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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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There is little doubt about the elevated hope and excitement that the rain events of this past week have brought to all of us, especially among our producers and their supporting industries. In terms of our crop situation, there are some earlier planted cotton fields with stands ranging from the cotyledon stage to one or more true leaves, whereas, there are other cotton fields planted immediately prior to the rain events with small seedlings just now starting to emerge. Many of the dryland fields will be planted as soon as the producers can get their tractors into the fields. Most producers had already listed their beds up, thus they were able to take full advantage of these rains; this is particularly true as it relates to our dryland fields.

Meanwhile, there are a few insect pest management perspectives to consider following this extended period of rain events. The heavy rains accompanied by lower than normal temperatures could slow down the growth of the cotton seedlings. Additionally, thrips infestations might be more injurious to the slow growing seedlings that are unable to "out-pace" the insect damage. The good news is that the heavy-intensity rains that many of us experienced this past week will typically "dislodge and wash away" existing thrips populations from cotton seedlings. Over the past few days I have scouted several fields and observed that there are very few adult thrips, which may have moved from nearby habitat. I did not detect any immature thrips which indicates that thrips have not been able to establish and start reproducing on our cotton stands thus far.

One of the undesirable effects of this heavy rainfall could be quick dissipation and leaching of the seed treatment insecticides. Research has suggested that neonicotinoid insecticides, such as imidacloprid and thiamethoxam could leach down quickly under heavy rainfall compared to the situation when moisture in the soil is at field capacity (upper limit of water holding capacity of soil). Therefore, it is expected that the desired efficacy and duration of protection from insecticide seed treatments will be lower than the ideal period, which is about 2-3 weeks. Thrips may move onto our cotton seedlings which are already up or about to emerge in the next couple of days. Therefore we must make sure to scout our cotton for both adult and immature thrips. Finding some immature thrips on cotton seedlings suggests that the plants are no longer adequately protected by the seed treatments and thus, might require a curative insecticide application if economic threshold levels have been exceeded. Under the reduced seed treatment protection environment, we may need more frequent scouting of our fields than usual.

This rain will not only help our crop but at the same time we will see intensified growth of many weed species as well. I have already noticed silverleaf nightshade, primrose and roadside alfalfa growing profusely and blooming. These plants are the source for fleahoppers and *Lygus* bugs, therefore we must keep an eye on the potential invasion of these insect pests into our cotton as the growing season and crop progresses. Please do not hesitate to reach me at Apurba.Barman@ag.tamu.edu or 806-407-2830 (cell) regarding any cotton insect related questions. **AB**

Cotton Agronomy

Cotton Agronomy Update

Planting of the 2014 Texas High Plains and Panhandle cotton crop is well underway. Most producers received significant amounts of rainfall recently that will certainly improve planting conditions and spirits!! Amounts ranged from just over 10" to less than 1" with a majority reporting 2-5". This should allow for more dryland acres getting stands established versus the last 3 years. Although these rains came at a perfect time for most, some locations that were planted but not emerged may experience difficulties getting stands established if the rains came with great intensity.

Soil crusting can occur following an intense rainfall event or heavy irrigation. If emergence is delayed due to crusting, a condition known as "big shank" may result. Producers should consider "helping" seedlings to emerge under these conditions by mechanically breaking the crust. Quick cotton seedling emergence will ensure that crop development is not delayed and may reduce the occurrence of some seedling diseases. Although getting the cotyledons out of the soil is important for crop development and production, what goes on beneath the surface is equally important. During the time it takes for the cotyledons to emerge, cotton roots can reach as deep as 10 inches into the soil, provided adequate moisture is available. Any hindrance of the root development can significantly reduce the possibility of achieving optimum yields.

