

Blackleg Fungicide Trial

Blackleg is a common and damaging disease in Saskatchewan canola crops, with an average of 92% presence in surveyed fields in 2024. The infection begins early, often at the seedling stage, and intensifies as the crop matures. Blackleg damages stems, restricting moisture and nutrient uptake, which can significantly reduce yield. Symptoms may appear as early as the cotyledon stage and can also develop on leaves, stems, and pods. A key diagnostic feature is the presence of black pycnidia. Other symptoms include dry rot or cankers at the stem base, while infected pods are prone to early ripening and shattering at harvest. The first line of defense against blackleg includes crop rotation, using proper resistance genes in the field and using seed treatments. When everything else is done right, using fungicides can be an effective tool for managing blackleg; however, it comes with associated costs. Deciding whether to apply a fungicide can be complex and requires careful evaluation of the risk of the disease in each field. Incorporating check strips to assess the fungicide's impact on yield, grade, and economic return is a practical strategy to guide decision-making.

Objective:

The objective of this field-scale trial is to assess the effectiveness and economic viability of early fungicide applications for managing blackleg in canola across varying environmental conditions and risk factors.

Project Overview:

Cooperators will implement a replicated field-scale trial comparing fungicide applications versus untreated check strips, using their own equipment and otherwise normal practices. An agronomist/trial manager will provide support throughout the season, including setting up the trial and collecting data. Statistical analysis of the data will be conducted following harvest, and a report with results including economic analysis will be provided. Data from all on-farm trials will also be pooled to examine the results across different management, soil, and weather conditions. Results from all trials will be publicly available, however individual farm data will be kept anonymous, apart from the location of the trial (nearest town or R.M.). Collaborators will be invited to join a network of producers who are conducting on-farm research through field tours and a year-end wrap up meeting. This program is available to members in good standing.

Rep	1		2		3		4	
Plot	1	2	3	4	5	6	7	8
Trt	1	2	2	1	1	2	2	1
	Untreated	Treated	Treated	Untreated	Untreated	Treated	Treated	Untreated



Study Design:

Option A:

- 1) Untreated Check
- 2) Treated with fungicide

Recommended application timings are from seedling to the 4-6 leaf stage, ideally the 2-4 leaf stage. Fungicides will be applied according to label recommendations, will be replicated four times, for a total of 8 and randomized within the field. Apart from fungicide application, all strips must be managed the same agronomically including seeding, fertility, and pesticide (excluding fungicide) application. Variable rate (VR) fertilizer applications can be used. An example randomized field plan is shown above. Layouts will be provided.







Data Collection:

Agronomists or trial managers will help the cooperator seed the trial according to the protocol and will complete the following in-season data collection.

- Spring soil sample
- Plant density (if plant stand looks inconsistent)
- If hail damage - Count damaged stems/ heads in 1 m² row
- Disease Assessments will be done at swathing timing (or 70% seed color change) by clipping 25 random stems in each treatment and rating each stem on a 0-5 blackleg rating scale (see below)
- Yield – weighed separately for each treatment strip using weigh wagon or grain cart scale
- Harvest samples for each plot
- Regularly scouting for treatment differences in weed pressure, flowering, maturity, disease pressure, plant health, or plant structure
- Economical breakdown
- Management data
- Weather data

BLACKLEG Disease Severity Rating Scale

Blackleg severity is scored for each canola plant using the following scale based on the area of diseased tissue in the cross section

	0: No diseased tissue visible in the cross section.
	1: Diseased tissue occupies <25% or less of cross section
	2: Diseased tissue occupies 26-50% of cross section
	3: Diseased tissue occupies 51-75% of cross section
	4: Diseased tissue occupies >75% of cross section with little or no constriction of affected tissues
	5: Diseased tissue occupies 100% of cross section with significant constriction of affected tissues; tissue dry and brittle, plant dead

For more information or to participate in the program contact:

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