

### **Evaluation of fungicides to control anthracnose fruit rot in annual strawberry, 2005-06.**

On 27 Oct 05, bare root runner plants from Canada were transplanted into methyl bromide:chloropicrin (67:33) fumigated soil in nine 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. Experimental beds were alternated with untreated beds of 'Camarosa' to facilitate inoculum production and spread. Individual plots contained 12 plants and were 8.1 ft long, separated by a 1.7 ft gap between plots. Transplants were irrigated by overhead sprinklers for 10 days to aid establishment, then irrigated and fertilized through drip tape. Fungicide treatments were applied weekly from 22 Dec to 15 Mar (14 applications) using a CO<sub>2</sub> backpack sprayer calibrated to deliver 100 gal/A at 40 psi through a two-nozzle boom. Most treatments received seven maintenance applications of captan at the beginning of the season. Experimental products were applied during the late season (1 Feb to 15 Mar) when anthracnose pressure is typically highest. Weekly applications were omitted in the untreated control, and during the early season in one captan treatment. In another treatment, captan (1.88 lb/A) was applied on 3 Jan and 18 Jan and Cabrio (14 oz/A) was applied on 4 Feb and 15 Feb after significant rain events. Fruit were harvested and graded twice weekly from 3 Jan through 24 Mar (24 harvests). The incidence of anthracnose fruit rot (i.e., the number of anthracnose-diseased fruit as a percentage of the total number of marketable and unmarketable fruit), and total marketable yield (lb/A) are reported. Both variables were analyzed by two-way ANOVA. Disease incidence data were transformed by an arc sine square root expression prior to the analysis. Non-transformed means are presented.

The incidence of anthracnose fruit rot was relatively low and may be related to the scant rainfall that occurred between Jan and Mar 2006. Only four rain events exceeding 0.25 in occurred during this critical period for disease development and spread. The highest disease incidence (9.9%) occurred in the untreated control. Disease levels in the experimental treatments were all numerically lower than the control. However, disease occurrence was patchy with considerable variation between replicate plots. For this reason, the probability of F in the ANOVA for disease incidence was non-significant ( $P = 0.13$ ) and no means separation procedures were performed. Yields of marketable fruit ranged from 14,600 to 18,000 lb/A, and were also statistically similar ( $P = 0.34$ ).

Treatments (products and rate/A) <sup>z</sup>	Spray timing <sup>y</sup>	Marketable yield (lb/A)	Anthracnose incidence (%) <sup>x</sup>
Captan 80WDG (1.88 lb)	1-7		
Captan 80WDG (3.0 lb).....	8-14	17,300	2.2
Captan 80WDG (1.88 lb)	1-7		
Helena Prophyt (2 pt) + Captan 80WDG (1.88 lb).....	8-14	17,300	2.3
Captan 80WDG (1.88 lb early)	1-7		
Abound 2.08F (15.4 fl oz)	8,9,12,13		
Switch 68WDG (14 oz).....	10,11,14	16,400	2.3
Captan 80WDG (1.88 lb)	1-7		
Cabrio 20EG (14 oz).....	8-14	18,000	2.4
Captan 80WDG (1.88 lb)	1-7		
Pristine 38WG (23 oz)	8,9,11,13		
Captan (3.0 lb).....	10,12,14	16,400	2.7
Captan 80WDG (3.0 lb).....	8-14	15,700	3.3
Captan 80WDG (1.88 lb)	1-7		
TM-473 (5.7 fl oz).....	8-14	16,800	3.4
Captan 80WDG (1.88 lb)	1-7		
Hepta-gro (3.2 pt) + Captan 80WDG (1.88 lb) + Latron B-1956 (2 fl oz)...	8-14	15,800	3.8
Captan 80WDG (1.88 lb)	1-7		
TM-473 (5.7 fl oz) + Elevate 50WDG (1.25 lb)	8,9,11,13		
Captan 80WDG (3.0 lb).....	10,12,14	16,700	4.0
Captan 80WDG (1.88 lb)	1-7		
TM-473 (3.8 fl oz) + Elevate 50WDG (1.25 lb)	8,9,11,13		
Captan 80WDG (3.0 lb).....	10,12,14	17,100	4.4
Thiram granuflo 75WG (2.0 lb)	1-7		
Thiram granuflo 75WG (3.2 lb).....	8-14	16,500	4.5
Captan 80WDG (1.88 lb) early	1-7		
Orbit 3.6E (4 fl oz) + Captan 80WDG (1.88 lb).....	8-14	15,600	4.6
Captan 80WDG (1.88).....	1-14	15,500	4.7
Captan 80WDG (1.88 lb)	1-7		
Elevate 50WP (1.25 lb).....	8-14	15,800	5.8
Model-based schedule, Captan 80WDG (1.88 lb)	1,6		
Cabrio 20EG (14 oz).....	8,10	14,600	9.6
Control.....		15,200	9.9

<sup>z</sup>Plus signs "+" indicate tank mixes of two or more products.

<sup>y</sup>Timing in a sequence of 14 weekly applications made from 22 Dec 05 to 15 Mar 06.

<sup>x</sup>Incidence of anthracnose-diseased fruit as a percentage of all marketable and unmarketable fruit harvested.