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FOCUS on South Plains Agriculture

A newsletter from the Texas A&M AgriLife Research and Extension Center at Lubbock

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Editor's Note

SNAFU; it was a term coined by U.S. Military personnel in WWII and is an apt description of why Dr. Apurba Barman is not writing the Cotton Insects section of FOCUS today. He is out of the country and a paperwork problem is preventing his return. He is fine but he just can't get home quite yet. I would like to thank our District 2 Integrated Pest Management Agents for writing the Cotton Insects section of this edition of FOCUS. RPP

Cotton Insects

Blayne Reed, EA-IPM, Hale & Swisher counties; Kate Harrell, Texas A&M MS Entomology Student; Kerry Siders, EA-IPM, Hockley & Cochran counties; Tommy Doederlein, EA-IPM, Dawson & Lynn counties.

Cotton continues to make good progress across the district. The vast majority of cotton fields are in bloom with most fields north and west of Lubbock entering their second week while there are some later fields south of Lubbock that are entering bloom this week or very soon. This is somewhat 'late' but these authors agree that there is plenty of time to make a decent to good crop if it is managed for maturity.

District wide the pests have been fairly quiet economically but with plenty of insects to keep us on alert. Fruit retention remains outstanding unless the field has experienced some plant bug damage. In Hale and Swisher Counties about 5% of the IPM program's cotton acres have reached the economic threshold for fleahoppers in the past 10 days. This week the fleahopper population continued to increase in most fields, seemingly exponentially. This increase in population did not directly relate to an increase in economic fleahopper problems now that fields are entering the second week of bloom. Once blooms can be consistently found in cotton fields, fleahoppers are generally no longer an economic threat as the fleahoppers then tend to feed more readily upon easy to reach pollen from the blooms in search of their preferred protein source versus the harder to extract protein from the small squares. In fields where blooms may not be quite so readily available, fleahoppers could still be a major concern. It is felt that several additional fields, both to the north and south of Lubbock, were spared an economic fleahopper problem due to good amounts of predation from big-eyed bugs, minute pirate bugs, lacewing larva, ladybugs, and Nabids.

As the crop moves farther along in development, other pests typically slide into the fields to pick up where the fleahoppers left off. North of Lubbock we have been noting an increase of Lygus in our program cotton. In none of our fields did this increase reach economic threshold. I am noting a large population of Lygus in our area alfalfa fields, CRP, and roadsides. We should be on the lookout for a Lygus migration to nearby cotton once these fields, roadsides and ditches are swathed, sprayed, treated, or shredded.

There are multiple species of Lygus bugs that haunt our area crops, but all belong to the Lygus genus, giving them their lumped common name. Almost all of these species of Lygus share a pest status and exhibit many similar behavioral patterns, which thankfully allow us to generally speak about "the Lygus problem" without troubling producers too much about species identification. The prevalent species in our area vary slightly in color but are usually a pale green base color and about a quarter of an inch long. Lygus bugs can look similar to cotton fleahoppers at first glance, but they will be notably larger and often exhibit a distinct triangle or V prominently on their backs. The nymphs are more similar to cotton fleahopper nymphs when very young, but the Lygus nymphs will have five dark, distinct spots on their backs, while fleahoppers will not. Lygus are primarily attracted to wild succulent plants as well as alfalfa, clovers, potatoes or vetch, but will feed on cotton squares and bolls almost as readily.

In cotton, their feeding pattern is similar to fleahoppers, only potentially much worse as they are proven to cause damage to medium sized cotton bolls. Lygus are also capable of traveling distances with impunity. Because Lygus are generally larger and more robust than fleahoppers, predation typically does not aid in control quite as much. They can cause square drop and blackened lesions or dents in bolls, as well as deformities within the bolls. These insects start moving into cotton around the time it is squaring, and will hang around for the rest of the growing season.

Kerry Siders (Hockley and Cochran counties) is reporting a fairly wide array of pest species present in Hockley and Cochran County cotton fields this week. None of these were at threshold levels, but were something to certainly keep an eye on. These pest included cotton square borers, bollworms, aphids, stink bugs, and fall armyworms. The most pressing of these pests at this time would likely be a potential mix of bollworms, cotton square borers, and fall armyworms (if the armyworms moved from area grain crops) in non-Bt cotton fields.

Once boll set starts in earnest, pressure from the cotton square borer generally fades, but the pre-bloom damage from this pest can be very similar to a bollworm. After a good amount of boll set, bollworms would likely be the primary culprit to watch out for in those fields.

