

Executive Summary

MAINTENANCE OF FRUITING POTENTIAL THROUGH THE WINTER PERIOD FOR COLD-TENDER VARIETIES GROWN IN MICHIGAN VINEYARDS

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Hilling up/take out equipment has been developed to perform a 100% mechanized hilling up and removal of soil around grafted grapevines. In previous years this equipment has performed well on light soils. In the Spring of 2002 this equipment was tested on a heavy soil at the Oxley Farm near Lawton, Michigan. Mounds of soil that had been hilled up around Pinot gris vines and left there for two years were removed successfully with this equipment. Testing is now complete for this equipment and it is considered ready for commercial use. Information regarding the construction of this equipment will be placed on the Southwest Michigan Research and Extension Center website as a special report at <http://www.msue.msu.edu/swmrec>.

Pinot gris vines were planted at Heart of the Vineyard in 1996. Since that time some vines have been managed either with hilling up and taking out or without that manipulation. Winter injury and vine mortality have been rated on these vines annually. Over the past seven years vine mortality of both the control and hilled-up vines has remained relatively low at 1%. Winter injury to vines rose dramatically after the 1998-99 winter when temperatures reached -18 °F during the winter. The level of winter injury in vines peaked in the year 2000 with 43% and 21% for control and hilled up vines, respectively. Since that time, pruning to remove winter injured portions of vines has reduced the percent of winter-injured vines in the control and hilled up categories to 13% and 7% in 2002, respectively. Therefore, these data indicate that hilling up has not altered the percent of vine mortality over the first seven years of this vineyard. It has reduced the incidence of winter injury, but pruning strategies to eliminate that injury from vines has resulted in both treatments having manageable amounts of winter injury in 2002.

Merlot grapevines at the Doug Nitz farm near Baroda are being managed to determine the influence of two levels of straw mulching over fruiting canes after they have been placed on the ground. Temperature data for the 2001-2002 winter indicate a mild winter with the minimum temperature at 5 feet above ground at this location of 2°F. Other recording devices in this vineyard indicate that winter-low temperatures at 12" above ground, ground level, under a light application of straw and under a heavier application of straw were 2°F, 10°F, 17°F and 19°F, respectively. Therefore, catastrophic levels of winter injury would not be expected on Merlot grapevines from any of these temperatures. Spring, 2002 evaluation of node mortality in this vineyard on these treatments indicated that control canes on the trellis had 65% live nodes whereas canes placed on the ground without straw cover or with a 1X or 2X covering of straw all had about 81% live nodes. Consequently, there was a need to thin vines of all treatments so that all treatments produced comparable yields and fruit quality.