

CHERRY (SOUR) (*Prunus cerasus* ‘Montmorency’)  
 Leaf spot; *Blumeriella jaapii*  
 Powdery Mildew; *Podosphaera clandestina*

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## 2020 MSU Cherry Leaf Spot and Powdery Mildew Trial

Fungicide sprays were applied to a block of 6-yr-old Montmorency tart cherry trees at the Northwest Michigan Horticultural Research Center near Traverse City, MI. This experiment was designed to test the efficacy of new fungicides and combinations of existing fungicides for the control of cherry leaf spot and powdery mildew in Michigan orchards. Sprays were applied with a handgun to run-off (equivalent to 300 gal/A) at 300 to 350 psi. Treatments were arranged in a randomized complete block using four replications of single-tree plots. Fungicide spray dates and respective growth stages were as follows: A = 29 May (petal fall); B = 8 Jun (shuck split); C = 17 Jun (1<sup>st</sup> cover); D = 26 Jun (2<sup>nd</sup> cover); E = 6 Jul (3<sup>rd</sup> cover) and F = 16 Jul (4<sup>th</sup> cover). Cherry leaf spot ratings were conducted on 15 Jul and 27 Aug and a powdery mildew rating was conducted on 15 Jul by examining all leaves on 20 shoots from each single-tree plot. Data for the control treatment for the second rating was not available for this trial. Data were analyzed using the analysis of variance and LSD mean comparison function of ARM (version 2020.0; Gylling Data Management Inc., Brookings, SD). Percentage data were subjected to an arcsine square root transformation before analyses. Phytotoxicity was not observed on foliage or fruit.

Treatment and product per acre	Timing	% Infection		% Defoliation		% Mildew
		15 Jul	27 Aug	15 Jul	27 Aug	15 Jul
4–Bravo Weather-Stik 4 pt Cevya 5 fl oz + LI-700 16 fl oz	AB CDEF	46.0 b-e	100.0 a	31.6 bc	98.6 a	26.2 b
5–Bravo Weather-Stik 4 pt Rally 40W 6 oz + LI-700 16 fl oz	AB CDEF	61.2 ab	98.3 ab	44.0 ab	92.0 ab	28.1 b
6–Bravo Weather-Stik 4 pt Cevya 5 fl oz + LI-700 16 fl oz Merivon 5.5 fl oz + Captan 80WDG 2.5 lb + LI-700 16 fl oz	AB CE DF	57.0 abc	97.2 ab	46.4 ab	93.3 ab	25.4 bc
7–Bravo Weather-Stik 4 pt Ziram 6 lb	AB CDEF	49.5 bcd	92.5 abc	18.0 cd	92.5 ab	25.0 bcd
8–Bravo Weather-Stik 4 pt Bravo Weather-Stik 4 pt Ziram 6 lb	PC; FB AB CDEF	39.5 de	95.2 abc	14.5 de	84.5 bc	24.7 bcd
9–Bravo Weather-Stik 4 pt Bravo Weather-Stik 4 pt Ziram 6 lb	FB AB CDEF	46.0 b-e	90.6 bcd	18.4 cd	76.5 c	25.5 b
10–Bravo Weather-Stik 4 pt + R-11 0.125% Flint Extra 3.8 fl oz + Captan 80WDG 2.5 lb + R-11 0.125%	AB CDEF	44.9 cde	91.8 bc	22.1 cd	79.6 c	13.8 efg
11–Captan 80WDG 2.5 lb Flint Extra 3.8 fl oz + Captan 80WDG + R-11 0.125%	AB CDEF	35.5 de	89.9 cd	11.2 de	80.3 c	15.7 cde

