

**American Vineyard Foundation/ Zinfandel Advocates and Producers/CCGPRVE
Annual Report 2002**

I. Project Title: Evaluation of Sierra Foothill Zinfandel Selections

II. Principal Investigator

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Cooperators

Ken Deaver, Deaver Vineyards (Grower – trial is located on his property)
Leon Sobon, Shenandoah Vineyards and Sobon Estates
Paul Sobon, Shenandoah Vineyards and Sobon Estates
Jeff Myers, Montevina Winery

Grower/Vintner Advisory Committee:

Frank Alviso, Clocksprings Vineyards
Greg Boeger, Boeger Vineyards and Winery
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III. Summary

Excellent quality Zinfandel wines are made from “old vines” in California. Often the source of wood for these vineyards is unknown. It is unclear whether these vineyards are different selections or clones of Zinfandel, or if they produce superior quality because of age, vineyard site, stress, viticultural or management differences. Virus disease symptoms, especially Leafroll have long been associated with many “old vines”. As laboratory testing for virus disease becomes more sophisticated even “asymptomatic” popular selections prove to be diseased. While the University of California and FPMS continue to promote certified stock, there is still strong industry interest in duplicating the success of “old vine” selections of Zinfandel, regardless of virus status or proven performance outside of the origin vineyard. By growing these selections in one location under uniform cultural practices, we will be able to evaluate any differences in these field selections.

A research block was established Amador County. In 1998, budwood was collected from nine “old vineyard” Zinfandel selections in Amador, Calaveras, and El Dorado Counties. Primitivo was also collected since there is growing interest in this cultivar. Wood was collected from 4-5 vines that appeared to be free of any virus symptoms. The wood was grafted onto St. George rootstock. Plants were grown during the summer at Sunridge Nursery in Kern County and the research vineyard was planted in March 1999. Selections include:

1. Aparicio
2. Dal Porto
3. Deaver
4. Eschen
5. Upton
6. Ghirardelli
7. Higgins
8. Lubenko
9. Primitivo
10. Steiner (same source as Grand Pere)

Each plot consists of 32 vines (4 rows x 8 vines) and each plot is replicated in 8 blocks across the 3 acre field. The blocking is laid out to follow soil types. Large plots were established so that wine samples could be made from the selections.

Eight data vines per plot are used for viticulture measurements. Pruning weights were collected to determine vine vigor. Shoots and clusters per vine were recorded. Two berry samples were collected prior to harvest. Vines were harvested in September 2002, and data was collected, including; yield per vine, clusters per vine, berry weight, cluster weight, brix, titratable acidity, pH. There are few significant differences in these young vines and a great deal of variability based on vigor and training. Vines were thinned in 2002 to avoid overcropping.

Fruit from all 256 vines of each selection was harvested, and approximately 60 gallons of wine were made from each treatment. Sample wines were tested and will be evaluated.

Vines were monitored for virus symptoms. PCR testing was conducted on 50 vines and will continue as time and expense allow.

IV. Objectives and Experiments Conducted to Meet Stated Objectives

Objective 1. To evaluate Zinfandel selections from “old vineyards” in the Sierra Nevada Foothills (Amador, El Dorado and Calaveras Counties). Evaluate viticultural and fruit quality properties. Make and evaluate wine from selections. Evaluate virus status of selections.

The plot is located at the Deaver vineyard in the Shenandoah Valley. Ten selections of Zinfandel were collected and grafted on to St George rootstock in 1998 by Sunridge Nursery.

They include:

- Aparicio
- Dal Porto
- Deaver

Eschen
Ghirardelli
Higgins
Lubenko
Primitivo (not a Foothill selection)
Steiner
Upton

Each plot consists of 32 vines (4 rows x 8 vines) and the trial has 8 replications. Therefore there are 256 vines of each selection. Large plots were established so wines could be made from selections. The trial covers over 2.5 acres. Vines were planted March 10-15, 1999.

Six additional selections were planted in adjacent plots in March 2000. These will not be compared directly to selections in the trial, but are for observation only:

Santa Cruz
DuPratt
Geyserville
Paso Robles
Davis Clone 6
Boeger (was field budded in Fall 2000)

The field budding with the Boeger selection was largely unsuccessful and will have to be repeated.

Vine Growth

Pruning weights were collected in February 2002. Data is presented in Table 1. Aparicio, Primitivo, Steiner, Upton and Higgins selections were most vigorous and Eschen was the least vigorous. Vigor improved in Steiner and Upton in 2001 and declined in Dal Porto. Some differences in vigor can be attributed to the source material and quality of the resulting dormant benchgrafts used at planting. The results are reported primarily because they impacted pruning, vigor and fruitfulness for 2002.

