STRAWBERRY (*Fragaria* x *ananassa* 'Sweet Charlie')
Botrytis fruit rot; *Botrytis cinerea*

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Evaluation of biopesticides in conjunction with standard fungicides for control of Botrytis fruit rot in annual strawberry, 2004-05.

On 18 Oct 04, bare-root runner plants from Canada were transplanted into methyl-bromide:chloropicrin (98:2) fumigated soil in plastic-mulched raised beds. The beds were 28 in wide on 4-ft centers. Each bed contained two staggered rows of plants spaced 15 in apart within rows and 12 in between rows. Treatments were arranged in a randomized complete block design with four blocks in separate, adjacent beds. Individual plots were 10.6 ft long and contained 14 plants, with a 2.5-ft gap between plots. Transplants were irrigated by overhead sprinklers for 10 days to facilitate establishment, then irrigated and fertilized through drip tape. Fungicides were applied at weekly intervals from 12 Jan to 2 Mar 05 (8 applications) with a CO_2 back pack sprayer calibrated to deliver 100 gal/ac at 40 psi through a two nozzle boom. The biopesticides Polyoxin and Milstop were alternated or mixed with Captan and compared to a Captan alone or Captan-Captevate program. A non-sprayed control treatment was also included. Fruit were harvested 6 times (twice weekly from 21 Feb through 11 Mar) and graded for marketable yield and the incidence of Botrytis fruit rot. Botrytis fruit rot incidence (number of *Botrytis*-diseased fruit divided by the total number of marketable and unmarketable fruit harvested, expressed as a percentage), and total marketable yields were recorded. The data were subjected to two-way ANOVA and means separated using Fisher's protected LSD ($P \leq 0.05$).

The 2004-05 strawberry season was conducive for Botrytis fruit rot development. All fungicide treatments reduced disease incidence compared to the untreated control. The program with Captevate applied at bloom was the most effective for reducing disease incidence. There were no significant differences among the other treatments. The programs utilizing the biopesticides Polyoxin and Milstop alternated with Captan were as effective as a full-season program of Captan, but were not as effective as the Captan-Captevate program in controlling Botrytis fruit rot. The program involving Captan and Polyoxin produced significantly higher yields than the control, although there were no significant differences between this and the programs involving Milstop or Captevate.

Treatment and rate/A[z]	Timing[y]	Marketable Yield (lb/A)	Botrytis fruit rot (%)[x]
Untreated control……	-	15,700 bcd[x]	33.1 a
Captan 80WDG (2.8 lb) pre-bloom, bloom, and post-bloom…….	1-8	13,400 d	16.5 b
Captan 80WDG (2.8 lb) pre-bloom, [Polyoxin-D 11.3DF (0.37 lb) + Captan 80WDG (2.8 lb)] bloom, Captan 80WDG (2.8 lb) post-bloom……..	1-2 3-6 7-8	18,700 a	14.5 b
MilStop 85WP (2.5 lb) pre-bloom and bloom, Captan 80WDG (2.8 lb) pre-bloom, bloom, and post-bloom…….	1, 3, 5 2, 4, 6-8	16,900 abc	16.0 b
MilStop 85WP (5.0 lb) pre-bloom and bloom, Captan 80WDG (2.8 lb) pre-bloom, bloom, and post-bloom ……	1, 3, 5 2, 4, 6-8	15,100 bcd	17.5 b
Captan 80WDG (2.8 lb) pre-bloom, Captevate 68WDG (4.38 lb) bloom, Captan 80WDG (2.8 lb) post-bloom……..…	1-2 3-6 7-8	16,900 abc	5.8 c

[z] Plus signs "+" indicate tank mixtures.
[y] Numbers indicate timing in a sequence of 8 weekly applications made from 12 Jan to 2 Mar 05.
[x] Values in columns followed by the same letter are not significantly different by a Fisher's protected LSD test ($P \leq 0.05$).