

**Evaluation of fungicides for control of diseases of Niagara grapes, 2010.**

This trial was conducted in a mature vineyard at the Lake Erie Regional Grape Research and Extension Center in North East, PA. Vines were trained to a single-curtain, high-wire cordon system. Treatments were applied to 8-vine plots in a randomized complete block design with four replications. The first application was made on 7 May only to the Inspire Super, Revus Top, and standard treatments with a backpack sprayer set to 40 gal/A at 60 psi. Five more applications were made to all treatments between 25 May and 14 Jul with a Friend covered-boom plot sprayer at 100 psi. Spray volume was adjusted to 50 gal/A for applications 2 and 3 (pre-bloom), and 100 gal/A for the final three applications (post bloom). Plots and plot rows were separated by unsprayed buffer plots and unsprayed buffer rows, respectively. In the upwind half of each plot, black rot was allowed to develop from naturally occurring inoculum. In the downwind half of each plot, black rot fruit mummies were hung from the trellis wire at five locations (3 mummies per location). The most severe black rot fruit disease occurred on clusters within a 2-ft wide zone centered beneath mummies hung in the trellis. Black rot incidence (percent infected) and severity (percent area infected) were determined on 18 Aug in the downwind half of each plot from 25 clusters selected randomly from within spore dispersal zones. In the upwind half of each plot, disease was allowed to develop from naturally occurring inoculum. Black rot and downy mildew incidence and severity were determined from 25 randomly selected clusters in the upwind half of each plot on 18 Aug. Downy mildew incidence and severity on leaves were determined on 14 Sep by evaluating 25 leaves selected randomly from the center of each plot.

Total rainfall for May, Jun, Jul, Aug, and Sep was 3.4, 4.6, 4.6, 2.8, and 6.1 in., respectively. Weather conditions throughout most of the season were not very conducive to disease development. Consequently, downy mildew and black rot pressure were light to moderate. On fruit, there were no significant differences among treatments with respect to downy mildew. However, all treatments significantly reduced black rot severity under low (no mummies) and high (mummies) inoculum pressure. Downy mildew leaf disease was low. Both Revus Top and the standard treatment program significantly reduced downy mildew on leaves when compared to the check. There was no phytotoxicity associated with any of the treatments.

Treatment and rate/A	Timing <sup>z</sup>	Downy mildew				Black rot on fruit			
		Fruit		Leaves		No mummies		Mummies	
		% dm	% area dm <sup>y</sup>	% dm	% area dm <sup>y</sup>	% br	% area br <sup>y</sup>	% br	% area br <sup>y</sup>
<b>Downy mildew check</b>									
Vintage SC 4 fl oz	2								
Quintec 4 fl oz	3, 5								
Tebuzol 4 oz	4								
Vintage SC 6 fl oz.....	6	5.0	0.19	77.0 b <sup>x</sup>	2.95 c <sup>x</sup>	0.0 a <sup>x</sup>	0.00 a <sup>x</sup>	26.0 bc <sup>x</sup>	2.06 a <sup>x</sup>
<b>Black rot check</b>									
Water	2,3, 6								
Ridomil Gold SL 7.7 fl oz	4,5	0.0	0.00	75.0 b	2.81 bc	8.0 b	0.23 b	43.0 c	5.68 b
Inspire Super 20 fl oz.....	1,2,3,4,5,6	6.0	0.26	70.0 b	3.23 c	0.0 a	0.00 a	2.0 a	0.05 a
Revus Top SC 7 fl oz.....	1,2,3,4,5,6	0.0	0.00	42.0 a	1.05 a	0.0 a	0.00 a	0.0 a	0.00 a
<b>Standard treatment</b>									
Vintage SC 4 fl oz	2								
Quintec 4 fl oz	3, 5								
Tebuzol 4 oz	4								
Vintage SC 6 fl oz	6								
Penncozeb 75DF 4 lb	1,2,3								
Ziram 76DF 4 lb.....	4,5,6	0.0	0.00	54.0 a	1.83 ab	1.0 a	0.02 a	6.0 ab	0.21 a

<sup>z</sup>Timing: 1 = 7 May; 2 = 25 May; 3 = 7 Jun; 4 = 18 Jun; 5 = 1 Jul; 6 = 14 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 within columns followed by the same letter are not significantly different according to Fisher's Protected LSD ( $\alpha < 0.05$ ).