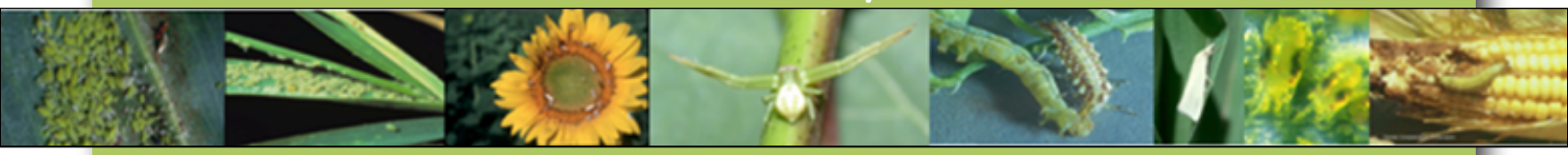
Panhandle Pest Update



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Aphids in Grain and Forage Sorghums

Now that early planted fields are growing well and later planted fields are emerging, it may be a good time to review some of the aphids that need to be scouted. First, we have several aphid species that are pests of sorghum and may be mistakenly identified by some individuals.

Photo: Ed Bynum

An aphid that can be a pest of seedling sorghum through grain development is the **Yellow sugarcane aphid**, ***Sipha flava*** **(Forbes)**. This aphid is usually lemon yellow, but may be pale green. The body has rows of small spines (hairs), the cornices are very small and difficult to see. The tips of the feet and antennae are not black. While feeding on the underside of a leaf the

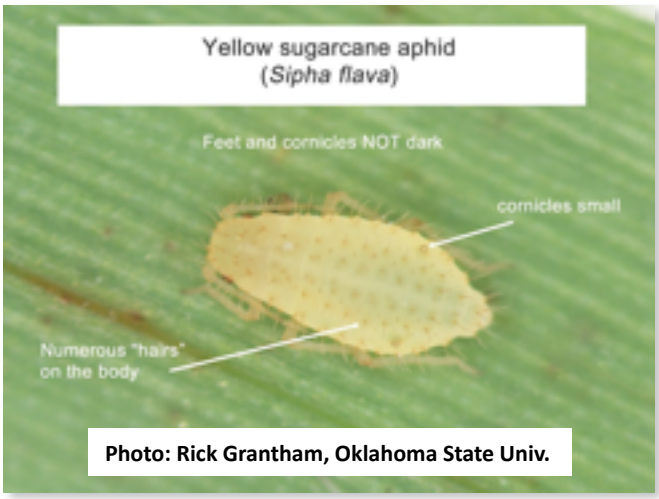

Photo: Rick Grantham, Oklahoma State Univ.

aphids inject a potent toxin that cause seedling leaves to turn reddish/purplish and older leaves yellow. Very few aphids are needed to cause a leaf to die. They do not produce honeydew. Economic injury levels have been established for seedling plants up to the three true-leaf stages and can be found in the the Texas AgriLife

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publication, B-1220, "Managing Insect and Mite Pests of Texas Sorghum". No economic injury levels have been established for vegetative plants after the third true-leaf stage and during head development, but damaging infestations can develop and cause yield losses. However, the following greenbug action threshold can be used for yellow sugarcane aphid to prevent excessive yield losses in older sorghum. **Yellow sugarcane aphids have already been found this spring.**

Action threshold levels for greenbug (yellow sugarcane aphid) on sorghum at different growth stages

Plant size	*When to treat*
Larger plant greater than 6 inches to boot	Colonies causing red spotting or yellowing of leaves and before any entire normal-sized leaves on 20% of plants are killed
Boot to heading	At death of one functional normal-sized leaf on 20% of plants
Head to hard dough	When colonies are sufficient to cause death of two normal-sized leaves on 20% of plants

Greenbugs, *Schizaphis graminum*, is another pest of sorghum if the sorghum is not a greenbug resistant hybrid. The majority of commercially available sorghum hybrids are resistant to biotype C and E greenbugs. Some sorghum hybrids have resistance to the biotype I greenbugs. In very general terms an aphid biotype is when aphids are able to survive and reproduce on a host that it could not survive on previously. For example, greenbugs were first a pest on small grains and then in the 1960's greenbugs were able to survive and damage grain sorghum. The greenbugs that were able to survive on sorghum were designated as biotype C. Sorghum breeders were able to identify genes in sorghum that were resistant to the biotype C greenbugs. Then greenbugs were able to survive on the sorghums containing the genes for the biotype C greenbugs. These new greenbugs were labeled as biotype E greenbugs. Researchers have now identified four biotypes (C,E, I and K) that are able to infest sorghum. All greenbugs, regardless of the biotype, are identical in appearance. Greenbug biotypes E and I are most common greenbugs in our sorghum fields and may occur together in some sorghum-growing areas. Therefore, the use of sorghum hybrids with resistance to the greenbug biotypes in our area will provide protection and prevent damaging infestations.

