Trial 11. Evaluation of biological seed treatments for control of seedling diseases in Fargo, ND - 2025

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The soybean variety PFS 2003E was planted in Fargo, North Dakota, on May 6, 2025, at a rate of 140,000 seeds/a and depth of 1.5 inches in bedded single rows spaced 30 inches apart. Plots were four rows (10 feet) wide by 20 feet long. Treatments were replicated four times and designed in a randomized complete block. Blocks were separated by 5-foot alleys. The field was rainfed and grown to wheat the previous year. Soil type was silty clay. Standard practices were used to manage weeds and nutrition. Mixing compatibility issues and phytotoxicity were not observed during the trial. Root rot ratings were taken on June 23, 2025. Yield was collected from the center two rows on Oct. 3, 2025. Rainfall during the period totaled 16.2 inches, and overall, weather conditions were moderately conducive to disease development. 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.

No significant differences were observed between treatments regarding root rot severity scores or yield.

Table 11. Effect of biological seed treatments on stand counts, root rot severity and yield.

Treatment	Rate	Stand Counts (plants/a)[a]	Root Rot Severity (%)[b]	Yield (bu/a)[c]
Non-Treated	-	65,885	19.0	57.9
Avodigen	1.2 fl oz/cwt	68,498	25.8	53.5
F4034-5	0.64 fl oz/cwt	70,241	18.7	55.6
Rhizotrop	300 ml/cwt	76,448	19.3	61.2
RootShield	5 oz/cwt	75,577	20.3	60.8
Howler	5 lb/cwt	76,883	25.8	58.0
Heads Up	8 fl oz/cwt	75,389	18.8	59.1
Cruiser Maxx APX	3.9 fl oz/cwt	72,092	20.5	54.8
P-Value		0.60	0.60	0.69

[a] Stand counts were recorded at the VC growth stage. This trial was planted at 140,000 seeds per acre.
[b] Root rot % was calculated based on root rot severity evaluations taken on June 23, 2025.
[c] Yield was adjusted to 13% moisture and calculated in bushels per acre (bu/a) and collected on Oct. 3, 2025.