

Project Report
**American Vineyard Foundation, California Rootstock Commission, the UC-DANR
Competitive Grant Program in Viticulture and Enology, and the Viticulture Consortium
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Project Title: Clonal Evaluation of Cabernet Sauvignon clones from Heritage, French, and Old California Sources

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Objectives and Experiments Conducted to Accomplish Objectives:

The objectives of this project are: 1) to establish Cabernet Sauvignon clonal trials at the Oakville Experimental Vineyard using standard, certified UC Davis FPMS clones, recently released Napa Valley heritage clones, and newly imported French ENTAV clones. These are extremely important selections for which no comparative performance data is available. and 2) to compare the effect of virus infection on viticultural and enological performance of the three Napa Valley heritage clones for which we have infected and healthy plant material.

In the first year of the grant budwood and rootstock has been collected and benchgrafting is currently in progress. Twenty Cabernet Sauvignon clones are being benchgrafted to the rootstock 110R (see Table 1).

Old California FPMS Clones: We will include two standard FPMS clones in these experiments, Cabernet Sauvignon FPMS 06 and Cabernet Sauvignon FPMS 08. These selections have been used throughout the industry for many years. They have also been included in previous clonal studies making them a standard for comparison with the new materials which have not yet been included in replicated trials.

Heritage Cabernet Sauvignon Clones: Three well-respected sources of Cabernet Sauvignon were selected by Phil Freese and Deborah Golino from Napa Valley vineyards. The Neibaum-Coppola selection (FPMS 29) was from the old plantings near their winery which provided premium quality grapes. The Disney Silverado selection (FPMS 30) was from an old vineyard off Silverado trail believed to be planted with the See clone of Cabernet. The Mondavi selection (FPMS 31) was from 50-year old vines in the old Tokalon vineyard. All three wineries gifted these selections to the FPMS public program. These selections were all treated by meristem shoot tip tissue culture to eliminate virus. For each new clone, the original virus infected selection is also available in the UC Davis Grapevine Virus Collection (DVC 29LR, DVC 30LR, and DVC 31LR).

ENTAV Trademarked Clones: A new program has been established by ENTAV (Etablissement National Technique pour l'Amélioration de la Viticulture) and its American partners to sell French clonal selections under a trademark program that insures the authenticity of the clones and provides participation by ENTAV in propagation and marketing. The ENTAV clonal materials are famous around the world but this is the first program to make them officially available to U.S. growers under an ENTAV agreement (ENTAV, 1997). Extensive clonal evaluation including wine quality testing is a key mark of the ENTAV program. There is great interest in comparing these clones to California selections. Sunridge nursery and ENTAV director Robert Boidron have agreed to allow of these clones to be included in this experiment. Included will be ENTAV-INRA clones 169 and 337. The selection of ENTAV-INRA 337 which is included is infected with GLRaV 2; it is reported to perform well under French cultural conditions but it is not known how important the virus will be under higher California/U.S. cropping systems.

The trial will be planted in a randomized complete block design with guard vines of healthy vines between the data vines at the Oakville Experimental Vineyard in Napa Valley. Growth and vigor of vines, fruit yield and quality and wine quality will be assessed as the vineyard matures. Shoot number and the weight of cane prunings will be measured as an indicator of virus effect upon vines. Fruit yield and cluster number will be taken on a per-vine basis; berry wt (average from a 100-berry sample) and fruit maturity indices (Brix, TA, and pH) will be taken on a per-rep basis; brix will be measured with a refractometer, TA by means of titration with a NaOH standard, and pH by pH meter; while the yield components cluster weight and berries per cluster will be arrived at by calculation. The size of the experiment will make it possible to make half-ton batches of wine for evaluation from each clone. It should be possible to do this over a number of years and under varying winemaking parameters.

Summary of Research (Major Accomplishments and Results) by Objective:

Plants are being benchgrafted according to schedule. Data collection is expected to begin in

2005/2006.

Publications or Reports: none at this time

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Concise General Summary of Current Years Results:

Funding was provided for nursery expenses in the first year of this work. Approximately 3000 cuttings of 110R rootstock were collected. Budwood from 20 different Cabernet Sauvignon clones from the FPMS collection, California Heritage sources and French ENTAV sources was collected and is currently being benchgrafted. The vineyard will be planted in a randomized design in Oakville, Napa Valley and data collection will begin in 2005/2006.

Table 1. Cabernet Sauvignon clones benchgrafted to 110R that will be evaluated at the UC Oakville Experimental Vineyard in Napa Valley. DVC = Davis Virus Collection

Cabernet Sauvignon Clone #	Description
FPMS 02	California, Oakville 11 V1
FPMS 04	Argentina, Mendoza PI 296423
FPMS 06	California, Jackson G8V10
FPMS 08	California, Concannon 34 V2 (#102)
FPMS 14	Chile, PI 364302
FPMS 24	California, Laurel Glenn (public selection)
FPMS S25	France #339 (1989)
FPMS 26	Italy, ISV-V-F-6, Conegliano, 1988
FPMS 27	Italy, R5, Conegliano, 1988
FPMS 29	CA, Neibaum-Coppola clone from Coppola Vineyard, Napa
FPMS 30	CA, Disney Silverado clone from old vineyard by Napa river from "See clone"
FPMS 31	CA, Mondavi S block, Napa County
DVC 29LR	Virus-infected, CA, Neibaum-Coppola clone from Coppola Vineyard, Napa, source of FPMS 29
DVC 30LR	Virus-infected, CA, Disney Silverado clone from old vineyard by Napa river from "See clone", source of FPMS 30
DVC 31LR	Virus-infected, CA, Mondavi S block, Napa County, source of FPMS 31
#169	ENTAV via Sunridge Nursery
#191	ENTAV via Sunridge Nursery
#337	ENTAV via Sunridge Nursery

#338	ENTAV via Sunridge Nursery
# 341	ENTAV via Sunridge Nursery