonizing sugarcane aphids on Johnsongrass.

Eventually sugarcane aphids began to arrive from the east in July, first along the cap in Crosby and Floyd counties. This time they trickled in little by little, and this was fortunately unlike the large clouds of winged aphids that hit the southern High Plains all at once in 2015. Last year's gradual westward movement of aphids meant that they were relatively predictable.

What about this year?

The abundance of beneficial insects early in the season this year will be important in protecting sorghum by preventing aphid movement from Johnsongrass to sorghum fields. Given that we had far less sorghum in 2016 than in 2015, it is the case that we had fewer beneficial insects going into overwintering in 2016. In effect we are starting 2017 with fewer beneficial insects in the system, but fewer sugarcane aphids as well. Katelyn Kesheimer checked some wheat fields today and found that some had high numbers of bird cherry-oat aphids and greenbugs, but there were high numbers of beneficial insects as well. Other wheat fields did not have many aphids or beneficial insects. Ultimately, aphid infestations on the High Plains will depend on overwintering and the earliness of arrival and severity and movement of sugarcane aphids from downstate. This causes a level of unpredictability for our 2017 sugarcane aphid situation. We will monitor populations and report our findings in this newsletter.

Early planting resulted in far less aphid pressure

Our primary recommendation for 2016 was to plant early so that the sorghum was as far along in growth stage as possible by the time aphids arrived. It is well documented that earlier growth stages can suffer more damage, so the idea was to outrun the aphid as much as possible. This strategy paid big dividends in 2016 for those who employed it.

However, to a lesser extent in 2015 we were also suggesting that late planted sorghum might suffer less damage because of all of the beneficial insects in the system that had developed on earlier planted crops. This definitely did not happen in 2016 and the standard and late planted crops were severely damaged by the aphid. So with two years of experience and data, our strongest recommendation is to plant early so as to outrun the aphid as much as possible.

Seed treatments are cheap insurance

We recommend that neonicotinoid seed treatments be used on all sorghum. In 2016, the early planted crop would not have benefitted from the 45 days of protection afforded by seed treatments. However, if we had not had abundant aphids in wheat to serve as food for the large number of beneficial insects that went in to overwintering, it might have been a

different story and the early planted sorghum crop might have been infested in May or June. It is too early to tell whether we will have a similar high number of overwintered beneficials to provide protection in 2017. Fields planted in the normal window or late could expect significant aphid pressure within the 45 day window of seed treatment effectiveness. Also, even though seed treatments gradually play out, they still provide some sub-lethal effects on aphid reproduction beyond 45 days and, depending on chance, seed treatments might mean one insecticide application later rather than two. On balance it makes sense to use treated seed to protect against downside risk of infestations in pre-flowering and flowering growth stages. Even for standard and late planted sorghum the ability of seed treatments to provide protection depends largely on when the aphids infest the crop during the season. Therefore, even fields with treated seed need to be scouted for sugarcane aphid.

"Resistant or Tolerant" hybrids are still susceptible

None of the so-called resistant or tolerant hybrids on the High Plains have been shown to be able to keep aphid numbers below treatment thresholds. At best they slow the rate of aphid population increase; when the aphids arrive the threshold will most probably be exceeded and insecticides will be necessary. However, our research at Halfway showed that there is a significant economic benefit to using resistant hybrids even though they still need to be sprayed at the normal threshold. As yet we do not have a list of resistant or tolerant hybrids that we have confidence in, and it will take three years of replicated data from the High Plains before solid recommendations can be made. At present we recommend that growers consult their local seed company for suggestions on resistant or tolerant hybrids.

Coming in Part II

The next article will address treatment thresholds, insecticide rates and efficacy, and an economic threshold for a potential second insecticide application if the first application failed or could not be made.

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