Evaluation of Foliar Fungicide Treatments to Manage Blackleg on Canola

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Objective: To evaluate foliar fungicide treatments on two varieties of canola to manage blackleg.

Materials and Methods:

The objective of this research trial, conducted at the Langdon Research Extension Center, was to evaluate and compare the effectiveness of seven foliar fungicide treatments (Table 2) in managing blackleg disease on two canola cultivars, 'InVigor L340PC' and 'P612L', when sprayed at the 4-6 leaf stage. These cultivars have variable resistance to blackleg. The trial began on May 28, 2025, and utilized a randomized complete block design with a factorial arrangement (varieties as main plots; fungicides as subplots), replicated four times. State-recommended land preparation, fertilization, seeding rate, weed and insect control practices were followed. Plots measured 5 ft. wide by 16 ft. long and were inoculated twice with blackleg ascospores at the 2-4 leaf stage. Disease incidence and severity (on a 0-100 scale) were recorded after swathing on September 3, using ratings from twenty-five canola stubbles per plot. The data were analyzed using analysis of variance in a complete-block, balanced, orthogonal design via Genovix version II software. Plant vigor (0 - dead and 10 – most vigorous) was rated a week after the foliar sprays of the fungicides.

Table 1: Response of two canola varieties to receiving foliar fungicide treatments on mean blackleg (disease) incidence, severity, plant vigor, yield, and test weight.

	Blackleg		Plant Vigor	Yield	Test Weight
Variety	**% Incidence**	**% Severity**	**(0-10)**	**(lbs/A)**	**(lbs/bu)**
L340PC	16	3	9	2687	51.03
P612L	13	3	10	2386	51.28
Mean	**15**	**3**	**9**	**2537**	51
CV %	**56**	**84**	**9**	**10**	1
LSD	**NS**	**NS**	**0.8**	**256**	**0.21**
P-Value (0.05)	**NS**	**NS**	**0.0055***	**0.00001***	**0.024***

Table 2: Efficacy of foliar fungicide treatments on mean blackleg (disease) incidence, severity, vigor, phytotoxicity, yield, and test weights.

Treatments	Rate Oz/A	Blackleg % Incidence	Blackleg % Severity	Plant Vigor (0-10)	Yield (lbs/A)	Test Weight (lbs/bu)
Revytek	15	19	6	9	2607	51
Propulse	18	14	2	9	2515	51
Priaxor	8	18	4	9	2444	51
Miravis Neo	13.7	13	2	9	2519	51
Quadris	15.5	11	2	9	2469	51
Headline	12	19	5	8	2458	51
Proline	5.7	11	2	9	2718	51
Non-treated	0	14	3	9	2563	51
	Mean	**15**	**3**	**9**	**2537**	**51**
	CV %	**56**	**84**	**9**	**10**	**0.8**
	LSD	**NS**	**1**	**NS**	**NS**	**NS**
	P-Value (0.05)	**NS**	**0.024***	**NS**	**NS**	**NS**

NS indicates no significant differences were observed statistically
*Statistical differences were observed among the treatments

Results: The research results show that canola foliar fungicide treatments have practical implications for reducing the severity of blackleg. However, the varieties tested as the main plot treatments showed no statistically significant differences in the parameters tested, except for vigor, yield, and test weight. InVigor L340PC yielded higher than the variety P612L (Table 1). Likewise, the fungicide subplot treatments showed no significant differences in the parameters tested, except for blackleg severity (Table 2). No statistically significant interactions between varieties and foliar fungicide treatments were observed for any of the parameters tested. These results provide crucial insights into foliar fungicides as a blackleg management tool, and the research has to be repeated to provide recommendations to the growers.

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