CHERRY (*Prunus avium* 'Corum')
Brown Rot; *Monilinia* spp.
Leaf Spot; *Blumeriella jaapii*

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Comparison of fungicides for management of cherry brown rot, 2016.

Treatments were arranged in a randomized complete block design in a 'Corum' 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 4 single tree replicates. Fungicides were applied using a hydraulic handgun sprayer at 100 psi and at a rate of 109 gal water/A. Approximately 8 gal of a spray suspension were applied per 4 trees. Fungicide treatments were applied on 23 Mar (popcorn), 31 Mar (full bloom), 12 Apr (petal fall), and 30 May (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 3 infection risk periods detected on 20 and 26 Mar and 3 Apr. A total of 4 cherry leaf spot infection periods were detected from bud break through Jun: 2 high infection periods (20 Mar and 14 May), 0 medium infection periods and 2 light infection periods (21 Apr and 2 Jun). Omni Supreme oil (1.5 gal/A) was applied to the entire block on 8 Feb, for Aphid management. Asana XL (5 fl oz/A) was applied on 13 May to manage western cherry fruit fly and aphids. Birdshield (1 gal/A) was applied on 13 May and Rejex-it (2 gal/A) was applied on 24 May as a bird repellant. Additionally, electronic bird distress calls, scare crows and forcefully propelled metallic pellets were used throughout ripening to deter bird pests. Insecticides and bird repellant were applied using a Rear's air blast speed sprayer. Makaze (generic glyphosate at 1 qt/A) was applied on 24 Feb and Forfeit 280 (2 qt/A) was applied on 19 Apr to manage weeds. No fertilizer was applied during the fruiting season. Incidence of brown rot blossom blight was evaluated on 8 Apr by examining 250 blossoms on the east and west side of trees for a total of 500 blossoms arbitrarily selected from the lower portion of each tree. Incidence of cherry leaf spot was evaluated on 17 May by examining all leaves on each of 10 vigorous shoots from around the tree (average of 67 leaves per 10 shoots). On 31 May, 100, arbitrarily selected, healthy appearing fruit were harvested from each tree and placed on wire racks within moist chambers located in Cordley Hall. Cherries were incubated at ambient room temperature for 8 days. The number of cherries with symptoms of brown rot were evaluated and removed each day. Fruit rotting from other causes were also noted and removed from the moist chambers daily.

Spring growing conditions were considered warmer and dryer than normal with several heat spikes including 83^{o}F on 7 Apr, 85^{o}F on 18 Apr, 87^{o}F on 2 May, and 95^{o}F on 4 Jun. Conditions resulted in accelerated tree growth 2 to 3 weeks ahead of average. Brown rot blossom blight was first observed on 26 Mar and brown rot fruit rot was first observed on 16 May. Cherry leaf spot was first observed on 27 Apr. All trees treated with fungicide or biologicals had significantly fewer blossoms with brown rot than on non-treated trees. Lowest brown rot blossom blight was on fungicide-treated trees but the amount found on trees treated with either the low or high rate of GWN 10320 was not significantly different. The incidence of cherry leaf spot was significantly lower on trees treated with fungicide than on all other trees. *Monilinia* sp. and *Rhizopus* sp. were found on rotting fruit after harvest at widely varying levels from each tree. There were no significant differences in fruit rot among the various treatments.

Application note: GWN 10320 SC left a residual ring of material around the inside of the plastic spray tanks and debris on the filters. Nozzles did not clog and pressure was maintained throughout the first three applications. A new, filtered batch was used for the fourth or preharvest application.

Treatment & Rate/A or /100 gal as indicated below	Time of Application*	Brown Rot Blossom Blight (%)**		Cherry Leaf Spot (%)**		Total Fruit Rot (%)**
Non-treated ……	None…….	15.1	a	87.8	a	36.8
Elevate 50 WDG at 1 lb plus Captan 80 at 3 lb alternate Indar 2F at 6 fl oz plus Fontelis at 15 fl oz ……...	A, C B, D …..	0.1	c	0.7	c	32.2
GWN 10320 SC at 20 fl oz plus Nu-Film-P at 16 fl oz/100 gal..	All ……	5.3	bc	86.3	ab	51.5
GWN 10320 SC at 32 fl oz plus Nu-Film-P at 16 fl oz/100 gal..	All……	5.8	b	63.3	b	28.5
GWN 10320 SC at 48 fl oz plus Nu-Film-P at 16 fl oz/100 gal	All…….	5.0	bc	81.5	ab	36.5
Serenade Opti at 20 fl oz plus Nu-Film-P at 16 fl oz/100 gal	All…….	6.5	b	79.8	ab	44.0

* Fungicide treatments were applied on A = 23 Mar (popcorn), B = 31 Mar (full bloom), C = 12 Apr (petal fall), and D = 30 May (pre-harvest).

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