

Evaluation of fungicides to control anthracnose fruit rot in annual strawberry, 2007-08.

On 15 Oct 07, 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, each in a separate bed. Individual 12-plant plots were 8.1-ft long, separated by 3.7 ft gaps within beds and an unplanted bed between blocks. Transplants were irrigated by overhead sprinklers for 10 days to aid establishment, then irrigated and fertilized through drip tape. Fungicide applications were made weekly from 20 Dec to 12 Mar (13 applications) using a CO₂ backpack sprayer calibrated to deliver 100 gal/A at 40 psi through two hollow-cone nozzles, 12 in. apart on the boom. Experimental products were applied throughout the season in some treatments and late in the season in others. Late season treatments were preceded by maintenance applications of captan at a low rate (1.5 lb/A) during the early season. Fruit were harvested twice weekly from 2 Jan through 14 Mar (22 harvests). Marketable fruit were counted and weighed to determine yield. Small fruit weighing less than 10 g, diseased fruit, and other unmarketable fruit were also enumerated. Disease incidence was expressed as a percentage of the total number of marketable and unmarketable fruit. Experimental variables were analyzed by two-way ANOVA. Percentage data were transformed by an arc sine square root expression prior to the analysis. Non-transformed means are presented.

Anthracnose fruit rot incidence was moderate to high in this trial. Most diseased fruit were harvested at the end of the season between 29 Feb and 14 Mar. All treatments except Actinovate and MOI-106 significantly reduced disease incidence, but none significantly improved disease control over a standard captan-only treatment consisting of captan at a low rate (1.5 lb/A) during the early season and at a high rate (3.0 lb/A) during the late season. However, Captan was not as efficacious when applied at the low rate throughout the season. With the exception of Actinovate and MOI-106, all treatments significantly increased yield over the nontreated control.

Products and rate/A ^z	Spray timing ^y	Marketable yield (lb/A)	Anthracnose incidence (%) ^x
Captan 80WDG (1.5 lb)	1-5		
Evito 480SC (2.0 fl oz.) + Captan 80WDG (1.5 lb)	6,8,10,12		
Captan 80WDG (3.0 lb).....	7,9,12,13	11,600 cd	8.9 a ^w
Captan 80WDG (1.5 lb)	1-5		
Captan 80WDG (3.0 lb).....	6-13	11,700 cd	9.1 a
Captan 80WDG (1.5 lb)	1-5		
Abound 2.08F (15.4 fl oz) + Captan 80WDG (1.5 lb)	6,8,10,12		
Captan 80WDG (3.0 lb).....	7,9,12,13	13,400 abc	10.9 a
Captan 80WDG (1.5 lb)	1-5		
Topsin M 4.5FL (20 fl oz)	6,8,10,12		
Captan 80WDG (3.0 lb).....	7,9,12,13	12,500 a-d	11.0 a
Captan 80WDG (1.5 lb)	1-5		
Evito 480SC (2.0 fl oz.) + Elevate 50WDG (1.0 lb)	6,8,10,12		
Captan 80WDG (3.0 lb).....	7,9,12,13	12,100 bcd	11.9 a
Captan 80WDG (1.5 lb) + Helena Prophyt (3 pt)	1-5		
Captan (3.0 lb) + Helena Prophyt (3 pt).....	6-13	11,200 cd	13.9 a
Captan 80WDG (1.5 lb)	1-5		
Evito 480SC (3.8 fl oz.) + Captan 80WDG (1.5 lb)	6,8,10,12		
Captan 80WDG (3.0 lb).....	7,9,12,13	11,800 cd	14.8 a

Captan 80WDG (1.5 lb).....	1-13	10,500 d	28.8 b
Captan 80WDG (1.5 lb) MOI-106 (1%) + NuFilm P (0.02%)	1-5 6,8,10,12		
Captan 80WDG (3.0 lb).....	7,9,12,13	7,900 e	42.1 bc
Control.....	--	6,300 e	46.0 c
Actinovate (12 oz.).....	1-13	5,700 e	49.5 c

^zPlus signs “+” indicate tank mixes of two or more products.

^yNumbers indicate week of application during a 13-week period from 20 Dec 07 to 12 Mar 08.

^xIncidence of anthracnose fruit rot as a percentage of all marketable and unmarketable fruit harvested.

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