AgriLIFE EXTENSION
Texas A&M System

INSECTS AND WEEDS IN FOCUS

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GENERAL CONDITIONS

The 2011 crop is finishing up fast due to greater accumulated heat units than normal and lack of additional rainfall. Sorghum harvest will begin this week in some fields. Cotton in many fields is at 5 NAWF (nodes above white flower). There are early planted cotton fields at 3 nodes above white flower. The crop in general is holding up a little better than expected probably due to available subsoil moisture and rainfall a few weeks ago. Yield potential for sorghum appears to be better than average in fields that had a good profile of water at planting and subsequently received the key rainfall. The key for better yields in cotton appears to be early planting and rainfall a few weeks ago, but boll filling and retention of bolls before water runs out will determine final yield potential.

RDP

HEADWORMS AND STINK BUGS IN SORGHUM

Headworms (mostly **corn earworm**) have required control measures in moderately late sorghum. In some cases where fields were in early milk stage last week very high headworm infestations were detected. Good control was achieved with the high labeled rate of one on the pyrethroids. In one of our tests, established on a moderately low population, control was achieved with an assortment of old and new insecticides. This information will be summarized at a later date. One thing that has been observed over the last few days is an increase in **fall armyworm** numbers; the fall armyworm situation should be followed closely since in past years farmers had to shift to Lannate to get good control. It has been surprising to me that the pyrethroids did not provide good control on fall armyworm since their use on pasture grass has provided good control where proper nozzles were utilize.

Rice stink bug numbers have been historically low throughout the season, but in recent days the numbers of rice stink bug nymphs have increased even in fields where a lot of seed is in late soft dough or hard dough. In such situations control measures are not needed. Fields that are in bloom to soft dough should be inspected for stink bugs. Use of a 2.5 or 5 gallon bucket as a sampling device is excellent for determining stink bug numbers as well as headworms. I suggest shaking 10 heads and then counting the insects since glooms from the sorghum heads make it difficult to see the insects. If insecticide and application cost is $6/acre, grain value is $10/cwt, and there are 50,000 susceptible heads/acre (milk stage) then the economic injury level is 3.7 bugs/10 heads.

RDP

COTTON ARTHROPOD PESTS GENERALLY LOW

Even though **bollworm** eggs were observed in cotton last week the number of larvae developing from those eggs in conventional cotton was very low in a field I am monitoring. The same may not be the case in other fields. Scouting conventional cotton for bollworm activity should be a priority at this time. We continue to capture higher than average numbers of bollworm moths in pheromone traps at the AgriLife Research and Extension Center at Corpus Christi.

Other caterpillar pests that should be on the mind of field scouts include **fall armyworm**, **beet armyworm**, and possibly **cabbage looper**. We have also noticed **saltmarsh caterpillar** on weed hosts and adult moths around lights. In the case of fall armyworm and beet armyworm, weather conditions have been favorable for outbreaks, especially for beet armyworm. Pheromone traps for beet armyworm operated by the Boll Weevil Eradication Foundation in the Lower Rio Grande Valley have had higher numbers and the traps in the South Texas Winter/Garden Zone have tended capture more of the moths than in the past few years. In the case of fall armyworm we have seen fairly high natural mortality of the eggs and larvae caused by predators, parasites or possibly disease causing organisms.

Stink bug activity has been low, but there are reports that this insect is present in some cotton fields. Bolls 0.9-1.1 inch should be inspected for evidence of internal feeding. During the 3rd through the 5th week of bloom my personal treatment level would be when 15-20% (more to the 20% side) of the inspected bolls exhibit evidence of internal feeding. Those levels have worked, in my opinion, to economically provide protection. However, a sliding scale has been developed by some cotton growing states where during the 3rd-5th week of bloom they use 10% evidence of internal feeding in the bolls. Make sure that stink bugs are present in any case in fields where the internal evidence criteria is used (Fig.1). I just think we end up treating fields to often when the 10% level is used to trigger treatment.

RDP

Fig. 1. Evidence of stink bug internal feeding in bolls.

BOLL WEEVIL TRAP NUMBERS STILL VERY LOW

Boll weevil numbers in Foundation pheromone traps have been low throughout 2011 in the South/Texas Winter Garden Eradication Zone (Table 1). With vigilant effort it appears that the job of eradication can be finished in this region. We need to take advantage of the low numbers and not lose ground. Things that agricultural consultants and growers can do at this time include:

(1) making sure there are pheromone traps around all fields since missed fields could translate into uncontrolled infestation,
(2) working to keep all pheromone traps upright, and
(3) asking your custom harvesters, especially from the Lower Rio Grande Valley, to clean off all cotton plants, green bolls and piles of harvested cotton from equipment before they move into this area.

