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## Sudden Death Syndrome Continues to Spread — Checkoff Funded Research Provides Solutions



**R**esearchers are gaining ground in the fight against sudden death syndrome (SDS). But it may not be happening fast enough. While scientists continue to learn about this deadly disease, the pathogen is spreading at an alarming rate. Some researchers predict that SDS will overtake SCN as the number one robber of soybean yield in as few as ten years. The fungus is well adapted to northern U.S. soils, is rapidly moving north, and has recently been found as far north as southern Minnesota and Wisconsin.

Supported with soybean checkoff dollars, researchers across the Midwest have been working diligently to discover ways to reduce losses through simple management techniques. “Variety selection is the best control measure,” says Dr. Michael Schmidt, professor at Southern Illinois University. “Grow well adapted, high-yielding soybeans with good field tolerance to SDS,” he recommends.

Genetic control of SDS is on the horizon. Six genes that are associated with the SDS symptoms have been identified. However, it will be a few more years before we know if SDS can be controlled through genetic modification.

Until then, soybean growers must look toward other options to reduce yield loss. “Delaying planting by one or

two weeks seems to be one of the most effective ways to avoid yield loss from SDS,” says Dr. Schmidt. The SDS fungus prefers cool soil for infection.

Soil tillage to incorporate residue and warm the soil prior to planting also reduces the amount of SDS infection. “No-till fields often are more severely affected because they stay cooler longer and tend to hold more moisture; particularly when soils are compacted,” says Dr. Schmidt. Heavy SDS pressure has been linked to elevated early-season soil moisture levels.

Maintaining a healthy root system is essential to manage this disease. The pathogen enters the plant through the soybean root. Once in the plant, the pathogen produces a protein-based toxin that causes the foliar symptoms. Infections that occur early can result in pod abortion and reduced seed number and seed size. Infections that occur after flowering will not have a significant impact on yield.

Management practices to reduce SCN populations, such as planting SCN resistant varieties, are thought to also delay the onset of SDS. The SDS fungus can overwinter in cysts of the SCN, thus increasing the survivability from season to season. The surviving SDS pathogen can enter soybean roots through lesions caused by insect feeding or SCN.

Researchers are developing procedures to rapidly screen varieties in the greenhouse for disease resistance. This checkoff funded research shows promise. It will result in faster and more accurate methods of determining disease resistance than current field screening methods. Soybean growers will directly benefit because the disease ratings listed in seed catalogs will be more reliable under heavy disease pressure.

For more information on management of sudden death syndrome and other diseases log on to [www.planthealth.info](http://www.planthealth.info).