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Pest Cast

The Row Crops IPM Newsletter for the LRGV, a cooperative project of Texas AgriLife Extension Service, the Texas Pest Management Association, and the Cotton & Grain Producers of the lower Rio Grande Valley

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General Situation

Miserable heat. It's been so hot here in the LRGV for 3 weeks now over 100°F during day and nights right at 80°F. We are really starting to see the effects of the extreme heat on the cotton's development this week with cotton cutting out faster than usual around this time of year and seeing some significant loss of bolls and large squares. Our dryland cotton is really suffering from the adverse heat but even our irrigated cotton is being affected badly. Below is a piece that our Agronomist Josh McGinty wrote explaining the effects the heat is having on all our South Texas Cotton.

Extreme Heat is Taking its Toll on South Texas Cotton

Josh McGinty

Extension Agronomist – Corpus Christi, TX

While June is typically hot in our region, the last three weeks have been particularly brutal. Beginning around June 8th, both our daytime and nighttime temperatures jumped about 5°F above the previous week's average, a trend which continued until our temperatures reached the triple digits and beyond. For the last two weeks our nighttime low at the Corpus Christi research station has rarely dropped below 80°F. While the soil moisture we received in April helped this cotton crop withstand these temperatures for a while, we are rapidly running out of water and plants are suffering. Temperatures in the range from 74 to 90°F are optimal for cotton growth and development. At temperatures greater than this, cotton can regulate its internal temperature to an extent by opening up pores (stomata) on the leaf to allow water to evaporate, which is very effective at cooling its tissues. When soil moisture is lacking, obviously the plant cannot cool itself and canopy temperatures begin to rise, tissues are damaged, and growth is decreased or halted. If nighttime temperatures are below 80°F, the cotton plant can shed this heat and recover to an extent overnight. High nighttime temperatures cause the plant to increase respiration, the process where sugars produced through photosynthesis are combined with oxygen to produce energy. This increase in respiration takes resources away from developing fruit, typically resulting in the plant shedding small bolls and producing fewer seed per boll in retained fruit. Small bolls are the first that a plant will sacrifice when energy reserves become depleted, but as this trend continues larger bolls will begin to be shed. This can be seen currently in many of our surrounding fields, where flowers and small bolls litter the ground (Figure 1). If this weather pattern continues, I would expect to see some larger bolls on the ground in another week. Aside from the obvious impact on yield, we may see higher micronaire values in the harvested lint because of the loss of younger bolls which would have less mature fiber at harvest and help to bring the average micronaire down.

As of today (June 27th), the forecast indicates a little relief in our daytime highs by this coming weekend. It appears that nighttime temperatures will continue to be warm, however, and the crop will

likely continue to suffer to some extent. Where irrigation is available, frequent and shallow waterings will help mitigate the effects of high temperatures. For the dryland acreage, a rain in the next week or two would still be early enough to reduce or halt the shedding of fruit and have a yield impact. Ultimately, we are largely at the mercy of the weather but hopefully this helps you better understand the impacts of our current conditions.



Figure 1. Photo of dryland (left) and irrigated (right) cotton taken the afternoon of June 27th. These are the same variety planted at the same time in the same field. Note that even though the canopy of the irrigated cotton is not drooping, fruit is still being shed, likely due to high nighttime temperatures. Photos taken in Corpus Christi, TX.

Cotton insect pressure

Insect pressure in cotton has really tapered off this week. Low fleahopper populations in most areas but we are past the concern of this pest. Picking up on a few **Tarnished and Verde plantbugs** below threshold in cotton so be mindful if you still have dime sized bolls that are penetrable and treat accordingly. Whitefly pressure along the river is very high this week. When whitelfies feed they excrete sugars causing a black sooty mold to eventually grow and cover plant leaves inhibiting photosynthesis plant growth. Control of whiteflies is necessary so that way when bolls open we avoid lint being stained by black sooty mold ruining the fiber quality. Still picking up on moderate to high populations of chilli thrips in cotton along the river, and in parts of the mid valley so do check and treat accordingly. For more info click below:

https://southtexas.tamu.edu/files/2022/05/chilli-thrips-in-cotton_2022.pdf

For insecticides labeled for use on fleahoppers & tarnished & verdes plantbugs click on link to cotton insect mgmt. guide:

https://southtexas.tamu.edu/files/2023/05/Managing-Cotton-Insects-in-Texas-ENTO-075_2019.pdf



Figure 1: Cotton stressed by extreme heat in the LRGV, experiencing excessive boll & square loss.

