

Oregon Wine Advisory Board Research Progress Report

1995 - 1996

Winegrape Variety Trial in Southern Oregon - 1995

David Sugar and Porter Lombard
Southern Oregon Research and Extension Center, Medford

Barney Watson
Department of Food Science and Technology

The 18 winegrape varieties in this trial were in sixth leaf in 1995. Vines were pruned in February to either a Scott Henry (3-4 permanent arms on a vertical trellis using two fruiting wires 12 inches apart at 30 and 42 inch height) plus 2 extra disposal canes on some of the varieties with excessive growth. Prunings of one typical vine from each of the 5 replicate plots were used to adjust the size of the vines of each variety using a formula of approximately 25 nodes for every pound of cane weight removed. Varieties with 20-25 nodes were trained to 3 arms, 30-40 were trained to 4 arms, and 45-65 nodes were trained to 4 to 6 arms using 4 permanent arms and disposing of the excess arms in early August (Table 2). Gamay Noir, Dolcetto, Fresia, and Nebbiolo Lampia were pruned to 3 arms since their cane weights were only 1.7 to 2.0 lbs. Most varieties were pruned to spurs but cane pruning was used when developing a new arm. Those varieties pruned to only cane were those that lacked fertile basal nodes, had small clusters, or were too vigorous: Viognier, Tempranillo, Fresia, Petite Verdot, and Syrah. Nebbiolo was pruned to spurs on the upper arms and canes on the lower arms.

Table 1. Phenology of winegrape varieties in southern Oregon, 1995

VARIETY	DATES OF:					PERIOD IN DAYS:	
	Bud Break	1st Bloom	Seed hard	Verai-son	Harvest	Budbreak-Harvest	1stbloom-Harvest
CHARDONNAY	4-5	6-6	8-1	8-22	10-18	196	134
PINOT GRIS	4-11	6-4	8-1	8-20	9-21	163	105
PINOT BLANC	4-10	6-3	8-1	8-22	10-18	191	133
VIOGNIER	4-26	6-10	7-30	8-18	10-18	175	130
CAB SAUVIGNON	4-27	6-13	8-2	8-27	10-25	181	134
TEMPRANILLO	4-28	6-12	7-28	8-20	9-21	147	102
LEMBERGER	4-10	6-7	8-1	8-22	10-18	191	129
GAMAY NOIR	4-19	6-3	8-1	8-24	10-18	182	133
DOLCETTO	4-14	6-13	7-30	8-24	10-25	194	130
CAB FRANC	4-10	6-8	8-1	8-31	10-25	198	135
FRESIA	4-11	6-10	8-3	8-26	10-25	197	135
NEBBIOLO LAMP	3-30	6-10	8-3	9-2	10-25	209	137
NEBBIOLO	3-31	6-9	8-3	9-1	10-25	208	138
PETITE VERDOT	4-26	6-13	8-5	9-4	10-25	182	134
SYRAH	4-24	6-16	8-7	8-28	10-25	184	131
GRACIANO	4-27	6-11	8-1	9-2	10-25	181	136
SANGIOVESE	4-5	6-3	8-2	8-26	10-25	203	144
REFOSCO	4-5	6-10	8-3	8-26	10-25	203	137

Table 2. Pruning and thinning parameters, 1995

VARIETY	PRUNING:				CLUSTER NO.		CL WT(g) HARVEST
	WT# FEB.	NODE NO.	METHOD /ARMS AFTER AUG.	REMOVED	HARVEST (AUG)		
CHARDONNAY	3.5	40	SPUR/4	4	14	63	95
PINOT GRIS	3.0	40	SPUR/4	4	0	72	92
PINOT BLANC	3.6	45	SPUR/4.5	4	0	59	127
VIOGNIER	2.8	40	CANE/4	4	4	68	97
CAB SAUVIGNON	5.0	65	SPUR/6	4	14	55	111
TEMPRANILLO	5.6	65	CANE/6	4	4	32	140
LEMBERGER	2.5	35	SPUR/4	4	20	44	116
GAMAY NOIR	2.0	30	SPUR/3	3	0	51	97
DOLCETTO	1.6	25	SPUR/3	3	18	34	192
CAB FRANC	3.4	45	SPUR/4	4	18	63	115
FRESIA	1.7	20	CANE/3	3	0	35	189
NEBBIOLO LAMP	1.9	30	CANE/3	3	0	17	251
NEBBIOLO	3.6	45	SP/CA/4.5	4	0	33	181
PETITE VERDOT	2.5	35	CANE/4	4	36	51	74
SYRAH	4.9	65	CANE/6	4	20	51	118
GRACIANO	5.2	60	SPUR/6	4	21	39	250
SANGIOVESE	3.8	55	SPUR/6	4	34	34	193
REFOSCO	3.2	45	SPUR/4.5	4	21	41	164

