

CHERRY (*Prunus avium* 'Bing')
Powdery Mildew; *Podosphaera clandestina*
Leaf Spot; *Blumeriella jaapii*

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Comparison of fungicides for management of cherry diseases, 2018.

Treatments were arranged in a randomized complete block design in a 'Bing' sweet cherry orchard on Mazzard F12-1 rootstock planted in 1995 on 20 x 20 ft spacing and grafted in 1998. Each treatment consisted of 4 single tree replicates. Fungicides were applied using a hydraulic handgun sprayer at 100 psi, such that 4 to 5 gal of a spray suspension were applied per 4 trees (109 to 136 gal water/A). Fungicide treatments were applied on 25 Apr (petal fall), 8 May (shuck split to fruit set), 22 May, 4 Jun and 18 Jun. Omni Supreme oil (1.5 gal/A) was applied to the entire block on 21 Feb, for Aphid management. Assail 70 WP (3 oz/A) was applied on 24 May to manage western cherry fruit fly and aphids. Insecticides were applied using a Rear's air blast speed sprayer. Weedbar 64 (64 fl oz/A) was applied on 5 Mar and Casaron CS (2.25 gal/A) was applied on 16 Mar for weed control. Fertilizer (Urea 46-0-0 at 20 lb/A) was applied by hand on 21 March. Trees were pruned from 5 to 17 Jan. Fungal infection periods were monitored using an Adcon weather station equipped with standard sensors. A total of 8 cherry leaf spot infection periods were detected from bud break through Jun: 1 high infection periods (27 Apr), 2 medium infection periods (5 Apr and 10 Jun) and 5 light infection periods (7, 11 and 14 Apr, 8 May and 8 Jun). Incidence of powdery mildew was evaluated on 3 Jul by examining the last (distal) five (5) fully expanded leaves on each of 20 shoots from around the tree. To compensate for variations in tree vigor only shoots showing high vigor and strong growth were selected for disease evaluation. Powdery mildew on fruit was not assessed. Incidence of cherry leaf spot was evaluated on 5 to 6 Jul by examining all leaves on each of 15 vigorous shoots from around the tree (average of 250 leaves per 15 shoots ranging from 177 to 294 leaves).

Spring weather conditions were considered normal until early May when frequent rainfall tapered off quickly. Cherry leaf spot and powdery mildew were both first observed on 15 May. Highest amount of leaf spot was found on non-treated trees and trees treated with the high rate of Gatten. The amount of cherry leaf spot found on trees treated with Gatten were not significantly different from leaf spot found on non-treated trees. Lowest amount of leaf spot was found on trees treated with Pristine but the amount found on trees treated with GWN-10570 or pyraziflumid was not significantly different. Highest amount of powdery mildew was found on non-treated trees. Due to high variation, the amount of powdery mildew found on trees treated with the low rate of GWN-10570 or the two highest rates of Gatten were not significantly different from powdery mildew found on non-treated trees. Lowest amount of powdery mildew was found on trees treated with pyraziflumid but the amount found on trees treated with Pristine, the two highest rates of GWN-10570 or the lowest rate of Gatten was not significantly different. No phytotoxicity was observed in trees treated with any of the various materials used.

Treatment & Rate/A or /100 gal as indicated below	Time of Application*	Cherry Leaf Spot (% leaves)**	Powdery Mildew (% leaves)**
Non-treated.....	None.....	18.8 a	62.3 a
Pristine at 14.5 oz plus Induce at 16 fl oz/100 gal	All.....	0.1 b	8.8 b
GWN-10570 15% SC at 6.8 fl oz plus Induce at 16 fl oz/100 gal	All.....	0.9 b	19.5 ab
GWN-10570 15% SC at 10.3 fl oz plus Induce at 16 fl oz/100 gal	All.....	0.6 b	9.8 b
GWN-10570 15% SC at 13.7 fl oz plus Induce at 16 fl oz/100 gal	All.....	0.3 b	12.5 b
Pyraziflumid 20 SC at 3.1 fl oz plus Induce at 16 fl oz/100 gal	All.....	0.6 b	4.8 b
Gatten at 6 fl oz	All.....	13.4 ab	17.0 b
Gatten at 6 fl oz plus Induce at 16 fl oz/100 gal	All.....	15.2 ab	7.0 b
Gatten at 8 fl oz plus Induce at 16 fl oz/100 gal	All.....	10.6 ab	26.8 ab
Gatten at 10 fl oz plus Induce at 16 fl oz/100 gal	All.....	19.1 a	17.8 ab

* Fungicide treatments were applied on 25 Apr (petal fall), 8 May (shuck split to fruit set), 22 May, 4 Jun and 18 Jun.

** Means followed by the same letter do not differ significantly based on Fisher's protected LSD ($P=0.05$).