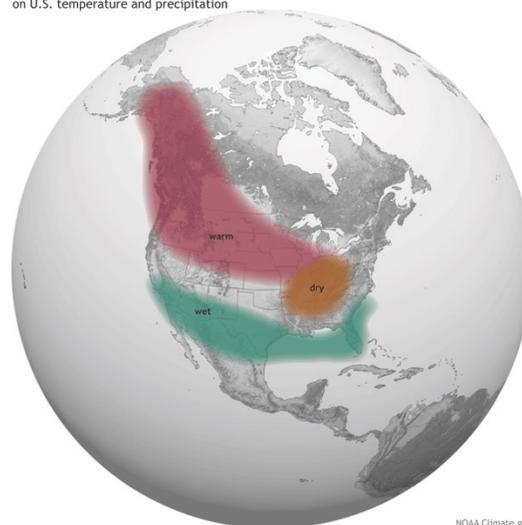


General Status

It has been an unseasonably hot, dry, and windy week. We continue to rack up valuable heat units for all crops. The weather has kept cotton and the grain crops developing well but is something of a double edged sword. Our crops are also using more water than we would normally expect for mid-September. I suspect that everyone has at least a ½ inch rain on backorder that would help finish these still thirsty crops out. In the meantime, everyone is ready to get this very expensive season behind us. Still there are issues that keep us heading back to the field again. The sugarcane aphid and disease issues are still high priorities in later sorghum and corn.

Average influence of El Niño on U.S. temperature and precipitation



Grain harvest during good weather for both early corn and early sorghum is well underway with field after field crossing the finish line. Harvest aid season for our cotton nears in conjunction with the predicted El Nino weather pattern. While the slightly late cotton is soaking up the heat and finishing development, it could use a drink to properly develop the last harvestable boll. There is concern that when and if El Nino rains hit, it might not shut off for harvest making a mess of our crop if we cannot get it all out before it hits. If this comes to fruition at the wrong time, it would not mean the economical end to the growing season so many of us need. We will have to make the decision as our cotton readies for harvest aids if we need to be very aggressive and get the cotton out before any lengthy weather sets in or if we can be a little more economical and use some harvest aids to condition the crop cheaply and make use of a killing freeze to finish it out in clear weather.

For the first week in sometime we had none of our program fields reach ET for any reason. It was a very welcome break but I do have reports of area fields requiring treatment for disease and pests alike. If this pest easing trend continues, this could be our last weekly Plains Pest Management Newsletter of the season and will adopt a more as needed approach.

Cotton

This week we have found no pests of note in our program cotton fields. We are seeing open bolls with regularity now with most fields having between an estimated 3% and 22% open boll. In some quick spot checks of our uppermost harvestable bolls in our program fields, I am seeing a boll maturity range of 1.1 to 1.8. In our program, we will begin taking more serious harvest aid data next week.

With the potential of a cotton crop damaging El Nino weather pattern predicted, producers will need to make serious decisions about how serious (or how much they can afford) they need to be about getting the crop out quickly once their crop is ready. No one can make those decisions for producers but we can be very clear about when a field is ready for harvest aids to best arm the producer with the best information about his field as possible. This week Tommy Doederlein, EA-IPM Dawson & Lynn County, offered a very good description of gaging when a cotton field is ready for harvest aids in his *Crop Management Newsletter* that I will share here.

When to Defoliate

Timing defoliation is usually a difficult decision, because we are balancing potential yield and quality loss in the bottom bolls versus additional weight gain in the top bolls. There are several techniques to determine when we can apply harvest aids and still retain maximum yield. These include percent open boll, sharp knife and Nodes-Above-Cracked-Boll (NACB).

Distinguishing which green bolls will be harvestable is an important skill needed to use these techniques. Not all unopened bolls on a plant will be harvestable at defoliation. Characteristics of mature harvestable bolls include: 1) they are too hard to depress between thumb and forefinger, 2) they are too hard to slice easily with a sharp knife, 3) they have lint that strings out when bolls are sliced with a sharp knife, 4) they have seed coats that are dark yellow to tan in color and 5) they have seed cavity filling with no jelly material present.

