



# Evaluation of Disease Management Systems in Soybean – Sudden Death Syndrome

- Sudden death syndrome (SDS) is among the most devastating soil-borne diseases of soybean in the U.S. The disease has spread extensively and causes high soybean yield losses throughout the North Central Region. SDS is most severe when soybean is planted early into cool, wet soils, when heavy midsummer rains saturate the soil, and when soybean cyst nematode (SCN) is present.
- The objective of this study was to evaluate a system-based approach for SDS disease management supported by genetic resistance of germplasm and seed treatment options.

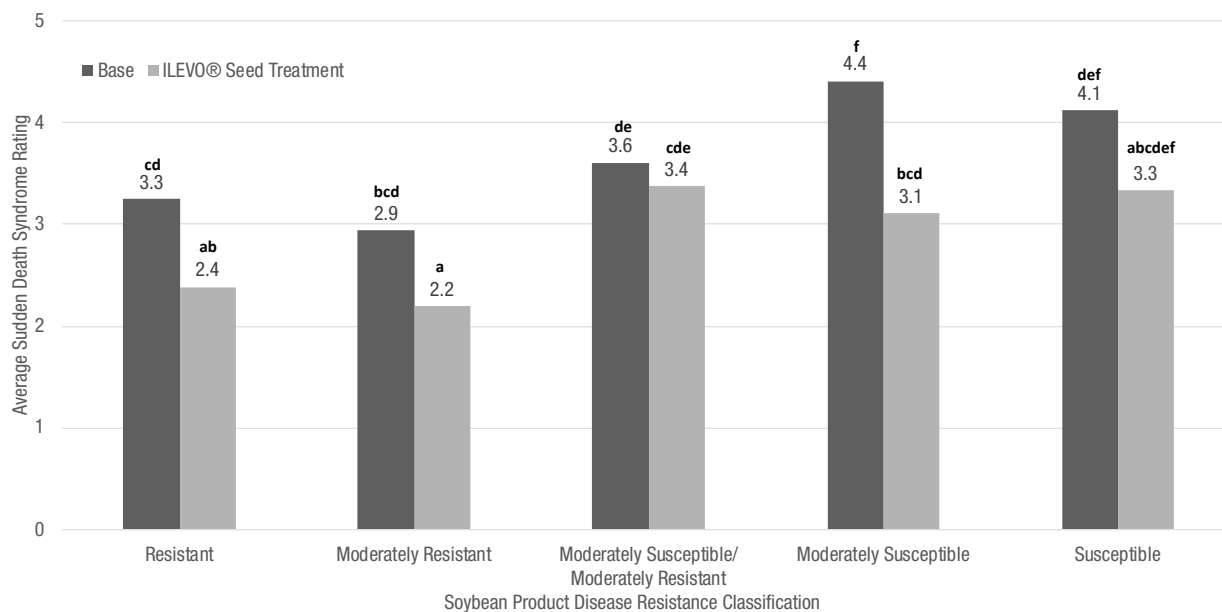
## Research Site Details

- Select soybean products with varying levels of resistance to SDS were evaluated under two different Acceleron® Seed Applied Solutions options:
  - » STANDARD
  - » STANDARD + ILEVO® Seed Treatment
- Soybean products selected for this trial were classified as susceptible (S), moderately susceptible (MS), moderately resistant/moderately susceptible (MR/MS), moderately resistant (MR), or resistant (R) to SDS.
- Fields with a history of SDS were selected for this study.
- Plots were randomized within the trial.
- SDS disease ratings were taken at the R6 growth stage.
- Data collected from 2018 through 2020 and a total of 15 locations with SDS symptoms were analyzed for this study. Locations were from across the North Central growing region including IN, KS, MO, IL, IA, KY, and NE. Most locations had mild to moderate SDS incidence and severity.



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## Understanding the Results

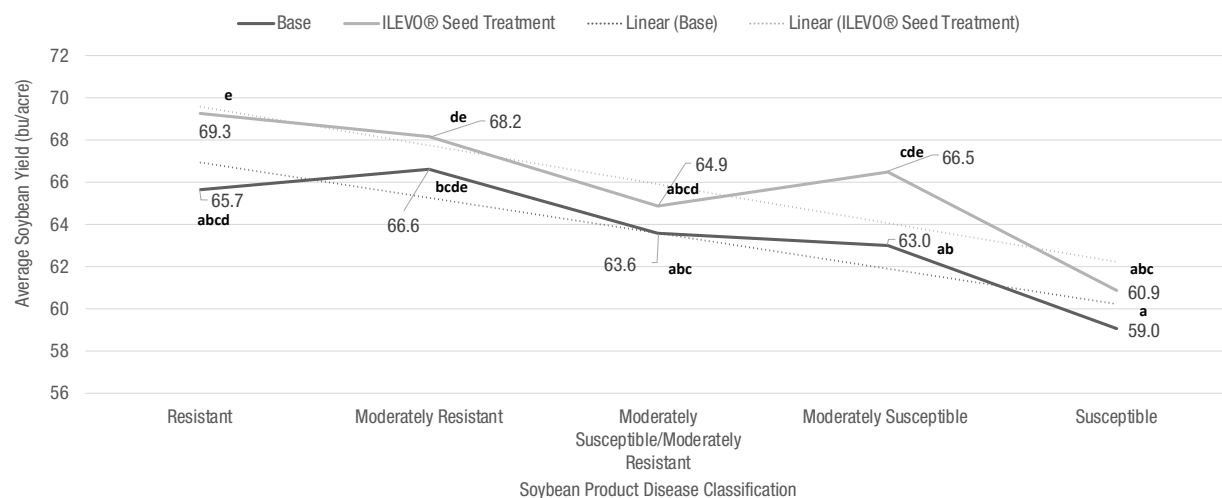


Base = Acceleron® STANDARD Seed Applied Solutions in 2019 and 2020; Acceleron® STANDARD Seed Applied Solutions + Poncho® Votivo® in 2018.

