

# VARIETY OBSERVATION TRIAL

Liberty Gallo Vineyard

Paul S. Verdegaa, Farm Advisor

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This field trial was established in 1991 to evaluate several varieties "new" to San Joaquin County and the Lodi area in particular. It is a non-replicated trial and as such does not provide a strictly scientific comparison of the included selections. However, with the very little information available on some of these varieties in California, it may give a starting point for alternative choices to diversify current production for future needs.

This variety block will help determine some of the merits and faults of several varieties that have potential for improving blends or to provide distinctive varieties of their own. General growth and production characteristics have been noted as observed each year. Yields and fruit characteristics have been collected for comparison. There has been some effort to evaluate small lot wines of the more interesting of these selections, but no single focused effort is presently under way to evaluate all the varieties. Varieties from several international regions include:

## Rhône

Syrah (Shiraz) 1,6,7	Mourvedre 1,3,5	Cinsaut 3
Viognier	Clairette blanche 1	Mondeuse
Marsanne		

## Italian

Aleatico 3,4,5	Aglianico	Arneis
Barbera 1	Corvina Veronese	Corbeau* 3,5,6,7
Dolcetto	Freisa	Forastera
Lagrein	Marzemino 1	Montepulciano
Nebbiolo 1	Nebbiolo Lampia	Picolit
Pigato	Pignolo	Primitivo 3
Sangiovese 1	Sangiovese 3	Schioppettino
Verduzzo	Cortese	Mammolo Toscano
Raboso Piave	Teroldego	

## Spanish

Tempranillo 3 (Valdepeñas)	Morrastel 1(Graciano)	Grenache 1A, 3
Picpoul noir	Xarello	

## Bordeaux

Cabernet Sauvignon 7	Cabernet franc 1	Carmenère
Merlot 6	Malbec 3,4,6,9	Petit Verdot 1, 2
Semillon 2,3,6,7	Tannat 1	

## Portuguese

Alvarelhão	Trousseau (Bastardo) 8	Souzão 1
Touriga 01	Verdelho 2	Trincadeira
Tinta Cão		

## Other

Zinfandel 2	Melon 5	Symphony
Petite Sirah 3	Muscat blanc 01	Pinot gris 1,146,152
Chardonnay 4,5,13,16	Plavac mali	Tinta Amarella
Pinotage	Cabernet Pfeffer	Negrette
Pinot noir		

\*Corbeau : Charbonó prior ID

Mondeuse : Refosco prior ID

*Can grow just about everything here  
PG, PN, white Riesling at bottom of list  
Freedom root stock has  
done well*

All of the varieties at this site are on the same rootstock, which is Freedom. This rootstock was chosen, as it represented the most common rootstock used in the district at the time of planting. Also, its general vigor demonstrates the maximum production potential of these varieties. This has helped indicate a "worst case" scenario from the vintner's perspective and to help growers be aware of potential overcropping by appropriate rootstock selection and vine management. The choice of Freedom has had the additional "benefit" of providing an excellent indicator for any latent viruses that may be present in any of the scion wood used.

A summary of the site information is included in the following:

Rootstock: Freedom  
Soil: Tokay fine sandy loam  
Spacing: 7 ft x 10 ft (2.1m x 3.1m)  
Irrigation: drip, 2 x 0.5 gph emitters per vine  
Trellis: 24 inch T-Trellis; Bilateral cordon  
Planted: 1991-93, 1995, 1999, 2004

**Sangiovese R** Very good yields and moderate vigor. Moderately low potential for bunch rot; berries are tough skinned. Will need crop thinning and proper trellis system and/or canopy management for good color and high quality. Several clones are available, but clone differences appear to be subtle by current industry experience. Differences between FPMS clones 2 & 3 appear slight. Clone 3 seems to have more variability in berry size; some winemakers prefer it currently for its flavors. This variety is for growers comfortable with growing Zinfandel for red programs.

