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

Very hot, humid, and very little wind this week scouting row crops. Temperatures have been mid 90s during the day with nights in the low 70s as the heat units are accumulating in cotton, but we still have about 200 heat units separating each of the 4 planting dates shown in the chart (See Figure 1). In Figure 2 below is a chart showing the difference in heat units for the last 4 years at this date in time and you can really see the difference in heat units for the planting dates of 3/15 and 4/1 between this year (2023) and last year (2022). Weather conditions have been perfect for pest activity to increase which is what we have been seeing and wind has been minimal which is good for spray applications to be made if necessary to control pests.

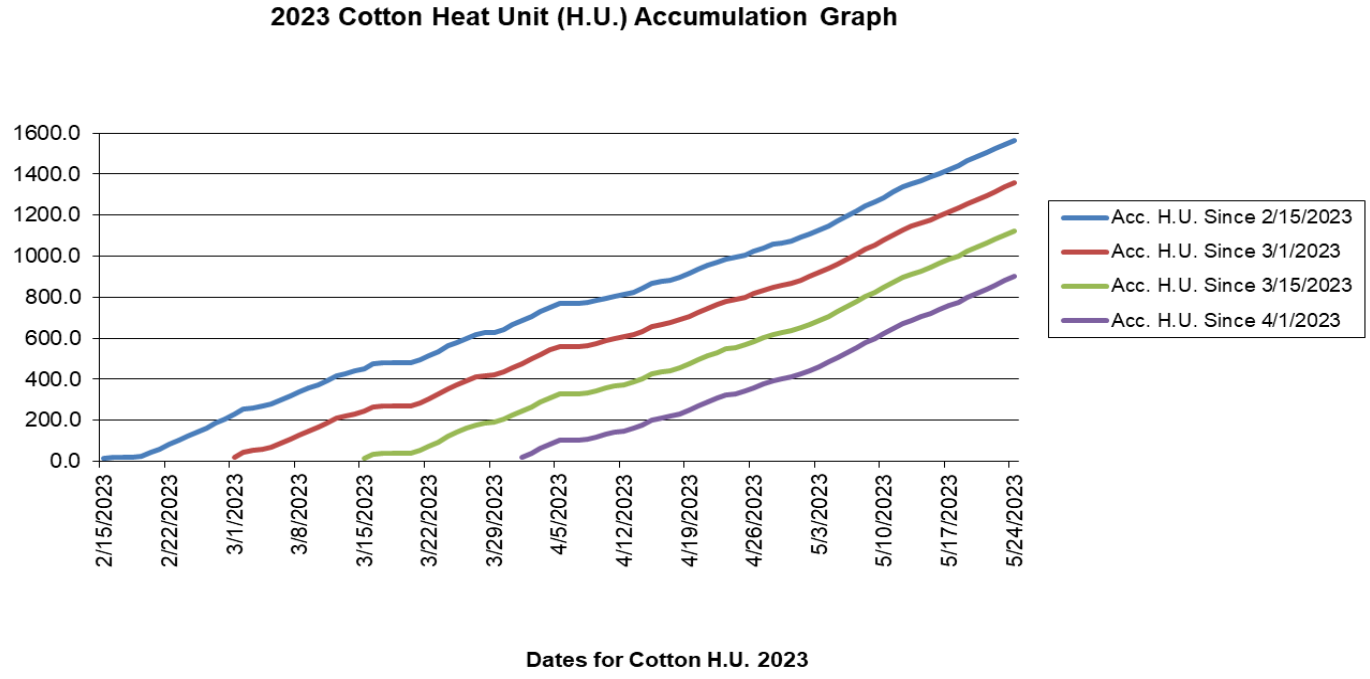

Figure 1: Heat Units chart for Cotton 2023

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	1689	1591	1424	1093
2021	1347	1258	1126	933
2022	1443	1380	1304	1137
2023	1565	1357	1125	900

Figure 2: Heat Units in cotton comparing the last 4 years.

