

Evaluation of fungicides for control of potato pink rot in storage – Hancock, 2012-2013.

A trial was established 15 Dec 2012 at the Hancock Agricultural Research Station-Storage Research Facility in Hancock, WI to evaluate fungicide efficacy for control of potato tuber pink rot in storage. Forty asymptomatic tubers grown for storage research at the Hancock Research Station were used in each of 4 replicates. Replications were completely randomized within the storage area and maintained at 55±2°F and relative humidity of 97%. To simulate rough harvest conditions which result in wounding and promote disease, tubers were subjected to 3 minutes in a modified cement mixer. Inoculation immediately followed simulated wounding. *Phytophthora erythroseptica* inoculum was incubated on clarified V8 juice agar for 2 weeks. A slurry was prepared with 100 culture plates of agar and pathogen (5.9-in-diameter plates) blended in 0.53 gal of water and diluted to a total volume of 5 gal. Tubers were dipped into the 5 gal inoculum slurry on 15 Dec 2012 and allowed to dry prior to fungicide treatment. Fungicide treatments were applied to tubers in a carrier volume of 2.37 fl oz of water using a 1gal handheld pump sprayer. Coverage of all tuber sides was ensured by rotating tubers during application. Ozone treatment (10 ppm) was applied in storage through the humidification system of select bins for 8 hr/day for the duration of the trial. Disease evaluations took place on 14 Jan 2013 (30 days post-inoculation, DPI) and 13 Feb 2013 (60 DPI). At each assessment, 10 tubers were removed from the storage area and destructively sampled by cutting the tuber in half and allowing 30 minutes to pass for pink coloration to form. Pink rot incidence and % symptomatic surface area (presented as % severity) were recorded for each assessment.

At 30 DPI, all treatments, with the exception of Ozone 10 ppm, significantly reduced pink rot incidence and % severity when compared to the untreated inoculated control. By 60 DPI, several fungicide treatments began to lose control of pink rot, resulting in greater % incidence, including Phostrol, A12705, and A8574. Percent pink rot severity and incidence at 60 DPI was significantly greater with Ozone when compared to all other treatments. Ozone suppressed disease when compared to the inoculated control. Of the three components of Stadium, A9859 provided greatest control of pink rot, followed by A8574 and A12705, in order of descending control.

Treatment and rate/ton	30 DPI		60 DPI	
	Incidence (%)	Severity (%)	Incidence (%)	Severity (%)
Untreated, non-inoculated control.....	0.0a ^z	0.0a	0.0a	0.0a
Untreated, inoculated control.....	45.0c	40.0c	52.5d	52.5c
Ozone 10 ppm.....	22.5b	22.5b	25.0c	25.0b
Phostrol 53.6SC 6.4 fl oz.....	0.0a	0.0a	12.5b	1.5a
Ozone 10 ppm + Phostrol 53.6SC 6.4 fl oz...	0.0a	0.0a	0.0a	0.0a
Stadium 34.78SC 1.0 fl oz.....	5.0a	5.0a	0.0a	0.0a
A9859 230SC 0.6 fl oz.....	5.0a	5.0a	0.0a	0.0a
A12705 250SC 0.6 fl oz.....	5.0a	3.8a	10.0ab	10.0a
A8574 360FS 0.3 fl oz.....	2.5a	2.5a	7.5ab	7.5a

^zColumn numbers followed by the same letter are not significantly different at $P=0.05$ as determined by Fisher’s Least Significant Difference test.