

## GAINES COUNTY IPM NEWSLETTER

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### General Situation

Peanuts are continuing to form small to large pods. Pod rots, Sclerotinia Blight, Southern Blight, Early Leaf Spot, and Verticillium wilt continue to be found in peanuts. Verticillium wilt pressure is increasing in cotton. Growers need to continue monitoring their fields for these diseases even if they have already treated their fields. To read more about these diseases and management, please refer back to the August 7, July 24, and July 8 *Gaines County IPM Newsletters* which can be found on the web at <http://gaines-tx.tamu.edu/newscat.cfm?COUNTY=Gaines&CatID=593>.

Nodes Above White Flower (NAWF) ranges from 0 to 7 with a majority of the cotton fields at 4 to 5 NAWF. It takes approximately 850 Heat Units (H.U.) for a white flower to develop into a fully mature boll. Although an expectable boll that may have low micronaire can be produced with 750 H.U. In 2007 we accumulated 850 from August 20 to October 31. However, in 2006 and 2008 flowers produced around August 20 only accumulated 550 to 580 H.U. by October 31. Therefore, we are at the point at which the likelihood of a bloom developing into harvestable boll is very low.

The cotton plants have started to shed squares and small bolls. Naturally shed bolls may be confused as worm damaged bolls, therefore, growers need to confirm that the shed bolls and squares have evidence of worm feeding (frass and feeding damage) and that the worms are still present in the field (see *Figure 1*). We have observed a few non-Bt fields with economically damaging bollworm populations however; we have not observed any economically damaging populations in Bt cotton. Thresholds for non-Bt and Bt cotton are discussed below in the section titled “*Bollworms*”.



**Figure 1.** Bollworm larvae feeding on a square. Grains of frass (excrement) can also be seen.

Lygus nymphs have been observed colonizing some fields. Bolls less than 1 inch in diameter are susceptible to Lygus damage, and these small harvestable bolls should be protected. Please see the section below titled “*Lygus*” for identification, sampling and thresholds.

### Nodes Above White Flower

Growers need to be monitoring their Nodes Above White Flower. When the field is 4 to 5 NAWF the field is considered cutout. Knowing when a field cutout can provide valuable crop management information. At 400 to 500 H. U. after cutout irrigation can be terminated without affecting yield and quality. At 350 H.U. after cutout a field is no longer susceptible to Lygus damage. At 450 H.U. after cutout the field is no longer susceptible to first or second instar bollworm/tobacco budworm larvae. *Table 1* indicates the number of H.U. accumulated since August 1, August 5, August 10, August 15, 2009. Growers can use this table to determine how many H.U. they may have accumulated since their field cutout.

**Table 1. Accumulated Heat Units (H.U.) from August 1, August 5, August 10, and August 15 to August 18, 2009**

| Accumulated Heat Units | Date     |          |           |           |
|------------------------|----------|----------|-----------|-----------|
|                        | August 1 | August 5 | August 10 | August 15 |
|                        | 369      | 301      | 197       | 95        |

**Collection of Agriculture Waste Pesticides - October 14, 2009**

Location: Agriliance – 101 Loop Hwy., Seagraves, TX 79359

Contact: Terry Millican, 432-758-4006, ext. 238 or at [gaines@ag.tamu.edu](mailto:gaines@ag.tamu.edu)

**Bollworms**

Good coverage is essential for good control of bollworms, and this can be difficult to achieve in growthy cotton. If treating a growthy field or if treating a field with bollworms that are greater than ¼ inch, use a ground rig if possible. If you can't get a ground rig in the field and you have to go out by air, try to use a spray volume of at least 5 gallons and consider using a higher rate of the pyrethroid. Before you apply an insecticide make sure that you have reached the action threshold (see *Table 2*). The action threshold is based on the number of worms per acre. Determining the number of worms per acre is really easy. First you have to determine your number of plants per acre. You do this by counting the number of plants in: 13 ft for 40 inch rows, 13.75 ft for 38 inch rows, 14.5 ft for 36 inch rows. Then multiple this number by 1000.

**For example: You have 38 inch row spacing and you are averaging 43 plants in 13.75 feet of row.**

**43 X 1000 = 43,000 plants per acre**

Then to calculate the number of worms, eggs, or predators per acre simply divide your plant population by the number of plants you checked and multiply by the number of worms or eggs or predators that you counted.

