

## Evaluation of in-furrow fungicides and pop-up fertilizer for control of potato pink rot in Wisconsin, 2019.

A trial was established on 5 June at the University of Wisconsin Extension Langlade County Research Area, Antigo to evaluate fungicides for pink rot control. Two-ounce-sized seed pieces were mechanically cut from US#1 ‘Snowden’ tubers and allowed to suberize for 7 days prior to planting. 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, including fungicides and pop-up fertilizer (Miracle-Gro Quick Start 8-24-8 lbs/A) were applied in an 8 inch band within the furrow containing seed pieces on the day of planting using a CO<sub>2</sub> backpack sprayer equipped with a single TeeJet 8002VS flat fan nozzle calibrated to deliver 12 gal/A at a boom pressure of 40 psi. Inoculum for the trial was prepared by culturing an isolate of *Phytophthora erythroseptica* on moistened, roughly-ground rye berries for 2 weeks. For inoculation, 275 g of inoculum was spread in-furrow in each center row directly over the seed pieces after fungicide treatment. After inoculation, furrows were mechanically closed using hilling disks. Foliar fungicide applications were applied using a CO<sub>2</sub> 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. The soil type was Antigo silt loam. Standard grower practices were used for field maintenance, insect management, and prevention of early and late blight as per the production region. Crop emergence was counted 36 days after planting from 24 linear feet of each of the center two rows of each plot (% seed emergence = number of emerged vines /maximum possible emerged vines (48)\*100). Vines were chemically killed with Verdure-X 1.5 pt/A + non-ionic surfactant on 11 and 18 Sep. The center two rows of each plot were harvested, and tubers were graded into marketable (US#1), undersize, and cull categories on 24 Sep. After undersize tubers were graded out and tubers washed, 20 tubers from each plot were chosen randomly and assessed for pink rot incidence and severity. All data were analyzed using ANOVA ( $\alpha=0.05$ ) and Fisher’s LSD at  $\alpha=0.05$  (SAS Version 9.2).

Disease pressure for this trial was very low, with no discernable pink rot present in tubers at the trial conclusion (data not shown). There were no significant differences among treatments for emergence, marketable yield, size Bs, and culls. No phytotoxicity was seen with any treatment.

Treatment and Rate <sup>z</sup>	Application Type <sup>y</sup>	Emergence (%)	Marketable Yield (cwt/A) <sup>x</sup>	Bs Yield (cwt) <sup>w</sup>	Culls Weight (cwt)
Non-treated Control	NA	76.0 <sup>v</sup>	329.5	20.0	8.2
Pop-up Fertilizer (P-u F) 8-24-8	In-Furrow	65.1	351.9	18.2	7.1
Xyler FC 1.2 fl oz	In-Furrow	68.8	316.9	18.9	12.4
Xyler FC 1.2 fl oz + Regalia 2.2 fl oz	In-Furrow	71.9	362.8	18.9	7.3
Xyler FC 1.2 fl oz + P-u F 8-24-8	In-Furrow	65.6	325.1	19.7	9.0
Xyler FC 1.2 fl oz + Regalia 2.2 fl oz + P-u F 8-24-8	In-Furrow	70.3	353.8	64.7	10.7
Elumin 4SC 0.55 fl oz	In-Furrow				
Elumin 4SC 8.0 fl oz/A	Foliar 1X	70.3	352.7	21.4	11.1
Orondis Gold 200 0.96 fl oz	In-Furrow	71.9	378.4	22.2	12.6
Ridomil Gold 4 EC 0.42 fl oz	In-Furrow	75.5	366.9	19.9	9.8
Phostrol 4.32F 2.94 fl oz	In-Furrow				
Phostrol 4.32F 5.0 pt/A	Foliar 2X	75.5	344.0	16.4	9.0

<sup>z</sup>Treatment rates applied in-furrow are given per 1000 row ft. Foliar rates are given per acre.

<sup>y</sup>Foliar fungicide applications occurred on 10 Jul (1X) and 10 Jul + 24 Jul (2X).

<sup>x</sup>Marketable yield refers to weight of Size A potato tubers of a size range  $\geq 2.5$  in diameter measured in hundredweight or 100 lb per acre or cwt/A.

<sup>w</sup>Size B potato tubers are of a size range between 1.5 and 2.25 inch in diameter

<sup>v</sup>No significant differences were determined using Fisher’s LSD at  $\alpha=0.05$  (SAS Version 9.2).