ILEVO® = Acceleron® STANDARD Seed Applied Solutions plus ILEVO® Seed Treatment in 2019 and 2020; Acceleron® STANDARD Seed Applied Solutions + Poncho® Votivo® + ILEVO® Seed Treatment in 2018.

SDS disease index: 1 = no disease, 9 = severe disease.

**Figure 1. Sudden Death Syndrome disease index rating by Acceleron® Seed Applied Solutions treatment and SDS disease classification of soybean products. Mean separation letters (a, b) denote statistically significant differences at an alpha = 0.1.**



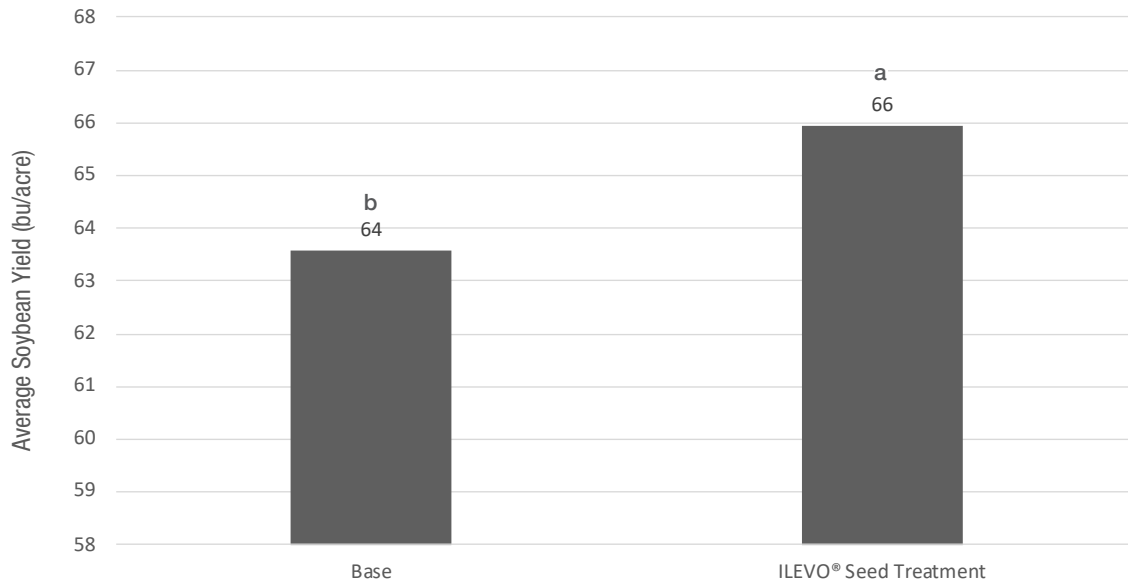
Base = Acceleron® STANDARD Seed Applied Solutions in 2019 and 2020; Acceleron® STANDARD Seed Applied Solutions + Poncho®/Votivo® in 2018

ILEVO® = Acceleron® STANDARD Seed Applied Solutions plus ILEVO® Seed Treatment in 2019 and 2020; Acceleron® STANDARD Seed Applied Solutions + Poncho®/Votivo® + ILEVO® Seed Treatment in 2018

**Figure 2. Average soybean yield by Acceleron® Seed Applied Solutions treatment and SDS disease classifications of soybean products. Mean separation letters (a, b) denote statistically significant differences at an alpha = 0.1.**



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**Figure 3. Effect of seed treatment on average soybean yield measured across soybean products, location, and years (2018 through 2020). Mean separation letters (a, b) denote statistically significant differences at an alpha = 0.1.**



**Figure 4. Comparison of the difference in soybean product SDS disease incidence and severity. One product with an SDS disease rating of 8 (left) and another product with a rating of 3 (right). SDS disease index: 1 = no disease, 9 = severe disease.**

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In locations where the most susceptible soybean product and the base seed treatment had an average SDS rating of at least 3:

- There was a significant ILEVO® Seed Treatment effect on SDS management and yield potential. Soybeans with ILEVO® seed treatment had yields 2 bu/acre greater than the untreated check.
- Genetics with enhanced resistance to SDS coupled with ILEVO® provided a significant yield advantage over moderately susceptible soybean products without ILEVO® Seed Treatment and susceptible products with or without ILEVO® seed treatment.

## Key Learnings (R)

- ILEVO® Seed Treatment is a potential solution currently available for sudden death syndrome (SDS) and continues to provide excellent management of SDS and protect yield potential. Depending on SDS risk for your field, pairing with the right soybean products should be considered to help maximize yield potential.

## Legal Statements

The information discussed in this report is from a multiple site, unreplicated research protocol. This informational piece is designed to report the results of this demonstration and is not intended to infer any confirmed trends. Please use this information accordingly.

ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. EACH ACCELERON® SEED APPLIED SOLUTIONS OFFERING is a combination of separate individually registered products. FOR SOYBEANS, EACH ACCELERON® SEED APPLIED SOLUTIONS OFFERING is a combination of separate individually registered products containing the active ingredients: BASIC Offering: metalaxyl, fluxapyroxad, and pyraclostrobin. STANDARD Offering: metalaxyl, fluxapyroxad, pyraclostrobin, and imidacloprid.

Not all products are registered in all states and may be subject to use restrictions. The distribution, sale, or use of an unregistered pesticide is a violation of federal and/or state law and is strictly prohibited.

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Performance may vary, from location to location and from year to year, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on the grower's fields.

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