CHERRY (*Prunus avium* 'Royal Anne')
Brown Rot Blossom Blight; *Monilinia laxa*
Brown Rot Fruit rot; *Monilinia fruticola*
Cherry Leaf Spot; *Blumeriella jaapii*

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Comparison of fungicides for control of cherry brown rot and leaf spot, 2005.

Treatments were arranged in a randomized complete block design in a 'Royal Anne' sweet cherry orchard on Mazzard F 12-1 rootstock planted in 1964 on 20 x 40 ft spacing and grafted in 1967. Each treatment consisted of 5 single tree replicates. Fungicides were applied using a hydraulic handgun sprayer at 150 psi and at a rate of 87 to 163 gal water/A. Approximately 8 to 15 gal of a spray suspension were applied per 5 trees depending on amount of foliage present. Fungicide treatments were applied on 17 Mar (popcorn), 25 Mar (full bloom), 9 Apr (petal fall), 22 Apr (shuck split), 7 May (1st cover) and 20 May (2^{nd} cover). Treatment protocols that included Pristine had an additional application on 3 Jun (14 days pre-harvest). Fungal infection periods were monitored using an Adcon A730 weather station equipped with standard sensors. According to a brown rot blossom blight risk model there were 2 infection risk periods detected during bloom on 25 Mar (full bloom) and 7 Apr (petal fall). A total of 8 cherry leaf spot infection periods were detected from Mar through May: 3 high infection periods (25 Mar, 23 Apr, and 8 May); 1 moderate infection period (18 Mar); and 4 light infection periods (1, 3, 5 and 17 May). Another possible infection period may have occurred on 23 Mar. Roundup ULTRAMAX (2 qt/A) plus Surflan AS (2 qt/A) were applied on 27 Jan for weed control. BirdShield (0.5 gal/A) was applied on 27 May and Rejexit (4 gal/A) was applied on 8 Jun as a bird repellant. Additionally, random electronic bird distress calls, pistol-launched pyrotechnics, scare crows and forcefully propelled metallic pellets were used throughout ripening to deter bird pests. Incidence of brown rot blossom blight was evaluated on 14 Apr by examining 500 blossoms arbitrarily selected from the lower portion of each tree. Fruit was evaluated for brown rot fruit rot 17 Jun by examining 100 arbitrarily selected fruit per tree. Then 50 healthy appearing fruit were harvested from each tree and placed side to side in a plastic gutter to evaluate fruit width. Cherry leaf spot was evaluated on 13 Jun by examining all the leaves (145 to 235) on 20 shoots from the lower half of each tree for symptoms of the disease.

Spring weather conditions in Western Oregon were considered wet especially when a "pineapple express" weather system brought warm wet weather from 25 to 27 Mar. Frequent rainfall from bloom through harvest resulted in high disease pressure. Brown rot was first observed on 1 Apr while cherry leaf spot was observed starting in mid Apr. All fungicide treated trees had significantly less brown rot blossom blight than nontreated trees except for one set of trees treated with only Rally during bloom. There were no significant differences in brown rot blossom blight among the various fungicide treated trees. All fungicide treated trees had significantly less brown rot fruit rot than nontreated trees. Lowest incidence of fruit rot was on trees treated with Pristine 14 days before harvest, however, trees treated with Procure alternated with Abound or the low rate of V-10116 were not significantly different. There were no significant differences among any trees, fungicide treated or not, with respect to fruit size. All fungicide treated trees had significantly fewer leaves with cherry leaf spot than nontreated trees. Lowest number of leaves with cherry leaf spot occurred on trees treated with Pristine alternated with Rally, however, trees treated with V-10116 were not significantly different. Low efficacy of Rally against cherry leaf spot may have been due to the low rate of material used. There were no significant differences in disease measures among the two rates of V-10116. No phytotoxicity was observed on any fungicide treated trees.

Treatment & Rate/100 gal***	Time of Application*	Brown Rot Blossom **Blight (%)		Brown Rot Fruit (%)		Fruit Size (cm)	Cherry Leaf Spot (%)	
Nontreated ……	None	14.2	a	19.4	a	2.34	83.6	a
Procure 480 SC at 5.3 fl oz	A, B, C, D ..	0.7	b	11.9	b	2.40	50.5	b
Procure 480 SC at 5.3 fl oz alternate	A, C, G							
Abound 4.1 fl oz	B, D….....	1.5	b	2.2	e	2.46	26.9	cd
V-10116 at 0.58 oz plus								
Regulaid at 8 oz……....……	A, B, C, D..	0.9	b	4.0	de	2.44	13.4	de
V-10116 at 0.83 oz plus								
Regulaid at 8 oz……..……..	A, B, C, D..	0.3	b	7.2	cd	2.46	20.9	de
Pristine 38 at 4.83 oz plus								
Sylgard 309 at 4 fl oz alternate	A ,C, E							
Rally 40 WP at 1.67 oz then	B, D, F							
Pristine at 4.83 oz.....	G….....	0.9	b	0.2	e	2.40	11.3	e
Rally 40 WP at 1.67 oz then	A, B, C, D							
Pristine at 4.83 oz	G…….	6.6	ab	1.3	e	2.43	41.9	bc
Rally 40 WP at 1.67 oz	A, B, C, D..	1.6	b	10.2	bc	2.43	38.7	bc

*Treatments were applied on A = 17 Mar (popcorn), B = 25 Mar (full bloom), C = 9 Apr (petal fall), D = 22 Apr (shuck split), E = 7 May (1st cover), F = 20 May (2nd cover), and G = 3 Jun (14 days pre-harvest).

**Means followed by the same letter do not differ significantly based on Fisher's protected LSD (P=0.05). Means without letters were not significantly different.

*** Original target application rate was to be 300 gal water solution/A for all treatments. Lower per gal rates resulted in lower per A rates than target for all chemical applications. Rates of water used were 87 gal/A (1st two applications), 109 gal/A (Next two applications), and 163 gal/A on all subsequent applications.