Crop maturity determination is critical for a successful harvest-aid program. Premature

crop termination has been shown to reduce lint yield, seed quality, micronaire, and fiber strength. Harvest-aid chemicals cannot increase the rate of fiber development. Only additional good growing weather including open skies and adequate heat units combined with functional leaves can mature cotton bolls.

Percent Open Boll

Long term approaches have been to apply a defoliant when 60% to 75% of bolls are open, and a dessicant application when 80% or more of bolls are open and remaining green bolls can be cracked when squeezed. Although this is a useful gauge, more accurate techniques are available. When the crop has a “fruiting gap” the percent open boll technique can give erroneous recommendations.

To calculate, count the number of open bolls and total harvestable bolls per plant on 3 row feet from four randomly selected areas of a field. Divide the number of open bolls by the number of total harvestable bolls, then multiply by 100.

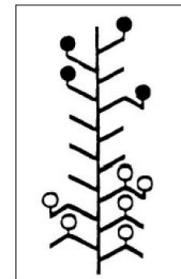


Figure 1. At 60 percent open boll, this crop would not be fully mature and safe to defoliate.

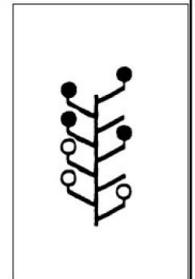


Figure 2. Even at 45 percent open boll, this crop would be mature enough for safe defoliation.

Sharp Knife Technique

Cutting into green bolls is a highly accurate method. Inspect the cross section of the seeds looking for signs of immaturity: jelly surrounding the seed, glistening water in the boll, cotyledons white and not yellow-green, and white seed coat instead of tan or black.



Immature

Requires more heat units - boll opener will probably open but will not fluff.



Towards maturity

Ready for boll opener.



Mature

Fully mature - should open with a dessicant (paraquat)

Nodes Above Cracked Boll (NACB)

NACB helps determine when a field is safe to treat with harvest aids and still obtain 98% to 100% of the yield potential. Defoliating cotton at NACB less than or equal to 4 results in less than a 1% total yield loss. Defoliating at this stage does not reduce fiber quality. However, defoliating when NACB is greater than 4 introduces immature fibers from some of the younger bolls.

The average number of nodes above the cracked boll (NACB) helps determine the proper time to apply defoliants, taking into account the potential yield loss and the quality loss from immature bolls. Ideal timing for defoliation is when unopened harvestable bolls are an average of four or less nodes (including missing branches) above the highest first position cracked boll.

How to monitor NACB:

Select random plants from representative areas of the field.

Choose plants that have a cracked boll on a first position fruiting branch.

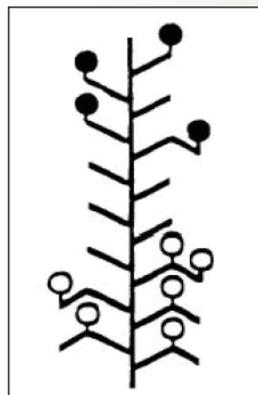
Find the uppermost cracked first-position boll and count this as fruiting branch zero.

Count the number of nodes, including nodes with no boll, above fruiting branch zero until you reach the **uppermost harvestable** boll on the plant.

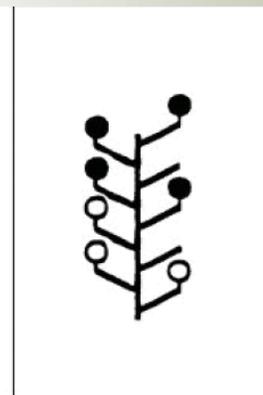
This is a boll that is large enough and mature enough in development that it will open before the scheduled harvest date.

The number of nodes counted above fruiting branch zero is the NACB for that plant.

Take the average across the plants sampled to obtain the NACB for the field.



10 NACB



5 NACB



Thanks Tommy!

