



California Tour – Santa Barbara to Mendocino. July, 03

This is a compilation of my notes during a two week trip to California. I pull these together as much for my own desire to recall significant facts from my visits, but also to share with growers here in the east. Much of the content is written from memory and notes, and, having experienced severe gray matter deterioration in recent years, I cannot attest to the exact accuracy of my recollections. I would encourage and welcome your comments, criticisms and changes if you would share them with me. Thank you.

With its 500,000 acres of wine grapes, the sheer mass of the California wine grape industry demands attention and respect from anyone interested in vineyards and places it on the cutting edge of many new developments in enology and viticulture. By comparison, I would guess generously about 25,000 acres of wine grapes along the eastern seaboard from Ontario to Georgia (making us about the size of the industry in New Zealand). As an educator, I feel it's important to scan the viticultural landscape in California on a regular basis to see what's up and what's new. But this should apply to anyone who is interested in wine, from the consumer to the wine grower. I'm lucky to have old pals from UC Davis scattered about the growing regions who I can rely on for information and touring tips.

I began this two week journey in Santa Barbara County, a most beautiful place with mission style accents everywhere, horse farms mingling with vineyards, brown rolling hills with ancient oaks and, what everyone really loves, perfect weather. In fact, the whole time I was in California it was sunny, dry and in the 70s and 80s.

Santa Barbara is a very unique viticultural district in its variability in climates. The Santa Rita region is only a few miles from the ocean and is cool so Pinot Noir and Chardonnay perform well there. Another 10 mile east the weather warms to a sub region that is well adapted to Sangiovese and Syrah. Recently, an area in the Santa Ynez Valley called Happy Valley has become notable for its Cabernet Sauvignon.

Jeff Newton is founder (1984) and co-owner of Coastal Vineyard Care Associates, a vineyard development and consulting company that manages about 1300 prime acres of vineyard in the county including Stolpman, Beckmen, Andrew Murray, Melville, Westerly and Fiddlestix – all top wine producers in the county. I spent two days touring some of his best vineyards and came away completely impressed by the meticulous viticulture that is being applied to great vineyard sites. New vineyards selected for low vigor are being planted on 6x3 spacing. Spacing is now more a function of reducing yields than trying to manage vigor. The best sites are farmed for 2-4 pounds per vine (3-4 t/a) to achieve the best quality. It's all about getting grapes to absolute, dead full ripeness with maximum flavor development. Meter by meter spacing is considered too close with excessive farming and development costs and not a noticeable improvement in wine quality.

Vineyard development is perfect with new heavy gauge, galvanized Quiedan pre-notched metal grape stakes and 4 inch diameter round metal end posts. Vineyards are laid out on flats and hills using lines and plastic spoons. All vines are hand planted. Even training stakes are rigid, channeled galvanized stakes that have special clips to securely fasten them to the training wire. Surveyors lay out the basic dimensions and the crew fills in the rest. Remarkably uniform layout given the uneven terrain. Irrigation goes in first, then trellis, vines are all hand planted.

Ranches are now being divided up into smaller sections with viticulture being adapted to the characteristics of each site, a practice referred to as precision viticulture. This is an important process of identifying exactly the correct sites for particular varieties and applying the correct viticulture (e.g. rootstocks, clones, trellis,

vine density, irrigation practices etc.) to produce the best possible wines. Clones are very important to all planting decisions and varieties are always identified according to clone – especially with Cabernet Sauvignon, Merlot, Pinot Noir, Chardonnay, Syrah and Sangiovese. Subtle clonal variations can make the difference between a very good wine and a great one. Jeff buys a lot of grapes from Duarte and Sunridge – the latter offering ENTAV selections of clones and rootstocks. Interesting Italian varieties and clones are found at NovaVine, who has a relationship with the Italian nursery Vivai Cooperativi Rauscedo - <http://www.novavine.com/vcr.htm>.

