

Trial Summary *NEW TRIAL TYPE*

Early Season Fungicide Trial

Research Question:

Can fungicide applications at blackleg timing help to manage incidence or severity of Verticillium stripe?

Treatments:

1. Early season fungicide (4-6 leaf)
2. Untreated check

Trial Setup:

Randomized complete block, each treatment was one sprayer width x field length, with 4 replicates per location (8 strips per location)

Data Collection:

Soil verticillium content (pre-seed soil sample), plant counts (cotyledon-1 leaf, 4-6 leaf), Verticillium incidence and severity post-harvest, blackleg incidence and severity post-harvest, maturity, yield.



Verticillium stripe disease severity scale

Time of surveying: Close to harvest timing, 80-90% seed colour change (SCC)

Disease severity rating scale for verticillium stripe with photos* and microsclerotia and stem/plant symptom descriptions.



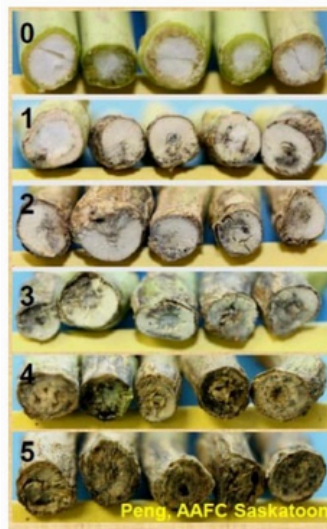
*Upper branches have been clipped on the plants, focus on stem discoloration. Photo source and scale adapted from research by: Sheau-Fang Hwang & Stephen Strelkov, University of Alberta.

Version: June 20 2025



BLACKLEG FIELD RATING SCALE

Score blackleg for each clipped tap root using the following scale



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% or more of cross section.

5 Diseased tissue occupies 100% of cross section, with significant constriction of affected tissues; tissues dry and brittle; plant dead.

Incidence = % of plants displaying visual symptoms of disease

Severity = average rating of diseased plants according to Verticillium scale

Background: Since being detected in Manitoba in 2014, Verticillium stripe (VS) spread rapidly across all Manitoban agricultural regions. To date, no chemical management methods are known to effectively control VS - the pathogen's root-infection pathway and wind dispersal between seasons make the control of infection and spread difficult. Yield losses from VS are just beginning to be understood; however, one common observation is that yield losses from blackleg and VS are amplified when they are present together compared to individually. Fungicide application at herbicide timing is a common method to control blackleg - if such fungicides are able to control BL damage, then there may be potential to protect yield from additional losses when verticillium is present.

2025 Results Summary

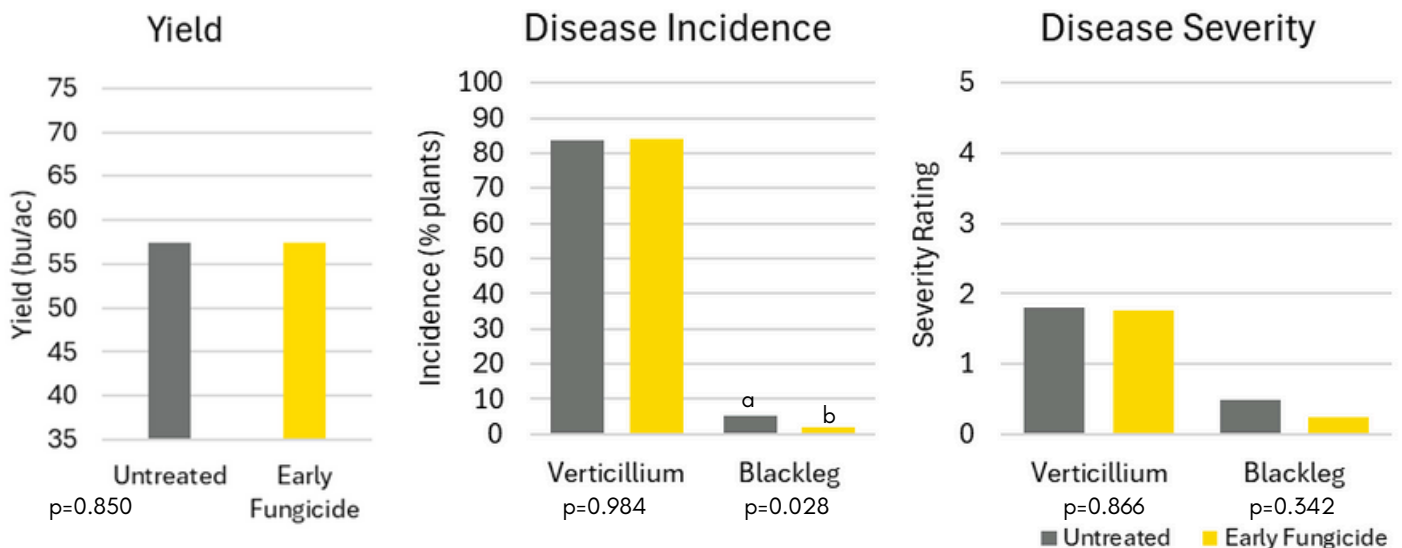
Early Season Fungicide Trial (ESF)

2025 Trial Sites

Trial ID	RM	Fungicide Product	Product Rate (L/ac)
ESF_01	Morris	Nexicor and Evito	0.2 L/ac, 0.118 L/ac
ESF_02	Hanover	Nexicor	0.2 L/ac
ESF_03	Morris	Nexicor	0.25 L/ac
ESF_04	Montcalm	Maxentis	0.25 L/ac
ESF_05	De Salaberry	Nexicor	0.25 L/ac
ESF_06	Minitonas	Nexicor	0.2 L/ac
ESF_07	Swan River	Maxentis	0.422 L/ac
ESF_08	Roblin	Nexicor	0.0202 L/ac



Verticillium and blackleg incidence and severity: Verticillium stripe was identified at all 8 trials across 7 different RMs, whereas some variation in incidence was observed for BL. At ESF_05, postharvest BL incidence reduced from 4% to 0% with the ESF treatment, identified as a statistically significant reduction. Two trials (ESF_03 and ESF_04) displaying the highest BL incidence in the untreated check (17% and 11%, respectively) observed minor reductions in BL incidence (down to 8% and 6%, respectively), however this was not identified as significant. Three of the remaining trials had 1% or less BL incidence in the untreated check - considering the goal of this trial, the use of BL fungicide in the absence of BL should have no effect on VS incidence or severity.



Yield: No significant increases in yield were observed with the use of ESF - this is likely attributed to the very low incidence of blackleg across all trials. One trial showed a 2.6 bu/ac decrease with the ESF treatment, which was identified as statistically significant, however this trial only observed 1% BL incidence - the small yield reduction is likely not be related to the effect of BL or VS, but may be attributed to sprayer compaction or other factors.