BLUEBERRY (*Vaccinium corymbosum* 'Bluetta')
Ripe Rot (Anthracnose); *Colletotrichum acutatum*
Botrytis Blight; *Botrytis cinerea*
Alternaria Fruit Rot; *Alternaria tenuissima*

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Organic fungicide management of blueberry post-harvest fruit rot, 2019.

Fungicide treatments were arranged in a randomized complete block design in a block of 'Bluetta' 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 109 gal water/A. Approximately 1.5 gal of a spray suspension were applied per 6 bushes. Treatments were applied on 4 Apr (50% pink or prebloom), 14 Apr (10% bloom), 21 Apr (full bloom), 28 Apr (petal fall), 10 May (fruit set), 17 May, 24 May, 31 May, 7 Jun (color change), 14 Jun, 21 Jun (ripe) and 28 Jun (pre-harvest). Each fungicide treated bush was flanked on each side by non-treated bushes. Badge SC (64 fl oz/A) was applied on 5 Nov 18 (>50% leaf drop) to prevent bacterial blight. Bushes were pruned 15 to 18 Jan by thinning out small, dead and spindly shoots and removing older non-productive stems. Makaze (generic glyphosate at 2 fl oz/gal) was applied on 21 Feb to control weeds. Plots were not fertilized. Overhead irrigation was started on 4 Jun and continued twice per week for 2 hour sets during the growing season. Nets were placed over bushes on 14 Jun to reduce bird damage. On 28 Jun, after sprays had dried, 100 healthy appearing, ripe berries were arbitrarily harvested from each bush. Berries were placed within moist chambers located in Cordley Hall. Berries were incubated at room temperature (66 to 76ºF) for 14 days. The number of berries with symptoms of various rots were evaluated and removed each day.

Rainfall for the growing season (Oct 2018 to Sep 2019) was approximately 5 inches below the 115 yr average but temperatures were at the average of 59.2ºF. March precipitation was 3 in below normal while April was 3 in above normal which led to localized flooding from April 9 to 11 in one part of the field. Blueberry growth started later than normal but unusually warm and dry weather at the end of April through mid-May accelerated plant growth. Scattered, minor symptoms of mummy berry (*Monilinia vaccinii-corymbosi*) and ripe rot were observed in the field during harvest. In addition to fungi listed in Table 1 the following fungi were also observed on rotting fruit post harvest at highly variable frequencies: *Rhizopus* sp. Highest ripe rot was observed on fruit from bushes treated with the high rate of Stargus, however, rot from bushes treated with Aviv or the low rate of Stargus was not significantly different. Lowest ripe rot was found on fruit from bushes treated with Serenade but rot from bushes treated with just Nu-Film-P was not significantly different. Fruit rot due to *Botrytis* or *Alternaria* was not significantly different among the various treatments. Highest total rot was observed on fruit from bushes treated with the high rate of Stargus, however, rot from bushes treated with Aviv or the low rate of Stargus was not significantly different. Lowest total rot was found on fruit from bushes treated with Serenade but rot from bushes treated with just Nu-Film-P, the low rate of Stargus or left non-treated was not significantly different. No phytotoxicity was observed on leaves or fruit from fungicide treated bushes. A splotchy appearance of the waxy cutin layer, also known as "bloom", was noted on all fruit treated with Nu-Film-P.

Statistical Note: Ripe rot from non-treated bushes was highly variable ranging from 0 to 75% with an average of 26%. Data were not included in analysis due to this high variability.

Treatment & Rate/A or /100 gal as indicated below	Ripe Rot (Anthracnose)* (%)	Botrytis Blight* (%)	Alternaria* (%)	All Fruit Rots * (%)
Non-treated……		15.5	0.7	43.7 bc
Nu-Film-P only at 16 fl oz/100 gal……	25.2 b	9.7	2.3	39.0 bc
Serenade Opti at 20 oz plus Nu-Film-P at 16 fl oz/100 gal……	12.7 b	11.8	2.0	30.3 c
Aviv at 25 fl oz plus Nu-Film-P at 16 fl oz/100 gal……	52.8 a	10.8	2.0	67.3 ab
Stargus at 2 qt plus Nu-Film-P at 16 fl oz/100 gal……	32.2 ab	16.2	2.3	56.5 abc
Stargus at 4 qt plus Nu-Film-P at 16 fl oz/100 gal……	56.8 a	14.5	0.8	74.2 a

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