Screening of Canola Cultivars for Tolerance to Verticillium Stripe

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Canola cultivars/varieties: Seventeen commercial canola cultivars with unknown tolerance to Verticillium stripe were planted to monitor the level of tolerance against the pathogen *Verticillium longisporum* (Table 1). The trial was planted on May 28, 2025, in a randomized complete block design (RCBD) with four replications. The amount of Verticillium stripe infection obtained in the research plots was from a meticulously developed artificial inoculum in the lab, using wheat grain as the source.

Table 1: Canola cultivars evaluated for *Verticillium longisporum* in North Dakota.

Cultivar	**Seed Source**
P612L	Pioneer
P617SL	Pioneer
P520L	Pioneer
P1540L	Pioneer
CP9551TF	Croplan Genetics
CP9978TF	Croplan Genetics
CP7130LL	Croplan Genetics
CP9221TF	Croplan Genetics
CP7250LL	Croplan Genetics
BY7204L	BrettYoung
InVigor L343PC	BASF
InVigor L340PC	BASF
InVigor L233P	BASF
InVigor LR354PC	BASF
InVigor L345PC	BASF
InVigor L350PC	BASF
DKTFLL21SC	Dekalb

Percent incidence and severity of Verticillium stripe was evaluated on August 29, 2025, by cross-section clipping of canola stems a half inch below ground level. Percent incidence was determined by the percentage of infected stems, and percent severity was determined by the percentage of the pith infected in each stem.

Data analysis: Statistical analysis was done using Genovix Generation II software. Fisher's least significant difference (LSD) was used to compare means at p ($\alpha = 0.05$).

Results: The cultivars demonstrated significant differences in Verticillium stripe incidence at P-Value < 0.05, with a least significant difference (LSD) of 13. The cultivars 'P1540L' and 'InVigor L350PC' exhibited the lowest Verticillium stripe disease incidence (8%), whereas the 'InVigor L233P' cultivar showed the highest incidence (35%) of Verticillium stripe (Figure 1). In addition, statistically significant differences in yield were observed at P-Value < 0.05, with an LSD of 259 (Figure 2), and the mean yield was 2,510 lbs/a. The InVigor L340PC cultivar achieved the highest yield, 2,832 lbs/a, supporting the robustness of these results and providing a basis for future decisions on choosing a cultivar with better tolerance to Verticillium stripe.

Figure 1: Percent Verticillium stripe incidence obtained on various commercial cultivars of canola tested in 2025 under field conditions.

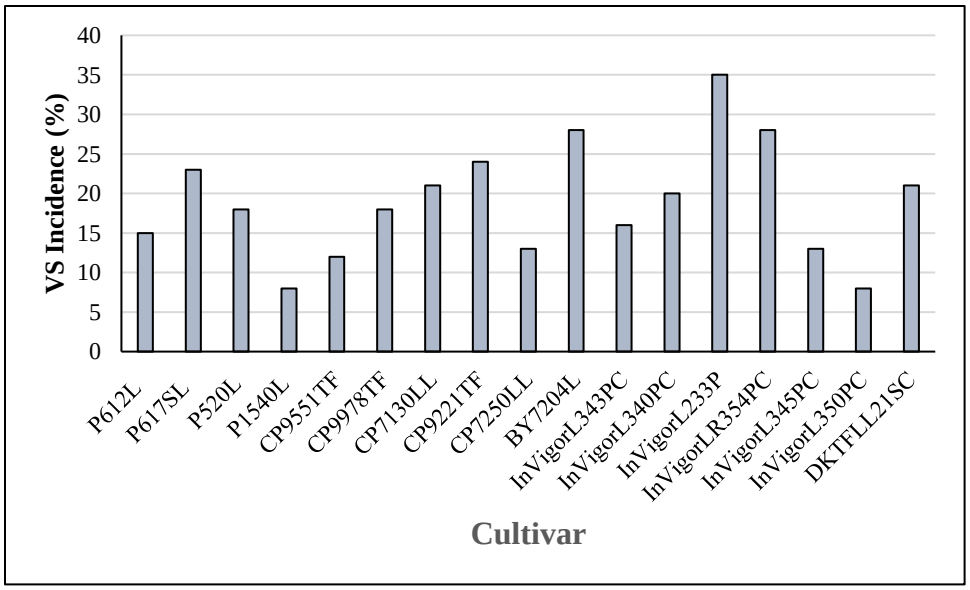

Figure 2: The average yield obtained on various commercial cultivars of canola tested in 2025 under the Verticillium stripe infection in field conditions.

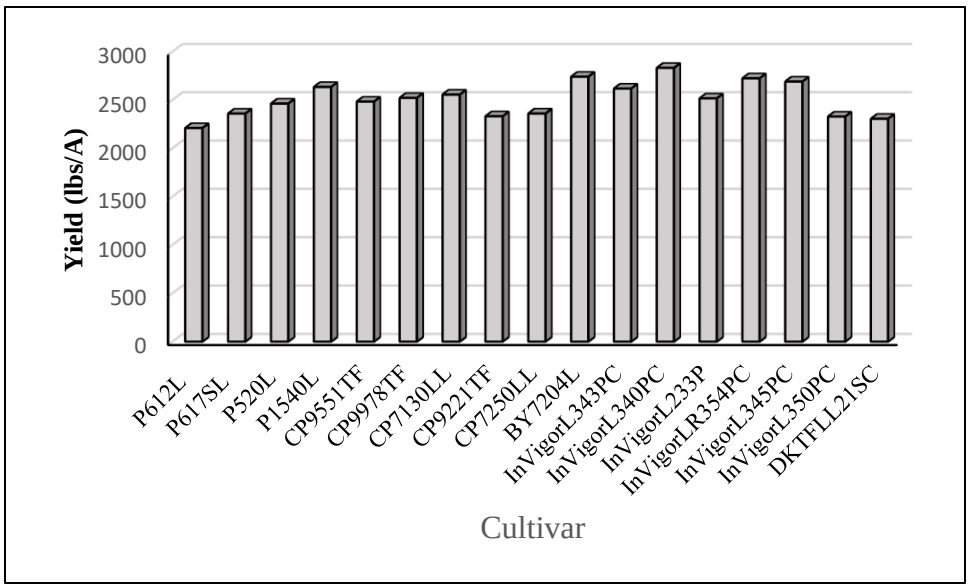

Figure 3: The picture below depicts Verticillium stripe disease on the cross-section of canola stubble.

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