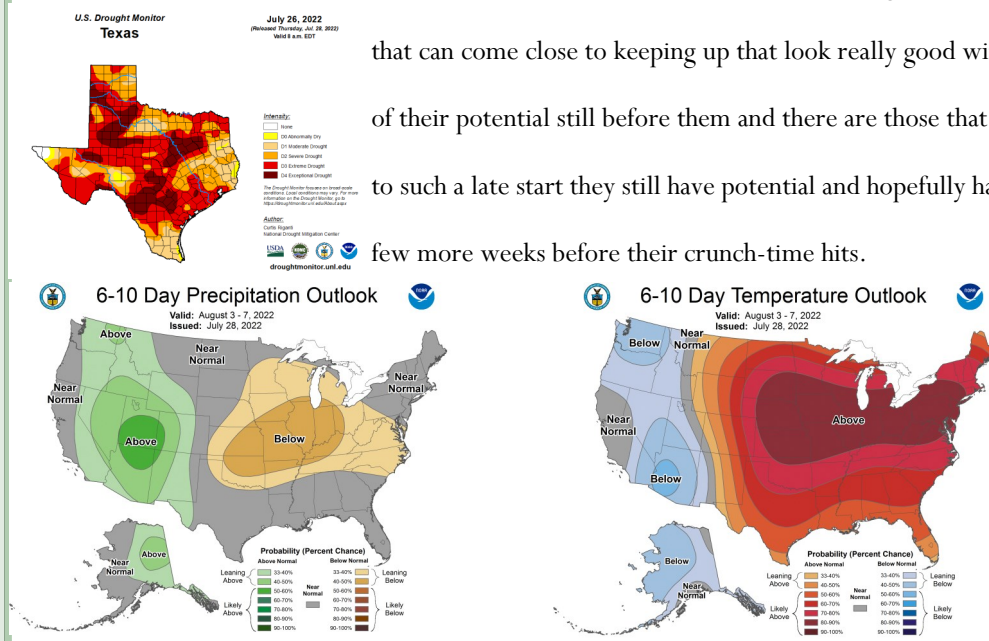


JULY 29, 2022

General Status

As we advance through this 2022 Bar-B-Que Pit of a summer growing season this week plenty of pests continue to nickel, dime, threaten, and in a few cases, hit hard. Still, the heat and drought continue to be the main issue threatening most fields. Several area cotton fields have reached peak water use, or that time of year I generally refer to as crunch time. The time of year that hours without drops of water count double. With so many irrigation systems already running at peak capacity for over a month now, and falling behind, many fields are already pushed to the critical 5 nodes above white flower (NAWF) stage very early. Ideally, we would like to see fields reach 5 NAWF here on the High Plains sometime between August 4th and 14th. These fields hitting this stage already stressed with no additional help in sight are looking to crash headlong into an early absolute cut-out (3.5 NAWF) far too soon. Once fields reach an absolute cut-out stage, there will be no more fruit put on that has any hope of maturing this year. We generally try to target cotton to reach this stage sometime between August 15th and the 24th, the last average date for a bloom to mature before an average freeze date in Plainview. The final point is, we have a large portion of our surviving fields that without additional and substantial moisture in the next 3-7 days will be finished setting fruit for the year almost a full month short of ideal for an average yield. Our grain crops are under just as much stress as most of them pollinated during grain development. Still

there are a minority of fields in the area with irrigation systems that can come close to keeping up that look really good with most of their potential still before them and there are those that got off to such a late start they still have potential and hopefully have a few more weeks before their crunch-time hits.



We did have a handful of convective cotton showers giving some relief late this week. According to PivoTrac, these brief showers brought somewhere between 0.01 and 0.3-inches this week to about 5% of the area, but only a whiff of a cooler breeze for most of us.



Drip field in southeastern Swisher this week.

Cotton

Our PPM scouting program cotton ranged in stage from a still late 1/3 grown square stage up to a very drought stressed 3.7 NAWF with most fields falling in between 5.7 and 7 NAWF. Lygus and bollworms were the largest threat to most fields and the focus of our scouting efforts. Very few bollworms or bollworm eggs were found in our cotton this week but as moths move from maturing corn and immigrate from farther south, we should expect this threat to increase week by week. We have to wait and see if this threat materializes, but scouting vigilance is key to economic bollworm control. Missing an economic population of bollworms for even a few days proves costly. Our improved threshold for bollworms remains at 6% harvestable fruit damage, but the number per acre methods and numbers are being modified for this year. For small worms the 8,000 to 10,000 worms per acre should remain, but accounting for West Texas bollworm mortality, if once the bollworms reach medium to large size (3rd instar or 5-7 days old or so) this number should drop to 2,000 worms per acre. Our highest bollworm count only reached 528 bollworms per acre this week with hardly detectable fruit damage levels.

