

GRAPE (*Vitis vinifera* - many cultivars)
Powdery Mildew; *Erysiphe necator*

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Early Bloom Timing for Better Grape Powdery Mildew Management in Western Oregon

Fungicides efficacy trials for grape powdery mildew (*Erysiphe necator*) management have been conducted on a variety of grape cultivars at the Botany and Plant Pathology Field Laboratory, Corvallis, OR since 1990. Vines were cane or spur pruned with vertical shoot positioning and managed for control of weeds and insects. Weather conditions were favorable each year for intense powdery mildew development. Fungicides were applied using a hooded boom sprayer where each spray program was replicated on four or five sets of five vines each. Fungicide programs were initiated when the first powdery mildew symptoms were observed and then continued at two week intervals through veraison. The incidence and severity of powdery mildew on fruit was evaluated visually at veraison by arbitrarily selecting 50 clusters for examination from the middle three vines of each replicate. Data from 31 fungicide trials conducted between 1990 and 2017 were used for analysis. The fungicide program with the lowest powdery mildew severity in each trial was selected for comparison with other trials. Programs selected consisted of either a single formulation (containing one or two FRAC groups) used throughout the season or multiple formulations (each containing one or two FRAC groups) alternated throughout the season. All fungicide programs were initiated prior to bloom for each cultivar. At two week intervals, bloom applications occurred anywhere from 10% (BBCH 61) to 90% bloom (BBCH 69) with two programs missing bloom altogether. In general, incidence or severity of powdery mildew was lower if season-long programs included an application at 10% to 40% bloom. Incidence or severity of powdery mildew tended to be higher and with greater variation if season long programs included an application at later bloom stages. Growers in western Oregon are advised to adjust fungicide management programs to include an application at early bloom stages.

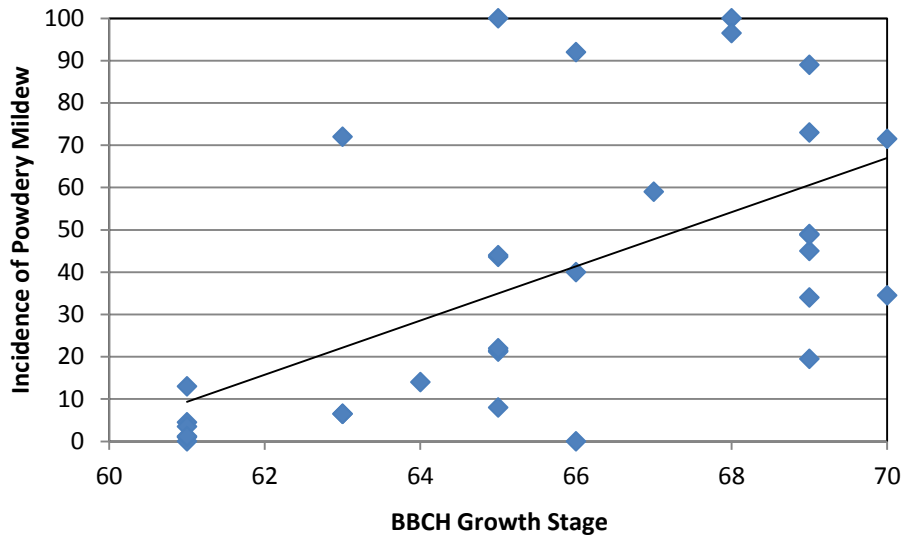


Figure 1. Incidence of grape powdery mildew on clusters at veraison relative to the BBCH bloom stage when fungicides were applied. Fungicides were applied regularly starting prior to bloom. All fungicide programs were initiated prior to bloom. At two week intervals, bloom applications occurred anywhere from 10% (BBCH 61) to 90% bloom (BBCH 69) with two programs missing bloom altogether (BBCH 70).

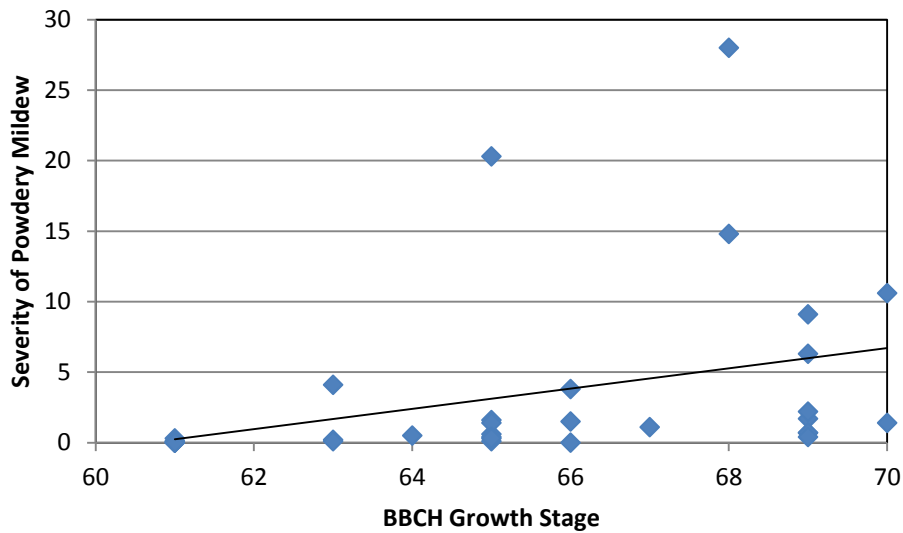


Figure 1. Severity of grape powdery mildew on clusters at veraison relative to the BBCH bloom stage when fungicides were applied. Fungicides were applied regularly starting prior to bloom. All fungicide programs were initiated prior to bloom. At two week intervals, bloom applications occurred anywhere from 10% (BBCH 61) to 90% bloom (BBCH 69) with two programs missing bloom altogether (BBCH 70).