Trial 21. Evaluation of fungicide seed treatments for controlling sudden death syndrome in La Mars, ND - 2025

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Soybeans were planted on May 11, 2025, in La Mars, North Dakota, at a rate of 140,000 seed/a in bedded single rows spaced 30 inches apart and a planting depth of 1.5 inches. Experiment plots were four rows (10 feet) wide by 18 feet long. Treatment evaluations were replicated four times and designed in a randomized complete block, and blocks were separated by 7-foot alleys. The soil type was silt/sandy loam. Standard practices were used to manage weeds and nutrition. All seed treatments evaluated in this study were paired with a "Base" seed treatment that included Allegiance FL at 0.194 fl oz/cwt, Stamina at 0.575 fl oz/cwt, Systiva XS 0.237 fl oz/cwt, Poncho 600 at 1.736 fl oz/cwt and Flo Rite 1706 at 1 fl oz/cwt. This trial was planted in a field with a history of sudden death syndrome (SDS). Stand counts were taken on June 3, 2025, and June 30, 2025. Yield was collected from the center two rows on Oct. 13, 2025. The weather over the course of the growing season was conducive to disease development. However, there was a hail/wind storm early in the season, which impacted plant growth during the vegetative stages. This trial received a total of 17.12 inches of rainfall over the course of the growing season. Analysis was conducted using SAS 9.4 PROC GLIMMIX to determine the effects of treatments on disease and yield. Means separations followed Fisher's Protected LSD at α=0.05.

Stand counts were recorded by counting the number of emerged soybeans in the center two rows (100 sq feet) and converting to plants per acre. A foliar evaluation for SDS was conducted in two ways: first, by estimating the percentage of a plot that was symptomatic (disease incidence); and second, by estimating the severity of symptomatic soybeans (disease severity). The disease incidence and disease severity values were used to calculate an SDS disease index percentage (SDS DIX%) value. There was a low level of SDS DIX% observed in this trial with the highest percentage in a single plot that was observed being 1.83%. There were no statistical differences detected among treatments for stand counts, SDS DIX% or yield. Interestingly, mean stand counts decreased in every treatment from the first date of recording to the second date of recording. This is atypical but can likely be attributed to the severe hailstorm that this trial endured. A combination treatment of the Base treatment and Ilevo at 1.98 fl oz resulted in the highest mean yield at 23.4 bu/a, which was 3 bu/a higher than if no seed treatment was used in one scenario and 11.7 bu/a higher than if no seed treatment was used in a second scenario. A combination treatment of the Base treatment, Saltro at 1.45 fl oz/cwt and Ilevo at 1.18 fl oz resulted in the second-highest mean yield at 23.2 bu/a.

Table 21. Effect of seed treatments on stand counts, sudden death syndrome disease index, and yield.

Treatment[a]	Rate	Stand Count VC (plants/a)[b]	Stand Count V2 (plants/a)[c]	SDS DIX (%)[d]	Yield (bu/a)[e]
Non-Treated	-	87,120	64,493	0.08	20.4
Base[f]		91,597	63,888	0.13	22.2
Base Ilevo	1.18 fl oz	90,629	60,984	0.50	19.1
Base Saltro	1.45 fl oz/cwt	87,483	65,582	0.03	21.4
Base Zeltera	1.0 fl oz/cwt	80,223	55,656	0.42	15.1
Non-Treated		93,170	60,500	0.62	11.1
Base Saltro Ilevo	1.45 fl oz/cwt 1.18 fl oz	91,718	65,219	0.06	23.2
Base Ilevo	1.98 fl oz	89,177	64,009	0.21	23.4
P-Value		0.1407	0.8169	0.3990	0.5572

[a] Treatments were applied as standard seed treatments in conjunction with colorant.
[b] VC stand counts were taken on June 3, 2025. This trial was planted at 140,000 seeds per acre.
[c] V2 stand counts were taken on June 30, 2025.
[d] SDS DIX (%) = sudden death syndrome disease index in percent.
[e] Yield was adjusted to 13% moisture and calculated in bushels per acre (bu/a) and collected on Oct. 13, 2025.
[f] Treatments that included a "Base" treatment included Allegiance FL at 0.194 fl oz/cwt, Stamina at 0.575 fl oz/cwt, Systiva XS 0.237 fl oz/cwt, Poncho 600 at 1.736 fl oz/cwt and Flo Rite 1706 at 1 fl oz/cwt.