12–Bravo Weather-Stik 4 pt Nu-Cop XLR 8.4 pt	AB CDEF	41.3 cde	72.0 e	19.0 cd	54.0 d	12.6 e-h
13–Captan 80WDG 2.5 lb	A-F	30.9 e	77.4 de	4.8 e	39.2 d	12.7 e-h
16–Bravo Weather-Stik 4 pt + Talendo 1.2 fl oz + Regulaid 0.125% v/v	A-F	NA	NA	NA	NA	7.2 hij
17–Bravo Weather-Stik 4 pt + Talendo 2.4 fl oz + Regulaid 0.125% v/v	A-F	NA	NA	NA	NA	7.7 f-j
18–Bravo Weather-Stik 4 pt + Talendo 3.42 fl oz + Regulaid 0.125% v/v	A-F	NA	NA	NA	NA	2.9 j
19–Bravo Weather-Stik 4 pt + Talendo 5.13 fl oz + Regulaid 0.125% v/v	A-F	NA	NA	NA	NA	4.5 ij
20–Bravo Weather-Stik 4 pt + Quintec 7 fl oz + Regulaid 0.125% v/v	A-F	NA	NA	NA	NA	7.2 g-j
21–Bravo Weather-Stik 4 pt + Merivon 6.7 fl oz + Regulaid 0.125% v/v	A-F	NA	NA	NA	NA	14.8 ef
24–Bravo Weather-Stik 4 pt + Miravis 1.37 fl oz + Regulaid 0.125% v/v	A-F	NA	NA	NA	NA	15.5 def
25–Bravo Weather-Stik 4 pt + Miravis 2.05 fl oz + Regulaid 0.125% v/v	A-F	NA	NA	NA	NA	14.8 ef
26–Bravo Weather-Stik 4 pt + Miravis 2.74 fl oz + Regulaid 0.125% v/v	A-F	NA	NA	NA	NA	13.0 e-h
27–Bravo Weather-Stik 4 pt + Miravis 4.1 fl oz + Regulaid 0.125% v/v	A-F	NA	NA	NA	NA	10.3 e-i
29–Untreated control		69.1 a	NA	59.1 a	NA	40.6 a

\*Means within a column followed by the same letter are not significantly different according to Fisher's Protected LSD ( $P \leq 0.05$ ).

2020 MSU Cherry Leaf Spot Trial Raw Data						
Treatment	Rep.	% Infection		% Defoliation		% Mildew
		15-Jul	27-Aug	15-Jul	27-Aug	15-Aug
4	1	54.2	100.0	26.6	97.3	23.2
4	2	35.4	100.0	27.2	99.3	19.6
4	3	35.7	100.0	41.2	98.9	34.5
4	4	58.8	100.0	31.4	98.7	27.5
5	1	51.8	93.3	11.9	76.1	25.3
5	2	57.3	100.0	51.5	96.1	39.6
5	3	57.8	100.0	46.3	97.6	18.1
5	4	77.9	100.0	66.3	98.3	29.4
6	1	61.1	88.6	24.7	82.6	14.4
6	2	39.5	100.0	48.3	95.8	25.8
6	3	52.0	100.0	54.5	96.4	29.4
6	4	75.3	100.0	58.0	98.2	32.0
7	1	38.1	85.6	9.8	85.6	30.3
7	2	42.9	84.3	7.0	84.3	12.3
7	3	57.1	100.0	23.6	100.0	32.5
7	4	60.0	100.0	31.6	100.0	24.8
8	1	39.1	100.0	16.9	91.1	26.7
8	2	25.3	80.7	1.6	63.1	26.6
8	3	41.6	100.0	20.4	95.1	24.3
8	4	51.8	100.0	19.0	88.6	21.2
9	1	42.1	83.0	6.0	61.2	24.8
9	2	44.5	97.3	29.4	84.8	37.6
9	3	68.3	100.0	34.7	87.8	19.0
9	4	28.9	82.1	3.5	72.0	20.6
10	1	40.8	74.2	11.0	65.4	8.5
10	2	47.6	96.0	24.6	90.6	20.3
10	3	46.8	97.1	17.3	80.1	13.3
10	4	44.2	100.0	35.6	82.3	13.0
11	1	31.5	92.5	10.6	77.8	17.7
11	2	22.4	88.1	8.4	76.8	19.6
11	3	43.3	80.8	12.1	88.4	18.7

