

# **Evaluation of in-furrow fungicides and growth regulators for control of potato common scab in Antigo, Wisconsin, 2021.**

A trial was established on 2 Jun at the University of Wisconsin Madison Division of Extension Langlade County Research Area in Antigo, Wisconsin to evaluate treatments for the management of common scab. Two-ounce-sized seed pieces were mechanically cut from US#1 ‘Yukon Gold’ seed tubers and healed for 7 days prior to planting under conditions of 55°F and ample air flow to support suberization. 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 disease nursery in each of the previous potato rotations (approximately every other year) 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 foliar early and late blight as per the production region. Crop emergence was evaluated at 35 days after planting from 24 linear feet of each of the center two rows of each plot (% seed emergence = number of emerged plants /maximum possible # of plants (48)\*100). Foliar fungicide applications for common scab management were initiated at tuber hooking (12 Jul) with a second application 2 weeks later (26 Jul). Foliar fungicide applications for common scab management 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. Tubers from plots were harvested, graded, and weighed on 11 Oct. Twenty tubers from each plot were chosen randomly and assessed for common 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).

Natural precipitation during the trial duration was 18.17 in and irrigation was applied, as needed, in Aug to supplement to support crop productivity. Disease pressure for this trial was moderate to high, with all treatments displaying common scab incidence of more than 40%. Disease severity, however, was low across all treatments. Netted scab was prevalent with very little pitted scab. There were significant differences among treatments for severity, but no treatment significantly reduced severity compared to the non-treated control. There were no significant differences among treatments on emergence, marketable yield (US #1) US #2 (data not shown) and culls (data not shown).

Treatment and rate <sup>z</sup>	Application Type <sup>y</sup>	Emergence (%)	Marketable Yield (cwt)	Common Scab Incidence (%)	Common Scab Severity (%)
Non-treated control	NA	90.6	353.3	65.0	3.875 a-c <sup>x</sup>
Blocker 4F 5.2 fl oz	In-furrow	89.1	402.2	50.0	2.875 ab
Blocker 4F 5.2 fl oz	In-furrow				
Hortus 0.2 g/L	In-furrow, Foliar 2X	92.7	371.4	42.5	2.5 a
Hortus 0.1 g/cwt	Seed trt	93.2	391.0	67.5	4.5 bc
Hortus 0.2 g/L	In-furrow	90.6	387.7	72.5	5.375 c
Hortus 0.2 g/L	In-furrow, Foliar 2X	88.5	370.8	60.0	3.375 ab
Rejuvenate 0.105 fl oz/	Seed trt, Foliar 2X	88.5	359.8	57.5	3.25 ab
Blocker 4F 5.2 fl oz	In-furrow				
Rejuvenate 0.105/	Seed trt, Foliar 2X	85.9	372.6	42.5	2.25 a
Serenade ASO 8.8 fl oz	In-furrow	93.8	391.7	50.0	3.375 ab
Blocker 4F 5.2 fl oz + Serenade ASO 8.8 fl oz	In-furrow	94.8	410.0	50.0	3.875 a-c

<sup>z</sup>Treatment rates applied in-furrow are given per 1,000 row ft. Seed treatments are given per ton seed. Foliar rates are per acre. <sup>y</sup>Seed treatments and in-furrow treatments were applied at the time of planting. Foliar applications were applied on 11 Jul and 25 Jul.

<sup>x</sup>Column numbers followed by the same letter are not significantly different at P=0.05 as determined by Fisher’s Least Significant Difference (LSD) test.