POTATO (*Solanum tuberosum* L.'Russet Norkotah')	W. W. Kirk, R. L Schafer and D. Berry
Brown spot; *Alternaria alternata*	Department of Plant Pathology Michigan State University East Lansing, MI 48824

Evaluation of fungicide programs for control of brown spot, 2003.

Potatoes [cut seed, treated with Maxim MZ 0.5D (0.5 lb/cwt), unless stated] were planted at the Michigan State University Muck Soils Experimental Station, Bath, MI on 5 Jun into two-row by 25-ft plots (34-in row spacing), separated by a five-foot unplanted row and replicated four times in a randomized complete block design. Plots were irrigated as needed with sprinklers and were hilled immediately before sprays began. All fungicides in this trial were applied on a 7-day interval from 25 Jun to 20 Aug (9 applications) with an ATV rear-mounted R&D spray boom delivering 25 gal/A (80 p.s.i.) and using three XR11003VS nozzles per row. Weeds were controlled by hilling and with Dual 8E (2 pt/A on 20 Jun), Basagran (2 pt/A on 20 Jun and 15 Jul) and Poast (1.5 pt/A on 28 Jul). Insects were controlled with Admire 2F (20 fl oz/A at planting on 15 Jun), Sevin 80S (1.25 lb/A on 1 and 28 Jul), Thiodan 3EC (2.33 pt/A on 1 and 21 Aug) and Pounce 3.2EC (8 oz/A on 28 Jul). Plots were rated visually for percentage foliar area affected by brown spot on 13, 21, 28 Aug and 4 Sep [15 days after final application (DAFA) when there was 30% foliar infection in the untreated plots. Vines were killed with Reglone 2EC (1 pt/A on 5 Sep). Plots (2 x 25-ft row) were harvested on 5 Oct and individual treatments were weighed and graded. Maximum and minimum air temperature (^{o}F) were 91.7 and 60.9 (Jun), 89.8 and 69.4 (Jul), 93.8 and 64.8 (Aug) and 85.5 and 61.7 (Sep). Maximum and minimum soil temperature (^{o}F) were 82.3 and 70.1 (Jun), 79.9 and 73.3 (Jul), 82.7 and 75.4 (Aug) and 77.4 and 68.4 (Sep). Precipitation was 0.8" (Jun), 0.37" (Jul), 0.56" (Aug) and 0.98" (Sep). Plots were irrigated to supplement precipitation to about 1"/A/4 day period with overhead sprinkle irrigation.

Brown spot developed slowly during Aug and untreated controls reached 30% foliar infection by 4 Sep. Brown spot first appeared on 13 Aug and fungicide programs 2, 3, 4, 9, 10 and 11 reduced brown spot significantly compared to the untreated control. Other programs were not significantly different from the untreated control. By 21 Aug, all fungicide programs except treatment 8 had significantly less foliar brown spot than the untreated control. Treatment 8 was not significantly different from any other treatment. On 28 Aug, 8 days after the final fungicide application (DAFA), all fungicide programs except treatment 8 had significantly less foliar brown spot than the untreated control. Programs with less than 4% foliar brown spot (2, 3, 4, 9, 10 and 11) had significantly less brown spot than program 8 (11.3% foliar brown spot). At the final evaluation on 4 Sep (15 DAFA), all programs were significantly different from the untreated control. Programs 2, 3, 4, 9 and 10 had significantly less foliar brown spot than treatment 8 but were not significantly different from any other program. No treatments had significantly different yield from the untreated control but treatment 3 had significantly greater US1 yield than treatment 1. No programs had significantly greater total yield compared to the untreated control. Phytotoxicity was not noted in any of the treatments.

		Foliar Brown Spot (%)[a]								Yield (cwt/A)			
		13 Aug		21 Aug		28 Aug 8 DAFA[b]		4 Sep 15 DAFA		US1		Total	
Treatment and rate/acre													
1	Tanos 50WDG 0.25 lb + Manzate 200DF 1.5 lb (A,C,E,F[c]) ; Manzate 200DF 2.0 lb (B,D,G,H).....	0.4	ab[d]	1.0	b	4.0	bc	6.8	bc	258	b	319	c
2	Tanos 50WDG 0.25 lb + Manzate 200DF 1.5 lb (A,C,E,F); Bravo WS 6SC 1.5 pt (B.D,F,H).....	0.1	b	0.8	b	2.8	c	6.0	c	283	ab	354	abc
3	Tanos 50WDG 0.38 lb + Manzate 200DF 1.5 lb (A,C,E,F); Manzate 200DF 2.0 lb (B,D,G,H).....	0.0	b	0.3	b	1.8	c	4.8	c	367	a	424	ab
4	Tanos 50WDG 0.38 lb + Manzate 200DF 1.5 lb (A,C,E,F); Bravo WS 6SC 1.5 pt (B.D,F,H).....	0.0	b	0.5	b	3.0	c	5.3	c	321	ab	392	abc
5	Tanos 50WDG 0.5 lb + Manzate 200DF 1.5 lb (A,C,E,F); Manzate 200DF 2.0 lb (B,D,G,H).....	0.3	ab	1.0	b	4.0	bc	9.5	bc	329	ab	410	ab
6	KQ 667 68.75WDG 1.5 lb (A,C,E,F); Bravo WS 6SC 1.5 pt (B.D,F,H).....	0.5	ab	2.0	b	4.3	bc	8.8	bc	334	ab	391	abc
7	Quadris 2.08SC 0.4 pt (A,C,E,F); Bravo WS SC 1.5 pt (B.D,F,H).....	0.3	ab	1.5	b	4.5	bc	8.8	bc	296	ab	352	abc
8	Bravo WS 6SC 1.5 pt (A,B,C,D,E,F,G,H).....	0.8	ab	3.5	ab	11.3	ab	16.8	b	287	ab	345	bc
9	**Headsup 100DF 0.0025 lb(ST).....**	**0.0**	**b**	**0.5**	**b**	**2.5**	**c**	**5.3**	**c**	**359**	**a**	**439**	**a**
10	Headsup 100DF 0.0025 lb (ST) Headsup 100DF 0.21 lb.....	0.1	b	0.3	b	1.9	c	6.3	c	327	ab	398	abc
11	Headsup 100DF 0.21 lb.....	0.1	b	0.8	b	3.0	c	7.5	bc	330	ab	417	ab
12	Untreated.....	1.3	a	7.0	a	16.3	a	30.0	a	298	ab	369	abc

[a] Percent foliar brown spot (rolling average through each plot, mean of 8 evaluations taken every 3 ft).
[b] Days after final application of fungicide.
[c] Application dates: A= 25 Jun; B= 2 Jul; C= 9 Jul; D= 16 Jul; E= 23 Jul; F= 30 Jul; G= 6 Aug; H= 13 Aug; I= 20Aug.
[d] Values followed by the same letter are not significantly different at P = 0.05 (Tukey Multiple Comparison).