
August 8, 2014

SOYBEANS – SUDDEN DEATH SYNDROME UPDATE

“Sudden Death Syndrome” (SDS) is caused by the *Fusarium solani virguliforme* disease and often confused with drought areas in dryland fields and is easier to diagnose in irrigated soybean fields. This fungus overwinters in soybean residue as well as in soil of previous SDS impacted fields. Early cool, wet planting conditions (followed by hot, dry weather) and early planted soybeans favors disease outbreaks. Heavy rains or moisture around the flowering time can also promote foliar symptom development.

Loren Giesler, UNL Extension Plant Pathologist, says that foliar symptoms of sudden death syndrome typically do not appear prior to soybean flowering. Early symptoms at the R3 soybean growth stage and beyond show chlorotic (yellow) spots on the leaves between veins. Eventually, as the disease progresses, the yellow areas between the veins will become brown as the tissue dies. Roots will also show obvious root rot typically on the tap root. Discoloration of the outer stem area also occurs and can extend up the stem from the soil line. The pith will remain white as a key symptom to differentiate SDS from brown stem rot.

One way to tell the difference between drought stress and SDS is the infected plants usually die suddenly with most of the leaves and leaf stems still attached to the dead plant. Symptoms of the root system are more difficult to distinguish from other soybean root rots. When roots are removed from the soil, the fungus is often visible on the outer root surface as masses of cobalt blue growths.

If you have a field and suspect this disease is causing yield losses in your field, what can be done? Unfortunately, there are no seed treatments or foliar fungicides which will help control this disease. So, the most important management decision is to plant SDS-resistant soybean varieties. According to Giesler, soybeans with moderate-to-high SDS resistance levels are available and should be used especially in fields with a history of sudden death syndrome.

Do not be too aggressive with irrigation if a field has a history of SDS. Watering too much early in the plant development can lead to worse SDS areas.

Consider sampling and testing suspect fields for soybean cyst nematodes (SCN); since these microscopic insects can hasten the development of both sudden death syndrome and brown stem rot diseases. Symptoms of soybean cyst nematode are highly variable and often a 5 to 7 bushel yield loss can be robbed from the field without visible plant injury. SCN is often misdiagnosed as a nutrient deficiency, chlorosis, herbicide injury, soil compaction, drought stress or other disease.

Take 6 to 8 inch soil samples for soybean cyst nematodes collected on the outer edge of “hot spots” as close to soybean harvest as possible. Avoid collecting samples in the center of hot spots, since severely damaged plants usually have severely damaged root systems that can’t support SCN. Also, note that SCN numbers tend to be highest when the plants are almost mature to shortly after harvest. Place the nematode soil samples in a plastic bag (not a paper soil test bag), and keep the sample out of direct sunlight during sample transport.

If SCN field numbers test high, then the next step is to have the nematode testing lab follow-up with a race test to classify the SCN populations as “HG” type. As a result, soybean variety selection can be improved and based on SCN race resistance.

More information is available through our UNL Extension website <http://cropwatch.unl.edu>

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