GAINES COUNTY IPM NEWSLETTER

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General Situation

Aphids have been found in low numbers in a couple of cotton fields. Fall armyworms and bollworms are being found throughout the county in peanuts, cotton, and grain sorghum. Please see that attached "Worm ID Key." This key will be valuable when trying to determine which type(s) of "worms" you are dealing with in your fields.

***Figure 1*. Peanut plant infected with Verticillium Wilt**

Verticillium wilt continues to be found in an increasing number of cotton fields and is starting to show up in peanut fields (See *Figure 1*). Leaf spot and Sclerotinia have been observed in peanut fields. Alternaria blight has been observed in two cotton fields. Fields should be scouted weekly to detect disease development.

During the last two weeks, on average, we have accumulated 21 heat units per day. It takes approximately 300 to 350 heat units for a square to develop into a bloom. Those cotton fields that have not suffered from weather related damage have a good square set. Water is one of the keys in maintaining this fruit load. Several of these fields are in peak bloom or will be within the next couple of weeks. Cotton plants will use the most water during peak bloom. Area grain sorghum fields are averaging around 5 – 7 leaves.

Fall Armyworms in Grain Sorghum

Fall armyworms and bollworms have been observed in area grain sorghum (milo) fields. Fall armyworms have an inverted Y on their heads as seen in *Figure 2*. Generally speaking, sorghum in the 2 - 3 leaf stage (shorter than 6 inches) may need to be treated if worm populations are sufficient to cause significant damage to the plants. Applications of insecticides during the whorl stage could increase the likelihood of secondary pest out breaks. After the 2 – 3 leaf stage, the growing point or sorghum head is less accessible by "worms" until it reaches the pre-boot stage, when the head is towards the top of the whorl. The sorghum head can be identified by cutting the stalk vertically. Once the sorghum reaches the pre-boot stage growers should scout fields consistently to determine if worms are feeding on the developing sorghum head and later on the emerged head.

***Figure 2*. "Worm" damage on 7 leaf stage sorghum and a picture of a fall armyworm showing the inverted Y on the head**

To find "worms" in whorl stage sorghum, pull the whorl leaf from the plant and unfold it. Frass or larval excrement is present where larvae feed within the whorl. Damaged leaves unfolding from the whorl are ragged with "shot holes." Although this may look dramatic, leaf damage usually does not reduce yields greatly, and control of larvae during the whorl stage is seldom economically justified. Also, larvae within the whorl are somewhat protected from insecticides. Insecticide application may be justified if larval feeding reduces leaf

area by more than 30% or is damaging the developing rain head or growing point with the whorl.

Some more helpful tips on fall armyworm control can be gained from the Plains Pest Management Newsletter written by Greg Cronholm, Extension Agent in Hale & Swisher Counties. In the newsletter Greg made the following suggestions: When aerial application is used it should be followed immediately with a center pivot application of water, where water is applied so it will wash some of the chemical into the whorl. If chemigation units are available for center pivots, then very high levels of control can be achieved. On row watered corn or sorghum, ground rig applications may be used where 15 to 20 gallons per acre are applied and nozzles are directed over the top of the row.

Irrigated Grain Sorghum

At 30 to 35 days (around 7 fully expanded leaves) after planting the growing point starts to differentiate. During this point the growing point changes from vegetative to reproductive, and the seed panicle begins to form inside the stalk. If sorghum is being grown under irrigation, it is important that the crop not be allowed to stress as the beginning of this stage when the maximum number of seed per plant is being set. Seed number per plant accounts for 70% of sorghum's final grain yield.

Corn Leaf Aphids in Sorghum

Corn leaf aphids have been observed in area sorghum fields (See *Figure 3*). These insects can be found in large numbers deep in the whorl of the middle leaf of pre-boot sorghum, but also occur on the undersides of leaves. These aphids suck plant juices but **do not** inject toxin as do greenbugs and yellow sugarcane aphids. The most apparent feeding damage is yellow mottling of leaves that unfold from the whorl. This insect rarely causes economic loss to sorghum. In fact, they maybe considered helpful. Beneficial insects such as lady beetles are often attracted to feed on corn leaf aphids. When corn leaf aphid numbers rapidly decline at sorghum heading, the beneficial insects are present to suppress greenbug and other insect pests. These beneficial insects also can move to adjacent crops, such as cotton, and help manage insect pests in those crops.

Figure 3. **Corn leaf aphids with dark bluish-green oval-shaped body with black legs, cornicles and antennae**

Bollworms and Fall Armyworms in Peanuts

Bollworms and fall armyworms have been observed in peanut fields. Peanut plants can withstand some foliage loss. Fields should be scouted to determine the number of worms per linear row foot. The threshold for Spanish peanuts is approximately 6 to 8 medium to large larvae per foot of row. Runner type peanuts have more foliage and can tolerate a few more worms. We have not observed any fields that warrant insecticide treatments.

Bollworms in Cotton

Bollworms and bollworm eggs have been observed in cotton fields. Non-Bt and Bt cotton (which could have some damage) should be scouted on a weekly basis. Eggs will generally be found in the upper third part of the plant. The larvae will hatch out of the eggs and begin feeding on the

small tender leaves and small squares before moving down the plant. Insecticide treatments should not be based on the presence of eggs or first signs of crop damage. When small worms are in the upper third of the plant, they are most vulnerable to natural mortality and predators. Once worms are larger than ½ inch, natural mortality decreases and insecticides are less effective.

Sclerotinia Blight in Peanuts

Sclerotinia blight, caused by *Sclerotinia minor*, has been observed in a field in the western part of the county. Sclerotinia blight is characterized in early stages by non-persistent small white tufts of cottony-like fungal growth at leaf axils on the stems near the ground line (See *Figure 4*). Later stages of the disease show up as bleaching and severe shredding of the stem (See *Figure 5*) accompanied by the production of many small, black irregular-shaped sclerotia that resemble mouse droppings in size, shape and color (See *Figure 6*). Confusion of this disease with southern blight, caused by the fungus *Sclerotium rolfsii*, can be costly because chemicals that control southern blight have little if any affect on *Sclerotinia minor*. Please refer the July 14, 2008 Gaines County IPM Newsletter for pictures and description of southern blight.

Figure 4. **Small white tuft of cottony-like fungal growth of Sclerotinia blight**

Figure 5. **Bleaching and severe shredding of stem caused by Sclerotinia blight**

Figure 6. **Black irregular-shaped sclerotia that resemble mouse droppings in size, shape and color**

Alternaria Blight in Cotton

Infected areas in a field exhibiting stem blight are relatively small and have a distinct circular appearance, resembling a lightning strike. Plants within these areas appear wilted and desiccation of leaves is apparent. Infections originate on the leaf margin and progress down the vein, petiole, and stem. The terminals of infected plants die and may exhibit a Shepherd's crook resulting ultimately in complete plant death. This information is from Jason Woodward's, Texas AgriLife Extension Plant Pathologist, presented at the 2007 Beltwide Cotton Conference, titled "Occurrence of Alternaria Stem Bligth and Leaf Spot of Cotton in West Texas."

Figure 7. **Cotton plants killed by Alternaria Blight**

Figure 8. **Cotton plant showing symptoms of being infected with Alternaria blight (the terminal is wilted but at this point the root system is still healthy)**

Information for this newsletter was obtained from the following publications:

- Texas AgriLife Extension Service, "Managing Insect and Mite Pests of Texas Sorghum"
- Texas AgriLife Extension Service publication "Sorghum Growth and Development"
- 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

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