

Executive Summary

THE INFLUENCE OF CULTURAL PRACTICES AND VINE SPACING ON THE PERFORMANCE OF WINE GRAPES UNDER MICHIGAN GROWING CONDITIONS

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VINE SPACING

White Riesling vines were planted at 3-, 4.5- and 6-foot vine spacings at both the Northwest Station and the Southwest Research and Extension Center. They were in their fourth growing season in 2002. Results were similar in both locations. Vines at the 4.5- and 6-foot spacings were significantly larger than those at the 3-foot spacing. However, vines of all treatments had optimum vine size when calculated per foot of trellis. Due to minimal winter injury to these vines, it was necessary to thin the crop.

The significance of these data is that after four years at both locations it has been possible to keep vines at the 3-foot as well as the other vine spacings at a manageable size by not nitrogen fertilizing vines since the time of planting, by maintaining a permanent sod row middle, and by cropping vines beginning in their second growing season. There has been neither a benefit nor a penalty in terms of yield and fruit quality for vines at the 3-foot spacing relative to those at the wider spacings.

LEAF REMOVAL

This is the first year of leaf removal work funded by the Michigan Grape and Wine Industry Council. Six research plots were established in the Traverse City area and four plots were established in Southwest Michigan. Several aspects of leaf removal are being investigated including the influence of variety, time of leaf removal, and manual versus mechanical leaf removal on fruit quality.

Fruit exposure averaged 44% in the eight vineyards used for leaf removal studies in 2002 when no leaf removal had been performed. In seven out of eight of these vineyards, leaf removal resulted in a measurable increase in fruit exposure and a measurable increase in both the percentage of clusters and the percentage of individual berries exhibiting sun scald. One vineyard experienced a difference in fruit soluble solids between manual and mechanical leaf removal. One vineyard experienced a decrease in fruit soluble solids over the control as a result of manual leaf removal. There were no differences in any vineyards in juice pH or titratable acidity among the manual leaf removal, mechanical leaf removal and control treatments. In a vineyard of White Riesling that developed high levels of fruit rot late in the growing season, leaf removal immediately after fruitset reduced both the incidence and severity of that fruit rot in comparison to both control vines without leaf removal and vines that had leaf removal performed at veraison. This was the only incidence of severe fruit rot of the ten vineyards under study for leaf removal. It indicates that under the conditions in this Michigan White Riesling vineyard, relatively early season leaf removal was preferable to leaf removal at veraison for controlling fruit rot.