BLUEBERRY (*Vaccinium corymbosum* 'Berkeley')
Mummy berry; *Monilinia vaccinii-corymbosi*

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Evaluation of fungicides for management of mummy berry, 2018.

Fungicide treatments were arranged in a randomized complete block design in a block of 'Berkeley' blueberries planted in 1999 on 5 x 10 ft spacing. Each treatment consisted of 6 single-bush replicates. Fungicide treatments were applied using a hydraulic handgun sprayer at approximately 100 psi at a rate of 96 gal water/A. Approximately 2 gal of a spray suspension were applied per 6 bushes. Treatments were applied on 29 Mar (floral bud break), 10 Apr (vegetative bud break), 24 Apr (30% bloom), and 7 May (petal fall, late bloom). Each fungicide-treated bush was flanked on each side by non-treated bushes. Badge X2 (8 lb/A) was applied on 27 Oct 17 (>50% leaf drop) to prevent bacterial blight. Makaze (generic glyphosate at 2 fl oz/gal) was applied on 19 Apr to manage weeds. Bushes were pruned from 27 Dec 2017 to 3 Jan 2018 by thinning out small, dead and spindly shoots and removing older non-productive stems. Four commercial honey bee hives arrived in a nearby cherry orchard on 12 Apr. Plots were fertilized on 9 May with approximately 100 lb/A (based on in the bush row area) of ammonium sulfate 20-0-0-22. Overhead irrigation was started on 29 May and continued twice per week for 3 hour sets during the growing season. The number of floral clusters and vegetative shoots per bush with symptoms of primary mummy berry was evaluated on 10 May. On 12 Jun, approximately 300 green berries were arbitrarily harvested from each Berkeley bush and placed in a refrigerator. Over the next week 200 berries were arbitrarily selected, cut in half and evaluated for symptoms of russeting and secondary mummy berry (white mycelial mats within the carpels of the berry).

Spring weather conditions were considered normal until early May when frequent rainfall tapered off quickly. Pseudosclerotia (mummies) were at germination/emergence on 12 Mar, at differentiation on 19 and 22 Mar, a few at sporulation on 28 Mar, apothecia were easy to find 2 Apr but no more found on 16 Apr for an approximate 15 day primary infection period. Primary mummy berry symptoms were first observed on both flower clusters and shoots starting 23 Apr. Classic symptoms of secondary mummy berry were first observed on 11 Jun. Non-treated bushes had the most floral and vegetative strikes per bush. The number of floral strikes on bushes treated with LifeGard alone or XF-17002 were not significantly different than the number found on non-treated bushes. Floral strikes were not observed on bushes treated with multiple applications of Proline alone, however, the number of floral strikes on bushes treated with Proline alternated with Luna Tranquility or LifeGard were not significantly different. Vegetative strikes were not observed on any bushes treated with Proline, however, the number of vegetative strikes on bushes treated with Luna Tranquility alone were not significantly different. Bushes treated with LifeGard alone had the most mummy berry, however, the percentage of fruit with mummy berry on bushes treated with XF-17002 were not significantly different. The percentage of fruit with mummy berry on bushes treated with LifeGard alone was significantly higher than on non-treated bushes. The lowest percentage of mummy berry was found on bushes treated with multiple applications of Proline throughout the spring and bloom period, however, the percentage of fruit with mummy berry on bushes treated with any number of Proline applications or Luna Tranquility were not significantly different. Although fruit russeting was low among all treatments, russeting was highest on bushes treated with XF-17001. No phytotoxicity was observed in bushes treated with any of the various materials used.

Treatment & Rate/A or /100 gal as indicated below	Time of Application [x]	Floral strikes per bush [y]	Vegetative strikes per bush [y]	Mummy Berry (% Fruit) [z]	Russet (% Fruit)
Non-treated ……	None…….	33.7 a	5.5 a	25.8 b	0.8 d
Proline 480 SC at 5.7 fl oz ……	All……	0.0 d	0.0 d	0.8 c	0.5 d
Proline 480 SC at 5.7 fl oz …….	C only.....	8.3 bc	0.0 d	6.7 c	3.1 bc
Luna Tranquility at 16 fl oz……	All……	4.2 c	0.8 cd	8.2 c	1.3 cd
Proline 480 SC at 5.7 fl oz Alt Luna Tranquility at 16 fl oz…..	A and C B and D...….	0.3 d	0.0 d	1.9 c	1.8 bcd
LifeGard WG at 4.5 oz/100 gal…	All……	18.3 ab	2.3 bc	39.0 a	0.4 d
LifeGard WG at 4.5 oz/100 gal Alt Proline 480 SC at 5.7 fl oz ……	A and C B and D...….	0.3 d	0.0 d	1.4 c	0.7 d
XF-17001 at 32 fl oz/100 gal…….	All……	15.8 b	1.7 c	25.5 b	3.6 b
XF-17001 at 44.8 fl oz/100 gal….	All……	15.5 b	2.8 b	28.8 b	6.8 a
XF-17002 at 32 fl oz/100 gal…….	All……	19.0 ab	1.3 bc	31.9 ab	0.7 d
XF-17002 at 44.8 fl oz/100 gal….	All……	15.8 ab	1.3 bc	34.1 ab	0.8 d

[x] Treatments were applied on A = 29 Mar (floral bud break), B = 10 Apr (vegetative bud break), C = 24 Apr (30% bloom), D = 7 May (petal fall, late bloom).

[y] Analysis of variance was based on log (x+1) transformation. Means followed by the same letter do not differ significantly based on Fisher's protected LSD (*P=0.05*).

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