Cotton

This week in cotton the two main pests we are seeing are cotton aphids and fleahoppers. The threshold for cotton aphids is 40-70 per leaf before first cracked boll. Most cotton fields we looked at had little to no cotton aphids present but there were some fields that were experiencing low to moderate populations, especially along the river, but it was really on a field-to-field assessment. We are also seeing fleahopper adults and nymphs present this week and some fields were right at threshold as we scouted the Lyford area and along the river so check your fields and treat accordingly. Fleahopper adults are 3mm in length, oval shaped light green in color and nymphs are quite smaller, are light neon green in color with purple antennae (Figure 3). It is during the first 3 weeks of squaring that finding 15-25 cotton fleahoppers (nymphs and adults) per 100 terminals may cause economic damage. We have lots of cotton across the Valley in full squaring mode, so most of the cotton is susceptible to future fleahopper damage if not scouted in the weeks to come. Once bolls are present and the cotton begins to flower fleahoppers are Not considered a threat anymore. We have many earlier planted cotton fields already producing dime size bolls and they have mature bolls towards bottom of the plant so those are safe from fleahopper damage. Also, this week along the river we were picking up on low populations of whitefly adults in cotton where some fields might want to be treated to be proactive of increasing whitefly populations. Lots of cotton across the Valley was still looking very clean of pests but do continue to monitor for pests during this active growing season.

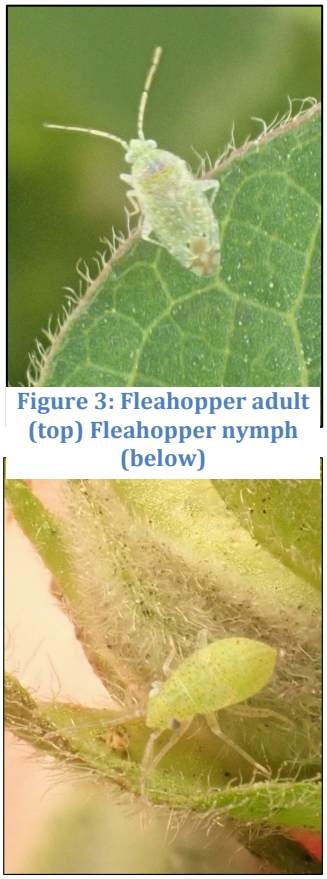

Figure 3: Fleahopper adult (top) Fleahopper nymph (below)

Grain Sorghum

As of Thursday, I noticed a significant increase in headworms in sorghum from when I last checked on Monday in my sorghum fields. If you have soft dough sorghum, get out your 5-gallon white beat buckets and shake sorghum heads in bucket to scout for headworms (corn earworms & fall armyworms see Figure 5). Threshold for headworms in soft dough sorghum is 1 per head. I was finding high populations of headworms in soft dough sorghum, all instars were present with many immature larvae of headworms around the Lyford, La Sara, Hargill, and Weslaco areas (Figure 4). In most fields I was finding 1 headworm per sorghum head but in others I had 2-3 headworms present per sorghum head when beat bucketing my sorghum heads throughout the fields. So please do check all soft dough sorghum around the Valley for headworm activity. While scouting for headworms also make note of the number of rice stinkbugs (See figures 8, 9, & 10) you get in your bucket as rice stinkbug populations really picked up on the later part of this week as well and they do feed on the soft dough stage in sorghum

Figure 4: Corn earworms & Fall armyworms in beat bucket while scouting soft dough sorghum 2023.

causing damage to your seed quality. If you are experiencing 1 rice stinkbug per head that is threshold and you should consider using an insecticide that will control both headworms and rice stinkbugs (See Figures 12 & 13 with insecticide charts below). Also, this week in sorghum we have sugarcane aphid populations low, moderate, and high it just depends on what field you are in and what variety you have planted. If you have fields that are experiencing 75 + SCA/ leaf and heavy honey dew from SCA feeding under the canopies, in which glistening of leaves is easily noticeable where more than 30% of the plants in the field are infested then a spray treatment is warranted (See Figure 7 below for SCA action thresholds & Figure 14 for insecticides labeled for SCA). We saw this occurring in sorghum varieties with No sugarcane aphid tolerance or resistant. And basically, if walk your fields and you're coming out with sugarcane aphids all over your pants/clothes then chances are you need to treat, however do check for headworms, and rice stinkbugs as you will probably be spraying for a multitude of pests it just depends on what stage your sorghum is in.

Figure 5: Corn earworm (top), Fall armyworm (bottom) in soft dough sorghum.

