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Blacklands IPM Update

GENERAL:

Crop progress is doing okay given the conditions we have experienced over the last three weeks. Early planted sorghum is nearing harvest, while the late planted sorghum crop is just now reaching the flowering stage. Cotton around the area is a mixed bag with most field at or near cutout. Pest issues in cotton right now remain quiet, with aphids present in a few fields, and stink bugs present in some fields also, but neither pest are near the economic threshold.

SORGHUM:

Sorghum that was planted on time is approaching harvest, and most fields I have seen should be ready for harvest in the next 10-14 days. In these fields we need to keep an eye out for sugarcane aphids. Sugarcane aphid populations have grown over the last few weeks, but their number remain below the economic threshold. For sorghum that is near harvest the potential for yield loss from sugarcane aphids is minimal, but as our leaves start to dry down, they will be pushed up into the head leading to harvest issues through sticky grain.

Late planted sorghum fields are just now reaching pollinations, with some heads in fields already at the milk stage. Insect pest to keep an eye on include sorghum midge, sugarcane aphids, and head worm. Sorghum midge are small orangish red fly with a yellow head, brown legs and antennae, and gray membranous wings. The larvae of the sorghum midge are colorless at first, but as they age develop a dark orange appearance. Larvae do the damage to the crop by feed on newly fertilized kernels, thus stopping the normal grain development process. Scouting should be done around mid-morning once temperatures are around 85°F, and sampled by beating heads into a white bucket, or 1-gallon milk jug with the bottom cut out.

COTTON:

The cotton crop desperately needs a rain to keep some of our young bolls on the plant. All fields in the scouting program are experience fruit shed due to high temperatures and a dwindling soil moisture profile. Insect pest issues in area cottonfields remains at a minimum with only one field having to be watch for aphids. Bacterial blight, also called angular leaf spot has showed up in a few fields that were planted with a variety that is susceptible to the disease. At this point in the growing season the only option we have is to take note of what fields have bacterial blight and use this information when making variety selections for the next cotton crop.

Bacterial blight caused by the bacterium *Xanthomonas citri* pv. *malvacearum*, that can infect the leaf tissue, stems, and bolls. The only management option for bacterial blight is to plant fields with varieties that have bacterial blight resistance. Symptoms of bacterial blight on the leaf includes small black angular lesions that may grow into each other (**Figure 1**). These angular lesions will be restricted to between the leaf veins as the bacterium cannot cross the leaf vein. The second stage infection is the systemic stage, where lesions can be observed on the leaf veins (**Figure 2**). Bacterial blight can also infect the petioles of cotton plants causing what is called black arm. Another infection stage of bacterial blight is the boll infection stage, when bolls become infected with the bacterial blight pathogen lesions are circular water-soaked lesions that will eventually turn black as they age (**Figure 3**).

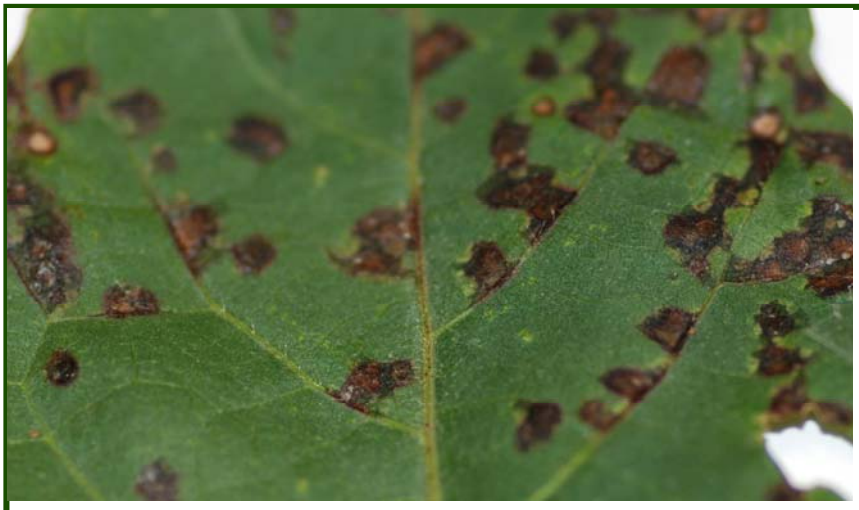

Figure 1. Black angular lesions caused by bacterial blight infection. Photo credit: Tyler Mays.

Figure 2. Leaf veins infected with bacterial blight. Photo Credit: Tom Allen, Mississippi State University

Figure 3. Bacterial blight lesions on a cotton boll. Photo credit: Tyler Mays

Fruit shed can be caused by several factors, including cultural practices, environmental conditions, insects, and diseases. Late season fruit shed is normal when plants are moisture stressed, and temperatures start to rise. This is because of two reasons 1) the carbohydrates stored in the plant is less than or equal to needed carbohydrate demand of the current bolls set on the plant, and 2) the crop is stressed by a lack of soil moisture and the plant drops the younger fruit to be able to mature the older bolls already set on the plant. Certain insects such as fleahopper, lygus, and stink bugs can cause fruit shed, by piercing the fruit with their mouthpart to extract juices for a meal. This feed causes the plant to drop smaller fruit, bolls that are older than 10 days are usually safe from being shed from the plant if fed on by a Lygus or stink bug. Fertility programs can affect fruit shed throughout the season. Nutrient deficiencies of Nitrogen, Calcium, Potassium, Boron, and Zinc can lead to fruit shed. Diseases such as vascular wilts, fungal leaf spots, bacterial blight, can reduced the photosynthetic potential of he plants which reduces the amount of carbohydrates produced by the crop which can lead to fruit shed. Shading of the bolls and square s can also cause fruit to be dropped from the plant, and can be because of thick canopies, and even extended periods of cloudy weather.

The main reason we are currently seeing fruit shed at this time is due to three factors including moisture stress, temperature stress, and a depletion of the plants stored carbohydrates. There is not much we can do to mitigate the fruit shed. With most of our area fields at or near cutout the stored carbohydrate supply is equal to the demand for carbohydrates from the bolls already set on the plant. If we do receive a rain shortly, we could see some regrowth in fields, but the chance for new bolls to be produced on this growth, and actually contribute to yield is questionable.

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