In addition to cool soil temperatures, other conditions can hinder root growth and development. These conditions can include, but are not limited to, herbicide injury, water stress, and hard pans. Under normal conditions, cotton should emerge between 5 and 7 days after planting (DAP). Under warm moist conditions and relatively shallow seed placement, cotton may emerge as early as 4 DAP. However, if "less than optimal" planting conditions, such as cool soil temperatures, are observed, cotton plants may take as long as 10 to 14 days to emerge. I would suggest that producers to check for emergence issues if seedlings are not "pushing" after 7 days.

At the time of this writing, May 30th, the annual total rainfall for Lubbock is 5.67 inches according to the Texas Tech Mesonet Website and 6.13 as per the National Weather Service. This amount, when compared to the last 3 years, is much greater than was observed in 2011 (1.1 inches through May) and 2012 (2.6") and better than 2" above 2012 (3.65 inches through May). Although the precipitation was greatly celebrated, we are still considered to be under extreme drought conditions and slightly behind the long term average for Lubbock (6.21" from Jan 1 through May). For most, if not all, of the region's dryland cotton production, more rain will be required to carry the crops that do get established through to harvest.

Please join us on our Facebook page (Texas A&M AgriLife Extension - High Plains Cotton Agronomy) that was established recently by Ms. Kristie Keys, Texas A&M AgriLife Extension Assistant– Cotton. Also, please feel free to contact either myself or Kristie if you have any cotton production questions. We can be reached at 806-746-6101 or my cell number is 806-781-6572 (24/7). There are a lot of resources at our disposal that will help us answer any questions that you may have. **MK**

Cotton Pathology

Cotton Disease Update

While rainfall amounts varied, most everyone across the Southern High Plains received some from this most recent system. According to the West Texas Mesonet (http://www.mesonet.ttu.edu), accumulation ranged from 0.76 inches in Seminole to 7.42 inches in Aiken. There are unofficial reports of some areas receiving more than 10 inches. Overall, the majority of rain that fell went into the ground; whereas, runoff into many of the playa lakes occurred in areas north and east of Lubbock. The lack of wind and moderate temperatures has been ideal for growth and development.

Cotton should respond quickly in areas where large amounts of rainfall occurred. Planting should resume early next week if it hasn't already, and with current soil temperatures seedlings should jump out of the ground. There have been a few reports of seedling disease or root disorders in some of the earlier planted cotton. Much of these issues were related to the cold temperatures that were experienced during mid-May. There are three main seedling disease pathogens (*Rhizoctonia solani*, *Pythium* spp. and *Thielaviopsis basicola*) that can cause seedling disease in cotton, and are generally favored by cool, moist conditions. Most all cotton seed is treated with fungicides to combat these diseases; however, even the best combinations available do not provide 100% control under conditions that are conducive for disease development. Furthermore, several factors are capable of influencing seedling disease as well. For example, deeper planting depths, as a result of soil moisture conditions or seed settling after a rain or irrigation, impose a certain amount of stress on the plant while also increasing the amount of time pathogens can infect (Figure 1).

Figure 1. *Emerging cotton (left) and cotton seedlings with extended hypocotyles resulting from seeds settling to a deeper planting depth (right)*

