

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

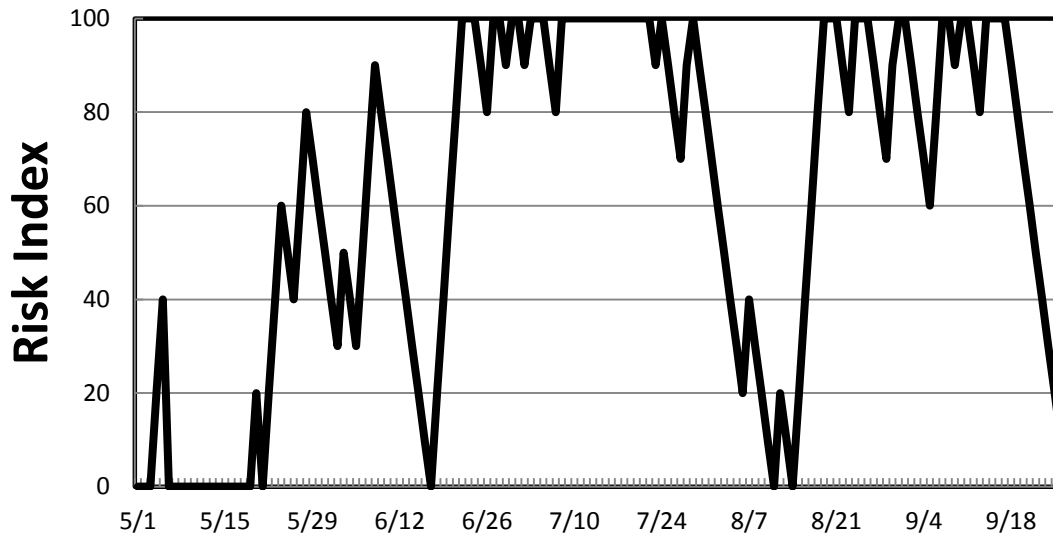
J. W. Pscheidt and J. P. Bassinette  
Dept. of Botany and Plant Pathology  
Oregon State University  
Corvallis, OR 97331-2903

### **Efficacy 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' planted in 1985 on a 8x10 ft spacing. Pinot Noir vines were trained to a Guyot (vertical shoot position) system and pruned from 3 to 5 Apr. Shoot thinning and sucker removal by hand occurred on 16 to 17 May. Canes were cut above the top wire on 30 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 to 200 psi at a rate of 80 to 162 gal water/A depending on canopy growth such that 2.6 to 5.4 gal of spray suspension was used per 20 vines. Fungicides were applied on 27 May (BBCH 53), 9 Jun (BBCH 58), 23 Jun (BBCH 68), 7 Jul (BBCH 73), 21 Jul (BBCH 77) and 4 Aug (BBCH 79). Rows were side dressed with a 16-16-16 fertilizer at 100 lb/A on 4 May. No leaves were removed from the fruiting zone. No herbicides or insecticides were applied during the trial. 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 Merivon alternated with Quintec. All fungicide-treated vines had a low severity of powdery mildew on leaves and were not significantly different from each other. The incidence of powdery mildew on clusters was not significantly different among all the various treatments. All fungicide-treated vines had significantly less powdery mildew on clusters when compared to non-treated vines. Lowest severity of powdery mildew on clusters was found on vines treated with Merivon alternated with Quintec. No phytotoxicity was observed on any treated vines.

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



Treatment & Rate/A or /100 gal water as indicated	Time of Application*	% Leaves with Powdery Mildew (23 Aug)**		% Clusters with Powdery Mildew (17 Aug)**	
		Incidence	Severity	Incidence	Severity
Non-treated.....	None.....	100 a	77.8 a	100	100 a
Merivon at 4 fl oz alternate Quintec at 5 fl oz.....	A, C, E B, D, F.....	20.5 d	0.4 b	100	28.0 c
Torino SC at 3.4 fl oz plus Induce at 16 fl oz/100 gal ...	All.....	45.0 b	1.7 b	99.0	69.5 b
Torino SC at 5.5 fl oz plus Induce at 16 fl oz/100 gal ...	All.....	40.5 bc	0.9 b	100	67.5 b
Torino SC at 6.8 fl oz plus Induce at 16 fl oz/100 gal ...	All.....	34.5 c	0.8 b	96.0	51.5 b

\* Fungicides were applied on A = 27 May (BBCH 53), B = 9 Jun (BBCH 58), C = 23 Jun (BBCH 68), D = 7 Jul (BBCH 73), E = 21 Jul (BBCH 77) and F = 4 Aug (BBCH 79).

\*\* Means followed by the same letter do not differ significantly based on Fisher's protected LSD ( $P=0.05$ ). Means without letters were not significantly different.

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