

**Evaluation of fungicides to control powdery mildew on annual strawberry, 2005-06.**

On 26 Oct 05, bare root plants from Canada were transplanted into methyl bromide:chloropicrin (67:33) fumigated soil in six plastic mulched raised beds in an open field. The beds were 28-in. wide on 4-ft centers. Each bed contained two staggered rows of plants, 11-in. apart, with plants spaced 15-in. apart within rows. Transplants were irrigated by overhead sprinkler for 10 days to facilitate establishment, then irrigated and fertilized through drip tape. Treatments were arranged in a randomized complete block design with four blocks in adjacent experimental beds. Plots consisted of 12 plants in 8.1-ft long plots separated by 1.7-ft gaps. The plot area was flanked on each side by a border bed that was not treated with fungicides. Fungicide treatments were applied with a CO<sub>2</sub> backpack sprayer which delivered 100 gal/A at 40 psi through a two-nozzle wand. Treatments were applied at 14-day intervals from 25 Nov to 1 Mar (eight applications). In one treatment, a tank mix of Quintec, Captevate, and Latron was alternated weekly with Captevate for a total of 15 applications. Fruit were harvested and graded twice weekly from 3 Jan to 10 Mar (20 harvests) for marketable yield and disease incidence. Powdery mildew symptoms were negligible on both fruit and foliage, but anthracnose fruit rot (*Colletotrichum acutatum*) and angular leaf spot (*Xanthomonas fragariae*) were present. Anthracnose fruit rot incidence was determined as a percentage of all marketable and unmarketable fruit. Angular leaf spot severity was evaluated on 16 Feb by rating the eight inner plants per plot on a scale of 0 (no disease) to 6 (old leaves mostly necrotic, middle-aged leaves partially blighted). On the same day, the canopy diameter of each evaluated plant was determined as an average of two perpendicular measurements. All variables were subjected to two-way analysis of variance. Individual plant data were averaged for each plot and disease incidence data were arcsine square root transformed prior to analysis. Treatment means were separated by Fisher's protected LSD ( $P \leq 0.05$ ). Untransformed values are shown in the table.

During the 2005-06 season, powdery mildew incidence was slight, even on the foliage of untreated plants, and less than 1% of the fruit in any treatment showed conspicuous fungal growth. Unfavorable weather may have caused the low disease incidence. During the critical Nov through Jan period, total rainfall was 1.6 inches, and average daily relative humidity exceeded 90% only on 7 days. Angular leaf spot severity was similar across all treatments. Anthracnose fruit rot incidence varied markedly between treatments and among replicates within treatments. The overall probabilities ( $P > F$ ) in the ANOVA for angular leaf spot severity and anthracnose fruit rot incidence were not significant. Plant canopy diameters were significantly increased by two tank mix treatments containing Procure, but not by Procure alone. Both treatments also gave the highest numerical yields, although these yields were not significantly different from the control and several other treatments ( $P = 0.05$ ).

Treatment and rate/A <sup>z</sup>	ALS severity (0 - 6) <sup>y</sup>	Anthracnose incidence (%)	Plant canopy diameter (cm) <sup>x</sup>	Marketable yield (lb/A)
Procure 480SC (8 fl oz) + Captan 80WDG (1.88 lb) <sup>w</sup> .....	4.0	1.3	31.5 ab <sup>v</sup>	12,400 a
Procure 480SC (8 fl.oz) + Thiram Granuflo 75WDG (3.5 lb).....	4.0	2.2	32.1 a	12,000 ab
Microthiol Disperss 80WP (7.5 lb).....	4.0	2.8	28.9 b-e	11,100 a-c
Quintec 250SC (6 fl oz) + Captevate 68WDG (4.38 lb) + Latron B-1956 (4 fl oz) alt. Captevate 68WDG (4.38 lb) 7-day.....	3.9	0.7	30.7 a-d	11,100 a-c
IR14360 (10.4 fl oz).....	3.9	8.1	29.8 b-e	10,600 a-d
Orbit 3.6E (propiconazole) (4 fl oz).....	3.7	5.0	28.1 e	10,600 a-d
IR14360 (17.3 fl oz).....	4.1	5.3	29.4 c-e	10,200 b-d
IR14360 (13.8 fl oz).....	4.4	9.1	30.0 b-d	9,800 cd
Prev-am (50 fl oz) + Captan 80WDG (1.88 lb).....	3.8	3.6	29.5 c-e	9,500 cd
Quintec 250SC (6 fl oz) + Latron B-1956 (4 fl oz).....	4.3	9.8	30.9 a-c	9,200 cd
Procure 480SC (8 fl oz).....	4.2	16.5	29.8 b-e	9,100 cd
Quintec 250SC (6 fl oz) + Latron B-1956 (4 fl oz)alt. Nova ( 5 oz) + Latron B-1956 (4 fl oz).....	4.3	12.5	29.1 c-e	8,700 d
Control .....	3.8	8.3	29.6 c-e	10,800 a-d

<sup>z</sup>Treatments were applied at 14-day intervals from 25 Nov 05 to 1 Mar 06 unless otherwise indicated.

<sup>y</sup>Foliage of eight inner plants/plot were rated for angular leaf spot (ALS) severity on a 0 to 6 scale.

<sup>x</sup>Canopy diameter was an average of two perpendicular measurements per plant for the eight inner plants in each plot.

<sup>w</sup>A + sign indicates a tank mix of two or more products; "alt." indicates an alternation of tank mixes or products.

<sup>v</sup>Means within columns followed by the same letter are not significantly different by Fisher's protected LSD ( $P \leq 0.05$ ).