

ROSE (*Rosa* sp. 'Tropicana')
 Black spot; *Diplocarpon rosae*
 Powdery mildew; *Podosphaera pannosa*

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Evaluation of fungicides for the control of black spot and powdery mildew of rose, 2007.

This field trial was conducted at the University of Delaware Botanic Garden in Newark, DE. Bare root hybrid tea roses were planted in the spring of 2001 in a Matapeake silt loam soil, 4 ft apart on center. Each plot consisted of two plants; pairs were 8 ft apart on center and rows were spaced 10 ft apart. Experimental design was a randomized complete block with three two-plant replications per treatment. Weeds were controlled with glyphosate and Surflan as needed, and the beds were mulched with composted woodchips for additional weed control and water conservation. No supplemental irrigation was supplied. Each rose plant was fertilized twice during the season, spring and mid-summer with 6 oz 10-20-20. Japanese beetles were controlled by five annual applications of lamdacyhalothrin (Battle WP) or carbaryl (Sevin SC) as needed. Fungicides were applied to run-off with a CO₂-powered backpack sprayer equipped with a single-hollow cone nozzle (D4 and D-45 core) at 50 psi. Fungicide applications were initiated on 15 May and repeated every 14 days ending 20 Aug. There were no symptoms of black spot or powdery mildew at the time of the first application. The plots were rated on 25 Jun, 16 and 31 Jul, and 24 Aug . Disease assessments were made by rating the percent leaves infected or defoliated for each disease for each plant per replication and taking an average of the two plants per replication. .

The growing season was dry with low humidity early in the season and returned to normal in May, before the test was initiated. The weather was favorable for black spot except July through mid-August when it became very dry. Powdery mildew developed early in June and severity fluctuated the rest of the season depending on the weather conditions. BAS 516 was very effective for control of black spot. BAS 595 controlled black spot early in the season but by the last rating black spot control had reached an unacceptable level. All the BAS 516 treatments for black spot were better than the unsprayed control. Eagle 40 WP provided the best powdery mildew control on 31 Jul. Although the foliage ratings reflect some of the infection, powdery mildew was present on many of the new shoots, leaves and flower pedicels at an objectionable level. No phytotoxicity was observed for any treatment in this test, but the 12.5 oz rate of BAS 516 did leave a noticeable white residue on the treated leaves.

Treatment and rate /100 gal	% black spot infected leaves			% powdery mildew infected leaves	
	16 Jul	31 Jul	24 Aug	25 Jun	31 Jul
BAS 516 04 F 38WG 12.5 oz.	0.0 a *	0.0 a	0.7 ab	5.3 a	8.0 bc
BAS 516 04 F 38WG 8 oz + 4 fl oz					
Latron B-1956	0.0 a	0.3 a	4.0 bc	2.0 a	5.0 ab
BAS 516 04 F 38WG 12.5 oz + 4 fl oz					
Latron B-1956	0.0 a	0.0 a	3.3 abc	3.3 a	8.6 bc
BAS 516 08 F 28WG 7 oz	0.0 a	0.0 a	5.0 c	5.0 a	6.3 bc
BAS 516 08 F 28WG 9 oz	0.0 a	0.0 a	4.0 bc	5.6 ab	7.3 bc
BAS 595 16 F 1.67 SC 6 fl oz.	2.0 a	7.6 a	65.6 d	14.0 c	10.7 c
Eagle 40WP 6 oz + 4 fl oz Latron B-1956	0.0 a	0.0 a	0.0 a	1.7 a	1.7 a
Control	29.3 b	53.3 b	89.6 d	11.7 bc	8.0 bc

* Means within a column followed by the same letter are not significantly different, Fischer Protected LSD (P=.05)