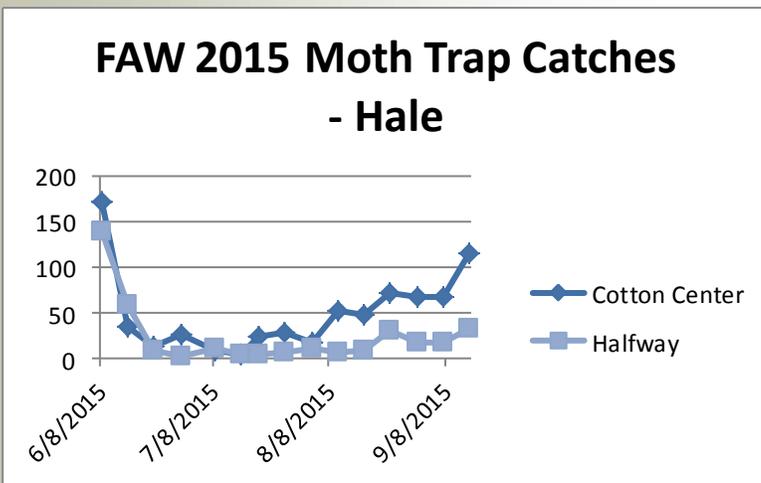
Corn

All but a few fields from our program's mid-maturity stage corn is now past economic insect damage, joining our oldest maturity group and is drying for harvest. This should prove an almost seamless harvest transition from older corn to this mid-maturity group. Our youngest stage grouping of corn is in late dough to dent stage. In these late fields we had no spidermite issues but we are still watching for economic disease problems, still primarily southern rust.

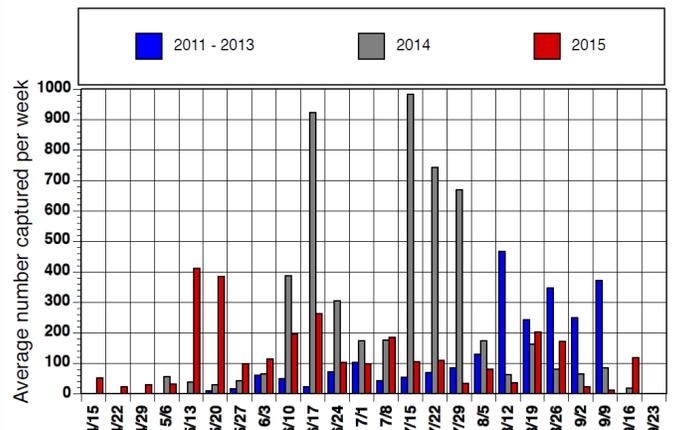
Fall armyworm (FAW) moth trap numbers increased this week, which likely accounts for some of the light but seemingly unique damage (see photo) in our mid-maturity corn as we made our last checks in those fields this week. Only about 1/30 to 1/50 ears had this type of damage. It was likely caused by FAW, wanting to feed just a touch more with their tougher mouthparts before pupating, moving from the ear tip, where their damage is not economic, down to the mid area of the ear. I say likely because no worms were found. This is typical pattern for FAW although the perfectness of the 'hole' is not. The light amount of ears damaged does match the population of FAW I felt we had in those fields. Now that the adult versions of these moths are out, any late corn with no Bt or a weaker Bt trait will be a risk of economic FAW damage, especially if that field is younger than dough stage. In younger corn, these worms would have much more time to increase this damage many times over.



Suspected Light FAW Damage, Swisher 2015.



2015 fall armyworm pheromone trap captures (moths per week) at Lubbock. Average of two traps.



Sorghum

This week our program sorghum ranged in stage from dough to late dough. Normally I would suggest that these fields are a few weeks away from economic pest damage also. Today, these fields are still at risk for FAW attack and we cannot let our guard down with the sugarcane aphid about until the combine leaves the field. We are also picking up quite a few Lygus in our sorghum fields with most fields returning 0.08 Lygus per head up to 3.4 Lygus per head. There is a limited pool of economic threshold work of Lygus in sorghum, but these levels should be well below the suspected ET of 12-16 Lygus per head.

I would expect that our sorghum, particularly any very late field, would be the primary host choice for the increased FAW moths to lay egg into. In our program fields, our exceptionally high population of predators that are fresh from dealing with sugarcane aphids are moving into the heads and keeping the headworms (of all types) from becoming an issue. I so have a report of one field in northern Swisher where this was not the case. In that field, It appears that SCA are still a threat and the headworms have reached economic levels triggering a treatment. For any field in this situation, I strongly suggest control products that are predator soft so as to avoid any aphid flares.

