8/31/09 University of Missouri Extension Agronomic Update

Sudden Death Syndrome Severity Increasing in Soybean Fields

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According to the August 23rd USDA Crop Progress and Condition report, 65% of the Missouri soybean crop is or has already set pods, which is 8 days behind normal. West central Missouri is above the statewide average, with 72% of its soybean crop with pods set, but still falls behind the normal 79%.

As the soybean crop progresses towards harvest, symptoms of sudden death syndrome (SDS) infection are becoming more evident in numerous fields across west central Missouri. Although foliar symptoms of SDS started appearing in early August, they have increased in severity within the past 1-2 weeks. Leaves of infected plants initially show scattered yellow spots between leaf veins, which normally remain green. The yellow lesions will increase in size and merge together, to affect large areas of leaf tissue, and may eventually turn brown.

Although SDS is generally correlated with early-planting dates, later-planted fields were also at risk of SDS infection this season due to the unusually high rain fall throughout the month of July. Infection of SDS is generally favored by high soil moisture during the vegetative growth stages and below normal temperatures prior to or during bloom and pod set. As noted by Dr. Laura Sweets, MU Extension Plant Pathologist, "the weather this season has been favorable for the development of SDS and for expression of SDS symptoms."

SDS is actually caused by a Fusarium fungus which infects and rots the root system. The fungus then produces a toxin which results in the characteristic foliar symptoms of SDS, notably the interveinal yellowing, severe defoliation, and pod drop in severe instances. Since SDS is not a foliar disease but rather infects the roots, there are no rescue treatments and foliar fungicides provide no protection to the soybean plant.

Potential yield losses from SDS are difficult to estimate, because weather conditions during the remainder of the growing season will affect the impact SDS has on yield potential. If growing conditions are conducive for plant maturation and do not cause additional stress to the soybean plant, yield losses will be lessened. The University of Kentucky notes severe yield reductions only when defoliation occurs before the plants reach the R6 growth stage, which is the full pod stage (pods contain green seeds that fill the pod to capacity at one of the four uppermost nodes on the main stem).