

Sugarcane aphids: A potential threat to grain sorghum in Kansas

Producers in southern Kansas should start scouting their grain sorghum fields for the sugarcane aphid. As of last week, this relatively new pest had spread quickly from Texas into the northern Oklahoma counties of Noble, Kay, and Grant. This means the aphid was on the Oklahoma-Kansas state line last week. It is very possible that the aphids have already moved northward into Kansas. Sustained southerly winds will make their arrival a virtual certainty.

The sugarcane aphid, *Melanaphis sacchari*, has been in the U.S. for quite a while as a minor pest of sugarcane in Florida and Louisiana. But in 2013 it suddenly began infesting sorghum fields and Johnsongrass in southern states. It has been confirmed in 12 southern states so far, and is likely to be confirmed in more states in the near future.

Much of what is known about this new pest comes from the southern states affected so far. A good publication is *Sugarcane Aphid, a New Pest on Grain Sorghum in Arkansas* from University of Arkansas Extension: <http://www.uaex.edu/publications/FSA-7087.pdf>

This aphid begins its infestation on the underside of sorghum leaves, multiplies rapidly, then moves onto other parts of the plant. The first thing you may notice is a glossy coating of a sticky honeydew on the leaves. Sooty mold can begin growing on this honeydew, which is the excrement of the aphids, and this black film on the leaves can reduce photosynthesis.

Entomologists and agronomists in southern states have found that a heavy infestation of the sugarcane aphid can kill grain sorghum plants or reduce or prevent head emergence, depending on the timing of the infestation. The aphids can also reduce grain size and grain quality. The bottom line is that this aphid can both reduce yields and lead to late-season lodging by killing plants prematurely. There can also be serious problems harvesting grain when aphids have feeding in the panicle during grain fill.

Effective control of sugarcane aphids in sorghum requires timely treatment of the aphid population before colonies become too large. To estimate the number of sugarcane aphids in a field and whether they require treatment, use the following sampling protocol:

- Once a week, walk 25 feet into the field and examine plants along 50 feet of row.
- If honeydew is present, look for sugarcane aphids on the underside of leaves above the honeydew.
- Inspect the underside of 2 leaves, one upper leaf and one lower leaf, from each of 15-20 plants per location.
- Sample each side of the field as well as sites near Johnsongrass and tall mutant plants.
- Check at least four locations per field for a total of 60-80 plants.

If no sugarcane aphids are present, or only a few wingless/winged aphids are on upper leaves, continue once-a-week scouting.

If sugarcane aphids are found on lower or mid-canopy leaves, begin twice-a-week scouting.

If the field average sugarcane aphid infestation is 50-125 aphids or more per leaf, apply an insecticide within 4 days and evaluate control after 3-4 days. Consider treatment at 50 aphids per leaf if the field will be scouted just once a week. Due to a very high rate of reproduction on susceptible sorghums, this aphid can build populations rapidly, and a small infestation can get out of control in less than a week.

If the sugarcane aphid is found, but the population level is below the threshold, continue scouting twice a week. It is important not to spray before threshold is reached, as this will provide an opportunity for aphid predators to control the population naturally, and also to increase their numbers. There is also the risk that, by spraying too early, additional applications may be required and the grower can run into limits on repeated applications of the more effective products.

Many insecticides labeled for use against aphids have proven largely ineffective for control of sugarcane aphids, but there are exceptions. Kansas has received “section 18” emergency registration for Transform (Dow Agrosiences) and Sivanto (Bayer CropScience). Both are highly systemic within the plant, have translaminar activity (they can kill an aphid on the opposing side of the leaf), and have been proven effective for controlling sugarcane aphid provided they are properly applied. This requires ground application in a large volume of water (10-20 gal/acre), preferably using drop nozzles. There is a limit of 2 applications of Transform on the same field in one year. Note also that aphids may require up to 48 hours to die, but this material has proven very effective and, significantly, quite safe for most aphid predators. Even so, continued weekly scouting is advised until grain is filled, as reinfestation can occur if winged aphids are still flying.

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