

Evaluation of fungicides for control of powdery mildew on flowering dogwood, 2003.

This test was conducted at the University of Delaware Botanic Garden in Newark, DE on trees that were 7 to 10 ft tall, grown from seed, and locally purchased. The trees were sprayed every 2 to 3 weeks from 28 May, when powdery mildew was first observed on nearby trees, to 6 Aug. Treatments sprayed every 14 days received a total of six applications, and those sprayed every 21 days received four applications. The fungicides were applied to run-off with a CO₂-backpack sprayer equipped with a single hollow cone nozzle. The experimental design was a randomized complete block with four replications. Each replication was a single tree. Powdery mildew ratings were made on 7 Aug and 25 Aug, 19 days after the last application. The rating for aesthetic value was made on 16 Sep, 41 days after the last fungicide application. Low levels of *Discula* anthracnose and *Septoria* leaf spot also were present, but differences between treatments were not significant due to the low incidences of these two diseases.

Temperatures were cooler than normal early in the season and returned to normal in Jul and Aug. Rainfall was above average throughout the season. Data show that all the treatments provided control of powdery mildew compared to the unsprayed control. Under the heavy disease pressure in this test, Sunspray UF oil was losing effectiveness 19 days after the last application compared to the Insignia, Eagle and Compass treatments. The biorational products neem oil (Triact), potassium bicarbonate (FirstStep) and petroleum oil (Sunspray oil) performed very favorably compared to the conventional fungicides. All the treatments provided control that would be acceptable in the landscape throughout the season compared to the unsprayed control. No phytotoxicity or objectionable fungicide residue was observed for any treatment at the rates tested.

Treatment and rate/100 gallons	Spray interval (days)	Powdery Mildew Ratings ^z		Aesthetic Rating
		7 Aug	25 Aug	19 Sep ^y
Triact 70% EC 1 gal	21	2.5 b ^x	2.8 bc	1.8 ab
FirstStep 85WP 3.0 lb	21	2.0 ab	2.8 bc	2.0 b
Sunspray UF oil 1gal	21	2.3 ab	3.3 c	2.0 b
Eagle 40WP 6.0 oz + Latron B-1956 3.3 fl oz	14	1.0 a	1.5 ab	1.8 ab
Insignia 20 DG 4.0 oz + Latron B-1956 3.3 fl oz	14	1.3 ab	1.3 a	1.5 ab
Insignia 20 DG 8.0 oz + Latron B-1956 3.3 fl oz	14	1.0 a	1.0 a	1.1 a
Compass 50 WP 2.0 oz + Latron B-1956 3.3 fl oz	14	1.0 a	1.5 ab	1.0 a
Unsprayed control	--	6.5 c	7.3 d	4.0 c

^z Powdery mildew rating based on Horsfall-Barratt Rating 1=0%, 2=0-3%, 3=3-6%, 4=6-12%, 5=12-25%, 6=25-50%, 7=50-75%, 8=75-87%, 9=87-94%, 10=94-97%, 11=97-100%, 12=100% of leaves colonized by the powdery mildew fungus.

^y Aesthetic rating, overall appearance of plants: 1= excellent, 5=poor.

^x Means within a column followed by the same letter are not significantly different, Duncan-Waller *k*-ratio *t* test, *k*=100.