Bollworm eggs are a pearly white color, and are slightly oval shaped with a dent in the tip. The adults usually lay eggs on the top 1/3 of the plant, but can be anywhere on the plant. If you find eggs, even in high numbers, there is no need to spray quite yet. The eggs and small larvae are heavily parasitized and preyed upon by several different insects, in addition to them being highly cannibalistic. We want to start worrying about them when they get a little larger. The threshold for this insect in non-Bt cotton with bolls forming is about 10,000 worms 1/4 of an inch or smaller per acre, and 5,000 worms larger than 1/4 of an inch per acre. In Bt cotton, we look for 5,000 worms larger than 1/4 of an inch per acre with 5 t o15% damaged fruit on the plant. Once the insects reach this threshold, you should start considering a treatment.

Any existing population of cotton aphids would also need to be a consideration if a field did require treatment for another pest. Without a beneficial-friendly mode of action (the choice to treat any potential threshold primary pest), cotton aphids have proven to ‘flare’ in the resulting absence of predators. If a predator-friendly mode of action for control of the primary pest is not an option and cotton aphids are found in field, the inclusion of a proven aphid material could be justified.

Tommy Doederlein (Dawson and Lynn counties) reports some bollworm activity in his area, but these and the local fleahopper population has dropped significantly this week due to predation. Tommy noted no other major pest in his area cotton.

From all of us, we hope for the safe and timely return of Dr. Barman soon, and that you all get a good, soaking, timely rain!

Cotton Agronomy

Crop Update

With this year's June and July rainfall events and good temperatures, we have seen the condition of much of the cotton crop in the Texas High Plains and Panhandle regions improve greatly. However, a majority of the cotton crops are currently still ten days to two weeks behind, developmentally, than what they should be for this calendar date. Many of these cotton fields across the region began blooming around the middle of July (typically first week in July) and have set small bolls, while some of the later planted fields have just begun bloom, or are close to bloom. Most of the fields I have personally observed have excellent fruit retention and came into bloom at 7 to 8 nodes above first position white flower (NAWF). Crops that come into bloom at that level show excellent vigor while those that come into bloom at 6 or less are less vigorous and near physiological cutout, which is 5 NAWF, and may be experiencing some level of moisture, nutrient, or environmental stress. If producers find that their cotton crop comes into bloom at 9 to 10 NAWF, an application of a plant growth regulator may be warranted (see below for more information). However, for a large portion of the High Plains and Panhandle cotton crop, all that is needed for success is an open fall and for producers to continue to monitor for insect pests and adopt a zero tolerance policy in trouble fields where glyphosate tolerant palmer amaranth, or pigweeds, escapes are present. This policy may include either layby applications of residual herbicides under hooded sprayers, employing hoe crews, or careful cultivations if possible. High populations of this weed pest cannot only compete with the current cotton crop for valuable moisture, nutrients, and sunlight, but also provide millions (500 thousand per "female" plant) of seed for germination the following season thereby exacerbating the problem. For more information on proper weed control measures, an excellent Texas A&M AgriLife Extension publication authored by Drs. Gaylon Morgan, Paul Bauman and Pete Dotray is available. If fields are kept relatively weed free and insect pests are controlled in a timely manner, most fields should enter the boll maturity phase with an excellent fruit load and therefore with great yield potential. As indicated above, an open fall with warm temperatures and plenty of sunshine will be needed for many cotton fields for optimum lint and seed yields and fiber quality. In the Lubbock area, under "normal" conditions (whatever that is…) a bloom set on August 10th has a 100% probability of reaching full maturity. However, a bloom after August 10th has a declining percent probability of maturing. For example, a bloom set on August 15th has a 71% chance, August 25th, a 29% chance, and on September 1st, a 14% chance. With above average temperatures during the fall, however, these chances increase and higher maturity values and yields result.

Plant Growth Regulators

Some producers have asked about applications of plant growth regulators (PGR) to control plant height or "hasten" maturity. Research conducted in the High Plains over the years has indicated that under some conditions, producers may be able to "shave off" one node and gain approximately one week at the end of the season through the use of PGR products (mepiquat chloride or mepiquat pentiborate formulations) In many cases, for some varieties, a good fruit