The trial was managed and monitored throughout 2002. Standard grower practices were implemented for pest and irrigation management. Vines were thinned in early July since crop load exceeded vine capacity. Clusters were counted on each of the data vines and 30% were removed. Cluster counts were recorded.

Berry samples were collected on September 6 and September 12, to determine maturity. One hundred berries were sampled per plot and average berry weight, soluble solids, titratable acidity and pH were determined. The vines were harvested on September 18 and 19, 2002. Cluster number and vine yield was recorded on 8 data vines per plot. Components of yield are presented in Table 1. All vines were harvested for wine and bulked together by treatment (fruit from 256 vines in all 8 blocks.) This fruit was crushed on September 19. Must was fermented in 10 macrobins and a standard wine protocol was followed. The wine was punched down twice daily and brix and temperature were recorded. The wine was very lightly pressed and placed in 4 year old neutral American oak barrels on September 30. Wine was racked on November 5. There is one barrel per treatment and one barrel of blended wine for topping. Wines were sent to ETS laboratories for testing in December.

Results of the fruit quality parameters are summarized in Table 1. There were few differences in fruit maturity, or berry size. Yield, and cluster differences should be interpreted with caution since the vines were thinned.

Virus Testing and Results

In January 2002, wood was collected from five selections for virus testing. Aparicio, Deaver, Eschen, Higgins and Ghirardelli were selected for testing in 2002. Samples were analyzed by Foundation Plant Material Service (USDA) Davis, CA. Results are not yet available. We hope to continue testing, but it is dependent on the generous support and contribution of FPMS.

There are no symptoms of virus present in the block, nor were there symptoms in the origin-vines.

Objective 2. Establish uniform research block of Zinfandel in the Sierra Nevada Foothills for future viticulture research projects.

Every attempt was made to establish a uniform block following soil patterns. Virus incidence in some selections may limit using the block for future studies. However, the plots do represent common field selections and are representative of common field conditions. We will have to wait for testing results before we know the status of this objective. One small fertilization trial has been established in a replication of Primitivo.

Summary of Major Research Accomplishments and Results

Growth, fruitfulness, and fruit quality data were collected. Ten sample wines (60 gallons per treatment) were made. Wine from 4-year old vines will probably not reflect any real differences between selections, however, this gives baseline, historical information and gave the researchers and cooperators an opportunity to develop the winemaking protocol.

Outside Presentations of Research

Because vines were only in their fourth season, no results were presented. A progress report was presented in a talk to the Amador County Wine Grape Growers Association in April 2002. A presentation was made to the ZAP Board of Directors in May 2002. A tour of the plot and presentation was made to ZAP members at a local event in June 2002. A brief update was prepared for the November 2002 issue Foothill Vineyard News, the Amador and El Dorado County UCCE newsletter.

Research Success Statements

This research will provide Sierra Foothill and other grape growers with essential information on the performance of different selections of Zinfandel. Wood is currently in demand, being propagated and sold from many of these selections, despite their virus status. They are selected primarily on historic value and on performance in their original site on their own roots. It is critical to evaluate their performance on rootstock in a single site. This trial will provide valuable information on the virus status of these materials and the impact of virus on fruit quality.

Funds Status

Funds were used primarily for field assistance in pruning, thinning, harvesting and data collection. Some lab and winemaking supplies (NaOH, yeast, enzymes) were also purchased. All funds will be used by the end of the funding cycle.

Table 1. Evaluation of Sierra Foothill Vineyard Selections 2002 – Four-Year Old Vines

Selection	Weight/Berry		Soluble Solids (Brix)	pH	Titratable Acidity	Cluster # per vine (lbs)	Yield/vine (gms)
	Cluster wt (lbs.)	Pruning wt (gms)					
Aparicio	1.8 260.1	1.8 .50	25.1	3.51	.65	8.2	4.27
Deaver	1.8 .43	25.0	3.48	.68	7.9	4.20	241.4
DalPorto	1.8 256.5	1.8 .38	25.4	3.49	.69	7.6	4.31
Eschen	1.7 .30	25.1	3.52	.65	7.2	3.01	204.3
Ghirardelli	1.7 192.5	1.7 .38	26.2	3.46	.71	7.1	3.01
Higgins	1.9 .50	24.9	3.48	.69	8.0	4.59	261.6
Lubenko	1.8 244.7	1.8 .46	25.5	3.47	.69	8.6	4.63
Steiner	1.8 .48	25.7	3.47	.66	7.5	3.65	220.7
Upton	1.8 227.0	1.8 .51	25.3	3.47	.71	9.1	4.55
Primitivo	1.6 194.1	1.6 .50	26.5	3.52	.65	9.0	3.83