Insecticide Selection for Sorghum at Risk to Sugarcane Aphid Infestations, 2015

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The insecticides Transform and Sivanto are effective against sugarcane aphid SCA but are not labeled for control of midge, headworms or stinkbugs in sorghum. Unlike Transform and Sivanto, pyrethroid and some other insecticides applied for control of midge, headworms and stinkbugs are toxic to many beneficial insects. Predatory insects, including lady beetles, larval green lacewing and syrphid flies, and some parasitic wasps feed on sugarcane aphids. These natural enemies help reduce the rate of increase of sugarcane aphid populations. It is therefore important to preserve beneficial insects whenever possible.

In 2014, there were reports that SCA infestations sometimes increased following application of pyrethroid insecticides to control midge and headworms in sorghum. The increase in SCA numbers following a pyrethroid application could have resulted from the destruction of beneficial insects that were suppressing SCA populations. However, pyrethroids are effective against midge, headworms and stinkbugs, and are relatively inexpensive compared to alternative insecticides.

Consider the following when selecting insecticides to control midge, headworms and stinkbugs when sugarcane aphids are also present in the field.

1. Midge, headworms and stinkbugs, when present at treatment thresholds, are a certain threat to yield and profitability. While there is some risk of SCA outbreaks following use of some insecticides, crop yield should not be jeopardized in an effort to protect natural enemies.

2. For midge and stink bug control, there are no labeled options that will not reduce the numbers of beneficial insects (see Table). If an insecticide is applied for control of midge or stinkbugs, monitor sugarcane aphids frequently and be prepared to make a follow-up application of Sivanto or Transform if sugarcane aphid numbers exceed the treatment threshold of an average of 50-125 sugarcane aphids per leaf.

3. For headworm (corn earworm and fall armyworm) control, the pyrethroid insecticides (Group 3 and 3a in table below), methomyl and chlorpyrifos, are broad spectrum insecticides and are toxic to most natural enemies (see Table). In comparison, Prevathon and Belt are less toxic to natural enemies and very effective on caterpillar pests including corn earworm and fall armyworm. Besiege is a pre-mix of the same active ingredient as Prevathon plus a pyrethroid, and hence will not be as safe on beneficial insects as Prevathon. Spinosad, the active ingredient in Blackhawk, is much less toxic to many natural enemies than these other insecticides. Use of higher rates and long residual insecticides extend the time before natural enemies can re-populate a field.

4. Scout fields and base decisions to apply an insecticide on economic thresholds. That is, do not decide to treat based solely on crop growth stage or time of year, but based on insect counts and treatment thresholds. The economic threshold depends on the current value of the crop, the number of grain heads per acre and the cost of control. These variables can be entered into calculators available on-line to determine the number of midge, headworms or rice stinkbugs that should be controlled to avoid crop loss greater than the cost of the insecticide application. These calculators are available at:

https://insects.tamu.edu/extension/apps/index.html

Insecticides Labeled for Control of Midge, Headworm (Corn Earworm, Fall Armyworm) and Stinkbugs in Sorghum.

Active Ingredient	Brand Name	Group	Labeled for Control of:			Relative Impact on Aphid Natural Enemies[2]	Days to wait after application before harvest
			Midge	Head Worm[1]	Stinkbugs		
cyfluthrin	Baythroid, Tombstone	3a	Yes	Yes	Yes	High	14
esfenvalerate	Asana XL	3	Yes	Yes	No	High	21
lambda cyhalothrin	Karate Z, Warrior, Lambda-Cy	3	Yes	Yes	Yes	High	30
zeta-cypermethrin	Mustang Max	3	Yes	Yes	Yes	High	14
gamma-cyhalothrin	Declare	3	Yes	Yes	Yes	High	30
alpha-cypermethrin	Fastac	3	Yes	Yes	Yes	High	14
chlorpyrifos	Lorsban, Nufos	1B	Yes	Yes	No	High	30 (1 pt) 60 (> 1 pt)
methomyl	Lannate	1a	Yes	Yes	No	High	14
dimethoate	Dimethoate 400	1b	Yes	No	No	High	28
spinosad	Blackhawk	5	No	Yes	No	Low	21
flubendiamide	Belt	28	No	Yes	No	Low	14
chlorantraniliprole	Prevathon	28	No	Yes	No	Low	1
lambda-cyhalothrin plus chlorantraniliprole	Besiege	3 and 28	Yes	Yes	Yes	High	30

[1] Headworms include corn earworm and fall armyworm. Pyrethroids are often ineffective on larger FAW

[2] Data on impact on aphid natural enemies is often lacking. Rating may be based on impact on honey bee only.