

Comparison of fungicides for control of powdery mildew (*Leveillula taurica*) on tomato, 2009

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This study was conducted in a commercial fresh market tomato field (cv. Scout) located just west of Farmington, CA. The field was transplanted on July 11th, 2009 and furrow-irrigated. Each plot consisted of a single 60-in bed by 30 ft long. The experimental design was a randomized complete block design with four replications. Fungicide applications were initiated at roughly 6 wk after transplanting. At that time, only a few plants in the field showed early symptoms of mildew infection (occasional yellow spots on the lowest leaves). Applications were made with a CO₂ backpack sprayer (32 psi) and a handheld boom with hollow cone nozzles, two of which were on drops. Fungicide applications were made on a roughly 10- to 12-day schedule (for total of three applications), with the exception of DPX-LEM17 and -YT669 which were applied on a 7-day schedule (for a total of 5 applications). The study was split into two trials such that all materials within a trial and on the same schedule were applied the same day. Mildew severity was rated on Sept 24th and Oct 6th. Plots were rated for the percentage of the foliage that was affected by mildew. The numbers below represent the mean of 8 ratings (two rating dates and four replicate plots). On October 6th, a 5-ft section of each plot was hand-harvested for selected treatments. Fruit were sorted into marketable, sunburned, and other culls. Differences in marketable yield and percent sunburn were not significant ($P=0.05$).

Table 1. Evaluation of conventional fungicides for tomato powdery mildew control, Farmington, CA, 2009.

PRODUCT	RATE	ADJUVANT	Powdery mildew ^y (% foliage affected)	Marketable yield ^z (tons/acre)
Luna Sensation (USF2016, fluopyram + trifloxystrobin)	7.6 oz	Dyne-amic 0.125%	7.2 f	15.6
Quadris (azoxystrobin)	6 oz	Latron B1956 0.25%	8.1 ef	-
Luna Privilege (USF2015, fluopyram)	6.84 oz	Dyne-amic 0.125%	8.6 ef	13.0
Quadris Top (azoxystrobin + difenoconazole)	8 oz	Latron B1956 0.25%	9.5 ef	18.6
BASF056F (metrafenone)	15 oz	Mor-Act 0.25%	10.4 def	15.3
BASF056F (metrafenone)	15 oz	Silwet 0.06%	12.3 cdef	16.3
YT669 (picoxystrobin)	6 oz	Latron B1956 0.25%	12.8 cde	18.2
Cabrio (pyraclostrobin)	16 oz	Latron B1956 0.25%	13.2 bcde	
DPX-LEM17 (penthiopyrad)	24 oz	none	13.2 bcde	16.6
DPX-LEM17 (penthiopyrad)	10 oz	none	15.5 abcd	15.0
DPX-LEM17 (penthiopyrad)	16 oz	none	16.9 abc	19.3
Rally (myclobutanil)	4 oz	Latron B1956 0.25%	18.3 ab	-
Rally (myclobutanil)	4 oz	Wet-Cit 0.25%	18.3 ab	15.7
Nontreated control	-	none	19.6 a	14.8
		LSD ($P = 0.05$)	5.17	not significant
		Mean	13.1	16.2

^y Mildew severity rated on 9/24 & 10/6/09. Numbers represent the mean of 8 ratings: 2 dates and 4 reps.

^z Only selected treatments harvested. Numbers represent the mean of four replications, differences in yield not significant ($P = 0.05$)

Table 2. Evaluation of reduced-risk fungicides for tomato powdery mildew control, Farmington, CA, 2009.

PRODUCT	RATE	ADJUVANT	Powdery mildew ^y (% foliage affected)	Marketable yield ^z (tons/acre)
Sil-Matrix (potassium silicate)	1%	Latron B1956 0.25%	11.8	20.4
Regalia (<i>Reynoutria sachalinensis</i> extract) plus Rally (myclobutanol)	0.5% + 2.5 oz	Nu-Film P 0.02%	11.8	
Sonata (<i>Bacillus subtilis</i> QST2808)	4 qt	none	11.8	
Sulfur DF	20 lb	none	11.8	17.9
Actinovate fb Sulfur DF	9 oz fb 20 lb	Silwet 0.06% fb none	13.2	
Regalia (<i>Reynoutria sachalinensis</i> extract) fb Rally (myclobutanol)	0.5% fb 4 oz	Nu-Film P 0.02% fb Latron B1956 0.25%	14.6	
Serenade (<i>Bacillus subtilis</i> QST713)	3 lb	none	15.5	
IAP dusting sulfur (98% sulfur)	40 lb	none	15.5	20.5
Actinovate (<i>Streptomyces lydicus</i> WYEC 108) plus Sonata (<i>Bacillus subtilis</i> QST2808)	6 oz + 2 qt	none	15.5	
Sulfur DF (micronized sulfur)	20 lb	Oroboost 0.25%	15.5	
Sil-Matrix (potassium silicate)	0.5%	Latron B1956 0.25%	15.9	18.3
Kaligreen (potassium bicarbonate)	3 lb	none	16.9	
Nontreated control	-	none	19.6	
		LSD ($P = 0.05$)	not significant	not significant
		Mean	14.6	19.3

^y Mildew severity rated on 9/24 & 10/6/09. Numbers represent the mean of 8 ratings: 2 dates and 4 reps.

^z Only selected treatments harvested. Numbers represent the mean of four replications, differences in yield not significant ($P = 0.05$)