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Verticillium wilt symptoms on



Fig. 1 Cotton



Fig. 2 Peanut



Fig. 3 Vascular discoloration

Peanut Progress

VOLUME 1, ISSUE 6

AUGUST 23, 2007

Peanut Production Update

*Todd Baughman – State
Peanut Agronomist*

Tropical storm Erin brought rain and cooler temperatures to many of the peanut growing areas of Texas. These cooler conditions continue to lead to concerns about the lack of growing degree days this year. However, I believe that peanut have fared better than cotton under the cooler conditions we have seen this year. In fact in many cases, I think they have thrived. Peanuts actually seem to handle cooler temperatures better

than extremely hot temperatures. While we still hope for good growing conditions in September and October, I am not as concerned about maturity right now. Often maturity issues appear to be related to an extreme period of heat followed by a cold spell late in the season. It appears when we get a considerable number (what that number is I have no idea) of days above 100° F the peanut plant shuts down, when this is followed by a cold September than we can have issues with maturity. So as of today, I feel pretty comfortable about

our situation. However, that is not to say that if we have an unseasonably cool September and October that my opinion won't change. This addition of Peanut Progress will discuss Verticillium wilt along with emerging insect issues. As you will read insect control in peanut can be tricky and we must always be aware of the potential to flare mites once we start trying to control insect in peanut.

If you have any questions, comments, or concerns give Todd a shout @ 940.552.9941 ext. 233.

Verticillium Wilt an Emerging Peanut Disease in West Texas

*Jason Woodward –
Ext. Plant Pathologist*

The soilborne fungus *Verticillium dahliae*, causal agent of Verticillium wilt, is indigenous throughout the High Plains of Texas, and is capable of infecting numerous crop plants, including cotton (Fig. 1). Once a field becomes infested, the pathogen is capable of surviving in the soil for many years as microsclerotia. These specialized struc-

tures germinate in response to root exudates and serve as initial inoculum. The fungus establishes itself on the root surface, penetrates the root, progresses through the vascular system, clogging these tissues, and ultimately resulting in plant wilting. Infections occur early in the season (after flowering), and symptoms are most evident during pod set. Drought stress may exacerbate this condition. Leaves of infected

plants are pale green, have mottled appearance, and die from the leaf margin inward (Fig. 2). Severely infected plants may be stunted, turn yellow, wilt and die. These symptoms may be confused with damage caused by poor water quality. Close examination of the vascular system will reveal severe discoloration of the tissue (Fig. 3), which can be used to diagnose Verticillium wilt. Adequately watered plants may maintain a

Verticillium Wilt an Emerging Peanut Disease in West Texas Cont.



healthy appearance; however, excessive watering may lead to an increase in disease. As the disease progresses the branches of infected plants deteriorate. As a result, plants may be dug prematurely, thus negatively impacting yield and grade. There are currently no effective control strategies for Verticillium wilt in peanut. Information regarding the use of fungicides is lacking. None of the products currently being used in peanut production provide any suppression of the disease. Rotations with non-hosts will slowly reduce populations of the fungus in the soil. The amount of disease you

see in the field is directly related to the population of the fungus in the soil. Assays to quantify populations of *V. dahliae* in the soil are available for a cost of \$20 per sample. It is unlikely that the pathogen can be completely eradicated from infested fields; therefore, it is important to avoid introduction of the pathogen into clean fields. Most of the information regarding the reaction of peanut cultivars to Verticillium wilt is dated; however, Spanish and Valencia market-types have generally been considered more susceptible. Field trials are currently being conducted evaluating the performance of

several commercially available cultivars in fields with varying levels of *V. dahliae* in the soil. Results from two locations indicate that there are significant differences in Verticillium wilt incidence among the cultivars evaluated (Table 1). Verticillium wilt ranged from approximately 20% for McCloud and Tamnut OL06 to 11% for Florida-07. The cultivars Tamrun OL01, OL02, and OL07 appear to have intermediate levels of wilt.

If you have any questions regarding Verticillium wilt or any other peanut diseases, please contact Jason Woodward @ 806.746.6101

**Excessive watering
may lead to an
increase in disease**

Table 1. Performance of ten peanut cultivars in two Verticillium wilt field trials.

Cultivar	Verticillium wilt (%)
McCloud	21.4 a**
Tamnut OL06	19.2 ab
ACI 48*	16.6 bc
Flavorranner 458	15.4 bcd
ANorden	14.9 cde
Tamrun OL01	14.6 cde
Tamrun OL07	13.6 cde
Tamrun OL02	12.8 cde
ACI 51*	11.8 de
Florida-07	10.8 e

*ACI West Texas Variety Development Program.

