

# Evaluation of Soybean Commercial Varieties for Sudden Death Syndrome in Southern Iowa 2015

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### Introduction

Sudden Death Syndrome (SDS) is a major fungal disease of soybean in the Midwest. SDS has been found in all counties in Iowa. The large amount of rain in 2015 encouraged SDS foliar symptoms. Yield loss associated with SDS was noted even when foliar symptoms were negligible.

Field evaluation of SDS is difficult. Locations with high SDS pressure in previous years may not show a wide enough range for evaluation. Planting multiple locations is the best way to improve the chance of successful evaluations. Consistency over locations and years is the best method of evaluating resistance.

This was the second year of a regional evaluation run by Jason Bond (Southern Illinois University) and Silvia Cianzio (Iowa State University) and funded by the United Soybean Board. Bond handled material with maturity in the late III and later. Cianzio handled material in maturity groups I through Early III, with one trial of maturities earlier than I.

Lines were divided into experiments based on early or late maturity groups for more accurate scoring. Each experiment was planted at two locations. Locations in Iowa included the Muscatine, Ames, and Kanawha research farms. Each location was chosen for irrigation availability after discussion with the farm manager.

### Materials and Methods

Experiments for late maturity group II and early maturity group III were planted at

Muscatine in 2015. There were 66 entries in the late II experiment and 62 entries in the early III experiment. Each test also included 4 or 5 checks. Plots were 2-row, 5-ft-long, spaced 30 in. apart and were planted at a rate of nine seeds/foot, with three replications per variety. Plots were planted on April 21. Starting before flowering, plots were irrigated to bring total precipitation/irrigation to over 1 in./week. Experiments were rated at approximate pod fill (R6.2). SDS was scored on incidence (percentage of plants with symptoms) and severity. Severity was evaluated on a 1-9 score with 1 being healthy, 2-5 increasing foliar chlorosis and necrosis, 6-8 increasing defoliation, and 9 dead.

### Results and Discussion

Out of 26 experiments in Iowa and Illinois in 2015, 10 produced no significant differences in symptoms and only nine experiments had wide ranges of symptom expression for variety evaluation. At the Ames trials, which have been used for over 10 years, only half the tests had SDS symptoms with a wide range of symptoms for good varietal differentiation.

Disease index (DX) for the late MG II test at Muscatine was not high enough to differentiate SDS resistance. For the early MG III test at Muscatine, DX ranged from 0-21, although the statistical comparisons (ANOVA) were not significant.

For a complete list of varietal averages and experimental methods, see <http://web.extension.illinois.edu/nwiardc/downloads/61637.pdf>.