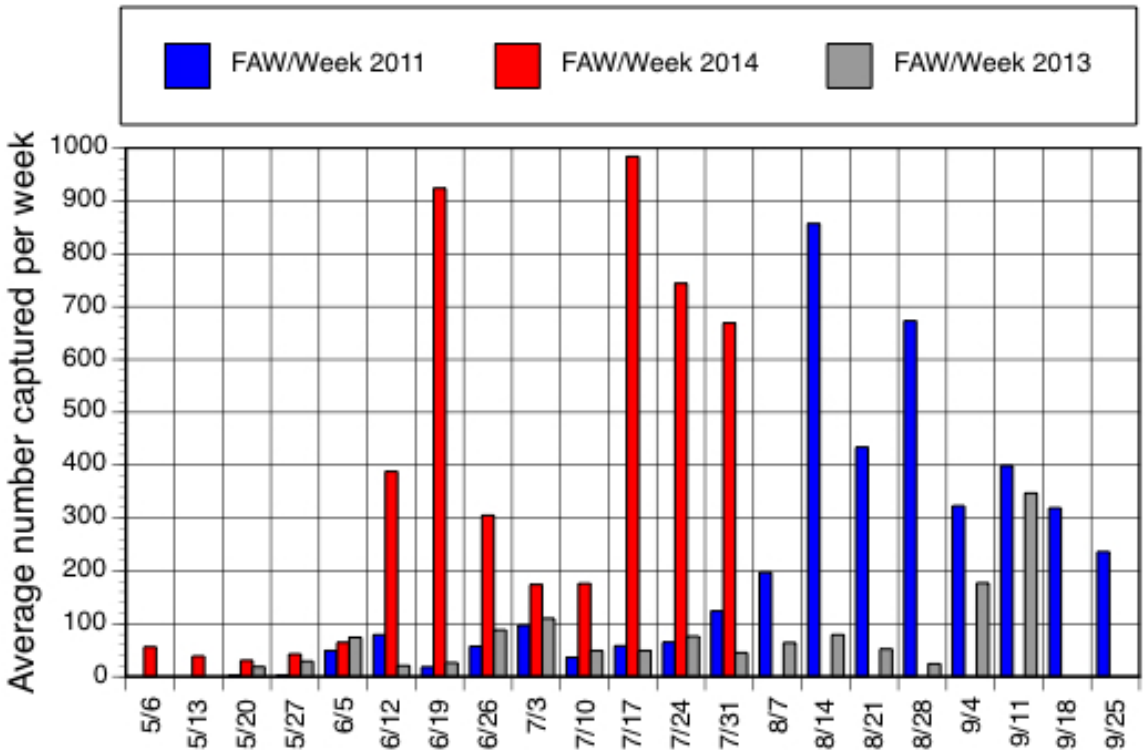
load will prevent or minimize “rank” growth. However, if more aggressive growing varieties were selected for planting, a sound PGR program may be warranted, especially if adequate or excessive moisture and nitrate-nitrogen levels are present. This topic was covered in the July 10, 2014 Focus on South Plains Agriculture. If more information or clarification is needed, please feel free to contact me at (806) 746-6101, or (806) 781-6572. MK

Non-cotton Insect Update

Corn and Sorghum Insects

It is a little difficult to know where to start this summary. The extremely high fall armyworm flight is almost over, but that means there are plenty of hungry larvae eating crops. I got notice this week of a late-planted non-Bt corn field that had 70% defoliation in the whorl stage. Fall armyworm and corn earworm, which together comprise the sorghum headworm complex, are now being found at or near treatment levels in headed sorghum.

2014 fall armyworm pheromone trap captures (moths per week) at Lubbock.
(2011 was a high fall armyworm year.)



Spider mites increased rapidly in many corn fields in the last two weeks and corn should be scouted until it approaches dent stage. Sorghum has not escaped mites; they are present and Blayne Reed, IPM Agent in Hale and Swisher counties, reported that many fields are approaching the economic threshold.