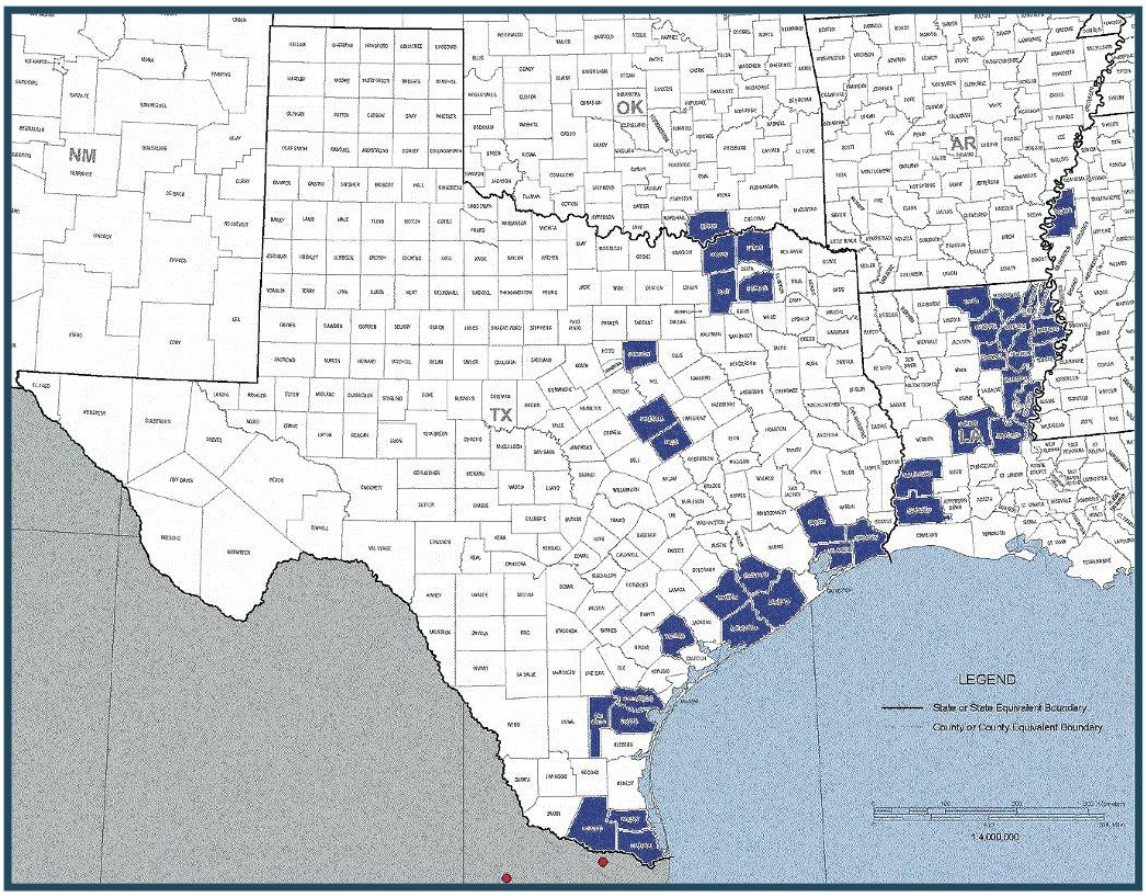
A situation where irrigation was applied to ensure emergence tends to cool the soil temperature increasing the risk of seedling disease. Some the plants where seeds were imbibing water during cold temperatures are exhibiting symptoms of chilling injury. I do not suspect chilling injury is wide spread, as most of the cotton that was planted during that time was placed in dry soil and irrigation was applied when temperatures warmed up. It is still important to examine the health of the root system to determine if replanting is warranted, because, a compromised root system will not be able to take full advantage of the moisture that has been stored in the soil profile. If you have any questions or comments about seedling disease or any other cotton issues contact Jason Woodward, Extension Plant Pathologist with Texas A&M AgriLife Extension Service at jewoodward@ag.tamu.edu, or (806) 632-0762. **JW**

Small Grains Entomology

On the Lookout for the New Sorghum Aphid

Most people have heard about the fall, 2014 sugarcane aphid (*Melanaphis sacchari*) outbreak in the Lower Rio Grande Valley, Gulf Coast counties and Louisiana, Mississippi and Oklahoma. The USDA Agricultural Research Service and others have conducted genetic tests and determined that the new pest is in fact the sugarcane aphid but it has switched hosts to sorghum for some unknown reason. It is still being found on sugarcane in the affected counties, but the majority of the insects are on sorghum. Our colleagues downstate are now reporting treatable levels of sugarcane aphids in some fields, and they are also reporting an increasing number of winged adults. It is a long distance from the infested fields down state to the Texas High Plains, but these winged aphids can easily ride wind currents and storm fronts, so there is a slight risk that aphids will reach the High Plains. We have no idea if this semi-tropical species can survive and reproduce in our climate, but it is worth watching for them in our sorghum and other sorghum related plants.