The greenbug is a light green colored aphid with a darker green stripe down the back. The tips of the cornicles, antennae and the tarsi (feet) are black. This aphid also injects a toxin into the plants when feeding that causes reddish spots on the leaves and aphids produce honeydew. Feeding on a susceptible hybrid will cause leaves to begin to die, turning yellow and then brown from the outer edges. Populations on a susceptible hybrid can develop to extremely high numbers on the underside of the leaves. Greenbug populations can increase twenty-fold per week and cause extensive loss in yields in a short period of time. The action threshold can be used in making decisions on when to treat.

Photo: Rick Grantham, Oklahoma State Univ.


Greenbug Damage

Corn leaf aphids, Rhopalosiphum maidis, is an aphid that infest the whorl of the sorghum plant. They do not inject a toxin when feeding and rarely cause economic yield losses. When populations are establishing one may have to pull out the whorl and unfurl the leaves to find aphids on pre-boot sorghum. However, when populations are abundant aphids can be easily seen in the whorl. The aphid is dark bluish-green to gray-green in color. The entire parts of the legs, antennae, and cornices are black. Beneficial insects, such as lady beetles, are attracted to and feed on the corn leaf aphids. Therefore, the corn leaf aphids are an important source for building up beneficial insects to help control other aphid pests, such as yellow sugarcane aphids, greenbug, and sugarcane aphids. Since the corn leaf aphid primarily lives in the sorghum whorls, their populations rapidly declines when the sorghum boot extends out of the whorl and heads exerts from the boot.

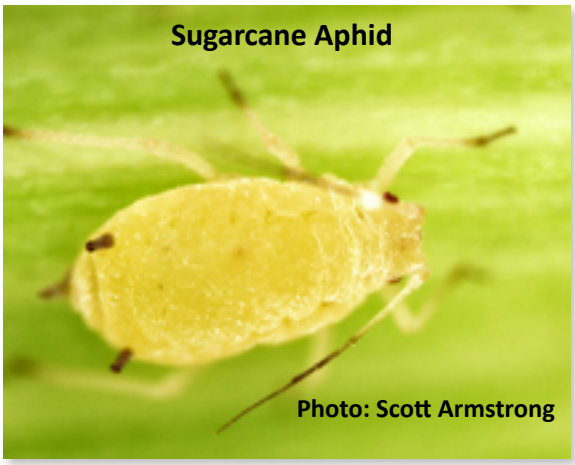
Corn Leaf Aphids
Photo: Pat Porter

Corn leaf aphids in sorghum whorl
Photo: J. P. Michaud, Kansas State

Sugarcane Aphid, *Melanaphis sacchari*, has been an extremely damaging pest of sorghum since 2015 on the Texas High Plains. These aphids have diverse coloration from pale yellow, grayish, or tan. The distal half of the antennae, cornicles, and tips of the legs (feet) are black. They excrete large amounts of honeydew that covers the upper side of the lower leaves making them sticky and shiny. They infest all leaves from the top of the plant to the leaves down into the canopy. They do not inject a toxin, but feeding damage from the sheer numbers of aphids on a leaf will cause leaves to turn yellow and will kill leaves. Infestations on pre-boot sorghum can cause significant yield losses. The threshold for treating sugarcane aphids on the Texas High Plains is based on the growth stage of the sorghum plants and a percentage of plants infested for that growth stage.

Treatment threshold:

Pre-boot: 20% of plants with aphids.
Boot: 20% of plants infested with 50 aphids per leaf.
Flowering to Milk: 30% of plants infested with 50 aphids per leaf.



Sugarcane Aphid

Photo: Scott Armstrong

Soft dough through dough: 30% of plants infested, localized areas with heavy honeydew, and established aphid colonies.
Black layer: Heavy honeydew and established aphid colonies with treatment only for preventing harvest problems.

Sugarcane aphids are becoming closer to the Texas High Plains. On June 1st, sugarcane aphids were reported on sorghum in Kiowa County, OK, about 200 miles east of Amarillo and Canyon. Yesterday, sugarcane aphids were reported on sorghum in Tom Green County, 3 miles east of San Angelo, by Josh Blanek, CEA - Ag, and confirmed by Joel Webb, EA-IPM.

Aphid Control

Yellow sugarcane aphids - Field experience has shown that foliar applications of chlorpyrifos 4E at 12 fl oz/A mixed with dimethoate 4E at 12 floz/A provides good control. But do not apply dimethoate after sorghum heading.

Greenbugs - The primary insecticide for greenbug control is still chlorpyrifos at 1 to 1.5 pints/A.

Corn leaf aphids - rarely a need to treat for the corn leaf aphid.

Sugarcane aphids - EPA has granted another Section 18 emergency use exemption for Transform WG for 2017. The preferred use rate for the Texas High Plains is 1.25 -1.5 oz/A.

Sivanto Prime continues to be labeled for sugarcane aphids under a 24(c) special local need label. The preferred rate for the Texas High Plains is ≥ 5.0 fl oz/A.

Both Transform and Sivanto will control yellow sugarcane aphids and greenbugs when populations are mixed.

These are suggestions based on research and experience, but other conditions may cause unforeseen or unexpected poor performance. The Texas A&M AgriLife Extension Service will not assume responsibility for risks when using insecticides. Read and Follow the label.