RDP

Table 1. Average number of boll weevils in Pheromone traps year to date (YTD) and for each week, South Texas/Winter Garden Boll Weevil Eradication zone.

YTD	2011	2010	2009	2008	2007
	.00007	.01595	.11018	.28274	.00736

Week Ending	2011	2010	2009	2008	2007
4/3/11	.00007	.00290	.05496	.05115	.00098
4/10/11	.00010	.01045	.02725	.37614	.00241
4/17/11	.00004	.00560	.04025	.19414	.00233
4/24/11	.00003	.02786	.34296	.13126	.00306
5/1/11	.00003	.03015	.09235	.31756	.00301
5/8/11	0	.01771	.24888	.38020	.00604
5/15/11	.00011	.00789	.13697	.44439	.02224
5/22/11	.00014	.01680	.11233	.40800	.00352
5/29/11	.00014	.01014	.31903	.12396	.01479

Traps inspected for current week: 73393

INTERESTING INSECTS

Dog-day cicadas are the largest cicadas in North America, but they are less often observed compared to being heard. Males make loud, droning buzzing calls during midsummer. They are found east of the Rocky Mountains. The dog-day cicadas are also known as annual cicadas, as adults are present each season. Nymphs live in the soil and require 2 to 5 years to complete development, but with overlapping generations they are observed on an annual basis. The dog-day cicada is unlike the periodical cicadas since the latter have a synchronized emergence every 13 or 17 years. Periodical cicadas do not occur in Texas.

RDP

Dog-Day Cicada

HARVEST AIDS IN GRAIN SORGHUM

HOW HARVEST AIDS WORK

When harvest aids are applied properly, harvest is made more efficient and combining or threshing is faster, with no reductions in grain weight. Grain from the entire field will have a uniform moisture content, resulting in few "hot" loads and price discounts.

To keep the grain from losing weight or yield, it is imperative that growers apply harvest aids at the proper time, which is once the grain reaches physiological maturity and the average grain moisture drops below 30 percent. If harvest aids are applied prematurely, both yields and grain quality will be reduced.

When the seed or kernel reaches physiological maturity, additional nutrients and carbohydrates no longer move in the grain. At this time, a black layer forms at the attachment point and seals the seed from the plant.

DETERMINING PHYSIOLOGICAL MATURITY OR BLACK LAYER

Pinch several kernels from the head and examine them carefully. When you detach a kernel from the outer glume, you will be able to see a black spot, or black layer, at the base of the kernel. This visible black spot indicates that the grain has reached physiological maturity.

Sorghum pollinates first at the top of the head and progresses steadily downward to the base of the panicle in 4 to 7 days. This means the seed at the top will mature before that at the bottom of the head.

THERE ARE TWO WAYS TO DETERMINE PHYSIOLOGICAL MATURITY:

- Hand harvest by stripping the grain from several heads from several areas of the field and determine percent moisture with a grain moisture tester. A harvest aid can be applied when grain sorghum has reached 30 percent moisture or less.
- Check the kernels for a black layer, which indicates the crop is mature. In figure 1, various kernels of sorghums have been pinched from descending regions of the head. Kernel 1 (far left) was selected from the top of the head and is visibly shrunken, as it has dried more than the other kernels. It appears "pinched" at the base and has a fully developed black layer that is clearly visible. Kernels 2, 3, 4, and 5 were taken in descending order. Kernels 4 & 5 have no black layer and are just entering the time that the vascular connection between the plant and seed will be terminated. The crop is mature when the kernels look like kernels 1, 2, or 3 in figure 1.

Figure 1. Sorghum kernels in various stages of maturity harvested from the same panicle from the most mature (1) to the least mature (5).

MATERIALS AVAILABLE

Only two products are labeled for use as harvest aids: sodium chlorate and glyphosate.

Sodium chlorate, which can cause fires if it is not mixed with a retardant, is a chemically active salt that desiccates the plant. This product is sold under various trade names and concentrations of active ingredient per gallon. For good desiccation, the weather must be hot and dry.

Glyphosate is a herbicide that kills the plant. Producers may make a single application of up to 2 quarts per acre. Once it is applied to sorghum, the plants move the glyphosate to the growing point over a 5-6 day period. Therefore, allow a minimum of 7 days between application and harvest of grain sorghum. Another of advantage of applying glyphosate is that actively growing weeds will be killed.

CROP LODGING

If the plant is healthy, growers usually do not need to worry about crop lodging after harvest aid applications. Studies have shown that healthy sorghum treated with harvest aids will stand well for up to 3 weeks after treatment. After 30 days lodging can be significant. Treat only those acres that can be harvested within 10 days to 2 weeks after application.

To avoid any premature lodging, inspect the field before application. Look for stalk degradation from diseases such as charcoal rot, which will cause premature lodging during natural dry down or after harvest aids are applied (Figure 2).

