GAINES COUNTY IPM NEWSLETTER

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General Situation

The irrigated cotton and peanut crops have benefited from our recent rains. We are entering into the period of highest water demand, which is during the blooming period for cotton and blooming, pegging and pod fill for peanuts. We have found a few bollworms and cotton square borers in cotton. Bollworm eggs have also been observed. Non-Bt fields should be monitored closely for bollworm populations. Beneficial insects (ladybird beetles, lacewings, minute pirate bugs) are helping to keep most insect pests at bay. Before an insecticide is applied, growers need to take into account the work of Mother Nature and the beneficial insects which will likely take out several small "worms".

Gaines County Disease Update from Dr. Jason Woodward, Texas AgriLife Extension Plant Pathologist

***Peanut*:** There has been an increase in the number of disease reports following the rain and cooler temperatures experienced the past several days. Southern blight, caused by *Sclerotium rolfsii*, has been observed in several peanut fields in Western portions of the county *(See Figure 1)*. This disease is characterized by the feathery sheaths of fungal mycelia and spherical-shaped, brown sclerotia that are produced on or near infected plants. A general chlorosis and wilting of lateral branches or main stems results from light to dark brown lesions that form near the soil line. Aspergillus crown rot, caused by *Aspergillus niger*, has also been observed in some peanut fields *(See Figure 2)*. This disease is favored by hot, dry conditions and can kill plants throughout the growing season; however, losses associated with crown rot are minimal. Crown rot is easily identified by the production of black spores on the stem at the soil line.

Figure 1. Southern blight

Figure 2. Aspergillus crown rot

Most peanut plants are beginning to set pods, thus, close attention should be paid to fields with a history of pod rot. The pod rot complex is comprised of several pathogens; however, *Rhizoctonia solani* (*See Figure 3*). and *Pythium* spp. are most prevalent. Subtle differences in the appearance of the two diseases can be observed. For example, pods infected with *R. solani* exhibit a dry rot; whereas, pods infected with *Pythium* spp. have more of a greasy, water-soaked appearance. Despite differences in appearance field diagnosis of pod rot is difficult, especially at advanced stages of pod decay, or when both pathogens are present. Under the right environmental conditions, *S. rolfsii* can also incite a pod rot. In this case pods have an ashy, grey color. Several of the fungicides used for Rhizoctonia pod rot have activity against Southern blight, but keep in mind that most Ridomil formulations are only recommended for *Pythium* spp.

Figure 3. Rhizoctonia pod rot

Figure 4. Sclerotinia blight

Figure 5. Early leaf spot

Sclerotinia blight, caused by *Sclerotinia minor*, is another disease to be on the lookout for at this time (*See Figure 4*). Symptoms of Sclerotinia are similar to those of Southern blight; however, the characteristics of *S. minor* can be used to differentiate the two. Mycelia of this fungus are aerial, fluffy, and have a cottony appearance. Furthermore, sclerotia of *S. minor* are small, black, and have an angular shape. Fungicide options for management of Sclerotinia blight are limited and more costly; therefore, an accurate diagnosis is critical. In addition to the aforementioned diseases, early leaf spot (*Cercospora arachidicola*) has been reported in the area (*See Figure 5*). In general, leaf spot lesions first develop on the lower portions of the plant. Small flecks appear seven to ten days after initial infections take place. These flecks enlarge to form light brown to reddish colored lesions. Spores of *C. arachidicola* may be present in the middle of the lesion, and appear as a clear to grey colored mold. Damage caused by early season herbicides, or some systemic insecticides can cause confused with early leaf spot; however, these spots are lighter in color, and lack fungal growth in the center. Again, many of the fungicides used for pod rot will also be active against leaf spot; however, additional applications may be required later in the season. A detailed list of fungicides labeled for use in peanut can be found in the Texas peanut Production Guide located at http://peanut.tamu.edu/.

