POTATO (*Solanum tuberosum* 'Dark Red Norland)
Silver Scurf; *Helminthosporium solani*

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Evaluation of seed treatment and in-furrow treatments for control of silver scurf of potato in Wisconsin, 2013.

Potatoes were planted on 6 May to initiate a field trial at the Hancock Research Station in central WI to evaluate seed treatment and in-furrow applied fungicides for the control of silver scurf of potato. Fertilization, insect, weed, and foliar disease control was accomplished using standard industry practices for the production region. Approximately 2 oz seed pieces were cut mechanically on 22 April from US#1 'Dark Red Norland' tubers. Seed pieces were allowed to heal prior to treatment and/or planting. A randomized complete block design with four replications was used for the trial, and treatment plots consisted of four 24-ft-long rows spaced 36 in. apart with 12 in. spacing in the row. To minimize soil compaction and mechanical damage to plants in rows used for foliar and yield evaluations, drive rows for pesticide application equipment were placed adjacent to plots. In-furrow treatments were applied directly over seed pieces in-furrow 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. Foliar treatments were applies using a CO_2 backpack sprayer equipped with TeeJet 8002VS flat fan nozzles calibrated to deliver 30 gal/A at a boom pressure of 35 psi. Prior to planting, seed pieces used for seed treatments were placed in a single layer on a plastic tarp with the treatments applied evenly over the top with 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. The seed pieces were then rotated 180°, and the treatments were reapplied so as to completely coat the seed pieces. Plots were not inoculated but instead relied on natural inocula for disease establishment. Seed emergence data were collected on 4 June as the number of emerged hills in 10 linear feet of each of the center 2 rows of each plot. Vines were killed with herbicide (Diquat E 1.5 pt/acre + non-ionic surfactant) applied on 9 and 16 September. Plots were harvested, graded, and evaluated for silver scurf on 25 September. Twenty tubers were randomly selected from each plot and evaluated for silver scurf incidence (# symptomatic tubers/20*100). Precipitation in Hancock during the potato production season was 15.0 in. Supplemental irrigation was applied 44 times during the potato production season for an additional 19.5 in.

Four treatments: A18232 435.7FS 0.308 fl oz, A16148 500FS 0.077 fl oz + A9765 600FS 0.128 fl oz, A18232 435.7FS 0.308 fl oz + A16148 500FS0.046 fl oz, and A18232 435.7FS 0.308 fl oz + A16148 500FS 0.077 fl oz resulted in significantly reduced seed emergence when compared to the untreated control. There were no significant differences among treatments in controlling the incidence of silver scurf on tubers. There were no significant differences among treatments on marketable yield. No treatments resulted in phytotoxicity.

Treatment and rate[z]	Application Type	Seed Emergence	Silver Scurf Incidence (%)	Marketable Yield (cwt/acre)
Untreated Control……..	NA	17.5c[y]	57.5	665.7
A18232 435.7FS 0.308 fl oz……..	Seed Treatment	14.3ab	60.0	559.5
A16148 500FS0.046 fl oz + A9765 600FS 0.128 fl oz……	Seed Treatment	15.8abc	65.0	627.2
A16148 500FS 0.077 fl oz + A9765 600FS 0.128 fl oz……	Seed Treatment	13.8a	65.0	622.1
A18232 435.7FS 0.308 fl oz + A16148 500FS0.046 fl oz……...	Seed Treatment	14.5ab	45.0	612.8
A18232 435.7FS 0.308 fl oz + A16148 500FS 0.077 fl oz……..	Seed Treatment	13.8a	62.5	584.9
A18232 435.7FS 0.308 fl oz + A16148 500FS 0.077 fl oz + A12946 250SC 0.614 fl oz…….	Seed Treatment	18.0c	55.0	599.6
Emesto Silver 118FS 0.31 oz + Admire Pro 4.6SC 0.35 oz…….....	Seed Treatment	17.0bc	62.5	576.5
Quadris 2.08SC 0.8 fl oz……	In-Furrow	17.0bc	62.5	716.6
Maxim MZ 6.2 0.5 lb……..	Seed Treatment	16.8bc	52.5	684.4

[z]Treatment rates applied in-furrow are given per 1000 row ft. Seed treatment rates are given per 100 lb seed.
[y]Column numbers followed by the same letter or an absence of letters are not significantly different at P=0.05 as determined by Fisher's Least Significant Difference (LSD) test.