Canopy management is intensive during the summer. Laterals opposite clusters are pulled on the best vineyards. This seems to offer a more balanced and sustained fruit exposure. In some cases leaf pulling is still done, either on one or both sides depending on disease pressure. Its all done by hand, lateral removal is considerably more expensive - \$700/ac. Jeff likes to see 20-30% sunflecks in the canopy. Shoots are mostly tucked through three pairs of catch wires as opposed to positioning with wires. On the best blocks parallel shoot position is done, individual placement of shoots in an upright position and fastened to a wire using a branch lock. This is done to keep an absolutely even distribution of shoots. In some cases, to balance the canopy, they have performed late shoot removal, which has the benefit of offsetting vine vigor. Basal shoots on spurs are carefully removed with shears. Very clean cuts are made right down to older wood to prevent adventitious shoot growth. Everything is very labor intensive and timing is critical to success. Early cluster thinning is done according to shoot length, vine age and quality parameters. Vines are trained at 30 inches but getting lower all the time. Great care is taken during initial training to be sure that the Y on a bilateral cordon has as little gap as possible, the same 4-5 inches that exist between spurs – keep all spur positions equidistant. 3-5 inches are left between cordon arms. No renewal spurs are kept. Training is mostly to bilateral cordon but some guyot is being used on 6x3. Trunks are absolutely dead straight. Excellent balance and look in the vineyard. Great uniformity between vines. Hedging only needs to be done once or twice a year. Irrigation limits canopy growth. Vines are typically trained at 30 inches, but new vineyards are going even lower.

Yields are kept very low on best sites. Some blocks are routinely thinned to one cluster per shoot. Lag phase counts are not taken but post veraison weights are close to final harvest numbers. Thinning is done mostly on experience and instinct. Trying to get Cabernet Sauvignon in the 2-3 t/a range. Syrah is a little higher. Wine quality is derived from perfectly ripe fruit – not too ripe, not underripe. Just ripe. The focus is lowering the pounds per vine of production and getting fruit to 25-26 brix at harvest. Fruit has to be clean coming into the winery. Grapes are all hand harvested.

Irrigation – 50% deficit irrigation. Rainfall is about 20” per year, mostly in winter months. Irrigation is the most essential element in California viticulture. Deficit irrigation helps to keep vine smaller. Jeff has started to use ET and crop coefficient information developed by Larry Williams to schedule irrigations. Inexpensive weather stations are being placed on individual ranches to monitor weather conditions and pressure bombs measure leaf water potential. These tools work better than tensiometers or watermarks which break tension at too soon. He still uses seat of the pants and intuition to know when to water, especially when heat spikes are expected. Get water on the vines. Usually about 2-3 g/v/wk but up to 5 in drier conditions. Druing peak season it might be 7-15 g/v/wk. Talk in Australia and California is of scheduling fewer and deeper irrigations to drive roots down. Most water comes from wells and distributed via storage ponds. Overhead solid set is put in for frost protection and to use for cooling vines during heat spikes. This is a new practice – water is evaporated almost before it hits the leaves so disease is not promoted.

Kathy Joseph’s Fiddlestix Ranch is on the valley floor of Santa Rita but vigor is moderate and vines are nicely balanced. 8x4 on VSP, this is a beautiful vineyard with many Pinot Noir and Chardonnay clones. Viticulture here is not quite as intensive on other properties, and it may show up in the wines, especially PN, where canopy and crop management are so important to getting grapes to full maturity.

Stolpman wines show real finesse and elegance, with underlying power in tannin and alcohol, but its all in balance. The vineyards are incredibly well managed with great attention paid to every detail. The key here

is an experienced ranch foreman and a crew that is well trained. The vineyard is on rolling hills dotted with oak trees. Irrigation is so important to controlling vine growth and fruit maturation. In California, irrigation, after site selection, may be the most critical management tool.

Nutrients – petiole samples are taken every year and tested by a local lab. 7 lb/ac N is plenty for most mature vineyards. 20 lbs is way too much. Not much fertilization is done. Some compost tea is being used through the drip system.

Disease control is routine and rather simple, certainly by eastern standards - mostly sulfur dust, Kaligreen, Armicarb and other low impact fungicides. Powdery mildew and botrytis are the main problems, especially in years with a rainy spring like this one. Growers worry about heat spikes and problems with sulfur burn while dusting and leaf pulling. Insects are generally not an economic problem, leaf hoppers and mealy bugs can be a problem and may require Lorsban application. No GWSS yet in the county, but there is PD and it has to be managed near riparian zones.

Biodynamic viticulture is being tested at Beckman, side by side with conventional. Vines look greener and bigger – darker color and bigger leaves. Preparations are being purchased from JPI. Going the full route, clean cultivation between rows, more vigor to deal with. Most vineyards are sustainable and almost organic. Jeff believes in the CAWG statewide sustainable initiative and thinks it will be applied widespread. He's using chamomile tea and stinging nettle, along with 500 preparations. They are not thoroughly convinced that it is the right system for Santa Barbara, but it's worth trying.