Again, this week in sorghum we saw high populations of midge in any actively flowering sorghum across the Valley. So if you have flowering sorghum please go check every 3 days for midge populations and treat accordingly as no blooming sorghum is safe from midge populations from this point forward. See figure 4, Table F below with insecticides labeled for control of sorghum midge. When checking for midge (Figure 6) inspect the heads for a small orange/reddish flying insect around the yellow flowering spikelets as this is where the female will lay her eggs, usually about 50 yellow-white eggs, the adults only live for one day. The eggs hatch in 2 to 3 days so you must check daily for sorghum midge as new populations emerge/hatch each morning. It is imperative that if you have flowering sorghum you try to get out there every 3 days between the hours of 10 am and 2pm to inspect for midge pressure. The threshold for midge is one per sorghum head but believe me we are finding more than that present per head at this time.

Figure 6: Sorghum midge above and below

Table 8. Action thresholds for sorghum aphids based on sorghum growth stages.

Sorghum Growth Stage	Threshold
Pre-boot to boot	20% of plants infested with 50 or more aphids.
Flowering to milk stage	30% of plants infested with 50 or more aphids.
Soft-dough to hard-dough	30% of plants infested with established aphid colonies and localized areas with heavy honeydew.
Black layer	Heavy honeydew and established aphid colonies. Treat only to prevent harvest problems.

Figure 7: Sugarcane aphid threshold table, on pg. 15 of the Managing Insect & mite pests of Texas Sorghum guide, ENTO-PU-170 April 2023, Texas A&M AgriLife Extension

Figure 8: Rice stinkbug nymphs that just hatched in soft dough sorghum.

Figure 9: Rice stinkbug nymphs, immatures, bigger in size, feeding in soft dough sorghum.

Figure 10: Rice stinkbug adult stage in soft dough sorghum.

Table F. Insecticides labeled for control of sorghum midges in grain sorghum (follow label directions).

Active Ingredient	Insecticide	Mode of Action	Rate	Remarks	REI[1]	PHI[2]
Post-emergence Treatment						
Alpha-cypermethrin	Fastac	3A	1.3–3.8 fl. oz./A	Restricted use. **Danger–Poison.**	12H	14 days
Beta-cyfluthrin	Baythroid XL	3A	1.0–1.3 fl. oz./A	Restricted use.	12H	14 days
Cyfluthrin	Tombstone	3A	1.0–1.3 fl. oz./A	Restricted use.		
Deltamethrin	Delta Gold 1.5 EC	3A	1.3–1.9 fl. oz./A	Restricted use. **Danger–Poison.**		
Esfenvalerate	Asana XL, generics	3A	2.9–5.8 fl. oz./A	Restricted use.		
Gamma-cyhalothrin	Declare 1.25, Proaxis 0.5	3A	0.77–1.02 fl. oz./A 1.92–2.56 fl. oz./A	Restricted use.		
Lambda-cyhalothrin	Warrior II with Zeon, Karate with Zeon, generics	3A	0.96–1.28 fl. oz./A	Restricted use.		
Lambda-cyhalothrin + chlorantraniliprole	Besiege	3A	5.0–6.0 fl. oz./A	Do not exceed total of 18 fl. oz./A per year. Restricted use.		
Spinosad	Blackhawk	3A, 28	1.5–3.3 fl. oz./A	See 2(ee) label for midges. For low to moderate midge infestations.		
Methomyl	Lannate LV, Lannate SP, generics	5	0.75–1.0 pt./A 0.25–0.5 lb./A	Do not use methomyl on sweet sorghum varieties. For SP, use a minimum of 10 GPA by ground or 2 GPA by air. Restricted use. **Danger–Poison.**	48H	14 days
Zeta-cypermethrin	Mustang Maxx, Respect	1A	1.28–4.0 fl. oz./A	Restricted use.	12H	14 days

[1] REI = Restricted entry level
[2] PHI = Pre-harvest interval

Figure 11: Table F, Insecticides labeled for midge on pg. 31 of the Managing Insect & mite pests of Texas Sorghum guide, ENTO-PU-170 April 2023, Texas A&M AgriLife Extension