**Nebbiolo R** Very lanky growth, suited to cane pruning, however spur pruned vines at Liberty trial have done as well with regard to yield. Clusters are loose, long and large. Berry color is light and easily affected by crop level. Budbreak is very early, but harvest is very late. Not prone to rot, but low potential here, without strong commitment to crop and canopy management. Lampia clone appears to have less crop and slightly less color, although slightly less rot than FPMS 1.

**Charbono(Corbeau) R** California Charbono appears to be the Corbeau variety of southern France. Moderately vigorous vine, high yield and very late ripening. Clusters are medium and fairly compact. Can make a nice wine of distinctive character, as already proven commercially, but may still have low potential due to late harvest and lack of market recognition. Minor rot problems in very wet years. and Will require cluster thinning for quality red program.

**Marzemino R** Vine is moderately high in vigor and trailing in growth. Very nice, dark color of fruit, with large and loose clusters. Berries are tough skinned. Good yield, with no rot. Lower acid levels like Morrastel, but very interesting fruit character. A good blending choice, with some potential as a varietal.

**Primitivo 03 R** Very closely related to Zinfandel (genetically a clone), but considered a distinct variety by BATF. Clusters are smaller and looser. Berries are smaller with some shot berry, very little to no rot. Yields are very good and vigor is moderate to high moderate. Berry color more even and deeper than Zinfandel. Generally matures well ahead of Zinfandel, 7 to 10 days on average and as much as 30 days in cool years or light crops.

**Barbera 01 R** Good yield and moderately high vine vigor. Clusters are medium in size and moderately compact. Excellent acid levels. Some rot potential, but manageable by irrigation and canopy management. Small number of clones available, with slight difference in rot potential. An older variety making a "comeback", it deserves much more attention locally. Can make a distinctive high quality red wine or good for blending with respect to acid level and flavor.

**Viognier W** Vines are of moderate to low moderate vigor, but have "bull canes". Very good yields, little to no rot potential, unless rained on directly. Clusters are fairly loose, small to medium in size. There have been some wood sources with virus problems. Will need crop thinning to achieve high quality and late mid-season harvest for flavor development. Color is nice, but not particularly sensitive to sunburn. Very good potential viticultural choice with comparable wine quality.

*can call  
at ZW*

*can get 8-10T/acre  
w/ thin to 7T/acre*

*(need to  
manage like a  
red avoid overcrop*

**Syrah 01 (Shiraz)** R Very high vigor vine with very good yields, no rot. Clusters are loose, well colored and uniform in ripening. Some sensitivity to *Botrytis* shoot blight at bloom time, but little to no potential for bunch rot at harvest. Excellent variety for this area with very good potential with respect to marketing. No apparent difference in FPMS clones as they are all same source of mother vine from Australia with varying levels of heat treatment. Vine is extremely vigorous, making rootstock selection and vineyard design very critical. Berries tend to become slightly flaccid (wrinkled) at 21 Brix and above, yield loss not significant. Very similar experience in Australia, but rarely (?) in the Rhône Valley. It can produce 12 to 15 tons per acre, but crop levels less than seven to eight per acre needed for maximum color and flavor.

**Mourvedre 3 (Mataro)** R Low vigor vine, very upright in growth. Moderate to high crop levels. Color of fruit is very good in most years (1998 somewhat less), but sensitive to crop level. Very good potential, especially as the variety can be found scattered in some old Zinfandel blocks as part of old tradition of "field blends" (accidental or otherwise). Some potential as a varietal wine, but better suited to quality blends.

**Cinsaut 3 (Black Malvoisie)** R Moderately high vigor growth. Late ripening with high yield. Tendency for large clusters and very large berries (3+ grams). Old vines or intensive crop/irrigation management needed for quality. Some rot potential, but not severe. Uneven ripening in cool year (1998) Australian interest is fading, under field and climate conditions similar to this area. It produces a wine of distinctive character, but more suitable to high quality blends. Origins actually are probably as a table grape (similar to Zinfandel). Can be found in old Zinfandel vineyards as Black Malvoisie, along with "good old" Mataro (Mourvedre).