There has been a bit of confusion about the name of the new pest. Sugarcane aphid and yellow sugarcane aphid sound a lot alike. In order to avoid potential confusion, Texas and Louisiana entomologists have agreed to bend the rules and will now use the name "**white sugarcane aphid**" when talking about *Melanaphis sacchari*, the new pest on sorghum.



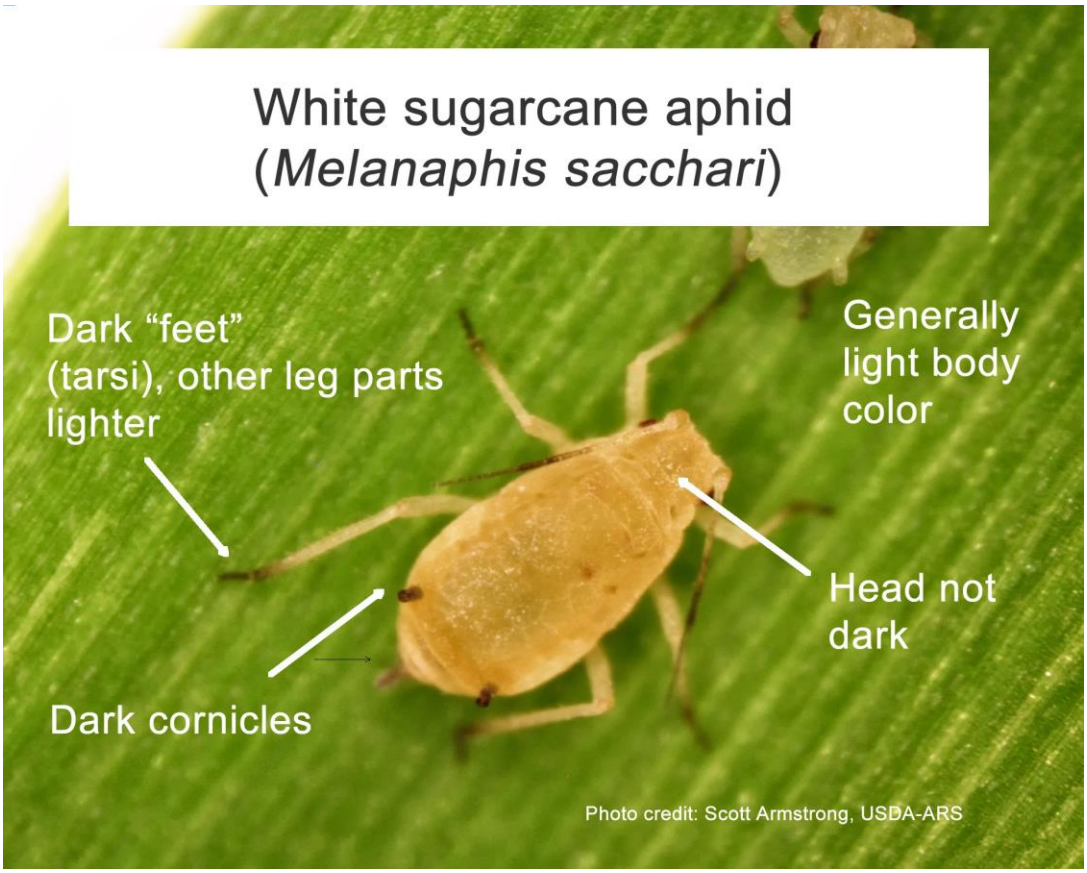
Distribution of white sugarcane aphid in 2013.

