

Evaluation of in-furrow fungicide and growth regulator treatments for control of potato common scab in Antigo, Wisconsin, 2019.

A trial was established on 5 June at the University of Wisconsin Extension Langlade County Research Area, Antigo to evaluate fungicides for common scab control. Two-ounce-sized seed pieces were mechanically cut from US#1 ‘Yukon Gold’ tubers and healed for 7 days prior to planting. A randomized complete block design with four replications was used and treatment plots consisted of two, 24-ft-long rows spaced 36 in. apart with 12 in. spacing in the row. Common scab inoculum was introduced in this research field plot in each of the previous potato rotations by incorporating common-scab symptomatic tubers into the soil and applying manure to exacerbate the disease. In-furrow treatments were applied to seed and soil in an open furrow on the day of planting using a CO₂ backpack sprayer equipped with a single TeeJet 8002VS flat fan nozzle calibrated to deliver 12 gal/A at a boom pressure of 40 psi. After in-furrow treatments were applied, furrows were mechanically closed using hilling disks. The soil type was Antigo silt loam. Standard grower practices were used for field maintenance, fertility, insect management, and prevention of early and late blight as per the production region. Vine emergence was counted 36 days after planting from 24 linear feet of each of the center two rows of each plot (% seed emergence = number of emerged vines / maximum possible emerged vines (48)*100). Foliar fungicide applications were initiated at hooking (11 Jul) with a second application 2 weeks later (25 Jul). Foliar fungicide applications were applied using a CO₂ backpack sprayer equipped with four TeeJet 8002VS nozzles spaced 19-in. apart and calibrated to deliver 35 gal/A at a boom pressure of 35 psi. Vines were chemically killed with Verdure-X 1.5 pt/A + non-ionic surfactant on 11 and 18 Sep. Plots were harvested and weighed on 24 Sep. Twenty tubers from each plot were chosen randomly and assessed for scab incidence and severity measured as the percentage of tuber surface covered with common scab lesions. All data were analyzed using ANOVA ($\alpha=0.05$) and Fisher’s LSD at $\alpha=0.05$ (SAS Version 9.2).

Disease pressure for this trial was high, with all treatments displaying common scab incidence of over 80% and severity ratings ranging from 14 to nearly 20% across all treatments. Netted scab was prevalent with very little pitted scab. There were no significant differences among treatments for incidence or severity. There were no significant differences among treatments on emergence or yield.

Treatment and Rate ^z	Application Type ^y	Emergence (%)	Total Plot Yield (cwt)	Common Scab Incidence (%)	Common Scab Severity (%)
Non-treated Control	NA	42.2 ^z	171.3	94.0	15.2
Blocker 4F 5.2 fl oz	In-Furrow	38.0	169.0	93.8	19.9
Blocker 4F 5.2 fl oz	In-Furrow				
Hortus 0.2 g/Liter	In-Furrow, Foliar 2X	35.5	137.3	92.2	14.3
Hortus 0.2 g/Liter	In-Furrow	51.1	197.4	87.3	14.6
Hortus 0.2 g/Liter	In-Furrow, Foliar 2X	42.2	166.4	88.8	10.9
Rejuvenate 0.105 fl oz	Seed trt, Foliar 2X	50.0	206.8	92.1	17.0
Blocker 4F 5.2 fl oz	In-furrow				
Rejuvenate 0.105 fl oz	Seed trt, Foliar 2X	50.5	156.9	87.0	18.7

^zTreatment rates applied in-furrow are given per 1000 row ft. Seed treatments are given per ton seed. Foliar rates are per acre.

^ySeed treatments and in-furrow treatments were applied at the time of planting. Foliar applications were applied on 11 Jul and 25 Jul.

^xNo significant differences were determined using Fisher’s LSD at $\alpha=0.05$ (SAS Version 9.2).