Shoot thinning to a specific shoot number was done June 20-27 (one week after bloom). Shoot positioning, particularly in the Scott Henry canopies, was done July 22 (4 weeks after bloom). Tendrils were difficult to separate from the wires on some varieties, i.e., Fresia, Nebbiolo Lampia, and Nebbiolo. Breakage of new canes was common on Tempranillo, Lemberger, both Nebbiolos, Syrah, and Graciano

vines. Inflorescence necrosis (IN) was noted in two varieties, Tempranillo and Petite Verdot.

The season had 2982 degree days compared to an average of 2739, and 250 less degree days than last season. The months of May, September, and October had above-average temperatures while April, June, and August were below-average. The vineyard remained unirrigated but rainfall was near average at 18 inches for the year. Only .32 inch precipitation occurred during maturation (September and October) which is 2 inches below average. Bud break occurred from late March to the 3rd week of April and bloom occurred in the first two weeks of June which are near normal for the area (Table 1). Seed hardening took place in late July and early August, 47-60 days after first bloom and veraison occurred 20 to 32 days later. Harvest began September 21 for the early varieties and ended October 25, just after a killing frost on October 22. The length of the growing season (bud break to harvest) ranged from 147 days for Tempranillo to 209 days for Nebbiolo Lampia.

No cluster counts or weights were taken this year, but thinning was based on last year's cluster weights and clusters were thinned off at veraison based on the number of shoots left on the vine. Six kg per vine was set as the goal. Cluster weights at harvest were close to weights found in 1994 except for Fresia, Nebbiolo Lampia, and Graciano which were considerably heavier in 1995 (Table 2). Cluster weights at harvest ranged from 74 grams for Petite Verdot to 251 for Nebbiolo Lampia. Harvest yields varied from 4.3 to 9.3 kg per vine (Table 3) indicating better yield estimations in 1995. Leafhopper infestation occurred after veraison and appeared to be more severe on several varieties: Dolcetto, Syrah, Graciano, Sangiovese, and Refosco. Leaf damage on these varieties appeared to be higher than others and this may be the reason for the lower *Brix than expected.

Netting for bird protection was placed on the vines by mid- September. Harvest occurred about 1-3 weeks later than 1994 for most varieties which may have due to the leafhopper infestation and a cooler year. Fruit maturity was sampled weekly on 250 berries for each variety. *Brix, titratable acids, and pH were tested during maturation. Brix were 1.5 to 2.0 points lower in 1995 than in 1994 and similar to 1993. Late harvested varieties had similar TAs in 1995 but the pH values were higher than 1994. All of the late varieties will be targeted for smaller yields in 1996 by leaving fewer nodes and clusters. Fruit from the center 3 of 5 vines were harvested from each plot and used for yield components and 45 clusters per variety were tested by juice components (Table 3). Cuttings of all varieties are being made available to all growers in early February 1996.

Wine Production

Grapes were harvested for experimental production beginning on September 21 with Tempranillo and Pinot gris followed by Viognier, Lemberger and Gamay Noir on October 18. The remaining varieties were harvested on October 25. Must analysis at crushing ranged in degrees Brix from as low as 19.1 for Dolcetto and 20.4 for Sangiovese and Syrah to as high as 23.5 for Tempranillo. Several of the red musts were chaptalized with the addition of sugar to obtain about 11.5-12.5 potential alcohol content. Figure 4 shows the must analysis at harvest and the new wine analysis (prior to completion of malolactic fermentations for the later harvested varieties). New wines ranged from 11.4 to 13.5% alcohol with TA's from 5.1 to 9.1 g/L and pH's from 3.25-3.77. Anthocyanin content in red wines ranged from as high as 505 mg/l for Tempranillo to as low as 104 mg/l for Nebbiolo. Red wines with the greatest color intensity included Tempranillo, Lemberger, Cabernet franc, Fresia, and Petite Verdot. Total phenolic content ranged from as low as 782 mg/l for Dolcetto to as high as 2390 mg/l for Petite Verdot. Low tannin varieties (less than 1000 mg/l) included Dolcetto, Syrah, and Sangiovese. Moderate tannin varieties (1000-1300 mg/l) included Lemberger, Gamay Noir, Cabernet franc, and Nebbiolo Lampia. High tannin varieties (> 1300 mg/l) included Fresia, Nebbiolo, and Petite Verdot. New wines after completion of malolactic fermentation, cold stabilization, and bottling will be tasted by an industry panel and at industry technical meetings.

