

AGRONOMIC ALERT



Sudden Death Syndrome in Soybean - Northern U.S.

Foliar symptoms of sudden death syndrome (SDS) have appeared in local soybean fields. Yield losses from SDS have ranged from slight to nearly 100% and are dependent on disease onset and severity.

SDS Symptoms

SDS is caused by the soilborne fungus, *Fusarium virguliforme*. Disease symptoms usually appear after flowering and during pod fill. Foliar symptoms begin as small yellow spots on the upper leaves. Spots gradually enlarge and develop a brown necrotic center, while the interveinal tissues are killed (Figure 1). A green vein pattern will remain on the leaves until they defoliate. Unlike a soybean plant infected by brown stem rot, a SDS-infected soybean should have a white, decay-free pith (Figure 1). Infected plants often have increased flower and pod abortion and reduced seed size and quality. SDS can affect entire fields of soybeans, but usually begins as scattered areas within a field. Unfortunately, if SDS symptoms appear, there is no treatment for the current year's crop.



Figure 1. Foliar symptoms and white pith of sudden death syndrome.

SDS Disease Cycle

SDS is favored by high-yield environments and is especially prevalent in years when cool temperatures occur prior to or during flowering and pod set. High soil moisture during vegetative growth also favors the disease, as was the case this season. SDS is usually most severe in saturated soils, such as in low spots or in areas prone to ponding. Compacted areas such as around field entrances or where grain carts drove in the previous year may also exhibit more severe SDS symptoms. In addition, moderate to high populations of soybean cyst nematode (SCN) usually, but not always, are associated with SDS and may increase the severity of SDS.

SDS Management

If SDS is present, little can be done this season; however, management decisions for next year can be developed. Fungicides are not an option for SDS control due to the nature and timing of the disease. An integrated management plan for SDS may include the following:

- **Balance the overall disease package.** In most years, SDS is not a major disease; therefore, balancing the

disease package in next year's crop is better than focusing on SDS tolerance, especially since soybean fields from this year will likely not be soybean fields next year.

- **Plant soybeans that are described as resistant or moderately resistant to soybean cyst nematode.** Consult the seed guide for SDS and SCN tolerance ratings.
- **Delay planting or plant earlier maturing varieties** to possibly help soybeans escape infection from SDS.
- **Cultural practices** that improve drainage in low spots, reduce SCN populations, or remove soil compaction layers may lessen SDS severity.

Please consult with your local agronomist if you have concerns about SDS in your soybean fields.

Sources: A. Dorrance and P. Lipps. *Sudden death syndrome of soybean fact sheet*. The Ohio State University Extension. Department of Plant Pathology. AC-44-98.

Anonymous. *Sudden death syndrome*. University of Minnesota Extension.

C. Bradley. *Late-season soybean diseases showing up*. *The Bulletin*. No. 20. Article 7. August 10, 2007. University of Illinois.

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