POTATO (*Solanum tuberosum* 'Yukon Gold')
Common Scab; *Streptomyces scabies*

S. Jordan[1], B. Webster[1], S. Plaster[2], S. Zimmerman[2], A.J. Gevens[1]
[1]Dept. of Plant Pathology, Univ. of Wisconsin, Madison, WI 53706
[2]Univ. of Wisconsin Extension, Langlade County, Antigo, WI 54409

Evaluation of at-plant treatments for control of potato common scab in Wisconsin, 2015.

A trial was established on 2 Jun at the University of Wisconsin Extension Langlade County Research Area, Antigo to evaluate fungicides for common scab control. Whole, 2 oz. B-sized 'Yukon Gold' tubers were used for seed. A randomized complete block design with four replications was used and treatment plots consisted of four, 24-ft-long rows spaced 36 in. apart with 12 in. spacing in the row. In-furrow treatments were applied to seed and soil in an open furrow on the day of planting using a CO^2 backpack sprayer equipped with a single TeeJet 8002VS flat fan nozzle calibrated to deliver 12 gal/A at a boom pressure of 40 psi. Seed treatments were applied to seed tubers prior to planting using the same sprayer equipment as previously described. Treated seed tubers were allowed to dry thoroughly before planting. After 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. The total natural precipitation during the production season was 11.12 in. An additional 2 in of supplemental irrigation was applied during the growing season. During the production season, additional common scab-targeted fungicide applications were made for two of the treatments with the initial application at emergence (30 Jul) with the second application following 2 weeks later (13 Aug). Foliar applications were made using a CO^2 backpack sprayer equipped with a boom equipped with 4 TeeJet 8002VS flat fan nozzles spaced 19 in apart, calibrated to deliver 30 gal/A at a boom pressure of 35 psi. Seed emergence data were collected 30 Jun from 10 linear feet of each of the center 2 rows of each plot. Vines were chemically killed with Reglone 2.0 pt/A on 8 and 14 Sep. The center two rows of each plot were harvested, and tubers were graded into marketable (US#1), undersize, and cull categories on 1 Oct. After undersize tubers were graded out and tubers washed, but before scabbed tubers are removed, 20 tubers from each plot were chosen randomly and assessed for scab incidence and severity. All data were analyzed using ANOVA (α=0.05) and Fisher's LSD at α=0.05 (SAS Version 9.2).

Treatments had no significant effect on seedling emergence compared to the non-treated control. There were no significant treatment differences in total yield or in US#1 yield, undersize yield, or cull weight (only US#1data shown). While common scab pressure was high in this field trial, severity of symptomatic tubers was low. Treatments had no significant effect on common scab incidence. However, numerically, the two treatments with the lowest common scab incidence were both *Bacillus* spp., Serenade Soil 4.4 fl oz and Double Nickel LC 20.0 ml.

Treatment and rate[y]	Application Type	Seed Emergence (%)[z]	Marketable Yield (cwt)[z]	Common Scab Incidence (%)[z]
Non-treated Control	NA	78.7	167.3	63.8
Blocker 4F 10.4 fl oz	In-Furrow	66.7	139.1	60.0
Blocker 4F 5.2 fl oz	In-Furrow	79.7	143.5	57.5
Blocker 4F 5.2 fl oz + Serenade Soil 4.4 fl oz	In-Furrow	77.1	144.5	57.0
Quadris 2.08SC 0.6 fl oz	In-Furrow	77.6	156.9	52.5
Blocker 10G 1.65 lb	In-Furrow	82.8	163.9	63.8
Serenade Soil 4.4 fl oz	In-Furrow	73.9	167.3	47.0
EF-400 0.35 fl oz + BacStop 0.25 fl oz	Seed Treatment	69.3	155.0	51.3
EF-400 0.35 fl oz + BacStop 0.25 fl oz	Seed Treatment			
EF-400 0.73 fl oz + BacStop 0.55 fl oz	In-Furrow	70.3	141.9	63.8
EF-400 0.35 fl oz + BacStop 0.25 fl oz	Seed Treatment			
EF-400 0.73 fl oz + BacStop 0.55 fl oz	In-Furrow			
EF-400 8.0 fl oz + BacStop 6.0 fl oz	Emergence	77.6	167.3	56.1
EF-400 0.35 fl oz + BacStop 0.25 fl oz	Seed Treatment			
EF-400 0.73 fl oz + BacStop 0.55 fl oz	In-Furrow			
EF-400 8.0 fl oz + BacStop 6.0 fl oz	Foliar	67.7	142.7	54.5
Amyprotec 42 20.0 ml	Seed treatment	77.7	155.6	60.0
Double Nickel LC 20.0 ml	Seed treatment	72.9	143.2	47.5
Regalia 5SC 4.0 fl oz	In-Furrow	76.1	147.1	60.0

[z]No significant differences were determined using Fisher's LSD at α=0.05 (SAS Version 9.2).
[y]Treatment rates applied in-furrow are given per 1000 row ft. Seed treatment rates are given per 100 lb seed. Foliar treatments are given in fl oz per acre.