

### **Evaluation of at-plant treatments for control of Rhizoctonia disease of potato in Wisconsin, 2012.**

Potato seedpieces were planted on 8 May to initiate a field trial at the University of Wisconsin Agriculture Research Station in Hancock, WI to evaluate seed treatment and in-furrow applied fungicides for the control of Rhizoctonia disease of potato. Approximately 2 oz seedpieces were cut mechanically on 25 April from US#1 'Russet Burbank' tubers. Seedpieces were allowed to heal prior to 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 15 in. spacing in the row. To minimize soil compaction and 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 using a CO<sub>2</sub> backpack sprayer equipped with a single TeeJet 8002VS flat fan nozzle and calibrated to deliver 12 gal/A at a boom pressure of 40 psi. Seed treatments were applied to cut seed prior to planting using same sprayer equipment as previously described. Plots were not inoculated but relied on natural inocula for disease establishment. All management practices for fertility, weed, insect, and foliar disease control were considered standard for commercial production in the region. Vines were killed with herbicide (Reglone 2 pt/acre+non-ionic surfactant) applied on 30 Aug and 4 Sep. Plots were harvested and graded on 7 Oct. At harvest, 20 tubers were randomly selected from each plot and evaluated for black scurf (incidence). It was an unusually hot and dry production season in 2012; precipitation in Hancock during the potato production season was 8.21 in. Supplemental irrigation was applied 48 times during the potato production season for an additional 26.15 in.

No differences in stand counts among treatments were observed at emergence. Several in-furrow treatments, all applied at rates per 1000 row ft, controlled black scurf significantly better than the untreated control including Quadris 2.08SC 0.8 fl oz/1000 row ft, Vertisan EC 1.67 LG 0.7 fl oz, Vertisan EC 1.67 LG 1.15 fl oz, Vertisan EC 1.67 LG 1.6 fl oz, Regalia MAXX 20 SC 1.0 fl oz+Quadris 2.08SC 0.8 fl oz, and Regalia MAXX 20 SC 1.0 fl oz+Moncut 1.18 fl oz. Seed treatments that performed significantly better than the untreated control included Maxim MZ 6.2DF 8.0 oz, Fontelis 1.67SC 0.3 fl oz+Manzate FL 4.0LG 0.9 fl oz, A14382 420 FS 0.226 fl oz, A14382 420FS 0.226 fl oz+A16148 500FS 0.153 fl oz, A14382 420FS 0.226 fl oz+A16148 500FS 0.077 fl oz, and Moncoat MZ 7.5DP+Admire Pro 4.6SC. Total yield was not significantly different across the treatments though all treatments were numerically greater than the untreated control.

Treatment and rate <sup>z</sup>	Application type	Black scurf incidence (%)	Total cwt/A
Untreated Control.....	-	27.5de <sup>y</sup>	397.3
Quadris 2.08SC 0.8 fl oz.....	In-furrow	1.3a	427.3
Maxim MZ 6.2DF 8.0 oz.....	Seed treatment	2.5ab	440.3
Vertisan 1.67EC 0.7 fl oz.....	In-furrow	0.0a	426.6
Vertisan 1.67EC 1.15 fl oz.....	In-furrow	2.5ab	471.0
Vertisan 1.67EC 1.6 fl oz.....	In-furrow	5.0abc	476.5
Fontelis 1.67SC 0.15 fl oz + Manzate FL 4.0LG 0.9 fl oz.....	Seed treatment	13.8abcde	477.7
Fontelis 1.67SC 0.3 fl oz + Manzate FL 4.0LG 0.9 fl oz.....	Seed treatment	2.5ab	489.7
Tiger Sul 90CR 44 lb/A.....	In-furrow	27.5de	457.4
Regalia MAXX 20SC 0.5 fl oz.....	In-furrow	22.5cde	417.8
Regalia MAXX 20SC 1.0 fl oz.....	In-furrow	32.5e	444.3
Regalia MAXX 20SC 2.0 fl oz.....	In-furrow	21.3bcde	461.6
Regalia MAXX 20SC 4.0 fl oz.....	In-furrow	16.3abcde	422.3
Regalia MAXX 20SC 1.0 fl oz + Quadris 2.08SC 0.8 fl oz.....	In-furrow	1.3a	467.4
Regalia MAXX 20SC 1.0 fl oz + Moncut 70DF 1.18 fl oz.....	In-furrow	5.0abc	498.7
A14382 420FS 0.226 fl oz.....	Seed treatment	6.3abc	474.3
A14382 420FS 0.226 fl oz + A16148 500FS 0.0307 fl oz.....	Seed treatment	8.8abcd	465.4
A14382 420FS 0.226 fl oz + A16148 500FS 0.046 fl oz.....	Seed treatment	11.3abcd	461.8
A14382 420FS 0.226 fl oz + A16148 500FS 0.077 fl oz.....	Seed treatment	10.0abcd	459.2
A14382 420FS 0.226 fl oz + A16148 500FS 0.153 fl oz.....	Seed treatment	5.0abc	462.1
A14382 420FS 0.226 fl oz + A16148 500FS 0.077 fl oz.....	Seed treatment	5.0abc	437.5
A14382 420FS 0.226 fl oz + A12946 250SC 0.307 fl oz.....	Seed treatment	12.5abcd	453.2
A9459 480FS 0.08 fl oz.....	Seed treatment	7.5abc	482.7
A14382 420FS 0.226 fl oz.....	Seed treatment	23.8cde	473.9
Moncoat MZ 7.5DP 12 oz+ Admire Pro 4.6SC 0.35 fl oz.....	Seed treatment	6.3abc	471.0
A18232 435.7FS 0.308 fl oz+ A12946 250SC 0.307 fl oz.....	Seed treatment	15.0abcde	485.3

<sup>z</sup>Treatments rates applied in furrow are giving per 1000 row ft, seed treatment rates are given per 100 lb seed.

<sup>y</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.