

GRAPE (*Vitis vinifera* 'White Riesling')
Powdery Mildew; *Erysiphe necator*

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Efficacy of fungicide for management of grape powdery mildew on Riesling, 2015.

Fungicide treatments were arranged in a randomized complete block design in a block of 'White Riesling' planted in 1995 on a 7x10 ft spacing. Vines were trained to a bilateral cordon with spur pruning. Vines were pruned 12 to 24 Mar. Sucker removal and shoot thinning by hand occurred 4 to 14 May. Canes were cut above the top wire on 6 Jul and maintained at this height throughout the growing season. Each treatment was replicated on 4 sets of 5 vines. The rate of water used was 80 to 162 gal/A depending on time of year. Approximately 2.5 to 5.3 gal of spray suspension was used per 20 vines depending on time of year. Fungicides were applied on 15 May (BBCH 56), 29 May, 11 Jun (BBCH 63), 25 Jun, 9 Jul (BBCH 77), and 22 Jul. Fertilizer (16-16-16) was applied at 42 lb/A on 22 Apr. No leaves were removed from the fruiting zone. Makaze (2 qt/A) was applied on 19 Feb and GoalTender (15 oz/A) plus Reckon (2 qt/A) was applied on 30 Mar for management of weeds. Suckers and weeds were sprayed with Aim (3.5 fl oz/A) plus Forefit (3 qt/A) on 4 Jun. According to the Gubler-Thomas powdery mildew forecasting model, there were 3 rain events between bud break and end of bloom that were favorable for ascospore release and infection: 1 severe infection period (11 May), 1 moderate infection period (31 May) and 1 low infection period (20 May). The risk index shot up from 0 to past 60 during the last week in May, remained high until Jul 2 when it dropped below 60 for 11 days during a hot period, then back above 60 through to the end of Sep. Incidence and severity of powdery mildew on leaves and clusters was evaluated on 6 and 7 Aug by randomly examining 50 leaves or clusters from the middle 3 vines of each replicate.

Spring and summer growing conditions were considered warm and dry resulting in accelerated vine development. Symptoms of powdery mildew were first found on 4 May as flag shoots and a few individual colonies. All fungicide treated vines had significantly less powdery mildew when compared to nontreated vines. Lowest incidence of powdery mildew on leaves was found on vines treated with TopGuard but the amount found on vines treated with Rally, Luna Experience or Quintec alone were not significantly different. All fungicide treated vines had a low severity of powdery mildew on leaves and were not significantly different from each other. Lowest incidence of powdery mildew on clusters was found on vines treated with Quintec alone but the amount found on vines treated with Luna Experience or TopGuard were not significantly different. All fungicide treated vines had a low severity of powdery mildew on clusters and were not significantly different from each other. No phytotoxicity was observed on any vines treated with any material.

Treatment & Rate/A or /100 gal as indicated below	% Leaves with Powdery Mildew (7 Aug)*		% Clusters with Powdery Mildew (6 Aug)*	
	Incidence	Severity	Incidence	Severity
Nontreated.....	100 a	34.3 a	100 a	74.5 a
Rally 40 WSP at 5 oz plus Induce at 15 fl oz/100 gal alternate Quintec at 4 fl oz plus Induce at 15 fl oz/100 gal	2.8 bc	0.0+ b	37.0 b	1.1 b
Quintec at 4 fl oz plus Induce at 15 fl oz/100 gal	2.5 bc	0.0+ b	6.5 c	0.1 b
Luna Experince at 6 fl oz plus Induce at 15 fl oz/100 gal alternate Quintec at 4 fl oz plus Induce at 15 fl oz/100 gal	3.0 bc	0.0+ b	11.5 c	0.3 b
TopGuard at 10 fl oz plus Induce at 15 fl oz/100 gal alternate Quintec at 4 fl oz plus Induce at 15 fl oz/100 gal	1.0 c	0.0+ b	16.0 c	0.4 b
Mettle at 5 fl oz plus Induce at 15 fl oz/100 gal alternate Torino at 3.4 fl oz plus Induce at 15 fl oz/100 gal	6.0 b	0.1 b	41.5 b	2.0 b

* Means followed by the same letter do not differ significantly based on Fisher's protected LSD ($P=0.05$). The data points with 0.0+ indicate the value was very low but not equal to zero.

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