

Evaluation of fungicides to control Botrytis fruit rot in annual strawberry, 2003-04.

Bare-root runner plants from Canada were transplanted into methyl bromide:chloropicrin (98:2) fumigated soil in plastic-mulched raised beds on 6 Oct 03. 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 8.4 ft long and contained 14 plants, with a 2.5 ft gap between plots. Transplants were irrigated by overhead sprinklers for 11 days to facilitate establishment, then irrigated and fertilized through drip tape. Fungicides were applied with a CO₂ backpack sprayer calibrated to deliver 100 gal/ac at 40 psi. Most treatments received Captan 80WDG (1.88 lb/A) at weekly intervals during the early season (29 Oct to 21 Jan, 13 applications). Experimental products were tested from Jan 28 to 3 Mar when up to six weekly applications could be made. Unless otherwise noted, products were applied in a block of four weekly applications during the principal bloom period (28 Jan to 18 Feb), and were followed by two applications of captan on 25 Feb and 3 Mar to complete the season. An untreated check and captan standards were included. Three unrelated treatments consisted of fungicides applied on 29 Oct, 5 Nov, and 12 Nov in an effort to suppress early season plant colonization by *Botrytis*. Fruit were harvested twice weekly from 2 Dec through 5 Mar (28 harvests) and graded for marketable yield and the incidence of Botrytis fruit rot. Botrytis fruit rot incidence (number of fruit with *Botrytis* divided by the total number of marketable and unmarketable fruit harvested, expressed in percent), and total marketable yield are reported. *Botrytis* incidence data were transformed (arcsine square root) before statistical analysis. The data were analyzed by two-way ANOVA and means separated using Fisher’s protected LSD ($P \leq 0.05$). The untransformed means are reported.

The 2002-03 strawberry season was ideal for production with relatively mild weather and low rainfall. Nevertheless, two rainy/foggy periods in early Feb were sufficient to provoke an epidemic in Botrytis fruit rot during our peak harvest period in late Feb and early Mar. Early season fungicide applications did not delay the onset or reduce the severity of this late-season epidemic. However, most treatments applied over the main bloom period significantly reduced disease incidence. Block applications of Captevate, Switch + Captan, Scala + Captan, Pristine + Captan, Thiram, and Scala over this period were particularly effective. These treatments also increased marketable yield.

Treatment, rate/acre, and schedule ^z	Marketable yield (lb/A)	Botrytis fruit rot (%)
Captan 80WDG (1.88 lb) early, Captevate 68WDG (3.5 lb) bloom, Captan 80WDG (1.88 lb)	17,200 a ^y	6.2 a
Captan 80WDG (1.88 lb) early, [Switch 62.5 WG (11 oz) + Captan 80WDG (1.88 lb)] bloom, Capta 80WDG (1.88 lb) ^x	17,500 a	7.2 ab
Captan 80WDG (1.88 lb) early, [Scala 54.6SC (9 fl oz) + Captan 80WDG (1.88 lb)] six appl.	16,600 ab	8.0 ab
Captan 80WDG (1.88 lb) early, [Pristine 35WG (18.5 oz) + Captan 80WDG (1.88 lb)] bloom, Captan 80WDG (1.88 lb).....	16,800 ab	10.4 a-c
Captan 80WDG (1.88 lb) early, Thiram WSB (5 lb) bloom, Captan 80WDG (1.88 lb).....	16,700 ab	11.0 a-c
Captan 80WDG (1.88 lb) early, Scala 54.6SC (18 fl oz) three bloom appl., Captan 80WDG (1.88 lb) three appl.....	17,200 a	11.4 a-c
Captan 80WDG (1.88 lb) early, [Captevate 68WDG (3.5 lb) alt. Switch 62.5WG (11 oz)] 6 appl. ^x	15,000 a-d	14.0 b-d
Captan 80WDG (1.88 lb) early, [Topsin M 70WSB (0.75 lb) + Captan 80WDG (1.88 lb)] bloom, Captan 80 WDG (1.88 lb).....	15,300 a-d	16.2 c-e
Captan 80WDG (1.88 lb) early, Topsin M 70WSB (1 lb) bloom, Captan 80 WDG (1.88 lb).....	15,300 a-d	19.3 de
Captan 80WDG (1.88 lb) early, Topsin M 4.5F (20 fl oz) bloom, Captan 80 WDG (1.88 lb).....	15,700 a-c	21.0 d-f
Captan 80WDG (1.88 lb) whole season.....	14,500 b-e	22.2 e-g
[Elevate 50WDG 1.5 lb + Captan 80WDG (1.88 lb)] first 3 appl., no additional fungicides.....	13,800 c-f	22.9 e-g
Untreated check.....	13,000 d-f	29.0 f-h
Switch 62.5WG (14 oz) first 3 appl., no additional fungicides.....	12,500 ef	30.8 gh
Captan 80WDG (1.88 lb) early.....	11,800 f	34.7 h
Pristine 38WG (23 oz) first 3 appl., no additional fungicides.....	11,800 f	34.9 h

^zDuring the early season (29 Oct to 21 Jan), captan was applied weekly in most treatments (13 appl.). Unless otherwise noted, bloom applications were made weekly starting 28 Jan (four appl.), and followed by captan (two appl.).

^yIn a column, values followed by the same letter are not significantly different by a Fisher’s protected LSD test ($P \leq 0.05$).

^xA “+” symbol indicates two products used in combination (a tank mix); “alt.” indicates two products applied in alternation.