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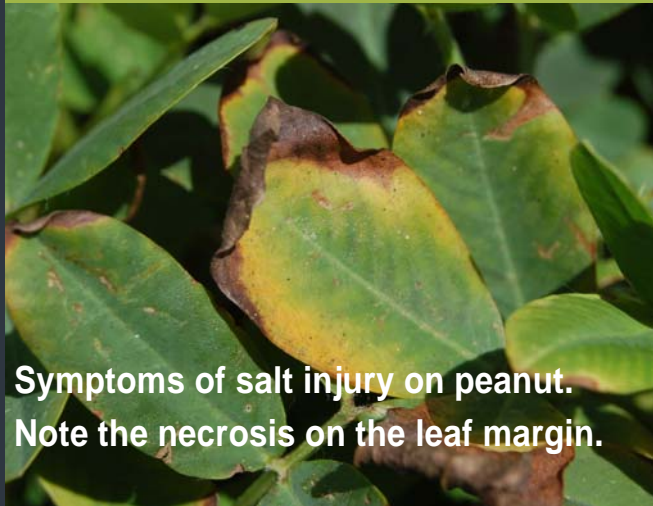
Peanut Disease Update

The current weather situation is changing the rules in peanut production this year. We should be in the heavy stages of bloom and pegging and the beginning stages of pod set. However due to drought, heat, and wind the crop is lagging behind its normal developmental schedule. Water use demands of the plant have been way ahead of normal and in most cases we cannot keep up with the current demands of the plant. While water requirements of the plant are hampering us, high temperatures and wind are also causing problems from a humidity stand point. The low humidity within the peanut canopy is also leading to poor bloom set this year. Unfortunately, there is no good advice on the best way to manage this year's crop water needs and each field will likely require a different approach based on the crop condition and well capacity of that individual field. However, I will say that we have situations in the past where the crop did not look good early and with a change in the weather we set a good late crop. That is most likely what we are looking for or hoping for this year. With that, we need to consider the actual physiological stage of the crop and not the calendar in making management decisions.

In additions do not let things like salt damage, Aspergillus, or similar symptomology allow us to spend unwarranted money. There is no magic potion that will correct the extreme heat and drought that this year's crop is facing.

Peanut Disease Update

Several soilborne fungi are capable of causing diseases that limit peanut yield; however, the majority of these pathogens are not active under drought conditions. One exception to that rule is *Aspergillus crown rot* (caused by *Aspergillus niger*), which can actually be more severe under the hot, dry and windy conditions we have experienced throughout much of the growing season. The fungus is found in most field soils and can be isolated from contaminated seed. Plants infected with *A. niger* have a dark brown appearance and often have water-soaked, sunken lesions. The formation of black masses of fungal spores is the most characteristic feature of this disease. Sporulation typically occurs at or just below the soil surface. While the majority of infections occur within the first four to six weeks after planting, mortality can occur throughout the growing season if conditions conducive to disease development are experienced. Fluctuations in soil moisture can also lead to an increase in disease incidence. Such conditions are common this season, especially where the irrigation events are delayed due to water being shared with other crops or redirected to other pivots.



Symptoms of salt injury on peanut. Note the necrosis on the leaf margin.

Fluctuations in soil moisture can also lead to an increase in disease incidence.



Jason Woodward,
Extension Peanut
Pathologist

High evapotranspiration rates also lead to dramatic fluctuations in soil moisture levels following irrigation. Stand losses due to crown rot are generally low and yield reductions do not typically occur, thus fungicide applications are not warranted. Cultural practices that minimize infections from occurring include minimizing the amount of soil thrown on seedlings if cultivation is being conducted and maintaining uniform soil moisture levels when possible, especially during pegging.

In addition to crown rot, I have received calls and seen several fields exhibiting plant mortality caused by *Fusarium*. *Fusarium* spp. are common soil inhabitants, but relatively weak pathogens. Damage caused by *Fusarium* spp. generally results from some other factor(s) that weakens the plant making it more susceptible to the fungus. Possible explanations this year could again be the harsh environmental conditions. I have also recovered *Fusarium* spp. from plants that were showing symptoms of yellow herbicide damage on the roots, as well as from plants growing

in fields with irrigation water quality issues (salinity in particular). Yellow herbicide injury affects the development of primary and/or lateral roots; resulting in roots having a clubbed appearance and plants being stunted. Salt injury can easily be confused with other factors such as herbicide damage, drought stress or diseases such as charcoal rot or *Verticillium*

wilt. Foliage of plants exhibiting salt injury may exhibit a necrosis or burn (at the leaf tip or margins). Under severe conditions premature defoliation may occur. Salinity issues occur on peanut due to the rela-

tively shallow rooting depth of the plant and generally low water storage capacity of the coarse soils where peanuts are typically grown. If you suspect salinity issues may be occurring have water samples analyzed for electrical conductivity (EC) or total dissolved solids (TDS).



Plant mortality resulting from *Aspergillus* crown rot.

“Possible explanations this year could again be the harsh environmental conditions.”



Signs of *Aspergillus* crown rot. Note black sporulation at the soil surface and soil adhering to the infected tissue.



Symptoms of yellow herbicide damage. Often found associated with plants killed by *Fusarium* spp

Initial pod rot fungicide

Applications

Drought conditions are affecting the majority of peanut production regions in Texas, especially the High Plains. As a result, the peanut crop appears to be behind where we typically are this time of year. While blooms are present in the majority of fields peg initiation and pod development are lagging. Growers generally make initial pod rot fungicide applications 60 to 70 days after planting (DAP). When making initial applications, one must take into consideration the growth stage of the plant. Applications made too early (prior to peg development) may result in an increase in pod rot late in the season or lead to an

additional (third application) being made towards the end of the season. Studies are currently underway examining the optimum time to make initial fungicide applications.

Peanut pod rot can be caused by many different fungi; however, *Rhizoctonia solani*, *Pythium myriotylum*, and other *Pythium* spp. are the primary causal agents. While the hot dry conditions are not ideal for development of the disease, producers and consultants must continue to actively scout fields so that they do not miss infections that might take place. This could be extremely important, especially if we have a narrow time frame in which pods can be set. Field diagnosis of peanut pod rot is difficult, as advanced stages of dis-

eased pods result in complete decay.

There are no apparent symptoms associated with pod rot. Severely infected plants may actually appear darker green late in the season. This is due to the lack of energy and nutrients being redistributed to fill pods. *Rhizoctonia* can be characterized by a dry-rot, where the ridges of the pod are exposed. Kernels within pods infected with *R. solani* may exhibit a brown to cream colored mold. *Pythium* has more of a greasy, wet appearance and rotted pods are dark black. These textbook examples apply when the pathogens are causing disease independently; however, both pathogens are often present within the field

If you have any questions regarding *Pythium* pod rot, *Aspergillus* crown rot, or any other peanut production issues contact Jason Woodward at 806-746-4053 or jewoodward@ag.tamu.edu or Todd Baughman at 940-552-9941 or ta-baughman@tamu.edu.



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Peanut Progress — Volume 5, Issue 3 July 2011



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