To check the plants before treatment, split the stalk lengthwise and look for a hollow stem or black rot just above the root crown. If the stalk is unhealthy, it will generally fall, whether or not it has been treated. Figures 3 and 4 show what to look for in finding charcoal rot and what to expect if an application is made without assessing these risks.

Figure 2. Three increasing levels of charcoal rot (left to right). Infected plants die prematurely before all the grain can be filled. Sorghum heads appear dull and lackluster, and the spikelets my droop, giving the panicle a ragged appearance. Such panicles contain some shriveled grain, with the worst being found at the base of the sorghum head, which would have been the last grain to mature.

Figure 3. By the time sorghum begins to lodge, it may be too late to apply glyphosate. When sliced open, the lower 5 to 6 inches of stalk appears gray and is infected with charcoal rot. As prematurely killed plants continue to lose moisture, the stalks will fall rapidly under the weight of their own grain.

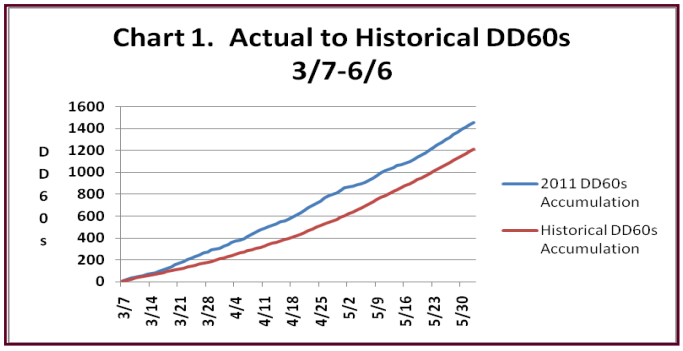
Figure 4. Harvest aid applications may accelerate the fall of sorghum infected with charcoal rot. To avoid excessive lodging, harvest promptly. Do not treat more sorghum acres than can be harvested immediately.

DDF

ACCUMULATED DD60S FOR COTTON

During the period of (3/7-6/6) 1,455 DD60s were accumulated compared to the historical DD60 accumulation of 1,211

(**Chart 1**). Information obtained from the Nueces County crop weather station #1 at http://cwp.tamu.edu



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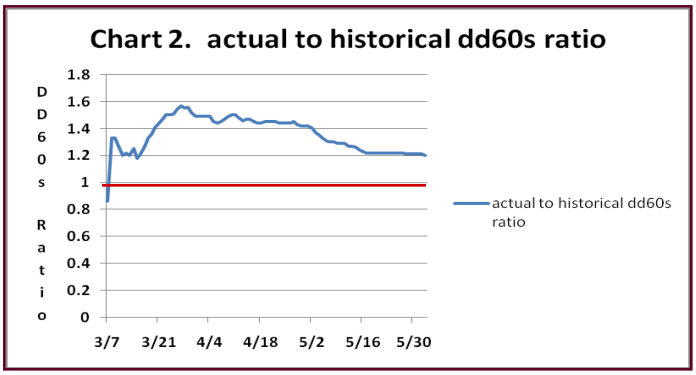
ACTUAL TO HISTORICAL DD60S RATIO

For the period of 3/7 to 6/6 the actual to historical DD60s ratio is 1.20 or cumulative heat units is 20% higher than normal

(**Chart 2**). When the blue line is above the red line this means we are warmer than normal and when the blue line is below the red line, this means we are cooler than normal. Information obtained from http://cwp.tamu.edu



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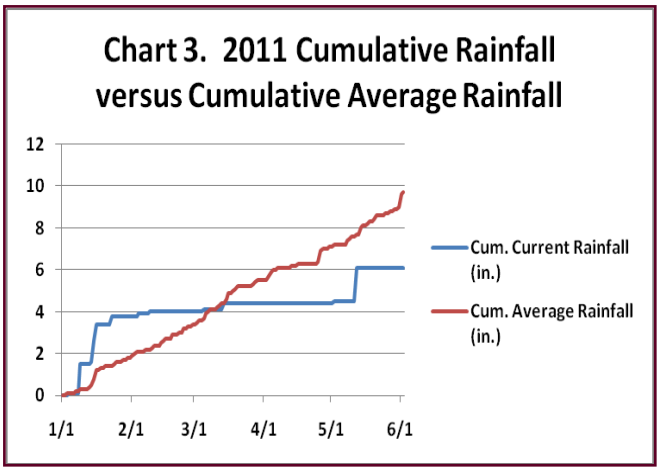
RAINFALL

Rainfall at the Texas AgriLife Research and Extension Center for 2011 has totaled 6.1 inches compared to the average of 9.7 inches for the time period of January 1 through June 6
(See Chart 3).



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