

Tree Fruit Diseases

Efficacy of Fungicides to Control Brown Rot and Leaf Spot of Cherry

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Fungicide treatments were arranged in a randomized complete block design in a planting of 32-yr 'Black Republican' sweet cherries on Mazzard F-12-1 rootstock at a 20 x 20 ft spacing. Each treatment was applied to 5 single tree replicates. Fungicides were applied using a hydraulic handgun sprayer at 300 psi at a rate of 400 gal water/acre. Approximately 20 to 25 gal of spray solution was used per 5 trees, depending on growth stage. Fungicide applications were made on 26 Mar (popcorn), 5 Apr (full bloom), 16 Apr (petal fall), 28 Apr (shuck split), and 10 May (1st cover). One treatment, established to evaluate leaf spot forecasting, received only one cover spray on 30 Apr, following a week of high and moderate leaf spot infection periods. A Metos environmental monitoring system was used to determine cherry leaf spot infection periods. Dimethoate EC at 3 pt/acre was applied to all trees on 3 Jun for control of cherry fruit fly. Brown rot blossom blight was evaluated on 12 Apr and 21 Apr by randomly observing 400 blossoms from the lower portion of each tree. Fruit rot was not evaluated as wet weather severely interfered with fruit pollination and set. The incidence of leaf spot was evaluated on 25 May and 15 Jun by examining all leaves (120 to 135 leaves) from 10 vegetative shoots selected at random from the lower portion of each tree.

The weather during bloom and harvest was wet and cool which resulted in high incidence of brown rot blossom blight and poor pollination, resulting in abnormally low fruit production. From popcorn through normal harvest, a total of 20 leaf spot infection periods was detected; 9 high infection periods (30 Mar; 8, 13, 16, 22 and 24 Apr; 24, 26 and 29 May); 5 moderate infection periods (20 and 28 Apr; 7 and 19 May; and 2 Jun); and 6 low infection periods (1, 3, 5 and 21 May; 3 and 4 Jun). All treatments significantly reduced the incidence of blossom blight and leaf spot compared to the nontreated control. There was no significant difference in brown rot or leaf spot control when Captan 50WP was compared with Captan 75WG or the 80WP Solubag. Rovral applied during bloom had the lowest incidence of brown rot blossom blight. Leaf spot incidence was the lowest when Rally was applied at shuck split and at 1st cover. One application of Rally applied after a week of high and moderate leaf spot infection periods reduced the incidence of leaf spot by nearly 50%, compared to the nontreated control.

Table 1.

Treatment and rate/acre	Brown rot blossom blight % infected blossoms*		Leaf spot % infected leaves*	
	12 Apr	21 Apr	25 May	15 Jun
Nontreated	7.5a	19.1a	87.6a	98.3a
Rovral 4F, 2 pt	0.0c	0.1c	29.1c	33.8c
Captan 50WP, 4 lb	2.1bc	7.2b	5.8d	27.1d
Captan 75WG, 2.67 lb	2.2b	7.5b	6.1d	25.9d
Captan Solubag 80WP, 2.5 lb	1.6bc	6.3b	5.5d	26.0d
Captan 50WP 4 lb (Popcorn, full bloom and petal fall) then Rally 40WP, 4.5 oz + Latron B1956, 12 oz (Shuck split and 1 st cover)	2.4b	7.8b	2.1d	9.1e
Rally 40WP 4.5 oz + Latron B1956 12 oz (Shuck split)	6.6a	20.7a	46.2b	57.8b

*Treatment means within a column followed by the same letter do not differ significantly according to Fisher's Protected LSD (P=0.05).