**For example: You looked at 40 plants and found a total of 5 worms.**

**43,000/40 X 5 = 5,375 worms per acre**

**Table 2. Bollworms Action Threshold**

| Cotton Stage         | Worm size          | Cotton Type       |   |
|----------------------|--------------------|-------------------|---|
|                      |                    | Non-Bt            | BT  |
| After boll formation | ¼ inch of less     | 10,000 worms/acre | Do not Treat                              |
|                      | Larger than ¼ inch | 5,000 worms/acre  | 5,000 worms/acre with 5-15% damaged fruit |

Always evaluate your beneficial insect counts before applying an insecticide application when you have small worms. The smaller larvae (less than ¼ inch) are susceptible to these the predatory insects. If your field has already reached cut-out (4-5 NAWF) and started shedding small squares and bolls, then you may want to increase your thresholds to account for the fact that these worms may be feeding on fruit that has little chance of making a good quality boll. Scouting your fields will help you to determine if this is the case in your particular field. Once the worms reach ½ inch they are less susceptible to natural mortality (predators and weather) and insecticide control.

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## Lygus

Reported by Dr. David Kerns in the August 7, 2009 *Focus on South Plains Agriculture* Newsletter.

At this point in the season, the best technique for sampling Lygus is with a drop cloth (see *Figure 2*). Preferentially, black drop cloths work better than white ones since small light colored insects such as Lygus nymphs (see *Figure 3*) show up better on the black drop cloths. When counting Lygus nymphs be sure not to count cotton fleahoppers (see *Figure 4*). The small Lygus nymphs can be confused with cotton fleahoppers. Simply place the drop cloth between the rows and vigorously shake and beat about 1.5 row-ft for each side onto the drop cloth and then quickly inspect the cloth. Most adult Lygus will be stunned, but watch for those able to quickly fly. Two drop cloth samples constitute a single sample unit. Take at least four sample units or eight drop cloth samples per field. If the total number of Lygus equals or exceeds 4 per 6 row-ft (2 per drop cloth sample); then an insecticide application is justified.

Don't be in too big of a hurry to spray populations composed primarily of adults. Most of the situations where the population was primarily adults have not resulted in significant damage. For the most part the adults appear to be coming in, laying eggs and leaving within 2-3 days; they do not appear to be doing much feeding. However, if you have growthy cotton that is shading the middles, they may want to stay and, in that scenario an insecticide application may be justified if at threshold. Once you begin to pick up predominately nymphs, be careful. It is at this point where high levels of damage can occur.

For the most part, Lygus on the Texas High Plains are fairly easy to control with the right insecticide. Last year we conducted several Lygus management tests looking at Carbine, Ammo, Orthene, Vydate, Centric, and Diamond. All of the products have some Lygus activity, although based on our data, Centric appears to be a little weak. Syngenta, the company that produces Centric, does not recommend Centric for Lygus control on the Texas High Plains. If you use a pyrethroid, such as Ammo, Orthene, or Vydate, you can expect an immediate kill while Carbine and Diamond act more slowly. Carbine is an anti-feedent, so the insect will essentially have to starve to death which may take up to 5 days depending on temperature. Diamond is an insect growth regulator and will only express activity on Lygus nymphs; it will not kill the adults. Thus if you have a Lygus population composed primarily of adults, Diamond is probably not your best choice. Similar to Carbine, Diamond may take 3-5 days to kill the Lygus; death from this product occurs during the molting process.

One thing to be wary of when selecting a product for Lygus control is its impact on beneficial insects and the likelihood of flaring secondary pests such as aphids. Of the products we looked at in 2008, Carbine and Diamond are least likely to cause secondary pest outbreaks. Both of these products are easy on beneficials. Also, Carbine has good aphid activity while Diamond has good activity on armyworms.



**Figure 2. Sampling for lygus using a black drop cloth.**



**Figure 3. From top to bottom, a 1<sup>st</sup> instar, 4<sup>th</sup> instar, and adult Lygus.**

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*Adult cotton fleahopper*



*Cotton fleahopper nymph (immature)*



*Adult cotton fleahopper and exposed eggs*

**Figure 4. Cotton Fleahopper adults and nymph**

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### **Information for this newsletter was obtained from the following publications:**

- **Dr. David Kerns information on Bollworm and Lygus as report in the August 7, 2009 FOCUS on South Plains Agriculture Newsletter**  
[http://lubbock.tamu.edu/focus/Focus2008/August\\_22/August\\_22.pdf](http://lubbock.tamu.edu/focus/Focus2008/August_22/August_22.pdf)

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