

Evaluation of Seed Treatments to Manage Verticillium Stripe on Canola

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This research trial was conducted at the Langdon Research Extension Center with an objective to evaluate the performance of seed treatments to manage Verticillium on canola. The trial was planted on May 23, 2023 with treated seed of various treatments on the canola cultivar ‘Invigor L233P’ and then compared with non-treated seed. The design was randomized complete block with four replications. The trial followed state recommended practices for land preparation, fertilization, seeding rate and weed control. The plot size was 5 ft. wide x 16 ft. long. Data on Verticillium infections were rated following the scale of 0-5 (same as the blackleg rating scale). Inoculum was prepared by inoculating Verticillium cultures/isolates on to corn spawn in the lab during March 2023 and was applied at planting. Twenty-five canola stubbles were rated within each plot and the incidence (number of plants that had Verticillium infections out of twenty-five cut stems) and severity on each was recorded after swathing (August 18). A 0-5 scale was used to rate disease severity, where 0 = no disease tissue visible in the cross section; 1 = $\leq 25\%$ of the cross section has disease tissue; 2 = 26 to 50% of the cross section has disease tissue; 3 = 51 to 75% of the cross section has disease tissue; 4 = $\geq 75\%$ of the cross section has disease tissue; 5 = 100% diseased tissue/plant dead. A Verticillium mean disease severity index was calculated with weighted mean of incidence and number of plants in each severity rating. Data were subjected to analysis of variance using complete block, balanced orthogonal designs of Agrobase generation II software.

Table 1: Mean Verticillium stripe incidence, severity and effect on plant stand, yield and test weight on the application of different seed treatments on canola.

Treatment	Plant Stand	Verticillium Stripe		Yield	Test Weight
	3ft	% Incidence	% Severity	lbs/a	lbs/bu
Vercoras	12	60	26	3873	51.7
Saltro	17	58	23	2960	52.4
Prosper Evergol	17	61	25	3058	52.5
Intego Solo	14	71	32	2698	52.6
Rancona Summit	19	65	29	2985	52.6
Trilex	17	65	30	3082	52.4
Non-Treated	19	62	28	2842	52.5
Mean	16	63	28	3071	52.4
CV%	23	17	21	10	0.6
LSD	5.6	16	9	464	0.4
P-Value (0.05)	NS	NS	NS	0.0016*	0.0057*

Results: The tested seed treatments had no effect on plant stand or Verticillium stripe incidence and severity percentages (Table 1). There were significant differences observed in yield and test weights. Vercoras® treated plots had a low plant stand and the highest yield (Table 1).