

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

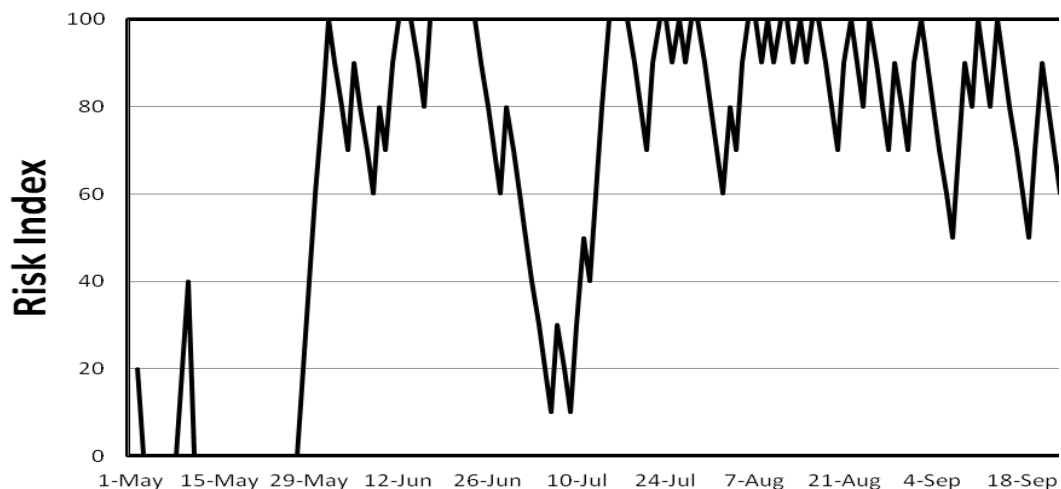
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Efficacy of fungicides for management of grape powdery mildew on Pinot Noir, 2015.

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 system and pruned on 9 to 10 Feb. Shoot thinning and sucker removal by hand occurred on 11 to 12 May. Canes were cut above the top wire on 16 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 48 or 103 gal/A. Approximately 2 or 3 gal of spray suspension was used per 20 vines depending on time of year. Fungicides were applied on 10 May (BBCH 55), 21 May, 4 Jun (BBCH 61), 18 Jun, 2 Jul (BBCH 77), 16 Jul, and 29 Jul (BBCH 81, start of Veraison). No fertilizer was applied this year. No leaves were removed from the fruiting zone. Reckon 280 SL (1 gal/A) was applied on 8 Apr and AIM (3.5 fl oz/A) plus Forefit 280 (3 qt/A) was applied on 4 Jun for management of weeds. Forefit 280 (3 qt/A) was applied on 18 May for management of suckers. 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 (Figure 1). Incidence and severity of powdery mildew on leaves and fruit were evaluated on 4 Aug. Powdery mildew disease data was collected 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 in nearby blocks. All fungicide treated vines had significantly less powdery mildew on leaves when compared to nontreated vines. Lowest incidence of powdery mildew on leaves was found on vines treated with Inspire Super. All fungicide treated vines had a low severity of powdery mildew on leaves and were not significantly different from each other. All clusters on vines treated with GWN-10411 had some powdery mildew. Lowest incidence of powdery mildew on clusters was found on vines treated with Pristine. Highest severity of powdery mildew on cluster was found on nontreated vines but the amount found on vines treated with GWN-10411 were not significantly different. Lowest severity of powdery mildew on clusters was found on vines treated with Inspire Super. The rate of the surfactant Induce was dropped from 32 fl oz to 15 fl oz for all treatments when minor fruit spotting of the waxy cutin layer (non-necrotic) was observed on Jul 14. Beyond that, no phytotoxicity was observed on any treated vines.

Figure 1. Gubler-Thomas grape powdery mildew risk index for the 2015 growing season.



Treatment & Rate/A or /100 gal as indicated below	% Leaves with Powdery Mildew (4 Aug)*		% Clusters with Powdery Mildew (4 Aug)*	
	Incidence	Severity	Incidence	Severity
Nontreated.....	96.5 a	42.2 a	100 a	99.6 a
GWN-10411 at 10 oz plus Induce at 15 to 32 fl oz/100 gal	55.5 b	3.0 b	100 a	83.8 a
GWN-10411 at 12 oz plus Induce at 15 to 32 fl oz/100 gal	31.0 c	1.4 b	100 a	91.4 a
Pristine38 WDG at 10.5 oz plus Induce at 15 to 32 fl oz/100 gal alternate Inspire Super at 20 fl oz plus Induce at 15 to 32 fl oz/100 gal ...	4.5 d	0.1 b	4.5 c	0.1 b
Aprovia EC at 10.5 fl oz plus Induce at 15 to 32 fl oz/100 gal alternate Inspire Super at 20 fl oz plus Induce at 15 to 32 fl oz/100 gal ...	3.5 d	0.0+ b	40.5 b	1.1 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.

** Fungicides were applied on 10 May (BBCH 55), 21 May, 4 Jun (BBCH 61), 18 Jun, 2 Jul (BBCH 77), 16 Jul, and 29 Jul (BBCH 81, start of Veraison).