



# Pest e-alerts



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## Sugarcane Aphids, Sorghum Midge, and Headworms in Sorghum: How to Make a Decision for this “Horse Race”?

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Late planted sorghum in Oklahoma is under a “triple threat” from sugarcane aphids, sorghum midge and sorghum headworms. Unfortunately, there is no “silver bullet” insecticide that can control all of these pests. This may seem like you need to pick your winners much like you would at a race track. However, I have some suggestions that can help you “handicap” your picks.



**Sugarcane aphid:** I have already discussed sugarcane aphid management options in an earlier news release [e-Pest alert vol. 14 no. 32](#). Two insecticides, Sivanto™ and Transform™ are the best option for controlling sugarcane aphid. However, they will not control sorghum midge or sorghum headworms, so if those are also a problem, other insecticides would be required to control them. Some

(mainly pyrethroids), if used, would likely cause flair-ups of the sugarcane aphid, so I don't recommend that they be used.

**Sorghum midge:** Sorghum midge is a tiny fly, measuring less than 1/32 inch with a reddish abdomen. The female fly lays eggs in open florets and the maggots feed inside the developing seed. The seed contents are usually completely consumed. The lifecycle from egg to adult is completed in 14-16 days. Heads that have sorghum midge injury are referred as “blasted”. The adults live for one day, but one female can lay 30-100 eggs.

This year, sorghum was planted over a long time window in Oklahoma, which translates to sorghum fields are blooming over a long period of time. We also have a huge flush of johnsongrass. This provides an ideal scenario for sorghum midge buildup. Scouting is essential to achieve effective sorghum midge control with an insecticide. There are two ways to scout. One is to carefully move to a plant without disturbing it, quickly put a plastic bag over the head, and shake it vigorously. Remove the bag and contents and look for midges inside the plastic baggie. The other way is through direct observation; without disturbing the plant, look for small gnat-sized flies that are moving about the head or are laying eggs on flowers with extended anthers. Use a 10X magnifying hand lens to aid in identification.



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The best time to scout for sorghum midge is when they are most active (9:00 -11:00 am). Begin scouting when the heads first emerged heads begin pollinating and continue every 3 days until the bloom is finished. The economic threshold is 1 midge per head for susceptible or 5 midge per head for resistant varieties. Contact your seed dealer for information on whether this variety is susceptible or resistant. Apply when the threshold is reached, and at least 25-30% of the heads are blooming.



**Sorghum Headworm:** The third threat is headworms. This is a complex of two insects, the fall armyworm and the corn earworm. Oklahoma has experienced an early and heavy infestation of fall armyworms in 2015. USDA and University scientists developed a computer-based program that can calculate an economic threshold for headworms and then provide a simple sampling plan that will tell the producer if that threshold has been reached. Called the Headworm Sequential Sampling and Decision Support System (<http://entopl.okstate.edu/shwwweb/index.htm>), it will take input on the plant population, the crop's worth and the control costs and calculate a threshold.

Now, get ready for the tricky part. When dealing with each pest, control options are fairly straightforward. If you are dealing with a single pest, you pick your insecticide based on which one will work the best on that pest. However, when dealing with a combination of two or all three of these insect pests, you will have to pick a "daily double" or a "trifecta" and select the pesticide that will work on multiple pests. The only way to control them is with a tank-mix of insecticides. In my opinion, if sugarcane aphid is already starting, you have to consider using

either Transform or Sivanto. That narrows the choice options for controlling one or both of the other pests because I have already indicated that pyrethroids could flair the aphids.

- If midge is not in the picture, Belt™, Blackhawk™, Diamond™, or Prevathon™ would be options. Data that I have reviewed from other insecticide trials suggests that Prevathon and Blackhawk provide excellent control.
- If midge is in the picture, Blackhawk™, methomyl, or a product containing the active ingredient chlorpyrifos are registered.
- If all three are a threat, Blackhawk™, or chlorpyrifos products are your options.

I have reviewed data form multiple years of insecticide trials throughout the SE US, and it suggests that chlorpyrifos products provide spotty control of headworms or midge. I don't have any experience with Diamond™, but it seemed to be weak on worms, and I found no data on its effectiveness for sorghum midge. Blackhawk™ should provide excellent control of caterpillars, and I suspect that since Dow has obtained a 2(ee) label for sorghum midge, they are confident that it will work, but I found little published data on its effectiveness on sorghum midge.



Finally, I strongly urge producers to check their fields and scout accurately. Do not spray until suggested thresholds are reached, and apply with the highest gallonage possible (5 or more gallons/acre by air, or 10 or more gallons/acre by ground). Spraying too early with inadequate coverage will likely require a second application (and maybe a third) from aphid recolonization.

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#### **Dr. Richard Grantham - Director, Plant Disease and Insect Diagnostic Laboratory**

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