Trial 22. Evaluation of biological seed treatments for controlling sudden death syndrome in Fargo, ND - 2025

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Soybeans were planted on May 6, 2025, in Fargo, North Dakota, at a rate of 140,000 seeds/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 20 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 silty clay. Standard practices were used to manage weeds and nutrition. All biological 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 that had no history of sudden death syndrome (SDS). Stand counts were taken on June 6, 2025, and June 24, 2025. Evaluations for SDS were conducted on Aug. 14, 2025, and Aug. 26, 2025. Yield was collected from the center two rows on Oct. 6, 2025. The weather over the course of the growing season was conducive to disease development. This trial received a total of 16.24 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. No symptoms or signs of SDS were observed in this trial throughout the course of the year. This was expected as there is no history of this field having SDS. There were significant differences among treatments detected for stand counts taken on June 6, 2025 (P=0.0425). A combination treatment of the Base, CeraMax and Germate Plus had a stand count of 87,229 plants/a, which was significantly higher than if no seed treatment was used. Additionally, a combination treatment of the Base, Thiabendazole, Heads Up, Biost 2nd Gen and Ascribe SAR had a stand count of 90,932, which was significantly higher than if no seed treatment was used. There were no significant differences detected for stand counts collected on the second date (June 24, 2025) or for yield. A combination treatment of the Base and Ilevo had the highest mean yield at 58.7 bu/a which was 4.2 bu/a higher than if no seed treatment was used.

Table 22. Effect of biological seed treatments on stand counts and yield.

Treatment[a]	Rate	Stand Count VC (plants/a)[b]	Stand Count V2 (plants/a)[c]	Yield (bu/a)[d]
Non-Treated	-	75,795 c[e]	81,675	54.5
Base[f]		81,926 ac	93,219	52.6
Base CeraMax Germate Plus	 2.5 fl oz/cwt 0.1 fl oz/cwt	87,229 ab	96,813	54.0
Base Avodigen Adaplan Ethos Elite	 1.26 fl oz/cwt 0.54 fl oz/cwt 0.69 fl oz/cwt	82,547 ac	87,774	56.9
Base Thiabendazole HeadsUp Biost 2nd Gen	 0.65 fl oz/cwt 0.16 fl oz/cwt 3.04 fl oz/cwt	90,932 a	92,130	57.7
Base		80,586 bc	92,130	55.0
Base Ilevo	 2.37 fl oz/cwt	77,755 c	86,576	58.7
P-Value		0.0425	0.5361	0.9313

[a] Treatments were applied as standard seed treatments in conjunction with colorant.
[b] VC stand counts were taken on June 6, 2025. This trial was planted at 140,000 seeds per acre.
[c] V2 stand counts were taken on June 24, 2025.
[d] Yield was adjusted to 13% moisture and calculated in bushels per acre (bu/a) and collected on Oct. 6, 2025.
[e] Treatments with different letter groupings differ significantly ($\alpha = 0.05$).
[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.