

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

J. W. Pscheidt and John P. Bassinette
Dept. of Botany and Plant Pathology
Oregon State University
Corvallis, OR 97331-2903

Comparison of fungicides for management of cherry powdery mildew and leaf spot, 2012.

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 approximately every 7 or 14 days using a hydraulic handgun sprayer at 110 psi, such that 5 to 6 gal of a spray suspension were applied per 4 trees (136 to 163 gal water/A) depending on the amount of foliage present. Fungicide treatments were applied on 7 May (shuck-split), 15 May, 23 May, 31 May, 6 Jun (pits hard), 13 Jun and 20 Jun. Omni supreme-oil (4 gal/A) was applied on 15 Feb and an application of Pravado 1.6 (8 fl oz/A) was made on 17 May for aphid control. Success (8 fl oz/A) was applied on 15 Jun for Cherry fruit fly control. Insecticides were applied using a Rear's air blast speed sprayer. Diuron (64 oz/A) plus generic glyphosate (64 oz/A formulated product) was applied on 8 Mar and Rely (64 oz/A) plus generic glyphosate (64 oz/A formulated product) was applied on 18 May for weed control. No fertilizer was applied to treated trees in the trial. Fungal infection periods were monitored using an Adcon A730 weather station equipped with standard sensors. A total of 5 cherry leaf spot infection periods were detected from Apr through May: 2 high infection periods (10 Apr and 21 May) and 3 light infection periods (15, 19 and 29 Apr). Incidence of powdery mildew was evaluated on 11 Jul by examining the last (distal) five (5) fully expanded leaves on each of 10 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 also evaluated on 28 Jun by examining all leaves on each of 10 vigorous shoots from around the tree (average of 141 leaves per 10 shoots). The incidence of cherry leaf spot on fruit stems was evaluated on 10 Jul by examining 100 fruit arbitrarily selected from the lower half of each tree.

Spring weather conditions in Western Oregon were considered normal to wet. Symptoms of cherry leaf spot were first observed on 14 May. Symptoms of powdery mildew were first observed and confirmed on 29 May. All treatments had significantly less cherry leaf spot on leaves when compared to nontreated trees except trees treated with Regalia alone. There was no significant difference in cherry leaf spot on leaves among the rest of the fungicide treatments. All treatments had significantly less cherry leaf spot on fruit stems when compared to nontreated trees. Lowest amount of leaf spot on fruit stems was observed on trees treated with the highest rate of TopGuard but it was not significantly different from leaf spot that developed on other fungicide treated trees except those treated with the low rates of Mettle, the low rate of TopGuard, or Regalia alone. All treatments had significantly lower incidence of powdery mildew when compared to nontreated trees. Powdery mildew was not found on trees treated with the high rate of Merivon but it was not significantly different from powdery mildew on trees treated with other fungicide treated trees except those treated with the 7 fl oz rate of TopGuard or Regalia alone. No phytotoxicity or growth regulation activity was observed in trees treated with any of the various materials used.

Treatment and Rate/A	Time of Application*	Cherry Leaf Spot		Powdery Mildew (% leaves)**
		Leaves (%)	Fruit Stems (%)	
Nontreated.....	None	18.7 a	60.0 a	39.0 a
Mettle 125 ME at 6 fl oz.....	A, C, E, G ...	2.7 b	38.8 bc	8.0 cd
Mettle 125 ME at 8 fl oz.....	A, C, E, G ...	2.0 b	27.8 cde	4.0 cd
Mettle 125 ME at 10 fl oz.....	A, C, E, G ...	0.7 b	21.3 def	4.5 cd
TopGuard SC at 3.5 fl oz.....	A, C, E, G ...	2.5 b	31.3 bcd	0.5 d
TopGuard SC at 7 fl oz.....	A, C, E, G ...	0.4 b	21.3 def	10.0 bc
TopGuard SC at 14 fl oz.....	A, C, E, G ...	0.2 b	20.8 def	6.0 cd
TopGuard SC at 28 fl oz.....	A, C, E, G ...	0.0 b	12.8 f	5.5 cd
Luna Sensation 500 SC at 5 fl oz then Quintec at 7 fl oz then Adament at 5 oz then Luna Sensation 500 SC at 5 fl oz ...	A C E G.....	0.2 b	14.0 ef	1.0 d
Merivon 500 SC at 4 fl oz.....	A, C, E, G ...	0.4 b	15.5 ef	0.5 d
Merivon 500 SC at 5.5 fl oz.....	A, C, E, G ...	1.3 b	13.0 ef	0.0 d
Pristine 38 WDG at 14.5 oz then Regalia 5% at 64 fl oz then Quintec at 7 fl oz then Regalia 5% at 64 fl oz then Pristine 38 WDG at 14.5 oz	A C D F G.....	1.0 b	20.8 def	5.0 cd
Pristine 38 WDG at 14.5 oz plus Regalia 5% at 32 fl oz then	A, C, E, G ...	1.7 b	22.5 def	7.0 cd
Regalia 5% at 64 fl oz	All.....	16.3 a	43.3 b	17.5 b
Regalia 20% at 16 fl oz	All.....	14.3 a	31.0 bcd	17.0 b

* Fungicide treatments were applied on A = 7 May (shuck-split), B = 15 May, C = 23 May, D = 31 May, E= 6 Jun (pits hard), F = 13 Jun and G = 20 Jun. In general any application of Regalia was followed in 7 days with another fungicide application. All other fungicide applications were followed in two weeks with another fungicide application.

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