**Clairette blanche** W Yield is good to heavy and vigor of vines is fairly high. Large, loose clusters, berries also fairly large. Canopy can be shaded, with shot berries evident in most years, yet production very constant. Irrigation and crop management may be needed. Harvest is late mid-season. Very similar to Chenin blanc, without the rot. Somewhat attractive to grape leaf hoppers. A good potential alternative for areas that have historically produced distinctive Chenin blanc.

**Grenache** R Very large and vigorous vine, with very heavy crop potential. Needs sandy or poor soil to control late season growth and for quality red wine program. Large clusters, very little to no rot. Well suited to a white program under most conditions, but deep color of fruit is possible even on Freedom (or other vigorous rootstocks). However, site and rootstock selection will be very important. Few clones are currently available. Best suited to white program or quality red blend in the proper site. Deserving of more attention, but with caution.

**Tempranillo (Valdepeñas)** R Another old variety of the Northern San Joaquin Valley (Lodi) area that can be found mixed in old Zinfandel vineyards. Very similar to Zinfandel in vine appearance, slightly more vigorous vine. Fruit is very good and uniform color. Clusters are looser, berries have tougher skin, little to no rot, when compared to Zinfandel. Can make a distinctive and elegant wine of high quality. It's local potential is very high for quality blends or as varietal.

**Morrastel (Graciano)** R Yield is good and vigor moderate to high. Large loose clusters, with excellent color fruit. Low acid fruit, pH tends to be high. Good potential for California version of Rioja style wine, as a variety, but more likely as a quality blend. "Grower friendly" grape in the manner of Tempranillo or Syrah. Marketing potential a question though.

**Verdelho** W Vines are of moderate to high vigor. Very good yields, with no rot. Clusters are loose and medium in size. Good acid levels in juice. Slight powdery mildew sensitivity, but manageable. Early harvest and nice flavors. It deserves much more attention as a blend or varietal, table or desert wine. Australians of Hunter Valley have produced quality wines under more difficult climate conditions. +

**Melon 5** W Vine vigor moderate to low. Very early ripening, with moderate yields. Small clusters and very compact. Berries weak skinned with tendency for bunch rot. Older variety of the area that may have merit for sparkling wine blends or low alcohol wines. However, most likely very limited in potential due to viticultural disadvantages. Previously known as Pinot blanc.

*was known as Pinot Blanc  
harvest early*

**Zinfandel 02** R/W Well known variety of local importance. Vine of moderate vigor and high productivity. Clone differences are subtle, but apparent in wines. Site effects may be more important. At clone trial site typical problems with tight clusters and uneven ripening occur, but well controlled by management (except in 1998). Significant clone differences are between Primitivo and all Zinfandel clones, of which there are many "field selection clones". Beyond the real and perceived advantages to Old Vine Zinfandel sites; water, nitrogen and crop load are critical keys to quality "Red Zin" in Lodi.

**Chardonnay 4,5,6 & 13** W Standard variety that previously "couldn't be grown in San Joaquin county". Some variation in yield of the various FPMS clones 4 through 16, but slight, except for very low yielding 16. Moderate vigor and moderate yields. Quality of juice and small wine lots shows no difference among these FPMS clones, economic advantage to higher yielding clones 4 and 5. Newer Chardonnay clones becoming available through FPMS, especially Dijon clones, these show significant fruit character differences and probably lower yields. Recently available clones for local evaluation are now established and will provide data for comparison beginning in 2000.

**Symphony** W A moderately vigorous hybrid developed by H.P. Olmo (Muscat of Alexandria x Grenache gris). Very good yields, good acid levels with strong Muscat character. Some tendency for fall cold damage where vigor is high or crop load is excessively heavy, such as sites with deep, fertile sandy loams or with excessive irrigation. Where very heavy crop level is allowed Muscat flavor still is evident, but maturity is greatly delayed. Highly sensitive to *Botrytis* shoot blight in early spring, but very little incidence of rot at harvest.

