

Evaluating seed treatment and in-furrow treatments for control of potato common scab in Wisconsin, 2013.

A trial was established 29 May at the Langlade County Research Area, Antigo, WI, to evaluate fungicide efficacy for control of potato common scab. Approximately 2 oz seedpieces were cut mechanically on 15 May from US#1 Yukon Gold tubers. Seedpieces healed for 7 days before 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. In-furrow treatments were applied 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. Seed treatments were applied to cut seed prior to planting using same sprayer equipment as previously described. Treated seedpieces were allowed to dry thoroughly before planting. After planting and in-furrow treatments, furrows were mechanically covered using hilling disks. The soil type was Antigo silt loam and fertility, insects, weeds, and foliar diseases were maintained during the growing season according to standard grower practices for the region. To minimize soil compaction and damage to plants in rows used for foliar and yield evaluation, drive rows for pesticide application equipment were placed adjacent to plots. Seed emergence data were collected 21 June from 10 linear feet of each of the center 2 rows of each plot. Vines were chemically killed with Reglone 1.0 pt/acre on 16 and 23 Sep 2013. The center two rows of each plot were harvested 30 Sep 2013. Tubers were graded into marketable (US#1), undersize, and cull categories on the day of harvest. After undersize tubers were graded out and tubers washed, but before scabbed tubers are removed, 20 tubers from each plot were chosen arbitrarily and assessed for scab incidence and severity. Disease severity was rated on a scale of 0-3 with 0=no disease, 1=<10% surface area symptomatic, 2=10-25%, 3=>25%, and an average tuber severity was calculated. Data were analyzed using ANOVA ($\alpha=0.05$) and Fisher's LSD at $\alpha=0.05$.

There were no significant differences in seed emergence among treatments. There were no significant differences in total yield or in US#1 yield, undersize yield, and cull weight (only US#1 data shown). Disease pressure was low in this field trial. This is a field with no recent history of potato production, in its first year of use as a common scab disease nursery. While common scab tuber incidence was high among all treatments, the average severity of symptoms was low. There were no significant differences in common scab disease incidence and severity.

Treatment and rate ^z	Application Type	Seed Emergence	US#1 Yield (cwt/A)	Incidence (%)	Average Severity
Untreated Control.....		13.3	403.5	80.0	1.03
Blocker 4F 11.0 fl oz.....	In Furrow	9.5	351.4	80.0	0.96
Blocker 4F 5.5 fl oz + Serenade Soil 4.4 fl oz.....	In-Furrow	10.8	363.5	86.3	1.01
Quadris 2.08SC 0.6 fl oz.....	In-Furrow	11.5	350.4	80.0	1.11
Blocker 4F 11.0 fl oz Rejuvenate 6.25SL 0.005 fl oz.....	Seed Treatment	9.3	348.0	67.5	0.83
Rejuvenate 6.25SL 0.005 fl oz.....	Seed Treatment	13.5	400.8	90.0	1.10
Tiger Sul 90CR 114.0 oz.....	In-Furrow	12.5	396.6	86.3	1.03
Regalia 5SC 0.5 fl oz.....	In-Furrow	11.5	355.0	86.3	1.06
Regalia 5SC 4.0 fl oz.....	In-Furrow	14.0	432.1	91.3	1.01
Serenade Soil 8.8 fl oz.....	In-Furrow	12.5	424.6	85.0	1.11
Serenade Soil 4.4 fl oz.....	In-Furrow	12.8	387.2	83.8	0.96

^zTreatment rates applied in-furrow are given per 1000 linear row ft. Seed treatment rates are given per 100 lb seed.