

**Evaluation of fungicides for control of late blight in potato in storage, 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 late blight in storage. Forty five asymptomatic tubers grown for storage research at the Hancock Research Station were used in each of 4 replicates. Replications were randomized within the storage area and maintained at 55±2°F, relative humidity of 97%, and appropriate airflow for proper storage of potato tubers. To simulate rough harvest conditions which result in wounding and promote disease, tubers were subjected to 3 min. in a modified cement mixer. Inoculation immediately followed simulated wounding. *Phytophthora infestans* inoculum was grown on leaves of late-blight-susceptible tomato cultivars, raised in a disease-free growth chamber. Tubers were dip-inoculated on 15 Dec 2012 in a suspension of 5000 sporangia per ml of water. After inoculation, tubers were allowed to dry prior to fungicide treatment. Fungicides were applied in a carrier volume of 2.37 fl oz using a 1 gal handheld pump sprayer. 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. Ten tubers were randomly selected and evaluated for the incidence and severity of late blight infection from each replicate at 60 days post-inoculation (DPI), or 15 Feb. Three disease evaluations were made: 1) incidence and 2) severity (% tissue symptomatic) of late blight symptoms from external surface of intact tubers, and 3) severity (% tissue symptomatic) of late blight on cut surface of tubers sliced in half.

All treatments, with the exception of Ozone 10 ppm, significantly reduced incidence of late blight infection compared to the untreated, inoculated control. All treatments significantly reduced late blight severity (both outer intact and internal cut surfaces) when compared to the untreated, inoculated control. Ozone + Phostrol, Stadium, and A12705 (the azoxystrobin component of Stadium) were the most effective treatments, with no significant difference from the untreated, non-inoculated control. While the Phostrol (alone) treatment was not statistically as effective as Ozone + Phostrol, Stadium, or A12705 in reducing % late blight incidence, tuber severity (internal and outside) was significantly reduced compared to the untreated, inoculated control.

Treatment, rate/ton	Incidence (%)	Disease severity of tubers (%)	
		Outer intact surface	Internal cut surface
Untreated, non-inoculated control.....	0.0a <sup>z</sup>	0.0a	0.0a
Untreated, inoculated control.....	100.0d	80.5e	49.6e
Ozone 10 ppm.....	87.5d	48.7d	30.8d
Phostrol 53.6SC 6.4 fl oz.....	25.0b	4.8a	3.0a
Ozone 10 ppm + Phostrol 53.6SC 6.4 fl oz.....	0.0a	0.0a	0.0a
Stadium 34.78SC 1.0 fl oz.....	0.0a	0.0a	0.0a
A9859 230SC 0.6 fl oz.....	35.0b	14.0b	10.0b
A12705 250SC 0.6 fl oz.....	5.0a	0.6a	0.6a
A8574 360FS 0.3 fl oz.....	62.5c	27.3c	17.6c

<sup>z</sup>Column numbers followed by the same letter are not significantly different at P=0.05 as determined by Fisher's Least Significant Difference test.