**Bastardo 8 (Trousseau)** R Moderately vigorous Portuguese Port variety. Early ripening, with tight clusters and uneven maturity of clusters, resulting in some raisins. Berry color is only moderately dark. Rot can be a severe problem. May be difficult to grow for the benefits of blending, but does sugar early. In 1998 very little rot compared to previous years! It adds interesting flavors, but may not be worth the risk.

**Cabernet Sauvignon** R Well adapted to most areas, well suited to Lodi. Very vigorous and upright growth, moderately productive. Rot potential almost nonexistent, but has occurred with high amounts of water and nitrogen. Differences of early FPMS clone selections almost entirely in yields, with clone 06 lowest. Recent releases show more wine differences, especially French clones 15 and 337. Irrigation management and crop load are critical for quality, more so than available clones.

**Merlot 6** R Moderate vigor, with very trailing growth. Does well in the local area with moderate to good yields, but very sensitive with respect to conditions that affect flower set. Poor set can result from excess nitrogen and excess water, low potassium or zinc deficient soils. Somewhat susceptible to poor set during wet, cool bloom weather as in 1998. Some indications in 1999 of berry shrivel problems in extremes of too much water early, or not enough water late in season and/or crop level, all interacting with soil texture and soil depth (affecting water availability). Some clone variation, but not consistent for FPMS clones 1, 3 and 6. Clone 3 is the most widely planted. Winemakers vary between preference of 3 or 6. Clone 8 most often with less consistent set and slightly less yield, with equal or lesser quality fruit. Clones 9 (from Italy) and clones 181 or 314 (from France) show promise for more quality from vintner's view. Limited data locally suggests their yields are similar to FPMS clones. As with Zinfandel and Sangiovese, Merlot will respond dramatically to management and site.

**Cabernet franc** R Very similar to Cabernet Sauvignon in growth, but less upright. Production potential slightly higher and slightly earlier in maturity. Can be very productive and adds different flavors for vintners needs. A underutilized variety with more potential. With Sauvignon blanc appears to be parent of Cabernet Sauvignon by spontaneous cross in a Bordeaux vineyard sometime prior to the 1700s.

**Malbec** R Very high vigor with low yields. Clusters are small and tend to be loose due to poor set. Very good color and quality possible. This Bordeaux variety has very good potential for wines of distinction, but consistently demonstrates low production from available clones, especially clone 4. Low vigor rootstock absolutely necessary, with minimal nitrogen or water. Newly available clone FPS 09 may seem to have better production potential and may provide impetus for increase. Variety is extremely sensitive to vine vigor factors such as rootstock, irrigation, nitrogen and zinc. Shoot tipping at onset of bloom makes a big difference in set and yield. Malbec (Cot) is the dominant workhorse (and premium) variety of Argentina. Best set ever in 2005 after four years of no nitrogen and only 24 gallons of water applied in 2002.

*Full doesn't like it. = prod.*

*touchy or irrigation*

*Sometimes needs them*

**Petit Verdot** R Moderately high vigor vine with very light yields for FPMS 1, almost an "ornamental", except in high crop years such as 1997. Even then very low yields, less than two tons per acre. FPMS 2 has more acceptable yields, but still moderately low in productivity (four to five tons per acre). Very small berries and clusters. Excellent color, very late ripening, but not unduly delayed in warm or moderate climate areas. Somewhat sensitive to powdery mildew, but manageable. May have limited marketing as a varietal, but market for color and flavor enhancement in blends of all price ranges, may make it very worthwhile consideration.