Ranches are spectacular to look at, on rolling hills with mountains in the background. Large oaks dot the properties and vineyard are designed around them Beautifully laid out and designed. North-south is not essential, moving to NW-SE to avoid sunburn. Peak heat is 11-12 a.m. so try to avoid direct light. Top elevation at Beckman is 1300 feet where Syrah is grown.

Older vineyards are at a disadvantage because viticulture technology has already changed so much that even five year old vineyards are obsolete. New clones and variety/rootstock suitability, vine density, trellising are the main changes. Mainly finding out what varieties perform best on which sites. Technology can help to map this out (see Paul Skinner at Terra Spase). To stay at the highest level of quality, regular adjustments must be made, despite terrific costs associated with changing vineyards.

Consultants are brought in to provide a world view of viticulture and to give advice in new areas and just bring a fresh view to the vineyard. They travel around the world and bring their ideas and observations to Jeff. Alberto Antonini brings his experience with Sangiovese and working with vineyards around the world. Phillippe is the biodynamic consultant. Tom Prentice from Crop Care also provides oversight and expertise. A PCA is on retainer to help with disease and pest monitoring and control. It's truly a team effort.

This philosophy extends all the way down the ranks at Coastal Vineyard Care. Jeff described to me a set of impressive management practices that he and partner Larry Finkel have established to educate and enhance communication among their employees. Each month, they have a full morning meeting at one of their 13 ranches with all their ranch foremen. They first cover safety and compliance issues. Each office has a full set of posters and MSDS binders – the latter took months to develop and are fully updated and maintained. Jeff then gives a talk on a topic in viticulture, often related to something they are doing in the vineyards at that time. The ranch foreman will then give a tour of the vineyards. Jeff says this is a point of great pride among the foremen, to have the chance to show case their work to their peers. It maintains a low level competition among the foremen to have the best vineyard. The morning activities are followed by a barbecue and then it's back to work. This is a great way to build solidarity among middle management and really keep them up to date on all the vineyard necessities.

Jeff keeps current with viticulture developments by reading Wine Business Monthly and Practical Vineyard and Winery. Each year a tour is arranged of high quality vineyards in another wine region to see new things and exchange ideas.

I visited many ranches with Jeff and they are super impressive. The development work is of the highest quality. Rows are straight. Uniformity is the standard. No weeds. Cover crop. Excellent canopy management. The price of quality management? \$4-7000 per acre. Sometimes upwards of \$10K. Development costs can go as high as \$35K for 6x3 on a rocky, hilly site. Most owners are absentee. They are lawyers, doctors, film magnates from LA. In the upper end of the wine world, gobs of money are the entrée to wine quality.

The vineyards in cool Santa Rita are spreading across the valley floor and up into the hills. Grape quality is on the rise and the local Pinot Noirs are receiving more attention all the time. For more information on two key Coastal Vineyard Care ranches, including some wonderful photos, please visit <http://www.stolpmanvineyards.com/> and <http://www.beckmenvineyards.com/>.

I was invited to attend a tasting of Santa Barbara Cabernet Sauvignon organized by Ray and Eleanor Heald for Practical Winery and Vineyard magazine. The tasting was held at Babcock Vineyards and was attended by Jeff and six local wine makers. After having read their articles for many years, it was interesting to see how Ray and Eleanor conduct the surveys. They run a tight ship and things begin to move rapidly as soon as they arrive – no nonsense and very efficient. We talked about the local region, geography, history and viticulture and they asked very specific questions about growing and wine making. The conversation focused on a new region in the western end of the appellation called Happy Valley. Two vineyards – Westerly and Vogelsang, produce ripe Cabernet that is much sought after by wine makers. Wines were all of excellent quality and quite different in styles. The most unusual was a Stolpman with a significant amount of Sangiovese that helped to bring balance, character and subtlety to the blend.

Santa Barbara is a super exciting new viticultural appellation. There is an aura of quality in the air around the vineyards and in the cellars. An ample population of professional vineyard managers and wine makers and ample seasonal labor help to extract the best grapes from the quality vineyard sites.

I was mostly meeting with people on this trip, but I wanted to stop at three Franco-American wineries to see their vineyards and taste their wines. It would be an interesting exercise because I think the east has more climatic, if not terroir, similarities to regions in France than our California brethren. I wanted to see how they adapted their French style and knowledge to California soils and climate. It was revealing.