**Data are the means of two trials (pooled for a total of 8 reps). Means followed by the same letter are not statistically different at the P=0.05 level.

Foliage Feeding Insect Management



Grasshopper nymphs, unlike adults, lack fully developed wings and therefore move only short distances at a time.

Scott Russell – Extension Agent – Integrated Pest Management

Foliage feeding insects can be a problem in peanuts at any time of the growing season. Peanut plants are susceptible to damage during the early days of stand establishment, and again at 60-90 days after planting, during peg establishment. One foliage feeding pest which has been a problem on the South Plains this season is grasshoppers. In mid-July I was made aware of fields with 50-100 newly hatched grasshopper nymphs per row foot. At present we are seeing both additional nymphs and adults in the populations. I suspect there has been an extended egg hatch going on. Most problem fields are near

wheat stubble, rangeland or pasture which has dried down. Grasshoppers have an incomplete metamorphosis where the immature resembles the adult except without wings (there are some species where the adults never develop wings). As with most insects, the immature stages are the most ravaging when it comes to feeding. Damaged is caused by grasshoppers feeding on the leaves of plants, reducing the leaf surface area required for photosynthesis.

Peanut plants are very resilient when it comes to foliage loss. Research has shown that peanuts can lose 20% of their leaves and not impact yield. When determining if treatment is needed, consider the crop's growth stage, time until harvest and life stage of the grasshoppers. It may also be possible to treat

only portions of a field, for example the boarder rows nearest to the source of the insects. There are numerous products labeled for use to control grasshoppers in peanuts, be sure to check the pre-harvest interval prior to application. Other foliage feeding insects which occasionally become a pest on peanuts are the various caterpillars. Whether bollworms, budworms or armyworms (several species), these pests can also impact yield by reducing the canopy during critical growth stages of the peanut. Make inspections to determine if an economic infestation exists prior to making any chemical applications. Depending on the type of peanut and the use of irrigation (versus dryland), worm populations may justify treatment when numbers reach 6 to 8 (or fewer in some cases) worms per row foot. Many insecticides are labeled for worm control in peanuts, be sure to follow label directions.

“Research has shown that peanuts can lose 20% of their leaves and not impact yield.”

Southern Corn Rootworm in Texas Peanut

Clyde R. Crumley, Texas Cooperative Extension Agent Integrated Pest Management

As peanut acreage in Texas has expanded and moved north and west, an unwelcome pest has begun to appear more frequently

in grower fields. This is a small, colorful beetle known as the southern corn rootworm or SCR for short. The SCR can be found throughout Texas on a number of crops including corn, squash, and melons. Both the adult and larval stages can be damaging, depending on the crop attacked. The adult beetle is sometimes called the spotted

cucumber beetle because of its affinity for cucurbitacin, a chemical found in most plants in the cucumber family. The adult is very distinctive - a lime green beetle and 1/4 inch long with black spots. Unlike many beetles, it is soft bodied and easily crushed. A similar beetle, the banded cucumber beetle, has tan or yellowish spots and also

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Southern Corn Rootworm in Texas Peanut Continued

occurs in Texas. It has also been reported as an occasional pest of peanut in south Texas. The life cycle of the SCR is typical of many beetles. The adult lays eggs on or slightly below the soil surface. The larva that hatches spends its life underground. It feeds mainly on plant roots and will molt five times as it grows. During the fifth molt the larva becomes a pupa and ceases feeding. The sixth and final molt produces an adult. There may be several generations per year, and it is believed that some adults will move between crops.

It is the larvae that are the problem in peanut. Because of their small size, they are not always easy to find. For the most part, they are an off-white in color and when disturbed will curl into a C shape, like the larger grubs found in lawns. The majority of damage is caused when the larvae feed on pegs

and pods of peanut. The damage to a pod can be recognized by the pit caused during feeding. The larvae are capable of boring all the way through the pod, but don't always. The feeding hole tapers, as though the pod has been poked with a pencil. This is unlike the feeding damage caused by wireworms, which normally bore all the way through to the kernel and may enter the pod to con-



SCR damaged pods

tinue. Pits caused by SCR can be easily seen and may be the only indication that the larvae are in the field feeding.

Field scouting is the only way to determine if larvae are present and damaging the crop. Adults may feed in the foliage and be easily seen, but this is no guarantee that they are laying eggs in the soil below. Further, if races of the SCR exist, not all of them may choose to lay in the peanut field, even though the adults would feed on the flowers. If peanuts are being grown in an area where rootworms have been a problem or if the field has a history of rootworm infestations, then it is especially important to have a scouting program. SCR can be managed with insecticides. Lorsban 15G is labeled and can provide control of these pests as a preventative measure.

Contact Clyde at 432.758.8193 with any questions.