**Tannat** R Vine is moderate to high in vigor. Consistently productive with very good yield and great color. Clusters medium in size, moderately compact, but with little to no rot potential. Berries have tough skin and very intense deep color development. Variety from the Cahors near Bordeaux. Appears to be nice selection for varietal wine or color and flavor enhancement in blends, as well as a grower friendly grape. Cluster thinning to limit yields below seven to eight tons per acre, will be needed for higher quality.

**Semillon** W Medium vine vigor and productive in yield. Clusters large and fairly compact, while berries are medium to large. Reputation for rot problems holds for FPMS 6 and 7, but FPMS 1 and 3 consistently have less rot in this non-replicated trail. A traditional Bordeaux variety that has been overlooked (to the point of negligence), especially for blends, such as Chardonnay or Sauvignon blanc.

**Pinot gris** W Moderate to low vigor vine. Yield is moderately high, with numerous clusters that are small and very compact. Berry attachment to rachis is strong, possible problem to machine harvest? Color of fruit is distinctly "gray" or red. Harvest is early with some rot potential. Will require cluster thinning to reach higher maturity levels and ensure an early harvest. A cool climate grape that can do reasonably well, but not likely to have high potential for the area. The clones 146, 152 and FPS 01 are very similar in fruit appearance and composition. Some difference in yield with FPMS 01 slightly more productive, slightly less rot and slightly more color.

**Schioppetino** R Moderate vigor vine with moderate production. Clusters medium and loose, berries are medium to large with relatively tough skin. Color of fruit is very good and uniform, but later ripening. The unique flavor of fruit and its lack of obvious field problems suggests potential for Italian variety or blend? It deserves a serious look by those interested in Italian varieties. Not many virus tested sources yet.

**Dolcetto** R Moderate vigor vine, tends to have many secondary shoots push. Moderately productive variety. Medium size, loose clusters and berries with tough skins. Color of fruit very good, but not intense, no rot. Will require some cluster thinning to avoid overcropping. Fruit has excellent flavor. Another very interesting Italian selection from grower and vintner perspective, with high potential. Limited clone sources and selection.

**Fresia** R Moderate vigor variety and very productive. Similar to Dolcetto at first glance. Most shoots have tendency to develop three clusters, which may require thinning as a normal practice to avoid overcropping. Medium to large cluster which is loose, but has slight potential for some bunch rot. Fruit color is very good to excellent with good flavor. Should be considered, but maybe more of a niche market compared to other Italian varieties?

**Arneis** W Moderate to moderately high vigor vine and moderately productive. Clusters are very compact and small, with uneven development of cluster maturity. Berries are thin skinned and break easily. There appears to be a severe sensitivity to Bunch rot infection. Fruit flavors are nice, but viticultural problems may limit the interest and potential.

**Picolit** W A low vigor variety, which appears to be very sensitive to cool and wet weather. Clusters are small and berries are small, with little to no weight.. All clusters have less than 50% set of flowers in some years, less than 10% set in 1998, less than one-ton per acre! Good weather spring of 1999 resulted in best crop yet seen at Liberty site in last four years.

**Picpoul noir** R A vine of moderate vigor and low production, with small compact clusters. Early ripening with good color, but a tendency to raisin. Some potential, but may be somewhat limited. Not many virus tested sources available.

**Pigato** W Variety of moderate vigor, semi-upright shoots and medium to good production. Medium clusters with large berries. Early harvest and uniform ripening of clusters, but tendency for individual berries to show *Botrytis* rot infections, appears to be very minor. Interesting variety with difficult to predict market fit.

**Petite Sirah** R Moderate to high vigor growth. Moderate to high production, but very low cluster count in 1998. Clusters are medium and very compact. Bunch rot can be severe and requires irrigation, nitrogen and canopy management to minimize problems. Fruit color very intense, flavors intense, but needs low vigor rootstock to obtain quality of which it is capable. Excellent potential for wine, but a difficult grape to grow, especially on fertile or deep or soil. Also called Durif and more recently being labeled Petit Syrah. It is identified as a natural hybrid of the varieties Syrah and Peloursin found in the Rhône Valley.