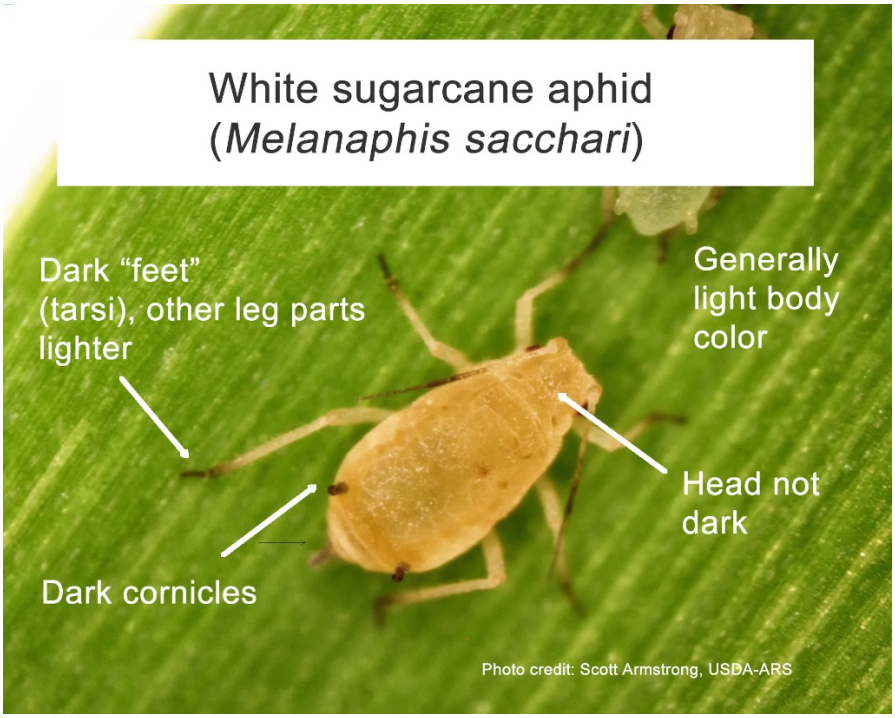
Blayne is also reporting finding sorghum midge, and a bit earlier than normal. I wrote in a prior edition of FOCUS that this year's abundant Johnsongrass provided an excellent early season reservoir for which to build up sorghum midge numbers. It is entirely likely that we are starting "midge season" off with high numbers of midges in the system, and all sorghum should be scouted during bloom. Here is Blayne Reed's preferred method of scouting for midge. "When scouting for midge, I prefer to make use of beat buckets or jugs by placing the bucket over the blooming head, tiling downward and shaking vigorously. Midge should be shaken loose and counted. A minimum of thirty plants per field should be checked, but the total number needed to be checked will vary depending upon field size. Another good method for use on windy days involves enveloping the blooming head in clear plastic, disturbing the head and counting the midges trying to escape. While in bloom, sorghum should be checked daily for midge starting about 11AM, temperature depending."

Thresholds and scouting procedures for corn and sorghum can be found in our publications Managing Insect and Mite Pests of Texas Corn and Managing Insect and Mite Pests of Texas Sorghum.

Sorghum midge. Photo Credit: Patrick Porter

(White) sugarcane aphid now in the Concho Valley

They are NOT HERE, but the white sugarcane aphid has moved into the blacklands, northern blacklands, and is now being found in Coleman, San Saba, Runnels, Tom Green and Concho counties. The species is *Melanaphis saccchari*, and we added the "white" to the name so that people won't confuse it with the yellow sugarcane aphid, a pest we already have on the High Plains and elsewhere in the state. We are monitoring sorghum and Johnsongrass for the white sugarcane aphid and please report any unusual aphids. Dr. Ed Bynum in Amarillo can be reached at (806) 677-5600 and Pat Porter can be reached at (806) 746-6101.



A year of strange insect problems

First there was *Mozena obtusa* by the millions on mesquite, and then there were tens of thousands of whitelined sphix larvae marauding around Amarillo. (I got an ID request from the Cadillac Ranch; it seems the giant caterpillars were scaring the tourists.) Then there was the grasshopper flight in New Mexico that appeared on weather radar and thankfully did not come to Texas. And then there was the geographically inappropriate TV story in Amarillo about kissing bugs (vectors of Chagas Disease), which are a downstate problem and not an issue here. None the less, we are civic minded on the High Plains, so people sent hundreds of what they thought were kissing bugs down to Texas A&M as the TV story requested. Only they were not kissing bugs; almost all of them

were *Mozena obtusa*. (Bugs look very much alike to non-entomologists, and *Mozena obtusa* is not far off in appearance from the kissing bug species.)

But wait, there's more. Last week ended with Tommy Doederlein, IPM Agent in Dawson and Lynn counties, who sent photos of a black grasshopper that suddenly appeared in large numbers. The species is *Boopedon nubilum*, (aka "the ebony grasshopper"). But this name is not quite right because the females can be greenish to grey. This grasshopper has been found in high numbers as far north as Swisher County this year. It prefers to eat grasses, likes sorghum, and won't object to any type of pasture grass. Cotton does not seem to be at significant risk.

Boopedon nubilum. Photo credit Tommy Doederlein.

This week started with a sunflower grower sending an e-mail about large numbers of harlequin bugs feeding on sunflower stalks. To this point we had no record of harlequin bugs feeding in large numbers on sunflower, but we do now. The harlequin bugs were doing damage in 20 – 40 foot circles in the fields. (Note to Dr. Ed Bynum, keeper of "Managing Insect Pests of Texas Sunflower" – we need to add a new chapter at the next revision.)

Continues on next page.

Harlequin nymphs and adults. Photo credit: Patrick Porter.

