GAINES COUNTY IPM NEWSLETTER

Manda G. Cattaneo, Extension Agent - IPM
101 S. Main RM B-8
Seminole, TX 79360
(432)758-8193 office
(432)758-2167 fax

http://gaines-co.tamu.edu
http://www.tpma.org
http://ipm.tamu.edu
mgcattaneo@ag.tamu.edu

Volume I, No. 6 August 16, 2008

General Situation

The hot dry weather has had an impact on this year's crops. After moisture, the most important factor in the development of squares and bolls is temperature. The heat unit (H.U.) concept is a way to measure the relationship between cotton development and temperature. This year we accumulated approximately 2018 heat units between May 1st and August 14th. In 2004 and 2007 we had accumulated approximately 1793 and 1395 heat units, respectively for the same period of time. This could be one of the main contributing factors as to why the cotton plants have cutout earlier this year than in previous years.

Cotton fields range from 2 to 7 Node Above White Flower (NAWF), with a majority of the fields at 3 to 4 NAWF. The fields with 6 to 7 NAWF tend to be the later planted fields, fields that were hailed on earlier in the season, or fields with exceptionally good water.

During the last two weeks cotton plants have started to shed small bolls and squares. This is a natural process in which the plant is adjusting its fruit load to match the supply of water and nutrients.

Growers with conventional cotton varieties (non-Bt) should keep a close eye on their fields. Bollworm, fall armyworms, and beet armyworms could migrate from sorghum and peanut fields and lay eggs in cotton fields. The lusher (greener or actively growing) cotton will be more attractive to these moths. Bollgard, Bollgard II and Widestrike fields should also be scouted weekly to determine if the fields have treatable "worm" populations.

Figure 1. **Fall armyworm feeding on the developing sorghum head**

Grain sorghum (Milo) crop stages range from being in the whorl stage to heading out and blooming. Fall armyworms and bollworms continue to be observed in high numbers in sorghum fields. We have observed a lot of bollworm and fall armyworm moths in several cotton and sorghum fields. Eggs and egg masses have also been observed. Treatments should not be based on the presence of adults and/or eggs. Fields should be scouted on a weekly basis to determine if larvae populations are increasing/decreasing and if they will cause economical damage at the current crop stage.

Verticillium wilt continues to be found in an increasing number of cotton and peanut fields. Sclerotinia and leaf spot have also been observed in more peanut fields. Pod rots caused by Phythium and Rhizoctonia have been observed in scattered peanut fields. White grubs have been observed at low population levels in scattered fields. We have not observed any damage associated with these low population levels and no fields have been treated. Fields should be scouted weekly to detect disease and insect development.

Nodes Above White Flower (NAWF)

The Nodes Above White Flower (NAWF) is a technique that growers and consultants can use to chart cotton's growth during the bloom period. NAWF is a reflection of the amount of "horsepower" the plant has left. If the boll load consumes almost all of the nutrients provided by the roots and leaves, or if stress reduces the nutrient supply, then little excess supply will be available for continued terminal growth. Under these conditions, the NAWF will lessen as the squares in the top of the plant develop into blooms. This information is from the *Cotton Physiology Today, Newsletter of Cotton Physiology Education Program – National Cotton Council.*

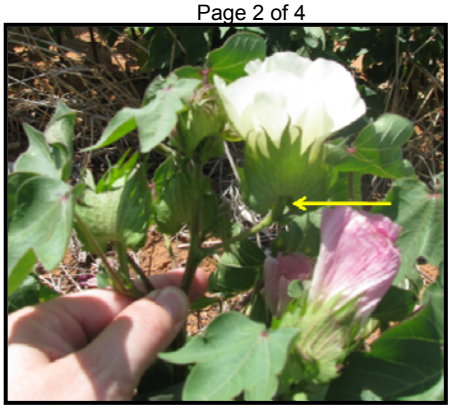

Figure 2. **Upper most first position white flower**

To determine NAWF, count the number of nodes above the upper most 1st position white flower (See *Figure 2*). The cotton plant is "cutout" when it reaches 4 or 5 NAWF. Before cutout approximately 100 flowers will produce 1 pound of seed cotton. After cotton reaches cutout, the number of flowers needed to produce 1 pound of seed cotton increases dramatically. The flowers produced after cutout contribute less to yield because the bolls are smaller and boll retention is reduced.

