

Program 9SB-2

► **Management Of Sudden Death
Syndrome Of Soybean: A Farmer And
Researcher Perspective**

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Sudden Death Syndrome (SDS) is a soilborne fungal disease caused by *Fusarium virguliforme*. This pathogen has spread throughout the U.S. and causes root rot, leaf scorch defoliation and pod abortion. These symptoms lead to major soybean yield losses. In 2013, SDS was in the top 5 diseases in the United States with over 28 million bushels lost. The disease causes yield losses from the mid-south to Canada. The only viable control option is to plant resistant soybean varieties. However, farmers need objective information to select the best varieties. Commercial variety evaluations were conducted in Illinois from the 1990 until 2011 and were supported each year by the Illinois Soybean Association. In 2014, the United Soybean Board decided to fund the project with a focus on helping farmers across the region. In 2014, the SDS commercial trial included 481 varieties with 252 being tested in Iowa in the maturity groups (MG) 1 - 3.6. In Illinois, 229 varieties in the MG 3.7 - 5.0 were evaluated. The varieties were partitioned as MG 0, MG I, MG II, MG III early, MG III late, MG IV early, and MG IV late. Each maturity group was screened for their SDS resistance/susceptibility at two different locations. In each state, fields with a history of SDS were selected. At planting the soil was also infested with the pathogen. The inoculum carrier was infested sorghum that allowed for colonization and increase of the pathogen. Each location had irrigation capabilities that allowed for at least 1 inch of irrigation per week to insure conditions for SDS.

All locations had SDS, however some maturity groups did not have enough disease severity in the susceptible check for that maturity. The MG 0, I early and II late did not have sufficient disease in the check varieties. All other maturity groups had enough disease pressure to separate varieties with confidence. The variety report was made available in print and digitally on the USB, NCSRP, and check-off websites. This project provides farmers with the ability to manage SDS on their farms by providing them with the information to select the best varieties in addition to avoiding susceptible varieties. This information is also used by company personnel when making decisions about which varieties to release, by soybean breeders when deciding which varieties to be used in crosses for further variety development, and drives development of populations for genetic studies for the identification of new SDS resistance genes. The variety report was released in mid-September to insure that producers had the information prior to seed selection in the fall. A farmer will describe his experience with the disease, and how he uses variety reports, extension and company reports to battle this disease. The commercial trial will be continued in 2015.