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

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Evaluation of materials for management of mummy berry, 2012.

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 436 gal water/A. Approximately 3 gal of a spray suspension were applied per 6 bushes. Treatments were applied on 26 Mar (floral bud break, minor vegetative bud break), 2 Apr, 6 Apr (vegetative bud break), 13 Apr (pink bud), 20 Apr (early bloom), 27 Apr, 2 May, 15 May (late bloom), and 18 May. Each fungicide treated bush was flanked on each side by nontreated bushes. Nu-Cop 50 DF (16 lb/A) was applied on 1 Nov 11 (40% leaf drop) to help prevent bacterial blight. Generic glyphosate (3%) plus Kinetic (4 fl oz/gal) was applied on 8 Mar and 30 May to control weeds. Bushes were pruned 3 to 9 Jan by thinning out small, dead and spindly shoots and removing older non-productive stems. Plots were fertilized on 24 Apr and 21 May with approximately 200 lb/A (based on in the bush row area) of 21-0-0-24. Overhead irrigation was started on 20 Jun and continued 2 times per week during the growing season. The number of floral clusters and vegetative shoots per bush with symptoms of primary mummy berry was evaluated on 9 May. On 26 Jun, approximately 300 berries were harvested arbitrarily from each Berkeley plant and placed in a refrigerator. Over the next few weeks 200 berries were arbitrarily selected, cut in half and evaluated for symptoms of secondary mummy berry (white mycelial mats within the carpels of the berry) and fruit russet.

Spring weather conditions in Western Oregon were considered wet with record rainfall in the last week of March. Apothecia started to emerge and open on 26 Mar and continued until the last one was observed on 16 Apr. Primary mummy berry symptoms were first observed on both flower clusters and shoots starting 23 Apr. The highest number of floral and vegetative mummy berry strikes per bush was on nontreated bushes. All fungicide treated bushes had significantly less primary mummy berry than on nontreated bushes. Flower trusses with primary mummy berry were not found on bushes treated with Regalia every 7 days during pre-bloom followed by Quash just before symptom development. Bushes treated with Regalia alone, Actinovate or Regalia alternated with Abound plus Elevate had significantly more floral strikes than bushes treated with Regalia every 7 days during pre-bloom followed by Quash during bloom. No vegetative shoots with primary mummy berry were found on bushes treated with Indar alone. Bushes treated with Regalia alone, Actinovate, or Regalia alternated with Abound plus Elevate had significantly more vegetative strikes than bushes treated with Indar alone. The highest amount of fruit with secondary mummy berry was on nontreated bushes. All fungicide treated bushes had significantly less secondary mummy berry than on nontreated bushes. Lowest mummy berry fruit rot was found on bushes treated with Proline but the amount found on bushes treated with Indar alone, Quash alternated with Abound plus Elevate, or Regalia every 7 days during pre-bloom followed by Quash during bloom was not significantly different.

Bushes treated with Regalia at 1 gal/A during bloom had subtle necrotic flower spots and some russeted fruit. No phytotoxicity was observed on a set of 6 bushes treated with Fontelis at a high rate of 48 fl oz/A plus Regulaid on 6 Apr, 20 Apr and 4 May.

Treatment & Rate/A	Time of Application*	Floral strikes per bush**	Vegetative strikes per bush**	Mummy Berry (% Fruit)**
Nontreated ……	None…….	22.8 a	19.8 a	57.6 a
Indar 2F at 6 fl oz plus Regulaid at 32 fl oz/100 gal	A, C, E, G, I...	0.5 d	0.0 e	1.9 ef
Proline 480 SC at 6 fl oz ….....	A, C, E, G, I...	0.3 d	0.3 de	0.4 f
Fontelis at 16 fl oz plus Regulaid at 32 fl oz/100 gal	A, C, E, G, I...	2.0 cd	2.7 de	38.3 bc
Fontelis at 24 fl oz plus Regulaid at 32 fl oz/100 gal	A, C, E, G, I...	0.7 d	1.2 de	29.9 cd
Actinovate AG at 12 oz plus Regulaid at 32 fl oz/100 gal	All……..	6.5 c	11.7 b	44.9 b
Quash 50 WDG at 2.5 oz plus Regulaid at 32 fl oz/100 gal ALT… Abound at 15.5 fl oz plus Elevate 50 WDG at 1.5 lb.....	A, E, I C, G……	1.2 cd	0.3 e	8.8 ef
Regalia at 1 gal…….	All……..	6.5 c	8.3 bc	41.1 b
Regalia at 0.5 gal ALT..... Quash 50 WDG at 2.5 oz plus Regulaid at 32 fl oz/100 gal	A, D, G B, E, H……..	0.3 d	0.2 de	10.5 e
Regalia at 0.5 gal ALT..... Abound at 15.5 fl oz plus Elevate 50 WDG at 1.5 lb.....	A, D, G B, E, H……..	17.0 b	12.5 b	46.1 b
Regalia at 0.5 gal Then..... Quash 50 WDG at 2.5 oz plus Regulaid at 32 fl oz/100 gal ALT… Abound at 15.5 fl oz plus Elevate 50 WDG at 1.5 lb.....	A B, F D, H……...	2.5 cd	1.0 de	6.6 ef
Regalia at 1 gal THEN……..... Quash 50 WDG at 2.5 oz plus Regulaid at 32 fl oz/100 gal	A, B, C, D E, G, I…….	0.0 d	0.2 de	0.8 f
Quash 50 WDG at 2.5 oz plus Regulaid at 32 fl oz/100 gal THEN .. Regalia at 1 gal	A, C E, F, G, H, I…	1.2 cd	4.3 cde	28.7 d

[x] Treatments were applied on A = 26 Mar (floral bud break), B = 2 Apr, C = 6 Apr (vegetative bud break), D = 13 Apr (pink bud), E = 20 Apr (early bloom), F = 27 Apr, G = 2 May, H = 15 May (late bloom), and I = 18 May. In general any application of Regalia or Actinovate 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 same letter do not differ significantly based on Fisher's protected LSD (P=0.05).

Note: special thanks to Jade Florence for her help in assessing fruit for symptoms of mummy berry.