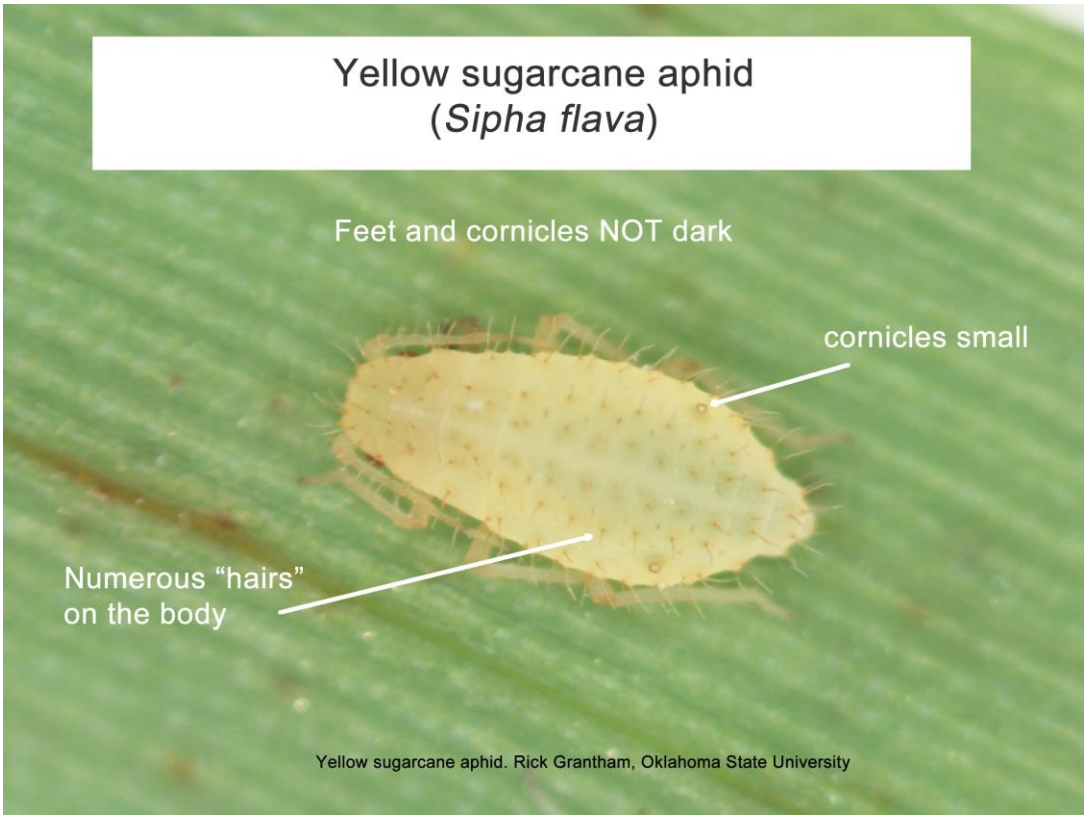
We know that this aphid can be found on sorghum, forage sorghums, sorghum x sudan crosses, johnsongrass, sugarcane and occasionally on corn. We do not think there is a significant threat to corn, in part because the aphids now on corn in the Lower Rio Grande Valley do not seem to be in healthy colonies; sorghum and its relatives seem to be far better hosts.