Table G. Suggested insecticides for control of the headworm complex in grain sorghum (follow label directions).						
Active Ingredient	Insecticide	Mode of Action	Rate	Remarks	REI[1]	PHI[2]
Post-emergence Treatment						
Alpha-cypermethrin	Fastac	3A	1.3–3.8 fl. oz./A	Restricted use. **Danger–Poison.**	12H	14 days
Beta-cyfluthrin	Baythroid XL	3A	1.3–2.8 fl. oz./A	First and second instar (< ¼ in. long). Restricted use.	12H	14 days
Carbaryl	Sevin XLR Plus	1A	1–2 qt./A	Bee caution: Do not apply this product to target crops or weeds in bloom.	12H	21 days
Chlorantraniliprole	Vantacor, Shenzi 400SC	28	1.2–2.5 fl. oz./A 1.7–3.8 fl. oz/A	—	4H	1 day
Deltamethrin	Delta Gold 1.5EC	3A	1.0–1.5 fl. oz./A	Apply at least 2 GPA by aircraft or 5 GPA by ground. Restricted use. **Danger–Poison.**	12H	14 days
Esfenvalerate	Asana XL, generics	3A	5.8–9.6 fl. oz./A	Used for earworms on heads only. Restricted use.	12H	21 days
Gamma-cyhalothrin	Declare 1.25, Proaxis 0.5	3A	1.02–1.54 fl. oz./A 2.56–3.84 fl. oz./A	Use higher rates for large larvae. Restricted use.	24H	30 days
*Heor*NPV	Heligen	31	0.7–1.4 fl. oz./A	Only effective on corn earworms. Use lower application rates when targeting larvae smaller than 0.3 inches long (first and second instar) and in mixtures with sprays for midge control (not ULV). Use higher application rates when targeting larvae larger than 0.3 inches long (third instar) or under high-pressure situations. Time applications when 50% of heads have reached 100 percent flowering for optimal control.	4H	0 days
Lambda-cyhalothrin	Warrior II with Zeon, Karate with Zeon, generics	3A	1.28–1.92 fl. oz./A	Restricted use.	24H	30 days
Lambda-cyhalothrin + chlorantraniliprole	Besiege 1.25 SC	3A, 28	6.0–10.0 oz./A	Use higher rate range for large larvae. Do not exceed a total of 18 fl. oz./A per year. Restricted use.	24H	30 days
Methomyl	Lannate LV, Lannate SP	1A	0.75–1.5 pt./A 0.25–0.05 lb./A	Do not use on sweet sorghum varieties. Restricted use. **Danger–Poison.**	48H	14 days
Novaluron	Diamond	15	6.0–12.0 fl. oz./A	Fall armyworms only. See label.	12H	7 days for forage, 14 days for grain and stover.
Spinosad	Blackhawk	5	1.7–3.3 fl. oz./A	Apply to coincide with peak egg hatch or small larvae. Use a higher rate range for heavy infestations, advanced growth stages of target pests, or difficult spray coverage situations.	4H	21 days
Zeta-cypermethrin	Mustang Maxx, generics	3A	1.76–4.0 fl. oz./A	Restricted use.	12H	14 days

[1] REI = Restricted entry level
[2] PHI = Pre-harvest interval

Resistance to pyrethroids (products with only mode of action 3A) in corn earworms has been reported from some areas. If resistance is present, applying pyrethroids can result in poor control of corn earworms, especially when the larvae are larger than 1/4 inch (second instar). Also, pyrethroids are not recommended for fall armyworms larger than 1/4 inch.

Prethroids are not recommended for sorghum webworms.

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32

Figure 12: Table G, Insecticides labeled for headworms on pg. 32 of the Managing Insect & mite pests of Texas Sorghum guide, ENTO-PU-170 April 2023, Texas A&M AgriLife Extension

Table H. Insecticides labeled for control of stink bugs, leaf-footed bugs, false chinch bugs, and Lygus bugs in grain sorghum (follow label directions).						
Active Ingredient	Insecticide	Mode of Action	Rate	Remarks	REI[1]	PHI[2]
Post-emergence Treatment						
Alpha-cypermethrin	Fastac	3A	1.3–3.8 fl. oz./A	Restricted use. **Danger–Poison.**	12H	14 days
Beta-cyfluthrin	Baythroid XL	3A	1.3–2.8 fl. oz./A	First and second instar (< ¼ in. long). Restricted use.	12H	14 days
Cyfluthrin	Tombstone 2	3A	1.3–2.8 fl. oz./A	Restricted use.	12H	14 days
Deltamethrin	Delta Gold	3A	1.5–1.9 fl. oz./A	Not labeled for false chinch bugs. Restricted use. **Danger–Poison.**	12H	14 days
Gamma-cyhalothrin	Declare, Proaxis	3A	1.02–1.54 fl. oz./A 2.56–3.84 fl. oz./A	Use higher rates for large larvae. Restricted use.	24H	30 days
Lambda-cyhalothrin	Warrior II with Zeon, Karate with Zeon, generics	3A	1.28–1.92 fl. oz./A	Apply no more than 6 oz. of *lambda*-cyhalothrin-containing products once the crop has reached soft-dough stage. Not labeled for false chinch bugs. Restricted use.	24H	30 days
Lambda-cyhalothrin + chlorantraniliprole	Besiege 1.25 SC	3A, 28	6.0–10.0 oz./A	Do not exceed total of 18 fl. oz./A per year. Apply no more than 6 oz. of *lambda*-cyhalothrin-containing products once the crop has reached soft-dough stage. Not labeled for false chinch bugs. Restricted use.	24H	30 days
Zeta-cypermethrin	Mustang Maxx, generics	3A	1.76–4.0 fl. oz./A	Restricted use.	12H	14 days

