BLUEBERRY (*Vaccinium corymbosum* 'Bluetta')
Ripe Rot (Anthracnose); *Colletotrichum* sp.
Mummyberry; *Monilinia vaccinii-corymbosi*

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EFFICACY AND PHYTOTOXICITY OF BAS 516 ON BLUEBERRY, 2002: IR-4 efficacy and performance protocol P8008. A new planting of Bluetta and Berkley blueberries was established in 1999 to test fungicides or other tactics for disease control. Blueberries, from commercial cold storage, with symptoms of ripe rot were used to inoculate the 4 western rows of Bluetta on 20 Aug 01. Young Bluetta plants had a second set of flowers at that time and were irrigated for 2 hours, starting at sunset, before inoculation. Ripe rotted berries were repeatedly dipped into 2 gal water and the resulting spore suspension was sprayed onto plants with a new back pack sprayer at 9pm. During Oct 01, berries that developed from these flowers developed ripe rot within 3 days incubation in a moist chamber. Mummyberry mummies were collected on 30 August 01 and distributed throughout the Berkley block. Fungicide treatments were arranged in a randomized complete block design in a block of 'Bluetta' and 'Berkley' blueberries planted in 1999 on 5 x 10 ft spacing. Each treatment consisted of 6 double bush replicates for a total of 12 bushes per treatment. Fungicide treatments were applied using a pump-style backpack sprayer at a rate of 35 to 70 gal water/A, depending on the amount of foliage present on bushes. Approximately 0.5 to 1.0 gal of a spray suspension was applied per 12 bushes. Treatments were applied on 5 Apr (vegetative bud break), 18 Apr (start of Bluetta bloom), 1 May, 15 May (late Berkley bloom), 30 May, 13 and 27 Jun 02. Treatments of Funginex were not applied past 1 May as they are not registered for use past bloom. Weeds were controlled using Roundup Ultramax (3 qt/A) applied in the row on 2 Jan 02; Casaron 4 G (100 lb/A based on in the row treatment) was applied 31 Jan 02; Scythe (3%) tank mixed with Glyphos xtra (3%) was applied on 3 Jul 02. Bushes were pruned from 28 Feb through 8 Mar 02 by thinning out small and spindly shoots but leaving dead floral trusses. Soil samples taken in Feb 01 indicated the soil pH was between 4.8 and 4.9. Composted fir bark mulch was applied to the entire planting on 9 and 10 May 02. Plots were fertilized with approximately 54 lb/A of a 46-0-0 fertilizer on 10 Apr, 15 May and 14 Jun. Supplemental irrigation was used beginning 16 May and applied 1 or 2 times per week during the growing season. Ridomil 50 W at75.25lb/A was applied 24 Sep 01 in 104 gal water/A to help prevent root rot problems and Kocide was applied on 9 Nov 01 to help prevent bacterial blight. Phytotoxicity due to pesticides was evaluated on 23 May and 25 Jun by rating each bush on a 0 to 10 scale where 0 = healthy plants and 10 = all leaves necrotic. Slightly different characteristics were used to make ratings on each date. On 8 Jul, 50 berries were harvested from each Bluetta plant (100 berries per experimental unit) and placed on wire racks within moist chambers located in Cordley Hall. Each moist chamber contained a random selection of two treatments (200 berries or 100 berries per treatment) separated by a wire mesh. Berries were incubated at room temperature for 8 days. The number of berries with symptoms of ripe rot (small reddish to pinkish liquid drops forming on the surface of the berry) were evaluated and removed each day. Berries rotting from other causes were noted and also removed from the moist chambers daily. Random samples of nontreated Berkley blueberries were collected and incubated for ripe rot symptoms periodically during the ripening season.

Spring and summer weather conditions in Western Oregon were considered dry with below normal rainfall. No apothecia and no primary mummyberry symptoms were observed in either the Berkley or Bluetta blocks. Only 2 berries with mummyberry symptoms were observed in the Bluetta trial on 8 Jul. Only a few Bluetta blueberries with ripe rot symptoms were observed in the field. Berkley blueberries never developed symptoms of ripe rot when incubated in moist chambers. Ripe rot developed rapidly when Bluetta berries were incubated in moist chambers. Only berries from inoculated rows developed significant amounts of ripe rot. Data analysis is based only on 4 replicates that were inoculated. The most berries with ripe rot were harvested from bushes treated with Funginex. The number of berries developing ripe rot was significantly lower not only from bushes treated with BAS 516 but also from nontreated bushes. The number of berries developing ripe rot on bushes treated with BAS 516 were significantly lower than from nontreated bushes. The number of berries developing ripe rot did not differ significantly between bushes treated with either rate of BAS 516. *Botrytis* sp., *Alternaria* sp. and *Rhizopus* sp. were infrequently observed on rotted berries during the incubation in moist chambers. No phytotoxicity was observed on 23 May and only a slight, insignificant amount was detected on 25 Jun.

Treatment & Rate/100 gal	Number of applications[x]	Bluetta Fruit with Ripe Rot (Anthracnose)[y] (%)	Phytotoxicity [y] (1-10 rating scale)[z] 23 May	Phytotoxicity [y] (1-10 rating scale) [z] 25 Jun
Nontreated ……	0	36.8 b	0.0	0.1
Funginex 24 fl oz ……..	3	70.3 a	0.0	0.3
BAS 516 at 1.44 lb ……..….	7	0.3 c	0.0	0.3
BAS 516 at 1.18 lb ……..….	7	0.8 c	0.0	0.3

[x] Treatments were applied on 5 Apr (vegetative bud break), 18 Apr (start of Bluetta bloom), 1 May, 15 May, 30 May, 13 and 27 Jun. Treatments of Funginex were not applied past 1 May.

[y] Means followed by same letter do not differ significantly based on Fisher's protected LSD (P=0.05). Analysis based on only 4 replications. Means without any letters were not significantly different.

[z] 0 to 10 scale where 0 = healthy plants and 10 = all leaves necrotic. Analysis based on 6 replications.