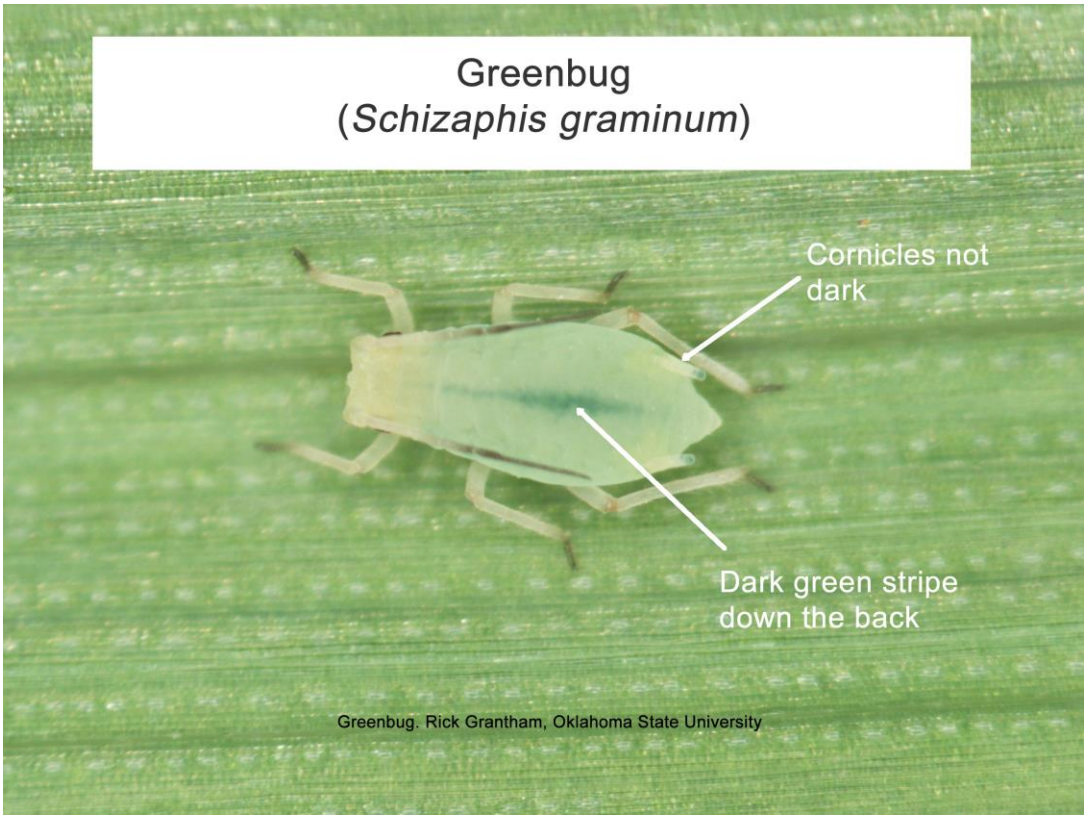
Identification of the white sugarcane aphid

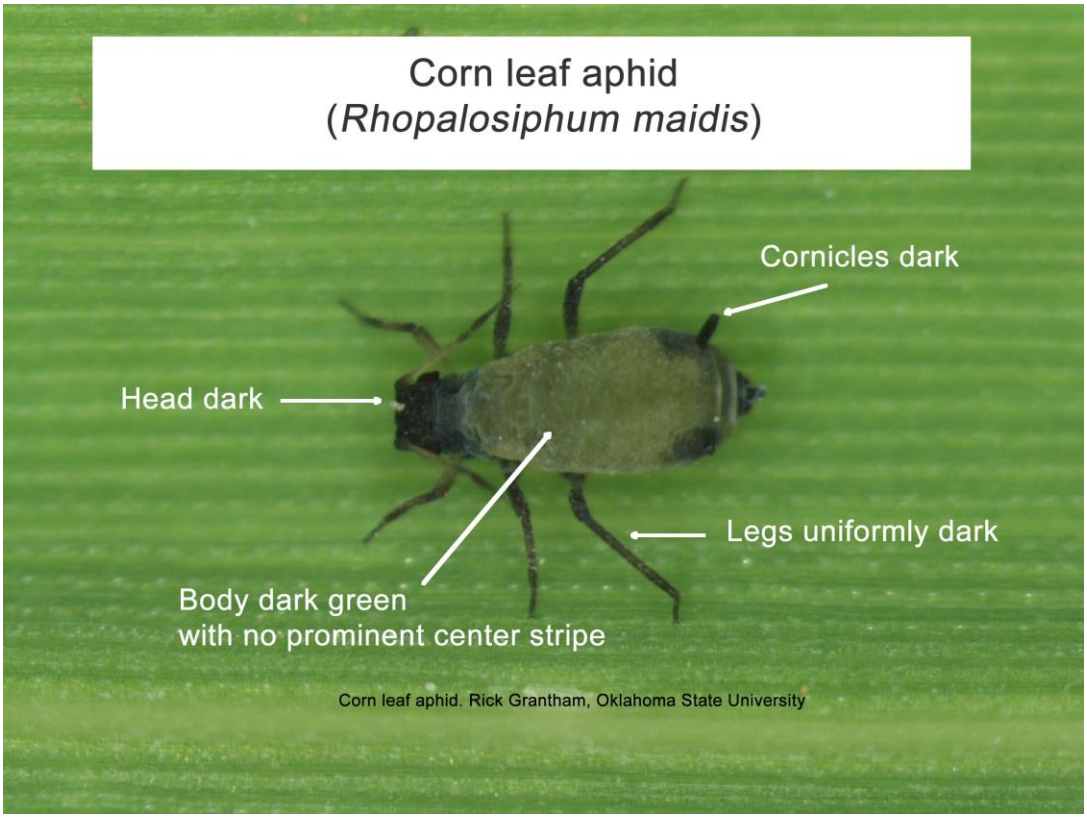
The three common aphid species we find on High Plains sorghum are the greenbug, corn leaf aphid and the yellow sugarcane aphid (*Sipha flava*). The following photos illustrate the recognition and identification characteristics of white sugarcane aphid and each of our common species.