Cotton. Fusarium wilt, caused by the soilborne fungus *Fusarium oxysporum* f. sp. *vasinfectum*, has been observed over the past few weeks. Symptoms include a yellowing and wilting on the leaf margin *(See Figures 6 & 7).* This results from the fungus clogging the vascular system of the plant. Seedling mortality may also be observed *(See Figure 6).* Development of Fusarium wilt requires wounding by the root-knot nematode (*Meloidogyne incognita*); thus, disease severity can be reduced through the use of at-plant nematicides. Fusarium wilt can be confused with Verticillium wilt, caused by *Verticillium dahliae (See Figure 8).* However, Verticillium wilt is typically observed after cotton plants begin to bloom. Plants infected with *V. dahliae* may appear stunted, and the leaves of infected plants are chlorotic, necrotic and premature defoliation may occur. Examination of the vascular tissue will reveal a brown discoloration that is indicative of wilt diseases; however, laboratory observations may be required for an accurate diagnosis. Varieties with partial resistance or improved tolerance to Fusarium or Verticillium wilt are commercially available. Field trials evaluating the performance of these varieties are being conducted this season.

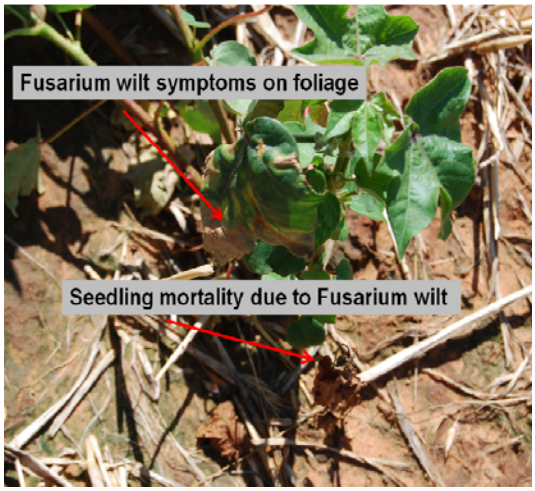

Figure 6. Fusarium wilt

Figure 7. Fusarium wilt

Figure 8. Verticillium wilt

Several fields in western Gaines County are exhibiting symptoms of a unique foliar disease. Bright yellow to orange colored lesion with a maroon border can be observed on the upper leaf surface *(See Figure 9).* On the lower leaf surface, yellow to orange structures (aecia) containing spores can be found *(See Figure 10).* These symptoms are characteristic of Southwestern cotton rust, caused by *Puccinia cacabata*. While this disease commonly occurs in fields in the Trans Pecos area, it has not been reported on the Southern High Plains. Unlike other plant rusts (i.e. stem rust of wheat), the spores produced on infected cotton leaves cannot re-infect cotton. The epidemiology of this Southwestern rust is complicated; however, the presence of an alternate host, specifically grama grasses (*Bouteloua* spp.), are required for disease development in cotton. Efforts at locating infected grama grasses near fields exhibiting symptoms of Southwestern rust were unsuccessful; however, close attention should be paid to ditches, fallow areas, and CRP fields adjacent to cotton fields. Severe yield losses associated with this disease can occur, but are sporadic in nature. The forecasted weather conditions (hot and dry) will help to slow the spread of this disease; however, subsequent infections may occur if we experience frequent rainfall throughout the season. While fungicides have been effective at controlling this disease in other cotton production areas, **it is unlikely that fungicide applications will be warranted in this case**. However, we are

Figure 9. Southwestern cotton rust lesions on upper leaf surface

Figure 10. Pustules of Southwestern cotton rust on lower leaf surface.

evaluating the use of fungicides in this situation. If you are experiencing, or have any questions regarding this disease, please contact Manda Cattaneo, Extension Agent IPM at 432-788-0800, or Jason Woodward, Texas AgriLife Extension Plant Pathologist at 806-632-0762.

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