Tablas Creek Vineyard is a collaboration between the Perrin Family of the famous Chateau Beaucastel in the Chateauneuf-de-Pape region of the southern Rhone and Robert Haas, who is well known as the former owner of Vineyard Brands, a respected importer of wines. After a long search, they settled on a hilly site west of Templeton in the Paso Robles region at 1400-1600 feet elevation and about 20 miles from the ocean. The growing season is characterized by hot, dry days and cool nights. Frost is a problem in some areas and a new type of wind machine is being tested – it's a horizontal fan that sucks cold air from near the ground and propels it upward where it mixes with warmer air and settles. Perhaps the most interesting step they took in establishing their vineyard was to import their own vine materials through the three year quarantine process at NY State Agricultural Experiment Station in Geneva. A fully functional commercial nursery on the property produces vines for TCV as well as for sale. Laura Wulff is the nursery manager. Varieties are classic southern Rhone including red varieties Syrah, Grenache Noir, Mourvedre and Counoise. Whites include Marsanne, Rousanne, Viognier, and Grenache Blanc. A strong focus on clonal selection drives wine quality. The vineyards are on a spectacular site, rich in limestone and with shallow, droughty soils. Vines are trained to bilateral cordon and on 7 x 3.5 spacing. The viticulture is moderate in quality, but more oriented towards their organic and biodynamic practices – no herbicides are used, cover crops are cultivated in row middles and they use their own compost and compost teas. Use of sulfur is minimal. Vines are

cropped at 8-12 clusters/vine with overall yields of 2.5-3.5 t/a on Syrah. Amigo Bob Consantino is their biodynamic consultant. <http://www.tablascreek.com/>

Opus One is well known among wine aficionados as the joint wine venture between Chateau Mouton-Rothschild, a first growth Bordeaux winery, and the Robert Mondavi Winery in Oakville. Millions of dollars were spent on a fantastic winery facility the spares no expense to achieve quality. The vineyard is 125 acres in the middle of the valley. **Michael Silacci**, the wine maker at Opus, explained to me that the vineyards around the winery are not on the best soils in the valley, those are by the base of the hills. Spacing is tight – 4x4, and vines are bilaterally trained and spur pruned. He said that Opus needs extremely rigorous management to produce grapes at the level of quality necessary to produce a \$175 bottle of wine. Training is bilateral cordon with spur pruning and most shoots still had two clusters on them before veraison. Very careful hedging is done on canopies that did not appear overly vigorous. Grapes are brought to the second level of the winery in 30 pound boxes and dumped onto a conveyor where grapes are sorted before going to the destemmer. After stems are removed, they drop onto another conveyor where individual berries are again sorted as well as bits of stems, pedicels and other MOG. The grapes then fall gently into the tops of tanks located on the floor below. The entire destemmer/sorting assembly moves from one tank to the next. Fermentation and maceration occur in stainless steel tanks and only the free run goes to barrel. Skins and seeds are never pumped with juice. Pressing is done in small horizontal basket presses. Opus One receives 100% new oak and is in barrel for 18 months and racked six times. Blends are made after the first racking. Egg white fining is done between the third and fourth racking. The wine ages in bottle for an additional 18 months. The style of wine they are seeking is one that reflects both Napa power and Medoc elegance. It's a challenge to blend those different qualities. <http://www.opusonewines.com/> and <http://www.opusonewinery.com/>.

Dominus Estate is owned by the Moueix family of Libourne in the Pomerol region of Bordeaux and the much respected Chateau Petrus. The vineyard and winery are located just west of Highway 29, near Yountville. The 128 acre vineyard is called Napanook and is one of the most esteemed vineyards in the valley with a rich history – previous owners have included George Yount and John Daniel of Inglenook. It has three distinct soil types that consist of gravelly volcanic, heavy clay and loam. Christian feels that the best Napa soils are at the base of the mountains, on both sides of the valley. Here the best Cabernet Sauvignon is can be grown. At the moment, too much Merlot is planted at Napanook and new vineyards are planted with new Cabernet clones on St. George, 3309, Riparia and 110R rootstocks. They are trying to get the right balance in the wines, not necessarily the super extracted style of Cabernet that is currently fashionable from the hillside vineyards. **Boris Champy** is the wine maker and explained to me that Christian is trying to emulate the style of wine the Inglenook produced in the 1940s. He feels this is the best expression of the vineyard. Therefore, the viticulture appears somewhat old fashioned but is well suited to the style of wine they are seeking to make.