[1] REI = Restricted entry level
[2] PHI = Pre-harvest interval

Figure 13: Table H, Insecticides labeled for Stinkbugs on pg. 33 of the Managing Insect & mite pests of Texas Sorghum guide, ENTO-PU-170 April 2023, Texas A&M AgriLife Extension

Table C. Insecticides labeled for control of aphids, including yellow sugarcane aphids, sorghum aphids, corn leaf aphids, and greenbugs (follow label directions).						
Active Ingredient	Insecticide	Mode of Action	Rate	Remarks	REI[1]	PHI[2]
Post-emergence Treatment						
Afidopyropen	Sefina	9D	6.0 fl. oz./A	See supplemental label for sorghum.	12H	14 days for grain, 7 days for forage.
Alpha-cypermethrin	Fastac	3A	3.2–3.9 fl. oz./A	Not recommended for sorghum aphids. Restricted use. **Danger–Poison.**	12H	14 days
Dimethoate	Dimethoate 400, Dimethoate 4EC, Dimethoate 2.67	1B	0.5–1.0 pt./A 0.75–1.5 pt./A	Restricted use. Not recommended for sorghum aphids.	48H	28 days
Flupyradifurone	Sivanto Prime	4D	4.0–7.0 fl. oz./A	See 2(ee) label for reduced rates.	4H	21 days See 24(c) label for 14-day PHI for sorghum aphid.
Sulfoxaflor	Transform WG	4C	0.75–1.5 oz./A	—	24H	14 days for grain, 7 days for forage.

Figure 14: Table C, Insecticides labeled for Sugarcane aphids on pg. 29 of the Managing Insect & mite pests of Texas Sorghum guide, ENTO-PU-170 April 2023, Texas A&M AgriLife Extension

IPM Resources available online please click on link below & Scroll down to where it says "Important Resources in IPM" :
https://southtexas.tamu.edu/programs-and-services/ipm/

Important Resources in IPM:

Cotton:

Cotton & Grain Scouting School Part 1-2023
Cotton & Grain Scouting School Part 2-2023
Managing Cotton Insects in Texas ENTO-075_2019-Cotton insect management guide
Controlling Volunteer Cotton in Grain Sorghum using Herbicides _2022
Cotton Stalk Herbicide trial _2022-Stalk destruction using herbicides.
Cotton Fleahopper Insecticide Efficacy trial_ 2020-Danielle Sekula & Dr. Holly Davis
Controlling Chilli thrips in Cotton Efficacy trial _2022-Danielle Sekula (IPM agent)
chilli-thrips-in-cotton_2022. ENTO- PU- 216
Diagnosis-Management-Foliar-Diseases in Cotton
Herbicide use stalk destruction Report – Dr. Josh Mcginty (agronomist) & Danielle Sekula (IPM agent)
Chilli thrips_28 July – Dr. Holly Davis

Sorghum:

New Sorghum Insect Guide: managing-insect-and-mite-pests-of-texas-sorghum-2023
sorghum-ergot-new-disease-threat-to-the-sorghum-industry

Thank you to all those who attended the Cotton & Grain Scouting School on Wednesday! Thank you, Pest Cast Sponsors, for supporting that Program! Go to my website to view the whole presentation in Part 1 & Part 2 and other valuable IPM resources. Have a great Memorial Day weekend. Thank you to all those who have served in our armed forces Past & Present.

Thank You 2023 IPM Pest Cast Sponsors!

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