(Photo on top is in dryland, photo on bottom is in irrigated cotton) in the LRGV cotton, June 28th 2023.



An update from Texas Boll Weevil Eradication program: Edward Herrera LRGV Zone Manager

*For 2023 there were 137,912.3 acres planted into cotton but as you know there was some acreage destroyed due to bad stand early season. Of this acreage there were about 3,000 acres of cotton that went into another crop after having been disastered out from cotton. In Mexico there were 10,165 acres planted for the 2023 season but since then there has been a loss of approximately 1,500 acres due to adverse weather/hail.

*Currently with the full swing of grain harvesting in fields that were planted in cotton last year we are finding some volunteer cotton plants within this acreage. Producers need to destroy this volunteer cotton as quickly as possible if not it will be reported to TDA for being out of compliance with stalk destruction regulations.

Grain Sorghum

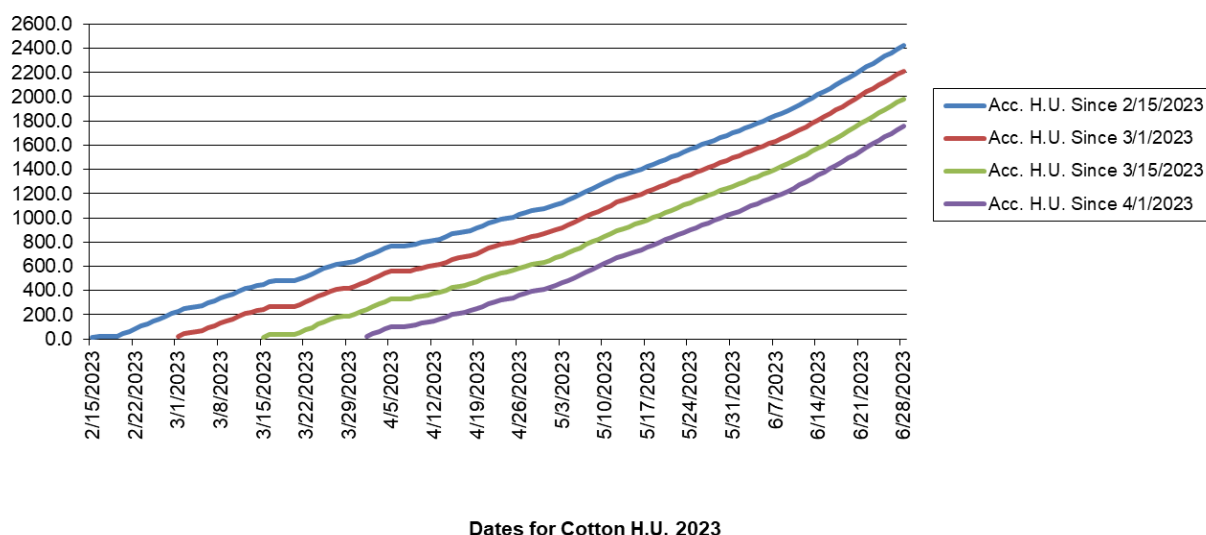
Lots of grain sorghum continues to be harvested this week across LRGV. In soft dough sorghum we are still seeing low to moderate populations of headworms and rice stinkbugs. Check fields and treat accordingly. All insecticides to use for pests in sorghum & pest thresholds can be found at this link below:

<https://southtexas.tamu.edu/files/2023/05/managing-insect-and-mite-pests-of-texas-sorghum.pdf>

Sesame

Sesame looking good this week across Valley, a little pest activity but nothing of major concern.

2023 Cotton Heat Unit (H.U.) Accumulation Graph



Comparison of Accumulated Heat Units over the last 4 years				
	Acc. H.U. Since 2/15	Acc. H.U. Since 3/1	Acc. H.U. Since 3/15	Acc. H.U. Since 4/1
2020	2467	2369	2202	1871
2021	2147	2057	1926	1733
2022	2303	2240	2164	1997
2023	2421	2213	1981	1756

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