Vines are trained to a four cane goblet and out along wires that are partially separated, almost like a tight lyre system. Spacing is quite wide by contemporary standards at 10 x 6. Vines With some moderate leaf pulling, the canopies are well balanced. Except for new vines and some vines in poor soils on the east side of the property, the vineyard is dry farmed in an attempt to get the vines to deep root. No cover crop is used. Thinning is used sparingly, they attempt to get the balance right when they prune, but crop is thinned once or twice a year to concentrate fruit qualities – up to 25% of the fruit is dropped. Clusters are separated from each other so they do not touch, allowing for better air circulation and softer tannins. Napanook is not organically farmed, yet they farm sensibly and sustainably with low inputs and no herbicides.

The winery is fantastic with its outer shell comprised of large rocks in cages that are stacked to form the walls which act as insulation against the summer heat. The building fairly dissolves into the landscape and is a very functional space inside with elegant glass walled offices, a large tank room and a modest barrel cellar.

Wine making is straight forward – 3-5 day cold soak using SO₂ fermentation may start on its own or with commercial yeast in large stainless steel tanks. Pump over (no irrigation). 30 day cuvaision. Wine is settled

and put into barrels where they are raised for 18 months and raked every three months (only about 5% of the wine volume is lost). Lees is settled and used in the second label. Wine is fined with organic egg whites and not filtered before bottling. Blending is done in the spring. Vines must be at least six years old to get into Dominus – at Chateau Petrus, Merlot vines must be 20 years old and Cabernet Franc at least 30 years old. <http://www.dominusestate.com/>

The French style of wine is unmistakable and, in my mind, much more applicable to what we can achieve in eastern viticulture. Classically elegant European style with great balance and structure supporting firm fruit characters and well integrated oak and tannin. It is not a sunlight or stress driven wine. Instead, it reflects more of the personality of the soil and the producer.

Paul Skinner is the owner of Terra Spase, a vineyard consulting company in St. Helena. He is doing some fantastic precision viticulture work using integrated spatial analysis in Napa as well as around the country and the world. Paul's work is firmly grounded in an understanding of soils in all its complexities, as well as the nature of the mesoclimate and viticultural realities. TS uses soil pits as the foundation of its vineyard development work. Soil chemistry, biology and physical properties and characteristics are analyzed individually and then synthesized using in-house software programs. Key viticultural parameters such as site limitations, site amendments, soil vigor potential, variety and rootstock choice, vineyard design and layout, yield forecasting and mapping, disease potential, nutrient program and predictions of wine quality and chemistry are all products of the analysis. The results are displayed in a set of amazingly clear site maps that break down the vineyard into its essential components, so easy and clear that even a doctor or lawyer can understand them. The soil analysis alone considers about 25 key variables including texture, depth, rock fragments, pH, potassium and other nutrients, salts and more. Not stone is left unturned. This is a very clever way to get a vineyard started. <http://www.terraspace.com/>

I also enjoyed a conversation with **Paul Anamosa**, the soil scientist for Crop Care Associates in Yountville. They do very similar work to Terra Spase in helping clients to evaluate and manage their vineyards. Again, expertise in soils is essential to extracting wine quality from a site, but understanding a soil in a viticultural context.

Daniel Bosch is now the head of viticulture for all of Robert Mondavi's Napa vineyards, about 1300 acres of grapes (equal to the total wine grapes planted in Pennsylvania). Dan has always specialized in precision viticulture and was involved in the original NASA Crush project that used satellite imagery to help map and assay vineyard attributes. They are using NDVI (normalized difference vegetative index) to monitor leaf surface area as a tool to predict yields and assist in pruning and crop thinning practices. Precision viticulture is applied in an attempt to bring greater uniformity to the grapes within a block. So far, the wine makers like what they are tasting. GPS units mounted on discs use the information to raise and lower discs according to vine vigor and how much cover crop needs to be removed in an effort to control soil moisture. A highly analytical system for crop estimating is being developed by a professor of statistics at UC-Berkeley. Otherwise, it is done by the standard methods with inconsistent results. Row directions are being altered from standard N-S to try to mitigate effects of direct sunlight on clusters. NE-SW helps to moderate fruit temperature and improve flavor and color. Soil water holding capacity is critical in CA viticulture, which is all about water and availability to the vine. It's important to know when a vine is stressed and when to apply stress. Pressure bombs are used to read leaf water potential. Rootstocks are also very important – 420A performance is unpredictable infertile soils, can give a big or small vine.

Mitchell Klug is the outgoing head of viticulture and had some interesting comments about the corporate Robert Mondavi (the company, not the man). Apparently, a sizeable chasm has formed between the expectations of the board and the essential role of agriculture in the production of fine wines. The vineyards no longer get the support or the respect they need and deserve because guys in suits do not make the connection between the bottom line and the plants in the field. It may be instructive to look at the RM situation before going public with a product like wine.