While sugarcane aphids have thankfully not reached ET again in our program fields, we need to remain on alert for them for as long as the sorghum remains in the field. From reports, this aphid is still rampaging in areas infested later and is still spreading in to new areas. These new areas include farther in to New Mexico and up into Illinois. It remains very possible that if our predators slip, or some other yet surprising factor, that these aphids could return to nightmare levels here too.



Blayne and Dr. Ed Bynum make SCA efficacy trial applications. Hale, August, 2015.

photo—Dr. Pat Porter



Blayne and the 2015 PPM scouting crew count SCA / leaf in the SCA efficacy trial. Hale, August, 2015.

Photo— Dr. Pat Porter



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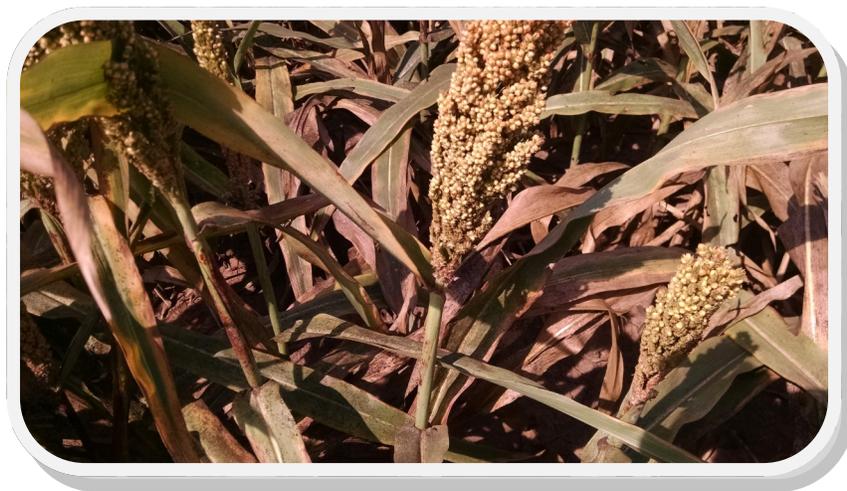
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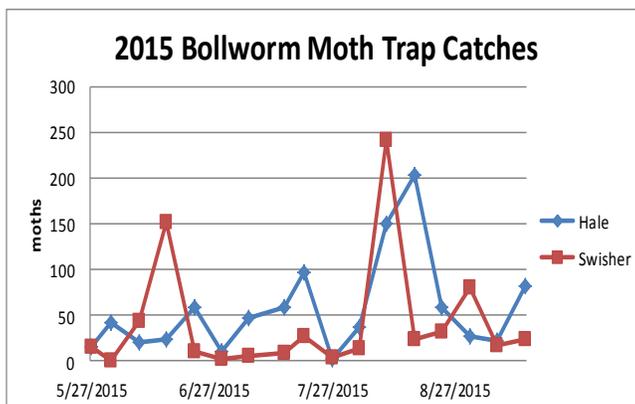
*"Tuesday's with Blayne"
from 6:30—7:00 AM
on the HPRN on
1090 AM KVOP-
Plainview.*

*"IPM Wednesdays" from
1:00-2:30 PM on The
Fox Talk 950 Ag
Show. Fox Talk 950
AM - Lubbock.*

I also have concerns over the SCA damage left behind. We have fewer green leaves than we would like feeding those heads and quite a bit more 'dead' plant matter around the base of the plant. We also have had some very hot days and most of our fields are running seriously low on soil moisture during the latter stages of grain development and fill. These factors could spell trouble in the name of future lodging issues for some fields, especially if high winds continue over long periods. It appears that there are multiple factors involved with the seriousness of the SCA damage left behind. We are looking into multiple factors such as varietal (above and beyond the known SCA host plant resistance/tolerance) fertility, stage at the time of infestation, and water availability. Hopefully we will get a better handle on these factors as we continue to learn more about SCA management and how to play these factors best to our favor.



Heavy SCA Damage to our 'susceptible' sorghum variety in our SCA host plant resistance trial at Halfway, September 7, 2015. Aphids were treated at ≈ 2 X ET with good control eventually achieved.



Blayne Reed