Early detection will give us a chance to monitor this aphid and perhaps learn a lot about it, and it will also let us get a jump on some insecticide trials so that we can look for new products. We would appreciate receiving reports of white sugarcane aphid or any unusual aphid problems in sorghum. **RPP** Pat Porter (Lubbock), (806)746-4046 and Ed Bynum (Amarillo), (806)677-5600


White sugarcane aphid
(*Melanaphis sacchari*)
Dark "feet" (tarsi), other leg parts lighter
Generally light body color
Head not dark
Dark cornicles
Photo credit: Scott Armstrong, USDA-ARS


Yellow sugarcane aphid
(*Sipha flava*)
Feet and cornicles NOT dark
cornicles small
Numerous "hairs" on the body
Yellow sugarcane aphid. Rick Grantham, Oklahoma State University


Greenbug
(*Schizaphis graminum*)
Cornicles not dark
Dark green stripe down the back
Greenbug. Rick Grantham, Oklahoma State University


Corn leaf aphid
(*Rhopalosiphum maidis*)
Cornicles dark
Head dark
Legs uniformly dark
Body dark green with no prominent center stripe
Corn leaf aphid. Rick Grantham, Oklahoma State University

Small Grains Agronomy

Changes for Huskie Herbicide Label in Grain Sorghum, 2014

Huskie herbicide (active ingredients: pyrasulfotole + two formulations of bromoxynil) from Bayer Crop Science has generated a lot of interest due to lower potential injury to grain sorghum compared to dicamba and 2,4-D products, which also have volatility drift issues to nearby cotton. Though leaf burn is expected, sorghum grows out of it with little apparent long-term effects.

Huskie use continued in 2013 with largely good results in numerous sorghum fields across Texas. Reports of good control of Huskie, especially on pigweed species including glyphosate-resistant Palmer amaranth, are common especially when applied to smaller weeds.

There are new label changes for the 2014 cropping season:

- The original application window for Huskie has been expanded from 3-leaf stage to 12" tall to now include sprays to 30" tall grain sorghum, or initial flag leaf emergence, whichever comes first. Three potential caveats must be noted about the expanded window of application: 1) label guidelines still recommend weed size ≤ 4", 2) Huskie applications after 12" tall must forego atrazine as a preferred tank mix (ATZ only labeled to 12" tall), and especially 3) the idea that you can save Huskie until later could deceive producers into making mistakes in regard to all-important timely weed control.
- The label now recommends that you do include AMS "under challenging conditions" (hot, dry) and "for optimal weed control in grain sorghum in arid environments, Huskie herbicide + 1 lb./A AMS can also be combined with 0.25% v/v NIS or 0.5% v/v HSOC (high-surfactant oil concentrate)."

