

POTATO (*Solanum tuberosum* 'Lamoka')
Late Blight; *Phytophthora infestans*

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Evaluation of foliar fungicides to manage late blight of potato in Michigan, 2022

Commercially available and experimental fungicides were tested to compare their efficacy in managing potato late blight. A field trial was established at the Michigan State University Plant Pathology Farm in East Lansing, MI. A randomized complete block design, with four replicates, was used. US#1 'Lamoka' potatoes were cut into 2-oz seed pieces and left to suberize before planting. The trial was hand planted 11 Jul. Plots were four rows wide (34-in row spacing) by 20 ft long, and seeded at 1.2 seed/row-ft. All insect, weed, and fertility management was consistent with standard approaches for commercial growers in the region. Foliar fungicide programs were initiated on 9 Sep with follow-up applications made weekly until 3 Oct. A CO₂ powered backpack sprayer, equipped with two TJ 8004XR nozzle, was used to apply fungicides at 20 gal/A (38 PSI). The trial was inoculated 12 Sep after sunset. *P. infestans* inoculum (8×10^3 sporangia/mL) was applied over plots at 20 gal/A using the previously mentioned equipment. After inoculating the trial, a misting system was used to maintain leaf wetness and facilitate disease development. Stand counts were collected at emergence. Foliar disease incidence (DI) and disease severity (DS) ratings (0-100%) were collected regularly for each plot from 26 Aug to 3 Oct. The center two rows of plots were harvested on 9 Nov and graded 11 Nov. The final late blight DI and DS as well as estimated yield and marketable yield (cwt/A) were compared among treatments. A generalized linear mixed model procedure was used to conduct the ANOVA and mean separations ($\alpha=0.05$).

Differences were observed among the DI ($P < 0.0001$) and DS ($P < 0.0001$) values of programs. All treated programs had significantly lower DI and DS values than the non-treated control but did not differ from each other. Significant differences were observed among total yield ($P < 0.01$) and marketable yield ($P < 0.01$) values.

No.	Product, Rate ^z , Timing ^y	Late Blight Incidence (%)		Late Blight Severity (%)		Total Yield (CWT/A)		Marketable Yield (CWT/A)	
		Oct 3 ^x		Oct 3					
1	Non-treated control	42.5	a	33.8	a	252	a	224	a
2	Bravo Weather Stik (1.5 PT/A) ABCDE	0.0	b	0.0	b	246	ab	224	a
3	Exp ^w (13.7 FL OZ/A) ABD; Reason (5.5 FL OZ/A) AB; Bravo Weather Stik (1.5 PT/A) CDE	0.0	b	0.0	b	184	c	161	b
4	Orondis Ultra (8 FL OZ/A) ABD; Bravo Weather Stik (1.5 PT/A) CE	0.0	b	0.0	b	210	bc	192	ab

^z All rates are listed as a measure of product per acre, and all foliar applications contained MasterLock at a rate of 0.25 % v/v.

^y Application timings: A=Sep 9, B=Sep 14, C=Sep 20, D=Sep 27, E=Oct 3.

^x Column values followed by the same letter are not significantly different based on Fisher's Protected LSD ($\alpha=0.05$).

^w Exp=Experimental Compound.