Lygus were probably the larger realistic threat to our cotton last week and should be for at least one more week. We had no fields reach ET, although we have found 2 hot spot fields where adults have moved in and through the field, almost reaching ET in number of Lygus per row feet and increasing drop to near economic levels. Most fields still house less than 1 Lygus per 18 row feet with the percent fruit drop holding around 10%. Our two hot spot fields are hovering around 1 Lygus per 5 row feet and drop near 17% with ET being 1 Lygus per 2.5 row feet and noted increased fruit drop of bolls and squares. Most of these Lygus were adults in these borderline populations for the 2nd strait week. Often we will experience 1-3 weeks of borderline Lygus adults before the fresh Lygus nymphs begin hatching. Fleahoppers remain a threat fo only the latest of our fields. While those populations rose in most post-bloom fields, where they are no longer an threat, they did not increase in our non-blooming fields yet.



Lygus found on my drop cloth this week in southwestern Swisher.

Corn and Sorghum

Our corn field this week reached a late dough stage while our older sorghum is in soft dough. Our younger sorghum ranges from V4-V6. In both our corn and sorghum fields, Banks grass mites increased again. This week our sorghum reached a 4.5 on our 0-10 damage rating scale with 3.5 being threshold and required treatment while our corn only increased to a 3 with solid beneficial populations working in our favor. We are aware of much of the area corn that has reached threshold for these mites and producers and entomologist are having difficulty controlling the mites in the extreme drought stress. We currently have a research protocol involving a mixing of products and rates to determine a response as soon as possible but likely for similar issues in the future. I should emphasize that all of these mites we have encountered so far this year in Hale and Swisher have been BGM with no so called 'red' or two-spotted yet. If any of these 'red' mites are an issue in these areas, please let us know at the Plainview office so we can address this emerging issue quickly.

The sorghum aphid, formerly the sugarcane aphid, remains hard to detect in our sorghum, although we do have reports of heavy populations in the area. Midge have not been an issue in our sorghum thus far with only a few detected during a very late blooming stage so far. Headworms of any species have not been found in our headed sorghum yet either. However, in our late dough stage corn, corn earworm (bollworm) has been hitting very hard with just a few fall armyworms mingling in. Typically this is a non-economic issue with the worms only conducting tip feeding and the earworms feeding cannibalistically with damage rarely increasing under normal situations and control being very expensive and repetitive to even attempt. With a mediocre pollination seeming to exacerbate the situation and heavy worm pressure are challenging our ears this year.



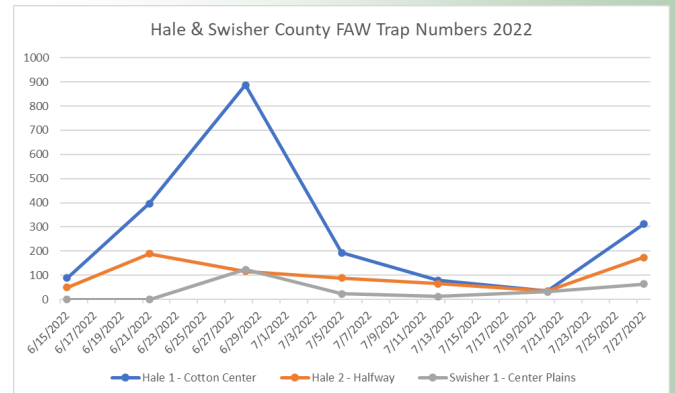
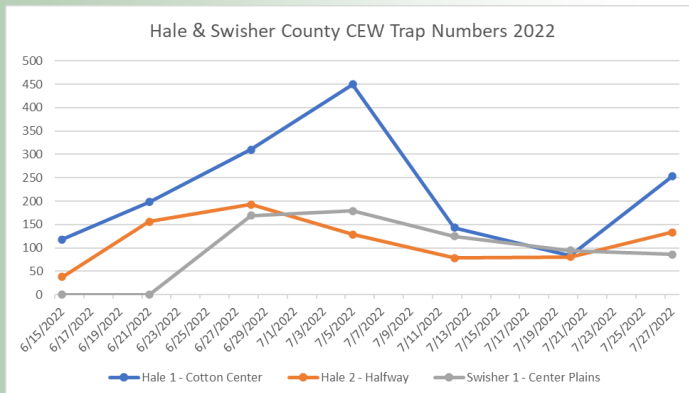
The PPM crew, working with the Western High Plains Pest Management team, have taken advantage of some of the increasing pest populations to work several product efficacy trials this week. Look for results this meeting season, if not sooner.