Huskie rotation questions: AgriLife weed scientists in the High Plains on sandier soils continue to address the question about rotation back to cotton, which the label says "field bioassay." For the first time in 2013 some apparent low levels of injury were observed in cotton and peanut after 2012 Huskie use in grain sorghum. This is being investigated further.

Including iron with Huskie sprays on grain sorghum: Bayer staff note that leaf burn appears to be reduced by the inclusion of iron (most likely iron chelate; less expensive iron sulfate has not been tested) in the spray solution.

Finally: Though Huskie appears to be a good choice for POST weed control in grain sorghum, I assert that your pre-plant/pre-emerge weed control strategy is still your **most important** weed control decision for grain sorghum. The expansion of the label

application window may delude some producers into further relying on Huskie to fix their weed issues.

For an AgriLife Extension summary of Huskie herbicide, see http://lubbock.tamu.edu/files/2014/03/Huskie-Grain-Sorghum-Summ-Mar2014-Trostle-PDF.pdf

Nitrogen Requirement in Grain Sorghum

As a rule of thumb the N requirement for grain sorghum is 2.0 lbs. of actual N (units) per 100 lbs. of yield. This N requirement may be met from applied fertilizer + all soil nitrate N in the top 24". All of the soil nitrate N is credited toward crop requirement?—yes 100% of profile nitrate N is credited to sorghum and other crops in Texas A&M AgriLife's long-term research and subsequent soil test fertility recommendations.

Grain Sorghum Seeding Rate Targets

With recent rains much of the region's grain sorghum may be planted in the next month. Seeding rate is a key risk management tool for producers in grain sorghum. Historically in the Texas South Plains seeding rates for grain sorghum have been higher than needed and sometimes too-high seeding rates can hurt yield in drier years. Good rules of thumb for grain sorghum seeding include "Less is more," e.g. less seed is more yield, and "If you are having doubts about whether to increase your grain sorghum seeding rate, don't do it."

All AgriLife sorghum seeding rate guidelines are for seeds per acre rather than pounds per acre. We adjust seeding rates significantly based on deep soil moisture at planting (never increase, only decrease) and projected irrigation. The following chart is a guideline to help you target your seed drop per acre for all row widths, even for narrow rows.

Table 1. General seeding rate guidelines for Texas South Plains grain sorghum based on at-plant stored soil moisture and projected irrigation.

	At-plant Stored Soil Moisture (Inches)		
Projected Irrigation	Good 4-6"	Fair 2-3"	Poor <2"
	1,000s		
Dryland	30-35	24-28	20-24
Limited (6-8")	50-55	45-50	39-45
Full (12-16")	65-78	58-65	50-57

Let the planter spacing provide the benefit, and don't increase the seeding rate (unless using a drill with poor seed placement then you might increase seeding rate by 10-20%, but you will still probably need to plug 1/3 to 1/2 of the drill rows).

Peanut *Bradyrhizobium* Inoculant is Labeled for Black-eyed Pea

Producers planting black-eyed peas (a member of the cowpea family) may not be aware that the same species of *Bradyrhizobium sp.* (Vigna) that is specific for peanut is also the same species that is specific for members of the cowpea family. Though peanut inoculant may not state this on the label, company literature for major inoculant manufacturers Becker Underwood, INTX Microbials, and Novozymes spell this out. This gives BEP farmers an opportunity to include granular inoculant (almost all planters can apply it through the dry boxes) or even in-furrow liquid (which most planters that seed peanuts are equipped for). Liquid inoculant can also be direct applied to the seed though in-furrow application is much better. Seedbox inoculant powders may also be available, but prior research in West Texas has not documented increased nodulation on peanut, guar, soybean, or black-eyed pea let alone yield differences when using different seedbox powders including sterile peat products. **CT**

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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