And finally, Dr. Ed Bynum in Amarillo just put out a special edition of his newsletter to warn people that crop consultants are finding high numbers of black widow spiders in corn and cotton fields, high enough to warrant caution. And this is just the first week of August. I'm begging to think I need to take a vacation to Roswell, NM where I would have a good chance of being abducted by space aliens; this would be the year for it. RPP

Wheat Grain Variety Picks for 2014—Texas High Plains

2013-2014 Wheat Crop in Review

Texas A&M AgriLife harvested 4 irrigated trial sites (and three failed) and one dryland trial. The massive pervasive drought across West Texas continued through the 2013-2014 cropping season and most dryland wheat was failed or grazed out. Even irrigated wheat struggled and we again saw some impact from a moderate freeze in April.

In general wheat variety trial results suggest that good performers in 2014 tended to be varieties bred for and well adapted to western Kansas and eastern Colorado. These varieties may have benefitted from a cooler than normal spring and were still able to respond by increasing grain yield from the region-wide Memorial Day weekend rains as harvest was up to 2 weeks later than normal across the Texas High Plains. Varieties such as Duster, Everest, TAM 112, and TAM 304 that tend to mature earlier under stress were at a relative disadvantage this cropping season unless irrigation levels were high.

AgriLife High Plains Wheat Picks for 2013-2014

Our ongoing Picks criteria include a minimum of three years of data in Texas A&M High Plains wheat variety trials across numerous annual locations. ***A "Pick" variety means this*****: given the data these are the varieties we would choose to include and emphasize on our farm for wheat grain production**. Picks are not necessarily the numerical top yielders as important disease resistance traits (leaf or stripe rust, wheat streak mosaic virus), insect tolerance (greenbugs, Russian wheat aphid), or standability can also be important varietal traits that enable a producer to better manage potential risk. We look for **consistency** of yields, e.g. the regularity with which an individual variety is in the top 25% of yield at each location.

For further discussion of wheat Pick varieties in the Texas High Plains consult the forthcoming "2014 Wheat Variety Trials Conducted in the Texas and New Mexico High Plains" (Trostle, Rudd, Bell) available by mid-August. That document will report multi-year trial averages for yield and test weight.

Continues on next page.

Table 1. Texas A&M AgriLife wheat grain variety Picks for the Texas High Plains based on yield performance and consistency from at least 22 multi-year, multi-trials, 2009-2012 & 2014.

Wheat Variety "Picks", Texas High Plains (alphabetical order)		
Full Irrigation	Limited Irrigation	Dryland
Duster	Duster	Duster
Hatcher	Hatcher	Hatcher
Iba	Iba	Iba
TAM 111	TAM 111	TAM 111
	TAM 112	TAM 112
TAM 113	TAM 113	TAM 113
TAM 304		
Winterhawk	Winterhawk	Winterhawk

How has this list changed from previous years? Iba, an Oklahoma bred wheat, has been promoted from the previous two-years' 'watch list' due to its continued good production under a wide range of conditions. It is resistant to leaf rust, but intermediate (between moderately resistant to moderately susceptible to stripe rust), and some data suggests it can be grazed a little longer in the spring than most varieties. Some certified seed should be available for 2014 seeding.

Endurance has been removed from the dryland Pick list for 2014 planting (it once was a Pick for all conditions but has been gradually surpasses by newer varieties). Oklahoma's Gallagher was noted in the previous two-year watch list, but it has been removed from further consideration as a Pick.

New two-year 'watch list.' Based on 2013 and 2014 harvest data Denali, Byrd, and T158 look promising, but we require at least one more year of data from the Texas High Plains. In addition, the newly released TAM 114 (tested as Texas A&M AgriLife TX07A001505) looks good though limited seed will likely not be available until at least 2015.

The Advantage of Variety Picks in Multi-Year Wheat Grain Production

"Pick" varieties with a minimum of three years in High Plains Texas A&M AgriLife testing continue to yield about 12% better as a group than all other varieties in both irrigated and dryland tests. Though you may have a variety for your production conditions that you really like, we encourage you to evaluate one of our Picks in your cropping. A Pick variety that has a disease package or relative maturity that contrasts your current variety may be a good complement to your overall program. CT

FOCUS on South Plains Agriculture

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Useful Web Links

Water Management Website, TAMU, Irrigation at Lubbock, IPM How-To Videos, Lubbock Center Homepage, Texas AgriLife Research Home , Texas AgriLife Extension Home, Plains Cotton Growers

County IPM Newsletters

Castro/Lamb, Dawson/Lynn, Crosby/Floyd, Gaines, Hale/Swisher, Hockley/Cochran, Lubbock, Parmer/Bailey, Terry/Yoakum