

Evaluation of foliar fungicides to manage Cercospora leaf spot of sugar beet in Michigan, 2024

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Location: Frankenmuth (SVREC)	Treatment Timings: 14-day interval starting at 35 DSV
Planting Dates: April 24, 2024	Pesticides: see table
Soil Type: Loam	O.M.: 5.08 pH: 7.5
Replicates: 4	Variety: HIL-2332NT

Summary: Significant CLS pressure was observed uniformly throughout this study; all fungicide programs had significantly lower AUDPCs than the non-treated control ($P < 0.0001$). AUDPCs for fungicide programs ranged between 175.0 and 357.2, while the control program had an AUDPC of 393.4. Significant differences were observed in estimated yield values ($P < 0.01$). Programs 3-6, 8, and 10-12 had greater yields (17.9-20.4 t/A) than the control (14.5 t/A). Programs 2-6, 8, and 10-12 had significantly greater sugar content ($P < 0.0001$) than the control, while programs 2-6, 8, 10, and 12 had greater RWST ($P < 0.0001$) than the control.

Table 1. Area under the disease progress curve (AUDPC) and yield parameters from the tested fungicide programs.

No.	Treatment ^a (Rate ^b) and Timing ^c	AUDPC ^{d, e}	Yield (t/A)	Sugar (%)	RWST ^f
1	Non-treated control	393.4 a	14.5 cd	13.6 d	227.6 ef
2	Dithane F45 (1.6 qt) ABCDE + Inspire XT (7 fl oz) BD + Super Tin (8 fl oz) CE + Badge (1.5 pt) F	218.1 e	17.7 a-c	15.0 b	258.5 c
3	Dithane F45 (1.6 qt) ABDF + Proline (5.7 fl oz) B + Agri Tin (8 fl oz) CE + Inspire XT (7 fl oz) D + Domark (6.9 fl oz) F	175.0 f	18.0 ab	15.6 a	271.6 ab
4	Dithane F45 (1.6 qt) AB + Proline (5.7 fl oz) B + Agri Tin (8 fl oz) CE + Inspire XT (7 fl oz) D + Domark (6.9 fl oz) F	186.1 f	19.0 a	15.7 a	279.6 ab
5	Dithane F45 (1.6 qt) AB + Proline (5.7 fl oz) B + Agri Tin (8 fl oz) CE + EXP 1 (7 fl oz) DF	200.3 ef	19.2 a	15.3 ab	270.0 a-c
6	Dithane F45 (1.6 qt) AB + EXP 2 (30 fl oz) ABCDEF + Proline (5.7 fl oz) B + Agri Tin (8 fl oz) CE + EXP 1 (7 fl oz) DF	180.9 f	20.4 a	15.3 ab	264.7 bc
7	EXP 2 (30 fl oz) ABCDEF	357.2 b	13.4 d	13.4 d	221.4 f
8	Dithane F45 (1.6 qt) ABCDE + EXP 3 (20.5 fl oz) BD + Super Tin (8 fl oz) CE + Badge (1.5 pt) F	200.0 ef	20.1 a	15.4 ab	264.9 bc
9	EXP 4 (41 fl oz) ABCDE + Kocide 3000 (1.5 lb) F	352.4 b	15.5 b-d	13.7 d	229.7 ef
10	Koverall (1.5 lb) ABCDE + Kocide 3000 (1.5 lb) F	248.8 d	17.9 ab	14.3 c	243.8 d
11	EXP 4 (41 fl oz) ABCDE + EXP 5 (5.7 fl oz) ACE + Agri Tin (8 fl oz) BD + Kocide 3000 (1.5 lb) F	294.3 c	18.3 ab	14.2 c	239.1 de
12	Koverall (1.5 lb) ABCDE + EXP 5 (5.7 fl oz) ACE + Agri Tin (8 fl oz) BD + Kocide 3000 (1.5 lb) F	197.8 ef	18.5 ab	15.1 b	264.6 bc

^a EXP=experimental product.

^b All rates, unless otherwise specified, are listed as a measure of product per acre. MasterLock was added to all tank mixes at a rate of 0.25 % v/v.

^c Application letters code for the following dates: A=27 Jun, B=9 Jul, C=23 Jul, D=3 Aug, E=13 Aug, and F=23 Aug.

^d Area under the disease progress curve was calculated using disease severity scores (0-10 scale) collected 1 Jul, 18 Jul, 28 Jul, 12 Aug, and 29 Aug,

^e Column values followed by the same letter were not significantly different based on Fisher's Protected LSD ($\alpha=0.05$). If no letter, then means were not significantly different.

^f Pounds of recoverable white sugar per ton of beets.