

Management of Blackleg in Canola with Fungicides

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A research trial was conducted at the Langdon Research Extension Center with an objective to evaluate the performance of experimental fungicides to manage blackleg in canola. The trial was planted on May 21, 2018, with the Roundup Ready variety “DKL 30-42” in a randomized complete block design replicated four times. The trial location followed state recommended practices for land preparation, fertilization, seeding rate and weed control.

The plot size was 5 ft. wide x 16 ft. long with a canola border between each plot. Eight experimental compounds were tested for their efficacy versus the fungicide Headline and a non-treated check. Two applications of fungicides were applied at the 2-4 leaf stage and 14 days after the first application using a CO₂-pressurized backpack style sprayer with a three-nozzle boom (XR-8002) at 10 GPA. Canola was inoculated with ascospores of the fungi-causing blackleg two times within three days at the 2-4 leaf stage to assure blackleg infection in the trial.

The severity of blackleg infection was evaluated on 100 plants (25 plants per replication) after swathing on August 25. Individual plants were uprooted, cut through the basal part of the stem and scored on the percent of diseased tissue visible in the cross-section. The ratings were zero when no diseased tissue was visible in the cross-section, and 100 if the diseased tissue occupied 100% of the cross-section with significant constriction of affected tissues, drying of tissue, brittle tissue or the plant was completely dead.

Results: Significant differences were observed among the treatments for blackleg incidence and blackleg severity index (DSI) when compared to the untreated check. However, there were no differences observed in yield and test weights.

Table 1: Efficacy of commercially available fungicides in managing blackleg and their influence on yield and test weight.

Blackleg						
Treatments	Dosage (oz/A)	Application Timing	Incidence (%)	DSI (0-5)	Yield (lbs/a)	Test Weight (lbs/bu)
NON-TREATED CHECK	NA	NA	59	1.44	2736	51.76
EXPERIMENTAL 1	8.22	2-4 leaf stage	22	0.30	3034	52.01
EXPERIMENTAL 2	12.33	2-4 leaf stage	35	0.51	2815	52.17
EXPERIMENTAL 3	16.44	2-4 leaf stage	46	0.73	2797	52.08
EXPERIMENTAL 4	13.70	2-4 leaf stage	39	0.57	2816	52.12
EXPERIMENTAL 5	13.70	2-4 leaf stage	37	0.59	2857	52.04
EXPERIMENTAL 6	5.48	2-4 leaf stage	34	0.43	2826	52.12
EXPERIMENTAL 7	3.43	2-4 leaf stage	40	0.60	2861	52.24
EXPERIMENTAL 8	5.48	2-4 leaf stage	33	0.46	2744	52.07
HEADLINE	5.48	2-4 leaf stage	42	0.89	2848	51.96
Mean			39	0.65	2833	52.05
C.V. %			29	63	8.2	0.41
LSD 5%			16	0.59	NS	NS
p-Value (α at 0.05%)			0.01	0.03	NS	NS

Surfactant @ 6.4 fl. oz/A was added in treatments Exp 7, Exp 8 and Headline.

*Blackleg Mean Severity: Calculated by multiplying the category value (0-5) times actual severity (0.2, 0.4, 0.6, 0.8, 1.0), and summing, then dividing by the infected plant count.

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