11	4	44.8	98.1	13.6	78.0	6.7
12	1	34.1	61.7	7.9	61.6	7.5
12	2	48.0	74.8	33.6	55.6	16.2
12	3	35.0	65.6	11.5	41.0	13.9
12	4	48.0	85.9	22.9	57.7	12.8
13	1	27.6	59.2	2.5	23.4	14.0
13	2	29.6	75.5	5.8	37.3	13.7
13	3	28.7	79.8	1.5	39.7	10.8
13	4	37.9	95.2	9.2	56.3	12.4
16	1	NA	NA	NA	NA	4.2
16	2	NA	NA	NA	NA	0.6
16	3	NA	NA	NA	NA	13.7
16	4	NA	NA	NA	NA	10.1
17	1	NA	NA	NA	NA	9.9
17	2	NA	NA	NA	NA	3.0
17	3	NA	NA	NA	NA	11.6
17	4	NA	NA	NA	NA	6.4
18	1	NA	NA	NA	NA	6.4
18	2	NA	NA	NA	NA	3.3
18	3	NA	NA	NA	NA	0.4
18	4	NA	NA	NA	NA	1.4
19	1	NA	NA	NA	NA	8.8
19	2	NA	NA	NA	NA	3.3
19	3	NA	NA	NA	NA	3.6
19	4	NA	NA	NA	NA	2.1
20	1	NA	NA	NA	NA	13.9
20	2	NA	NA	NA	NA	8.3
20	3	NA	NA	NA	NA	1.1
20	4	NA	NA	NA	NA	5.6
21	1	NA	NA	NA	NA	15.1
21	2	NA	NA	NA	NA	6.2
21	3	NA	NA	NA	NA	17.6
21	4	NA	NA	NA	NA	20.2
24	1	NA	NA	NA	NA	15.2

24	2	NA	NA	NA	NA	22.1
24	3	NA	NA	NA	NA	16.8
24	4	NA	NA	NA	NA	7.8
25	1	NA	NA	NA	NA	13.2
25	2	NA	NA	NA	NA	21.3
25	3	NA	NA	NA	NA	14.5
25	4	NA	NA	NA	NA	10.1
26	1	NA	NA	NA	NA	14.0
26	2	NA	NA	NA	NA	13.0
26	3	NA	NA	NA	NA	18.1
26	4	NA	NA	NA	NA	6.7
27	1	NA	NA	NA	NA	6.0
27	2	NA	NA	NA	NA	6.6
27	3	NA	NA	NA	NA	17.7
27	4	NA	NA	NA	NA	10.9
29	1	78.0		60.2	NA	26.8
29	2	80.0		61.7	NA	46.7
29	3	41.4		47.8	NA	38.3
29	4	76.8		66.7	NA	50.7

<b>2020 Michigan State University Cherry Leaf Spot and Powdery Mildew Trial Weather Data</b>				
Date	High Temperature °F	Low Temperature °F	Precipitation inches	Application Timing
5/25/2020	83.5	55.9	0.02	
5/26/2020	86.5	63.2	0.33	
5/27/2020	85.5	67.6	0.25	
5/28/2020	74.4	60.1	0.87	
5/29/2020	65	49.9	0.02	A
5/30/2020	55.8	41.4	0	
5/31/2020	61.8	38.1	0	
6/1/2020	71.4	46.2	0.04	
6/2/2020	84.1	62.1	0	
6/3/2020	80.3	58.4	0	
6/4/2020	77.3	53	0	
6/5/2020	72.4	55.3	0.02	
6/6/2020	62.4	49.2	0	
6/7/2020	67.3	42.8	0	
6/8/2020	86.8	53.4	0	B
6/9/2020	87.5	63.3	0.03	
6/10/2020	77	51.6	1.31	
6/11/2020	69.4	46.2	0.11	
6/12/2020	58.1	41.8	0	
6/13/2020	64.8	42.7	0	
6/14/2020	71.3	44.4	0	
6/15/2020	72.8	47.3	0	
6/16/2020	79.4	49.9	0	
6/17/2020	82.5	55.7	0	C
6/18/2020	83.2	59.2	0	
6/19/2020	85.1	60.2	0	
6/20/2020	83.7	63.8	0.12	
6/21/2020	73.6	63.2	0	
6/22/2020	71.7	59.7	0.36	

