

Evaluation of fungicides for control of downy mildew in grapes, 2022.

The experiment was conducted in a mature 'Niagara' vineyard at the Trevor Nichols Research Center in Fennville, MI. Vines were spaced at 6 x 10 ft and were cordon trained and hand pruned. Treatments were applied to 3-vine plots and were replicated four times in a randomized complete block design. Sprays were applied using a 15-gal skid sprayer equipped with a 12V 3.8 gal/min diaphragm pump set at 45 psi using a XR T Jet 800 VS nozzle on a 5 ft spray boom. Spray volume was 50 gpa. Spray dates and approximate phenological stages were as follows: 6 Jun (6 - 12 in. shoots), 15 Jun (16 - 20 in. shoots), 22 Jun (bloom), 29 Jun, 7 Jul, 14 Jul, 20 Jul, and 27 Jul, 3 Aug, and 17 Aug. Rainfall between spray dates was 0.10, 2.21, 7.12, 0.03, 0.02, 0.01, 0.47, 0.28, and 2.02 in., respectively. On 4 Oct, downy mildew was rated on 25 randomly selected leaves from the center vine in each plot. Incidence was calculated as % leaves or clusters with disease, and severity was calculated as % area symptomatic on diseased plant parts only. Overall severity was calculated as (incidence x severity)/100. Bracketed values denote percent control relative to the untreated check. Plots were monitored throughout the season for signs of phytotoxicity, but none was observed.

Treatment, rate/A	Application timing ^z	Downy mildew on the leaf (rated 6 Oct)			
		Incidence (%)	Severity (%) ^x	Overall severity (%)	Control [%] ^y
Untreated		90 a	56.7 a	89.4 a	
Manzate Max 0.56 gal	1, 2,				
Abound 12 floz	3,				
Rally 5 oz	5, 7,	75 ab	26.2 bc	74.7 ab	[16]
Manzate Max 0.56 gal	1, 2,				
Abound 12 floz	3,				
Orondis Ultra 8 floz	4, 6, 8				
Rally 5 oz	5, 7,	71 ab	25.9 bc	70.7 ab	[21]
Manzate Max 0.56 gal	1, 2,				
Abound 12 floz	3,				
Presidio 4 floz	4, 6, 8				
Rally 5 oz	5, 7,	62 abc	28.5 b	61.7 abc	[31]
Manzate Max 0.56 gal	1, 2,				
Abound 12 floz	3,				
Revus 8 floz	4, 6, 8				
Rally 5 oz	5, 7,	31 bc	14.0 c	30.8 cd	[66]
Manzate Max 0.56 gal	1, 2,				
Abound 12 floz	3,				
Ranman 2.75 floz	4, 6, 8				
Rally 5 oz	5, 7,	29 d	14.1 c	28.8 d	[67]
Manzate Max 0.56 gal	1, 2,				
Abound 12 floz	3,				
Zampro 14 floz	4, 6, 8				
Rally 5 oz	5, 7,	48 bcd	23.9 bc	47.7 bcd	[46]
Manzate Max 0.56 gal	1, 2,				
Abound 12 floz	3,				
Tanos 8 oz	4, 6, 8				
Rally 5 oz	5, 7,	70 ab	28.4 b	69.7 bcd	[22]
Manzate Max 0.56 gal	1, 2,				
Abound 12 floz	3,				
Ridomil Gold Copper 2lb	4, 6, 8				
Rally 5 oz	5, 7,	50 bcd	23 bc	49.7 bcd	[44]
Manzate Max 0.56 gal	1, 2,				
Abound 12 floz	3,				
Reason 2.7 floz	4, 6, 8				
Rally 5 oz	5, 7,	28 d	20 c	27.8 d	[68]

^zSpray dates: 1 = 2 Jun (6 - 12 in. shoots), 2 = 15 Jun (16 - 20 in. shoots), 3 = 22 Jun (bloom), 4 = 29 Jun (1st post bloom), 5 = 6 Jul (2nd post bloom), 6 = 19 Jul (3rd post bloom), 7 = 26 Jul (4th post bloom), and 8 = 3 Aug (5th post bloom).

Note: Orondis Ultra is not labeled on grapes.