"Worms" in Grain Sorghum

Fall armyworms and corn earworms (a.k.a. bollworms) continue to consume leaves in the whorl stage sorghum. Although this damage may look bad, it is likely more of an aesthetic damage than economical damage. These fields should be monitored closely to determine if the "worms" are feeding on the growing point. For whorl stage sorghum, the growing point can be located by cutting the stalk vertically and looking for the developing sorghum head (See *Figure 3*). Once the sorghum has headed out, bollworms and fall armyworms larvae can feed on developing grain. Natural mortality of small worms is normally very high. Moths can lay several hundred eggs on sorghum grain heads before or during flowering, but only a few larvae survive. Natural factors suppressing these insects include predators, parasites, pathogens and cannibalism among larvae. You can use the tables below to determine if you have reached an economic injury level in your sorghum fields.

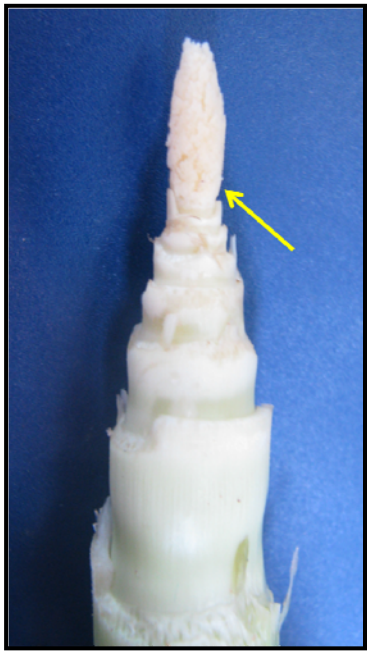

Figure 3. **Developing sorghum head in whorl stage sorghum**

Table 1. **Economic injury level for medium-size (1/4 to ½ inch) bollworms or fall armyworms shown as the number of larvae per acre. When the number of larvae per acre exceeds the number in the table at a given cost of control and value of grain per cwt, the value of the protected grain exceeds the cost of control.**

Control Cost $/Acre	Grain Value ($/100 lbs)		
	8.00	9.00	10.00
6	38,250	35,500	31,250
8	51,500	47,500	41,750
10	64,500	58,500	51,500
12	77,750	70,500	62,000

Table 2. **Economic injury level for large-size (longer than ½ inch) bollworms or fall armyworms shown as the number of larvae per acre. When the number of larvae per acre exceeds the number in the table at a given cost of control and value of grain per cwt, the value of the protected grain exceeds the cost of control.**

Control Cost $/Acre	Grain Value ($/100 lbs)		
	8.00	9.00	10.00
6	7,250	6,500	5,750
8	9,750	9,000	7,750
10	12,250	11,250	9,750
12	14,750	13,500	11,750

Peanut Pod Rots (Pythium and Rhizoctonia)

Diseases caused by these two groups of fungi can occur alone or together. Pythium fungi contribute to root rot, wilting, stunting, plant death, and pod rot (pod breakdown. Symptoms of Pythium infection may include a wet black decay sometimes covered with a loose white fungus mat; sloughing outer root layer, and greasy dark brown-black pod lesions. Rhizoctonia fungi cause disease on roots, lower stems, pods, pegs, limbs, and leaves. Symptoms of Rhizoctonia infection may include sunken red-brown dry-textured lesions on the hypocotyl (stem below cotyledons), stem (girdled seedlings), and limbs, and dry dull surfaced light/dark brown pod lesions. Cultural practices should be address rather than managing the problem solely with fungicides. Cultural practices include: avoid fields with known histories of these diseases; rotate with unrelated crops; plant on raised beds; improve drainage in low areas.

White Grubs in Peanuts

White grubs, the immature stage of the June beetle (See *Figure 4*), feed on the secondary or feeder roots of the plant, leaving the tap root intact. Plants appear to die of drought stress because there are no hair roots left to draw water. The beetle larvae do not travel far horizontally, but they do move a great deal vertically within the soil moisture profile. White grub populations are usually found in pockets within a field.

