

**Evaluation of fungicides for control of downy mildew of grapes, 2009.**

This trial was conducted in a mature vineyard at the Lake Erie Regional Grape Research and Extension Center in North East, PA, where vines were trained to a single-curtain, high-wire cordon system. Treatments were applied to 4-vine plots in a randomized complete block design with 4 replications. Fungicides were applied with a Friend covered-boom plot sprayer at 100 psi. Seven experimental applications were made between 31 May and 7 Jul. Applications 1-3 were applied at 50 gal/A, and applications 4-7 at 100 gal/A. Prior to the commencement of the protocols, all plots received a dormant application of lime sulfur (10 %) on 27 April and one application of Penncozeb 75DF at 3 lb/A on 15 May for control of Phomopsis cane and leaf spot. To reduce interference from powdery mildew, the entire vineyard was over-sprayed (Bertaud air blast sprayer) with Vintage SC on 25 May, 16 Jun, and 13 July, Endura on 4 Jun, and Quintec on 28 Jun. Fruit disease incidence (percent clusters infected) and severity (percent area infected) were determined on 4 Aug and 15 Sep, by evaluating 25 randomly selected clusters from the center of each plot. Data were analyzed using analysis of variance.

Conditions were wet during most of the cluster susceptibility period and downy mildew disease pressure was high. Rainfall for May, Jun, Jul, Aug, and Sep was 5.55, 5.51, 11.65, 7.10, and 6.92 in., respectively. All chemical treatments provided excellent and practically complete control of downy mildew by 4 Aug, when compared to the water sprayed check. Nearer the end of the season (15 Sep), downy mildew severity remained under tight control by all treatments despite almost 90 % crop loss in the water sprayed check. However, the Presidio treatment allowed a statistically higher level of incidence on clusters when compared to other chemical programs. The experimental product BAS 651F provided excellent control of downy mildew at all rates and spray intervals tested. None of the treatments were phytotoxic to fruits or foliage.

Treatment and rate/A	Timing <sup>z</sup>	4 Aug		15 Sep	
		% with Berry infection	% Area berries infected <sup>y</sup>	% with Berry infection	% Area berries infected <sup>y</sup>
Water sprayed check.....	1, 2, 3, 4, 5, 6, 7	100.0 b	76.83 b	100.0 c	89.06 b <sup>x</sup>
BAS 651F 11 fl oz/A + Sylgard 309 4 fl oz/A.....	1, 2, 3, 4, 5, 6, 7	0.0 a	0.00 a	0.0 a	0.00 a
BAS 651F 13.7 fl oz/A + Sylgard 309 4 fl oz/A.....	1, 2, 3, 4, 5, 6, 7	0.0 a	0.00 a	0.0 a	0.00 a
BAS 651F 11 fl oz/A + Sylgard 309 4 fl oz/A.....	1, 3, 5, 7	0.0 a	0.00 a	2.0 a	0.05 a
BAS 651F 13.7 fl oz/A + Sylgard 309 4 fl oz/A.....	1, 3, 5, 7	0.0 a	0.00 a	2.0 a	0.05 a
Pristine 12.5 oz/A + Sylgard 309 4 fl oz/A.....	1, 3, 5, 7	4.0 a	0.02 a	1.0 a	0.02 a
Revus 250 SC 8 fl oz/A + Sylgard 309 4 fl oz/A.....	1, 2, 3, 4, 5, 6, 7	0.0 a	0.00 a	1.0 a	0.02 a
Presidio 4 fl oz/A.....	1, 3, 5, 7	0.0 a	0.00 a	14.0 b	0.61 a

<sup>z</sup> Timing: 1 = 31 May; 2 = 7 Jun (immediate pre-bloom); 3 = 14 Jun (first post-bloom); 4 = 21 Jun; 5 = 29 Jun; 6 = 5 Jul; 7 = 12 Jul.

<sup>y</sup> Severity was rated using the Barratt-Horsfall scale and was converted to % area infected using Elanco conversion tables.

<sup>x</sup> Means followed by the same letter within columns are not significantly different according to Fisher’s LSD ( $P \leq 0.05$ ).