**Verduzzo** W Moderate vigor vine, with recumbent shoots and highly productive. Clusters medium in size and loose. Berries are small and fairly tough skinned. Similar in physical appearance to Merlot (no genetic relation). Harvest is fairly early. No rot, apparently due to loose structure and tough skins. Berries loosely attached to rachis, may easily machine harvest? Potential is a question, as no outstanding characteristics in the field, but easy to grow.

**Souzão** R Moderately vigorous vine, semi-upright, with good production. Medium clusters and loose in structure. Berries medium to small with tough skin. No rot in 1998 after several rains, but harvested late (in good condition). Berries detach easily, may be good for machine harvest. Fruit color very intense, evident even in the juice. Good flavors, acid levels are average at best. Very high potential for quality table and port style production blends.

**Touriga** R Vine is moderately vigorous, but slightly less productive than Souzão. Clusters are medium small with some shot berries, no rot as in Souzão. Fruit flavorful and of very deep color. A variety with high potential for table wine or port production, as with Alvarelhão and Souzão. Some indication that this is Francesca selection of Touriga. Nacional selection of Touriga believed to be even better. In either case an excellent variety for local interest as a table or port style wine of quality.

**Muscat blanc** W Moderate to low vigor vine, with moderate production. Medium clusters, moderately compact. Berry size medium to large, with tendency to amber or brown with maturity. Very slight rot potential. Mild, but very distinctive flavor. A very early harvest, the earliest variety ripening, except for white Zinfandel. Not a variety suited to problem soils, due to lower vigor and fruit sensitivity during ripening to sun and heat exposure. Although dessert and sweet wine market is somewhat limited, this variety, along with the other Muscat selections and the Port varieties will be more important part of the area production. Interest in premium Port, dessert and aperitif wines is growing.

**Lagrein** R Moderately vigorous vine and moderate producer. Clusters large and slightly compact with medium berries. No rot even in wet years, but very late ripening. Very dark color and interesting flavors. †

**Carmenere** R Moderate vigor moderate crop. Late mid season ripening. Clusters small and very loose with small berries and tough skin. Very good color.

**Plavac mali** R Moderately vigorous and very productive. Medium size clusters are loose with tough skinned berries that are crisp in texture. Late ripening and tolerates wet conditions well. Zinfandel like, but not bunch rot susceptible. It is considered to be one the result of a cross of Dobricic by Crljenak Kasteljanski (Primitivo).

**Teroldego** R Moderately low vigor vines, but very productive. Non certified sources can be virus infected. Small medium clusters somewhat loose. Berries medium small very good color. Very late season ripening, with very interesting favors.

**Tinta Amarella** R Moderate high vigor and productive, ripens late mid season. Medium large clusters, somewhat compact, with large berries. Some tendency for bunch rot. Color and flavor development is very good. Usually used in port blends

Although, this trial is non-replicated, it provides a first look and an continuing opportunity to evaluate how these "new" varieties grow in the Lodi district. It is a dynamic trial, as varieties are added or removed over time. Some varieties may already have strong supporters or definite winery commitments and there are more than 250 commercially available wine varieties, with several thousand in existence worldwide. Therefore, this trial will not be comprehensive, but it's a beginning.

Among the varieties observed, there are some more suited than others to this area. Ultimately grower and winery commitment will determine the future variety composition of the local commercial industry. To complicate the issue of variety selection, clones are now of interest and will be very important in the future. Many times site limitations and grower practices will affect quality and yield more than clone selection. However, the use of clones both on an individual basis and as an industry will be critical to give the winemaker more to flavors to work with, much as a chef might use spices. Management of these varieties and their clones will be increasingly important to individual growers and to the local industry.

Mammolo Toscano  
Refosco  
Nero d'Avola  
Piedrossa  
Alicante Bouschet  
Negroamaro  
Sagrantino

~~Mataro~~

Mataro - vigorous vertical  
very open