Table 3. Yield and fruit characteristics at harvest, 1995

VARIETY	YIELD KG/VINE	TONS/AC	HARVEST DATA			
			DATE	°BRIX	TA (g/l)	pH
CHARDONNAY	6.0	5.9	10-18	22.5	8.9	3.18
PINOT GRIS	6.6	6.3	9-21	21.4	11.3	3.19
PINOT BLANC	7.5	7.2	10-18	23.5	8.7	3.18
VIOGNIER	6.6	6.3	10-18	21.2	6.9	3.15
CAB SAUVIGNON	6.1	5.9	10-25	20.4	9.0	3.17
TEMPRANILLO	4.4	4.3	9-21	21.5	8.7	3.17
LEMBERGER	5.2	5.0	10-18	23.2	7.4	3.09
GAMAY NOIR	5.0	4.8	10-18	23.9	8.1	3.14
DOLCETTO	6.5	6.3	10-25	19.1	6.8	3.31
CAB FRANC	7.2	6.9	10-25	23.5	6.8	3.29
FRESIA	6.6	6.3	10-25	23.9	8.7	3.21
NEBBIOLO LAMP	5.3	5.1	10-25	22.3	12.9	2.98
NEBBIOLO	5.9	5.7	10-25	22.9	12.1	2.97
PETITE VERDOT	3.8	3.6	10-25	23.6	13.5	3.02
SYRAH	6.0	5.8	10-25	20.4	8.7	3.19
GRACIANO	9.7	9.3	10-25	18.8	7.5	3.19
SANGIOVESE	6.6	6.4	10-25	20.4	10.8	3.02
REFOSCO	6.8	6.5	10-25	18.9	9.0	3.09

Table 4. SOES Varietal Trial New Wine Analysis

	Must				New Wine						
	°Brix	TA ¹	pH	Mal ² g/L	Alc %	TA g/L	pH	Anth ³ mg/L	Color ⁴ Int	Total Phenols mg/L	
Pinot blanc	22.4	7.9	3.43	3.4	13.3	7.3	3.35	---	---	230	
Viognier	22.6	6.7	3.36	3.1	13.7	6.7	3.36	---	---	245	
Tempranillo	23.5	6.7	3.18	3.3	13.5	5.0	3.77	505	9.0	1935	
Lemburger	21.5	7.4	3.15	---	11.4	6.7	3.38	339	7.9	1036	
Gamay Noir	22.2	8.7	3.10	3.1	12.1 ¹	6.5	3.51	181	4.0	1039	
Dolcetto	19.0	8.1	3.10	3.0	11.6 ¹	7.9	3.25	145	4.2	782	
Cabernet Franc	20.8	8.3	3.09	2.6	12.7 ¹	5.1	3.73	376	7.7	1216	
Fresia	22.2	10.7	3.00	5.3	11.7 ¹	7.3	3.58	266	7.2	1810	
Nebbiolo Lampia	21.3	13.2	2.86	3.9	11.6 ¹	9.1	3.33	119	4.2	1236	
Nebbiolo	21.4	13.9	2.83	5.6	11.7 ¹	7.4	3.56	104	3.9	1655	
Petite Verdot	22.4	15.2	2.86	6.1	12.9	6.9	3.56	373	10.0	2390	
Syrah	19.8	8.9	3.05	2.5	11.6 ¹	6.2	3.50	222	4.3	850	
Sangiovese	19.9	11.3	2.92	3.2	11.6 ¹	8.3	3.34	168	4.1	916	

¹ Titratable acidity² Malic acid³ Anthocyanin content, mg/L⁴ Color intensity, 520 + 420 nm

