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Highlights:

- Results are from only one location and year.
- Study was carried out with artificial inoculation of *Sclerotinia sclerotiorum* by spreading sclerotia before planting and spraying ascospores at 20-30% bloom to promote disease.
- Supplemental moisture as overhead irrigation was also provided.
- Disease assessment was not carried out due to the lack of white mold development.
- None of the treatment resulted in statistically lower or higher yield than untreated.
- Numerically, experimental product at 8.5 oz/A resulted in the 398.05 lb/A more yield than untreated and 528.91 lb/A more yield than Omega (10.3 oz/A).
- No statistical difference was observed for test weight among treatments and untreated.

For further information:

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OBJECTIVE

Objective of this study was to evaluate an experimental product to control *Sclerotinia stem rot* caused by *Sclerotinia sclerotiorum* in Canola.

METHODS

Location: NDSU Langdon Research Extension Center, Langdon, North Dakota.

Experimental Design: Randomized complete block with four replications.

Previous crop: Hard red spring wheat.

Cultivars: DLK 30-42

Planting: 14 live seed per square feet was planted on May 16, 2013. A border plot was planted between treated plots to minimize interference from spray drift.

Plot size: Seven rows at six inch spacing. 5 x 20 sq. ft., mowed back to 5 x 15 sq. ft.

Inoculation: Plots were inoculated by spreading sclerotia, collected from 2012 sunflower, before planting at the rate of 185 g/plot and harrowed. In addition to sclerotia, inoculation was done at 30-20% bloom by spraying *Sclerotia sclerotinia* ascospores (5000 spores ml⁻¹) with a CO₂-pressurized backpack sprayer operated at 40 psi and delivering 20 GPA. Second application of ascospore inoculation was done a day after first application. Supplemental moisture was provided by running overhead irrigation from the day of ascospore inoculation until 50% of pod reached final size (growth stage 75) at the rate of an hour per day to create conducive environment for white mold development.

Fungicide treatments: Fungicide treatments, their chemistry and application rates and time are listed in Table 1. Fungicides were applied, with CO₂-pressurized backpack sprayer with three nozzle boom (XR8002), at the water volume of 20 GPA. Fungicide applications were made at 20% bloom on June 02 (wind westerly, speed three MPH, temperature 83 °F at 02:40 PM).

Disease Assessment: Disease assessment was not carried out due to the lack of white mold development.

Swath and Harvest: Plots were swathed using research plot swather on August 20 (97 days after planting). Swathed plots were harvested August 30 with a small plot combine and the yield and test weight determined.

Data Analysis: Data were analyzed using the general linear model (GLM) in SAS. Fisher's least significant difference (LSD) were used to compare means at P≤0.05.

RESULTS

Results are presented in Table 1.

Yield: None of the treatments resulted in statistically higher yield compared to untreated. However, numerically experimental product at 8.5 oz/A resulted in the 398.05 lb/A more yield than untreated and 528.91 lb/A more yield than Omega (10.3 oz/A).

Test Weight: None of the fungicide resulted in significantly higher or lower test weight than untreated.

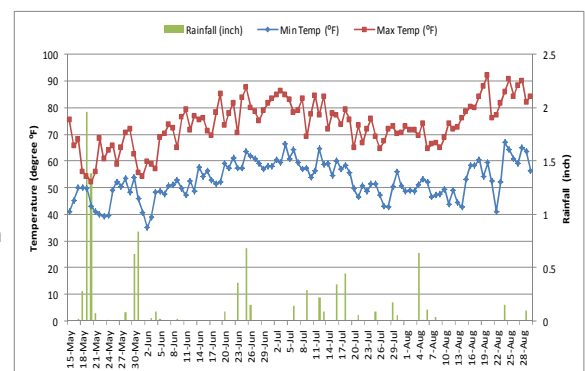
ACKNOWLEDGEMENTS

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Table 1. Mean comparison of treatments for yield (lb/A), and test weight (lb/bu).

TRT#	Treatments ¹	Chemistry (FRAC group)	Rate	Yield (lb/A)	Test Weight (lb/bu)
1	Untreated			2329.86 a ^u	50.64 a ^u
2	Expt. Product	-	4.3 oz/A	2727.91 a	50.75 a
3	Expt. Product	-	1 qt/A	2448.47 a	50.69 a
4	Expt. Product	-	2 qt/A	2240.53 a	49.89 a
5	Expt. Product	-	2 qt/A	2465.51 a	50.31 a
6	Omega	Fluazinam (29)	1 qt/A	2199.00 a	50.68 a
7	Omega	Fluazinam (29)	6 oz/A	2457.99 a	50.43 a
% CV				20.96	1.39
Mean				2409.90	50.48
Max				2727.91	50.75
Min				2199.00	49.89

^u Experimental product in treatment 1-4 was applied with Kinetic non-ionic surfactant at the rate of 32 oz/100 gal of water.
¹ Treatments were applied at 20% bloom.
^a Means with same letter within individual variable (within column) are not significantly different at P≤0.05
^u Serenade is a biofungicide/bactericide



Daily minimum and maximum temperature, and rainfall recorded in Langdon, ND during planting to harvest of canola in this study.