Figure 4. **White grub**

Plant Diseases and Tolerant/Susceptible Varieties

Growers have very few options in controlling some of the plant diseases that we are faced with in Gaines County. Currently, Dr. Terry Wheeler, Dr. Jason Woodward, myself and others have several on-farm field trials looking at tolerant/susceptible varieties. The results from these trials will be available at the end of the year. I encourage growers to utilize these results because we are seeing varying levels of susceptibility to these diseases. *Figure 5* is a picture of two different varieties of cotton. The variety in the top portion of the picture is more susceptible to Fusarium wilt and it had several dead plants. The other variety had no dead plants associated with Fusarium wilt.

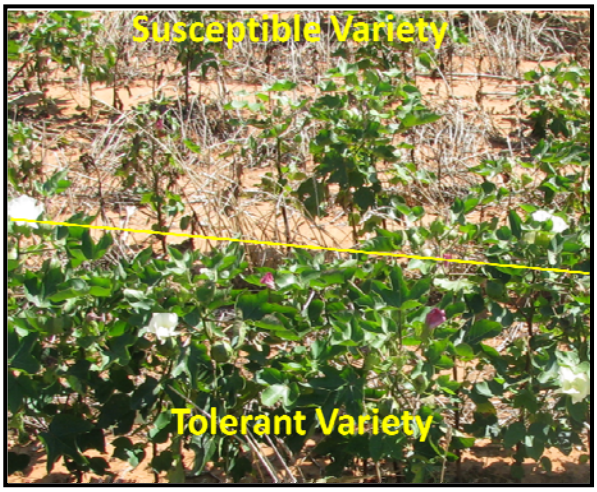

Figure 5. **Susceptible and tolerant varieties of cotton in a field infected with Fusarium Wilt**

Unwanted Pesticides or Used Motor Oil? Bring them to this FREE collection event for proper disposal!
September 23, 2008 - 8 a.m. to 1 p.m.; Dawson County Fair Barn, 1200 Court C, Lamesa TX
Contact: Jeff Wyatt at 806-872-3444

Information for this newsletter was obtained from the following publications:

- Physiology Today, Newsletter of the Cotton Physiology Education Program – National Cotton Council. July 1991, Vol. 2, No. 8.
- Texas AgriLife Extension Service, "Texas Cotton Production, Emphasizing Integrated Pest Management"
- Texas AgriLife Extension Service, "Managing Insect and Mite Pests of Texas Sorghum"
- Texas AgriLife Extension Service, " Texas Peanut Production Guide"
- Texas AgriLife Extension Service, "Managing Cotton Insects in the High Plains, Rolling Plains, and Trans Pecos Areas of Texas"

These publications can be found on the web at http://agrilifebookstore.org

Please join me in Thanking our Gaines County IPM Program Sponsors

Special Thanks to our *Gold* Sponsors of $1000

Oasis Gin Inc.
Ocho Gin Company
Suncot Gin, LLC
TriCounty Producers Gin

Thanks to our *Silver* Sponsors of $750

Carter & Co. Irrigation Inc.

Thanks to our *Bronze* Sponsors of $500

AG Aero
Anderson Welding Pump and Machine
Bobby King Jr. Pump Service Inc.
Four-Way Ginning Association
Golden Peanut Company
Hicks Supply
Nolen AG Services Inc.
Ocho Corp. Crop Plus Insurance
Western Peanut Growers

Thanks to our $100 & $250 Sponsors

Ag TX Farm Credit Services
Agriliance
Birdsong Peanuts
Brown's Ace Hardware
City Bank, Lubbock
Commerce State Bank
Gaines County Farm Bureau
First United Bank
Five Points Gin
McKinzie Insurance
Moore-Haralson Agency PC
Peter's Irrigation
Seminole Butane Co. Inc.
South Plains Implement LTD
State Farm Insurance
Ten High Gin Inc.
Valley Irrigation & Pump Service Inc.
West Gaines Seed and Delinting Inc.
West Texas Agriplex, Inc.
West Texas National Bank
West Texas Center Pivots & Pump Inc.
Whittenburg Crop Insurance

We would also like to recognize businesses that are supporting the Gaines County IPM Program through time, equipment and supplies.

BASF
Bayer CropScience
NuFarm
South Plains Implement LTD
West Gaines Seed and Delinting Inc.
West Texas Agriplex, Inc.