

GRAPE (*Vitis vinifera* 'Pinot Noir')  
Powdery Mildew; *Erysiphe necator*

J. W. Pscheidt and J. P. Bassinette  
Dept. of Botany and Plant Pathology  
Oregon State University  
Corvallis, OR 97331-2903

### **Comparison of fungicides for management of grape powdery mildew on Pinot Noir, 2017.**

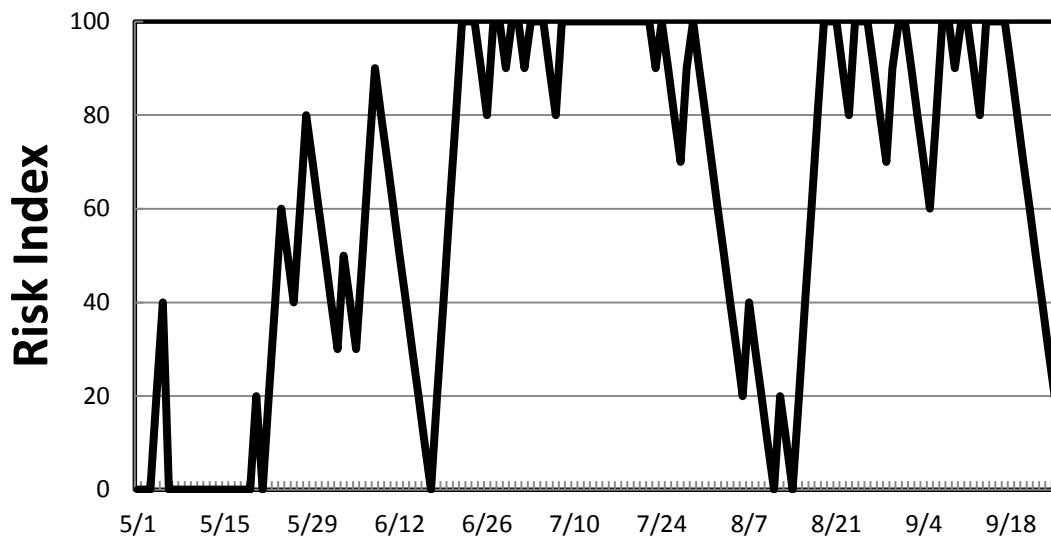
Fungicide treatments were arranged in a randomized complete block design in a block of 'Pinot Noir' (on *V. rupestris* x *V. riparia* 101-14 rootstock) planted in 1998 on a 7x8 ft spacing. A single buffer rootstock plant was trained between each set of treatment vines and a buffer rootstock row separated each varietal row. Pinot Noir vines were trained to a Guyot (vertical shoot position) system and pruned on 17 Mar. Shoot thinning and sucker removal by hand occurred on 11 to 12 May. Canes were cut above the top wire on 13 Jun and maintained at this height throughout the growing season. Each treatment was replicated on 4 sets of 5 vines. Treatments were applied approximately every 14 days using a hooded boom sprayer at 150 psi at a rate of 96 to 113 gal/A. Approximately 2.6 to 3 gal of spray suspension was used per 20 vines depending on time of year. Fungicides were applied on 23 May (BBCH 53), 9 Jun, 16 Jun (BBCH 63), 23 Jun, 30 Jun, 7 Jul (BBCH 73), 14 Jul, 21 Jul (BBCH 78), 28 Jul, 4 Aug and 11 Aug (BBCH 82, start of Veraison). No fertilizer or insecticides were applied this year. No leaves were removed from the fruiting zone. Goal 2XL (2%) plus Makaze (generic glyphosate at 1.5%) was applied on 28 Mar for management of weeds.

According to the Gubler-Thomas powdery mildew forecasting model, there were 7 rain events between bud break and end of bloom that were favorable for ascospore release and infection: 2 severe infection periods (12 May and 9 Jun), 2 moderate infection periods (15 May and 8 Jun) and 3 low infection periods (11 May and 15 and 16 Jun). The risk index shot up from 0 to past 60 during the last week in May, was variable for a few weeks ranging from 30 to 90, dropped to 0 during a cool rainy period until the last week of June when it remained high (above 60) until early Aug when it dropped below 60 for 15 days during a hot period, then back above 60 through to the end of Sep (Figure 1). Incidence and severity of powdery mildew on fruit was evaluated on 17 Aug. Incidence and severity of powdery mildew on leaves was evaluated on 23 Aug. Powdery mildew disease data was collected by arbitrarily examining 50 leaves or clusters from the middle 3 vines of each replicate.

Spring weather conditions for 2017 were considered cool and wet but with more normal plant growth relative to time of year. Symptoms of powdery mildew were first found on 31 May as few individual colonies on scattered vines. All fungicide treated vines had significantly less powdery mildew on leaves when compared to non-treated vines. Lowest incidence of powdery mildew on leaves was found on vines treated with TopGuard alternated with Quintec, however, vines treated with Aprovia alternated with Inspire Super or with 4 applications of Fracture 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 Aprovia alternated with Inspire Super. Highest severity of powdery mildew on clusters was found on non-treated vines. Lowest severity of powdery mildew on clusters was found on vines treated with TopGuard alternated with Quintec, however, vines treated with Aprovia alternated with Inspire Super or with 4 applications of Fracture were not significantly different. No phytotoxicity was observed on any treated vines.

Acknowledgements - We wish to thank Lea Merlot for helping with data collection.

Figure 1. Gubler-Thomas grape powdery mildew risk index for the 2017 growing season.



Treatment & Rate/A or /100 gal as indicated below	Time of Application *	% Leaves with Powdery Mildew (23 Aug)**		% Clusters with Powdery Mildew (17 Aug)**	
		Incidence	Severity	Incidence	Severity
Non-treated.....	None	98.0 a	51.8 a	100 a	100 a
Aprovia EC at 10.5 fl oz plus Induce at 16 fl oz/100 gal alternate Inspire Super at 20 fl oz plus Induce at 16 fl oz/100 gal ...	A, D, H B, F, J.....	7.5 bc	0.1 b	69.5 b	8.6 c
TopGuard at 10 fl oz plus alternate Fracture at 18.3 oz.....	A, D, H B, F, J.....	17.0 b	0.2 b	94.5 a	15.5 b
TopGuard at 10 fl oz plus alternate Fracture at 18.3 oz.....	A, C, F, I B, E, H, K...	8.0 bc	0.1 b	91.5 a	9.3 c
TopGuard at 10 fl oz plus alternate Quintec at 4 fl oz.....	A, D, H B, F, J.....	5.0 c	0.1 b	88.0 a	5.0 c

\* Fungicides were applied on A = 23 May (BBCH 53), B = 9 Jun, C = 16 Jun (BBCH 63), D = 23 Jun, E = 30 Jun, F = 7 Jul (BBCH 73), G = 14 Jul, H = 21 Jul (BBCH 78), I = 28 Jul, J = 4 Aug and K = 11 Aug (BBCH 82, start of Veraison).

\*\* Means followed by the same letter do not differ significantly based on Fisher's protected LSD ( $P=0.05$ ).