6/23/2020	63.8	54.3	0.95	
6/24/2020	69.6	54.5	0	
6/25/2020	76.7	54	0	
6/26/2020	83.3	59.4	0	D
6/27/2020	77	63	0	
6/28/2020	80.5	57.2	0	
6/29/2020	87	62.8	0	
6/30/2020	87.7	68.6	0	
7/1/2020	85.7	63.9	0	
7/2/2020	86.5	62.4	0	
7/3/2020	86.1	67	0	
7/4/2020	87.8	66.3	0	
7/5/2020	87.8	65.9	0	
7/6/2020	90.5	66.8	0	E
7/7/2020	85.1	69.5	0	
7/8/2020	87.5	66.5	0	
7/9/2020	87.5	71.5	0	
7/10/2020	75.5	66	0.44	
7/11/2020	78.7	63.3	0	
7/12/2020	72	60.5	0	
7/13/2020	76.7	58.9	0	
7/14/2020	79.4	57.8	0	
7/15/2020	73.4	63.5	0.76	
7/16/2020	79.9	62.5	0.08	F
7/17/2020	81.9	62.4	0	
7/18/2020	87.3	68.2	1.19	
7/19/2020	80.6	65.6	0.7	
7/20/2020	72.1	57.9	0	
7/21/2020	73.3	53.3	0	
7/22/2020	76.9	63.2	0.31	
7/23/2020	78.1	61.5	0	

7/24/2020	81.2	62.7	0
7/25/2020	87.6	65	0
7/26/2020	86.6	72.4	0.12
7/27/2020	78.3	66.5	0
7/28/2020	78.7	64.4	0
7/29/2020	75.3	65.3	0
7/30/2020	76.5	61.3	0
7/31/2020	78.3	59.6	0
8/1/2020	81.8	62.7	0
8/2/2020	76.9	61.4	0
8/3/2020	65.3	58.3	0.15
8/4/2020	69	55.7	0.01
8/5/2020	71.5	52.9	0
8/6/2020	77.4	57.8	0
8/7/2020	81.1	58	0
8/8/2020	72.8	62.9	0.83
8/9/2020	85.6	69.4	0
8/10/2020	84.9	68.4	0
8/11/2020	78.4	61.9	0
8/12/2020	83.8	63.5	0
8/13/2020	83.6	65.2	0
8/14/2020	86.6	64.5	0
8/15/2020	80.5	67.9	0
8/16/2020	77.3	60.6	0
8/17/2020	75.1	60.5	0
8/18/2020	68.5	58	0
8/19/2020	72.2	52.4	0
8/20/2020	80.8	65.6	0.02
8/21/2020	83.3	65.1	0
8/22/2020	85.5	66.2	0.02
8/23/2020	83.4	67.9	0



8/24/2020	81.8	67.8	0
8/25/2020	83.5	63.1	0
8/26/2020	84.5	62.5	2.53
8/27/2020	81.2	65	0
8/28/2020	70.4	62.3	0.05
8/29/2020	70.5	60.2	0
8/30/2020	69.3	56.9	0
8/31/2020	73.6	54.9	0
9/1/2020	72	53.5	0
9/2/2020	73.5	55.9	0.34
9/3/2020	75	59.2	0.1
9/4/2020	69	56.9	0
9/5/2020	68.2	52.8	0
9/6/2020	74.4	52.1	0.01
9/7/2020	72.2	53.6	0
9/8/2020	55.6	49.4	0.02
9/9/2020	52.7	47.6	0.28
9/10/2020	57.5	47.8	0.13
9/11/2020	65.4	43.4	0
9/12/2020	65	53.1	0.59
9/13/2020	65.3	56.4	0.01
9/14/2020	62.3	50.5	0
9/15/2020	74.4	50.8	0
9/16/2020	69.6	51.9	0
9/17/2020	57.5	45.8	0
9/18/2020	55.3	41.4	0
9/19/2020	59.9	37.1	0
9/20/2020	69.1	45.1	0
9/21/2020	70.5	49.2	0
9/22/2020	74.5	56.8	0
9/23/2020	77.4	57.5	0

9/24/2020	71.6	59.6	0	
9/25/2020	78.3	59.2	0	
9/26/2020	74.9	62.4	0.77	
9/27/2020	70.6	56.3	0.03	
9/28/2020	57.1	51.9	0.55	
9/29/2020	56.7	47.2	0.05	
9/30/2020	57.7	48.7	0.5	