

STRAWBERRY (*Fragaria x ananassa* 'Camarosa')
Anthracnose fruit rot; *Colletotrichum acutatum*
Anthracnose crown rot; *Colletotrichum gloeosporioides*

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Evaluation of products for anthracnose fruit rot control in annual strawberry, 2015-2016.

On 8 Oct 2015, bare-root plants from Canada were transplanted into plastic-mulched raised beds fumigated with Telone C-35 (300 lb/A). The beds were 28 in. wide on 4-ft centers and contained two rows of plants spaced 15 in. apart within rows and 12 in. between rows. Transplants were irrigated by overhead sprinklers for 10 days to aid establishment, then irrigated and fertilized through a central drip tape. On 15 Dec, plants were removed from sections of bed to create 14-plant plots in a staggered pattern throughout the experiment. Each plot was 9.3 ft long. Treatments were arranged in a randomized complete block design with four blocks in adjacent beds. Applications were made with a CO₂ backpack sprayer calibrated to deliver 100 gal/A at 60 psi through two TeeJet disc-core hollow cone nozzles spaced 12 in. apart on the boom. Applications were made weekly from 17 Dec to 26 Feb (11 times). In the Captan only treatment, 11 consecutive weekly applications were made. In all other treatments, test products were applied when disease pressure was high and/or weather conditions favoring disease development were present, i.e., on 17 and 24 Dec, 29 Jan, and 26 Feb (4 times). During other weeks, Captan 80WDG was applied at 2.5 lb/A. Ripe and diseased fruit were harvested twice weekly from 4 Jan to 19 Mar (19 harvests). Healthy fruit weighing more than 10 g were counted and weighed to determine marketable yield. Fruit weighing less than 10 g, diseased fruit, and other unmarketable fruit were also enumerated. Anthracnose fruit rot incidence was expressed as a percentage of the total number of marketable and unmarketable fruit. Data were analyzed by ANOVA using the proc GLM procedure in SAS. Multiple means comparisons were made by the Fisher Protected LSD test ($\alpha = 0.05$).

Anthracnose fruit rot (AFR) developed from naturally occurring inoculum, and was well distributed in experimental plots when foliar applications began on 17 Dec. The first two applications consisted of test products to counteract relatively high disease pressure early in the season. Despite this effort, overall disease incidence was high, particularly in Mar when most marketable and diseased fruit were harvested. All treatments except Mettle, Quilt Xcel + Actigard, and Protexio significantly reduced AFR. No treatment was superior to the captan-only standard for the control of AFR. Overall yields were very low due unusually warm weather in Nov and Dec leading to a prolonged period of low production in Jan and Feb. Treatment with Elatus, S2200, Merivon, and Quilt Xcel produced significantly higher yields of marketable fruit than the non-treated control. This is partly explained by reduced AFR incidence, and also influenced by plant losses during the harvest period. Plant collapse from anthracnose crown rot (caused by *Colletotrichum gloeosporioides*) was low in most high-yielding treatments, but higher in other treatments such as Mettle and PhD. Phytotoxicity was not observed in this trial.

Treatments (products and rates/A)	Week of application ^z	Marketable yield (lb/A)	Anthraco­nose fruit rot (%) ^y
Captan 80WDG 2.5 lb standard	1 – 11	3942 abc	33.0 a ^x
Elatus 9.5 oz + Cohere 1 pt Captan 80 WDG 2.5 lb	1, 2, 7, 11 3, 4, 5, 6, 8, 9, 10	4940 a	34.0 ab
Aprovia Top 13 fl oz + Cohere 1 pt Captan 80WDG 2.5 lb	1, 2, 7, 11 3, 4, 5, 6, 8, 9, 10	4078 abc	36.2 ab
S2200 8 fl oz Captan 80WDG 2.5 lb	1, 2, 7, 11 3, 4, 5, 6, 8, 9, 10	4896 a	37.7 abc
Merivon 11 fl oz Captan 80WDG 2.5 lb	1, 2, 7, 11 3, 4, 5, 6, 8, 9, 10	5347 a	38.0 abc
Quilt Xcel 14 fl oz Captan 80WDG 2.5 lb	1, 2, 7, 11 3, 4, 5, 6, 8, 9, 10	5009 a	40.3 abc
PhD 6.2 oz Captan 80WDG 2.5 lb	1, 2, 7, 11 3, 4, 5, 6, 8, 9, 10	4244 ab	42.1 abc
Kenja 400SC (13.5 fl oz Captan 80WDG 2.5 lb	1, 2, 7, 11 3, 4, 5, 6, 8, 9, 10	2967 bc	43.0 a-d
Affiance 13 fl oz Captan 80WDG 2.5 lb	1, 2, 7, 11 3, 4, 5, 6, 8, 9, 10	3793 abc	43.5 bcd
Abound 2.08F 12.0 fl oz Captan 80WDG 2.5 lb	1, 2, 7, 11 3, 4, 5, 6, 8, 9, 10	3771 abc	43.8 bcd
Mettle (5 fl oz Captan 80WDG 2.5 lb	1, 2, 7, 11 3, 4, 5, 6, 8, 9, 10	3154 bc	46.7 cde
Quilt Xcel 14 fl oz + Actigard 50WG 0.375 oz Captan 80WDG 2.5 lb + Actigard 50WG 0.375 oz	1, 2, 7, 11 3, 4, 5, 6, 8, 9, 10	4085 abc	47.6 cde
Protexio 19 fl oz Captan 80WDG 2.5 lb	1, 2, 7, 11 3, 4, 5, 6, 8, 9, 10	2650 bc	53.3 de
Non-treated control	n.a.	2452 bc	56.5 e

^zTreatments were applied weekly for 11 consecutive weeks beginning 17 Dec. Treatment week is indicated by the numbers 1 – 11.

^y Anthracnose fruit rot incidence is expressed as percentage of all fruit harvested.

^x Means in a column followed by the same letter are not significantly different by Fisher's protected LSD test ($\alpha = 0.05$).