Dr. Pat Porter, extension entomologist in Lubbock, has been doing quite a bit of research on Bt traits in corn and the impact on corn earworms. He has written a paragraph that can help explain the situation we are seeing in this field, and many fields in the area:



For several years the sweet corn sentinel plot trials at Lubbock used to monitor corn earworm resistance development to Bt toxins, have shown as many or more corn earworm larvae in ears with the older Bt toxins than in ears of non-Bt corn. This year's data showed an average of 2.5 larvae/ear in non-Bt sweet corn that was in the same hybrid family as one of the older sets of Bt toxins expressing Cry1A.105+Cry2Ab2. That hybrid had an average of 3.2 larvae per ear. In another sweet corn family, the Bt hybrid that expressed Cry1Ab toxin had 4.4 larvae/ear, while the non-Bt counterpart had 3.5 larvae/ear. Examination of ears was timed so as to encounter all growth stages of larvae, not just the big ones at the end of the development cycle. It has been shown that the older Bt toxins, while they do not kill many of the larvae anymore, do cause them to be "intoxicated". One of the results of this is that these intoxicated larvae lose their cannibalistic behavior and more often coexist with other larvae than would be the case in strictly non-Bt corn. So older Bts usually have as many or more larvae per ear than non-Bt corn. There was also a Vip3a hybrid in the trial, and no live larvae were recovered from those ears.

Thank you much Dr. Porter! Our lone corn field certainly falls into this category of only expressing the older Bt toxins. Here we are seeing 5-7 worms per ear, all of them 3rd to 5th instar, none even seem to be trying to move much about the ear. While I have no other field in our program to compare this to, it certainly explains what many of us have been seeing for the past few years. We should also note that if/as these worms mature into moths they will be looking for another host. If no corn can be found in a few weeks as they emerge, then cotton might be their next option and they should have already been selected for tolerance if not resistance to the same older Bt toxins that are expressed in cotton. Cotton, regardless of technology, should be scouted for bollworms. Even Vip trait cotton should be scouted. Data from labs and across all Vip crops shows that while still effective, when the Vip trait slips, it should crash hard and with almost no warning. It should also be remembered that these original Bt toxins were never designed to control bollworms, but rather corn borers and budworms, which they still do in our area.





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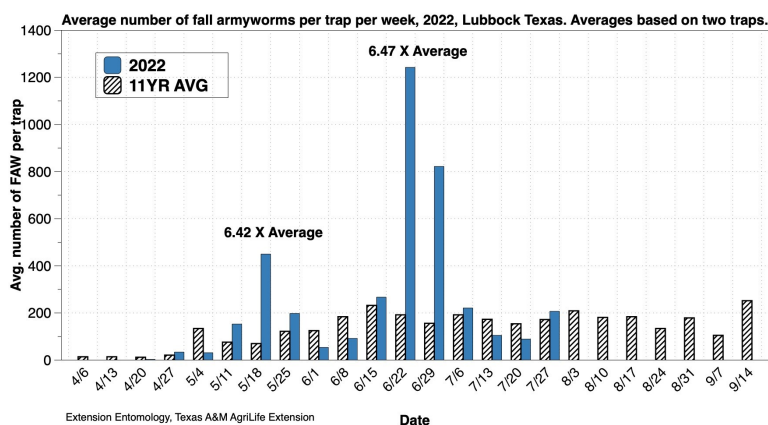


Tomato hornworm

About the area:

I am getting reports of tomato hornworms in most garden areas. It does not take very many of these to demolish the hard fought for vegetation of a several tomato plants. In small garden plots, an entire crop of tomatoes can be lost almost overnight if this pest is missed. If they are found in time, the few worms are easily hand controlled, although it is largely unpleasant due to the size and 'juiciness' of the worms. Larger production fields should be scouted for pockets of this pest practically daily, and the latest labels should be checked for control options and rates.

I am also receiving some of the expected reports of heavy grasshopper damage in rural horticulture sites and a few garden spots. More notably I am getting numerous concerned questions about scorpions, vinegaroons, and other odd arthropod predators being found in and around homes recently. As the drought continues, we should expect to see more and more of these encroaching on homes simply as a water and shelter source. These odd and rarely seen arthropod predators are acting much like a lion hovering around a shrinking water hole looking for prey with our facets, drains, and garden irrigation systems being the water hole for prey. Be safe out there, **most** of these predators that we now could be seeing locally are not poisonous to humans, but that is not guaranteed, and they all pack a big sting, bite, or shock factor. If you are stung, do capture the offender so they can be properly identified and seek medical attention if warranted.



Blayne Reed