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Rocky Lemus and Greg Flint Extension Forage Specialist and Extension Associate

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The sugarcane aphid (*Melanaphis sacchari*) is a vector of three persistent viruses (millet red leaf, sugarcane yellow leaf, and sugarcane mosaic viruses). Although sugarcane aphid has been a minor pest in the past, in the last two years, it has been reported in Mississippi's grain sorghum production and also in forage production of summer annual crops such as forage sorghum, sorghum-sudangrass hybrid, sudangrass, and sweet sorghum. There are several other forage grasses that have been reported as host of the aphid including bermudagrass, barnyard grass, hairy crabgrass, millet (foxtail and German), and Johnsongrass. No sugar cane aphid has been identified in hybrid pearl millet and it seems to be resistance to aphids.

The damage to summer annual forage crops depend on several factors such as aphid density and duration of the infestation period. Most summer annuals get infected soon after plant emergence, but threshold infestation levels occur during the late growth stages (plants that are more than 12 inches tall) and during dry periods. The development of high populations and colonies are due to asexual reproduction of the aphid (one individual produces the offspring). Response mechanisms in the plant include purple leave discoloration of seedlings, chlorosis (yellowing), necrosis (dead leaves), stunting, delay in flowering, loss in yield and forage quality. The sugarcane aphid forms lemon-yellow colonies in the lower surfaces of lower leaves first and then advance to the upper leaves. The feeding mechanism of the aphid (piercing and sucking) can impact the movement of minerals, amino acids and carbohydrates through the phloem in the plant. The aphid remove the plant sap from the xylem tissue in the leaves causing wilting and curling of the leaves and also resulting in chlorosis. The leaves located under the infected ones are usually covered with sooty molds which grow in the honeydew (secretion) produced by the aphids. Plant stress due to droughty conditions can intensify the damage cause by the aphid.



Figure 1. Sugarcane aphid outbreak in Green Grazer V sorghum-sudangrass hybrid in summer of 2015 at Mississippi State University baleage research trial: (a) aphid colonies in the lower surface of the leaf, (b) beneficial insects feeding on the aphid, (c) sooty mold/honeydew damage in the lower leaves, (d) sap accumulation on lower leaves, and (e) plant stunting due to aphid damage.

There are some control practices that include both cultural management and insecticide applications. After scouting, cutting the forage sorghum before the first week of aphid threshold density can prevent damage and also prevent subsequent increase in aphid density during regrowth. The most effective control of the sugarcane aphid is the use of insecticides, but their use might not be economically justifiable if the producer only has a small acreage due to the cost of application.



Infestations often begin at the bottom of the plant and work toward the top. Treatment thresholds have not been determined for sorghums used in forage production. There are very conservative recommendations when to treat the aphid infestation for grain sorghum. The recommended threshold for an insecticide application occurs when 20% of the infested leaves contains 50 or more aphid colonies per leaf or when 30% of the plants contain colonies of 100 or higher and there is heavy honeydew present in localized areas of the field. Once aphids are found, it is critical to scout fields twice per week to monitor infestations because they expand rapidly due to their reproductive cycle.

According to Dr. Blake Layton (Mississippi State University Extension Entomologist), the foliar insecticides available for forage crops include: Transform® WG and Sivanto® 200 SL. Transform® WG (sulfoxaflor, Dow AgroSciences) has a Section 18 emergency exemption and it can be applied at a rate of 0.75 to 1.5 oz/acre. The label allows for 2 applications of Transform WG® per season and not more than 3 oz per acre per forage crop. Sivanto® 200 SL (flupyradifurone, Bayer Crop Protection) has a Section 2(ee) recommendation and can be applied at a rate of 4 to 7 oz/ acre. Growers must have a copy of the Section 18 label or Section 2(ee) and the full product label in their possession when mixing and applying the insecticide. Both Transform® and Sivanto® have a 7-day restriction on haying or grazing after application, meaning that grazing and mowing for hay are not allowed within seven days of application, and cattle must be removed from the field for that period of time. The use of these insecticides will require good coverage of the entire canopy, including the lower canopy. When applying these insecticides an application containing a volume of at least 10 gallons of water per acre is recommended. The use of pyrethroids are not recommended because they can kill beneficial insects and aphid populations have been shown to increase following a pyrethroid application. Check with your County Extension office for future insecticides update, availability, efficacy, and management beyond the 2015 growing season.



Figure 2. Important beneficial insects for suppressing aphids in summer annual forage crops.

In a silage situation, if the field is more than 50% infected, it is recommended to use the summer annual for grazing instead due to loss in plant sap containing sugars and leaf damage that makes the ensiling and fermentation process difficult. If leaf damage is increasing, using an intensive grazing management strategy such as strip grazing or mob grazing could be the best options to avoid yield losses. The honeydew produced and excreted by the sugarcane aphid is not harmful to livestock. If the black sooty mold is growing on the leaves, it may contribute to reduced forage palatability.



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For upcoming forage related events visit: http://forages.pss.msstate.edu/events.html

September 15-17, 2015 – MS Grazing Land Coalition Initiative, Natchez, MS September 23, 2015 – Cattlemen's College, Prairie, MS September 24, 2015 – Cattlemen's College, Poplarville, MS October 2, 2015 – Hay Contest Entries Due October 27, 2015 – Southwest Mississippi Fall Forage Field Day, Meadville, MS November 6, 2015 – Mississippi Forage & Grassland Conference, Newton, MS