Project Title:
Enology Research in the Department of Horticulture, Michigan State University

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Students from Chemistry and Biochemistry: Conduct the laboratory analyses

Objectives: a) To provide a qualitative base for assessing the impact of vineyard decisions on subsequent wine quality; b) To provide industry with a qualitative basis for making production choices; c) To select previously non-evaluated genotypes that perform well and to reject those that do not.

Results: Are impossible to provide in the space allowed. The following provides the report of the efforts in 2002.

General Overview: Harvested grapes were analyzed immediately for brix, titratable acidity and pH. Target brix levels for the wines were as follows: dry white wines -20-22 brix; dry red wines - 22-23 brix; and sparkling wines -19.5-20.5 brix. If incoming grapes were below these levels they were chaptalized either with dextrose or fructose to desired target levels. All fermentations went to desired completion. Once fermentations were completed all wines were racked three times. All wines were cold stabilized in a 4°C room at the time of the first racking.

Red Wines: All red wine grapes were crushed and fermented with Pasteur Red yeast at the rate of 1 gram per gallon. The musts had skin contact for ten days. All fermentations were completed to dryness. After ten days the wines were pressed and inoculated with malolactic bacteria, Christian Hansen Viniflora oenos at the rate of 0.025g/gal. All red wines completed MLF. The wines were racked three times. No oak in any form was used in their processing. Differences in % alcohol levels can be attributed to discrepancies in estimating must volume due to fermentation occurring on the skins.

White Wines: All white wines from the SWMREC and from the Horticulture Teaching and Research Center were stemmed, crushed and pressed. All white wines from the NWHRS were whole cluster pressed. There was no period of skin contact. All white wines were fermented with Cotes des Blancs yeast, usually to dryness. Some wines were left with residual sugar in the range of 1.0g/L up to 5.0g/L depending on the variety. Once fermentation was complete all white wines were racked and cold stabilized in a 4°C room. At the time of the second racking all white wines were fined with bentonite at the rate of lOmL per gallon.

Sparkling Wines: All sparkling wines were whole cluster pressed and fermented with Premier Cuvee yeast. All fermentations went to complete dryness. Once fermentation was complete all white wines were racked and cold stabilized in a 4°C room. At the time of the second racking all sparkling wines were fined with bentonite at the rate of lOmL per gallon.

Report: In 2002 experimental wines were produced as noted in Table 1. A total of 124 wines were produced from 14 different vineyard efforts from 4 vineyard locations. Limited funds for the year limited our efforts at more detailed cellar efforts. It remains our view that Michigan's conditions of culture are so diverse and challenging that any suggestion of change, whether variety choice, training system, crop level; or canopy management, must be accompanied by an

evaluation of the impact of that change on wine quality. There are 14 detailed tables of data from the 2002 wine production component. These are available upon request and each contains: harvest date; initial brix, pH, and TA, and % alcohol, residual sugar, pH, TA, volatile sugar and malolactic fermentation status for each of the 124 wines. The copies are available for a small copying cost @ 7-cents/copy. Further, detailed data related to vineyard performance of the vines that produced the grapes vinified are also available upon request (See Wine Cultivar and Clonal Evaluation report).

Specific Findings of Note: The quality of wines produced from the recent release from Minnesota, Frontenac was excellent as both a dry table wine and as a port style. The color and wine quality of Dijon clones of Pinot noir (113, 115) in NW MI was excellent. Much more.

Table I. Location, activity, and wines produced in 2003.

Location	**Activity**
SWMREC	a) Vinifera white variety evaluation; b) Chardonnay clone evaluation; c) White hybrid variety and selection evaluation; d) Red wine variety and selection evaluation; e) Pinot noir clone evaluation; f) Cabernet Sauvignon clone evaluation; g) Cabemet Franc training, rootstock and cropping evaluation; h) Merlot rootstock and canopy management evaluation; i) Pinot noir clones for sparkling wine evaluation; j) Chardonnay clones for sparkling wine evaluation
HTRC	Hardy red wine cultivar evaluation
NWHES	Red wine variety evaluation
NWHES	White wine variety evaluation
F enn Valley	Riesling clones and training systems evaluation

Communications: We have published 3-articles on variety and clone efforts. We have also presented 4-meetings (invited) on the topic in the last 3-years. Our annual Spartan Cellars tasting provides a venue for industry assessment. Our wine library is available for non-formal assessment by industry persons by appointment. The goal is to provide information for industry persons seeking to learn that can serve as one component in their decision-making processes.

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