Many of you may know **Tom Collins**, who used to work for Canandaigua in the Finger Lakes. Now, he has a plum job in the research department at Beringer in St. Helena. Their research winery is bigger than most PA wineries. Tom helps to handle dozens of vineyard trials that are made into wine and then sent through a trained tasting panel. He cooperates also with researchers at UC Davis. He talked about an issue that came up frequently during my trip. It's a matter of concern to wine growers in California that VSP may not be the best trellis for their light intensive environment. It is too efficient at processing sugar and hence they are harvest red wine grapes at 15-30 brix to get the mature flavors they desire, but end up with alcoholic monsters in the tank. The conundrum is how to get the flavors and tame the alcohol... in the vineyard. Growers are actually attempting to provide a little more shade, a la good ol' one wire California sprawl, to slow down sugar, yet retain a balanced vine that develops flavors. Drew Johnson is now the head of viticulture research as Bob Steinhauer eases into retirement.

Phil Freese was the viticulturist for Mondavi for 13 years in its heyday when it seemed they were on the cutting edge of making fine wines in Napa. Since 1993 he has run his own consulting business called WineGrow and spends a lot of time traveling to the far corners of the globe. He and his wife, **Zelma Long** – former wine maker and president of Simi Winery in Sonoma, have partnerships in wineries in South Africa and Germany. Both consult extensively up and down the west coast. Phil brings his experience to bear on a select few clients who he helps to produce wines of great class and distinction. I was able to taste beautiful reds from Seghesio Vineyards 90 year old Zinfandel vines. If you have never tried an old Zinfandel, make it a point to do so.

I'm pretty sure we have all seen ads with Gina and Matt Gallo tooting the horn for their relatively new Gallo-Sonoma product line. To see the vineyards in the rolling hills north of Healdsburg is certainly an impressive site. Yet, the vineyards are not of the same caliber as those found in other top estates in the north coast. Maybe its just too difficult to farm this many acres. **Mark Greenspan**, the head of viticulture research at G-S, admits that he, and others, are spread pretty thin. A very interesting high Y shaped system is the primary form of training the vines. It spreads out the canopy at the top and gives it a more horizontal orientation (not like a lyre) and an open center with two bushy clumps of vegetation on either side (looks like clown's head from the front).

This canopy configuration may have the effect of softening the effects of light intensity on the fruit. Wider row spacing is needed for this system. The 650 acre Frei Ranch was first planted in the 1880s by Andrew Frei and Charles Dunz in the cooler hillside benchlands of the Dry Creek Valley. Soils are a combination of gravel, clay and loam. Warm days and cool nights are typical in the summer. Cabernet Sauvignon, Syrah and Zinfandel are the main varieties – the zins are full bodied and complex with plum, ripe berries and black pepper spice. Cover crops and irrigation are used everywhere. Vines are hedged back. It's early July and its very dry and vines are already beginning to shut down and shoots are lignifying.

The winery facility at G-S is incredible. All production facilities are outside, including a huge tank farm. Two groups of 13 huge tank presses in half moon configuration dominate the winery. I believe Mark told me that they can press about 5000 tons a day. The barrel cellar has a very modest entrance into a small hump on the property, but below is a vast cavern that holds thousands of barrels in temperature controlled conditions. Hard to imagine that hand crafted wines are coming out of this refinery-like facility, but its really all a matter of the grape quality and having the right people to make the wines. You can read more about the G-S winery in the Jan/Feb 1998 issue of Practical Winery or go to <http://www.gallosonoma.com/>.

Perhaps my most interesting vineyard tour on this trip was with **Alan York**, the biodynamic consultant to Brown and Forman, the owners of the Bonterra vineyard (formerly called the McNab Ranch) in Mendocino County, just north of the little town of Hopland. The 634 acre Bonterra farm stretches along a small tributary valley just west of Hwy 101 with impressive hills on three sides. It's a Region 3 with morning fog intrusions and a beautiful site to grow wine. The soils are predominantly gravelly clay loams. Jim Fetzer, a visionary and creative farmer, planted and developed the organic vineyard before it was sold to BF. The valley is very warm, and Alan thinks it may be best suited for Rhone varieties, but the emphasis continues to be on the

Bordeaux reds – a nod to the market’s dominance over viticulture, although Zinfandel is also grown. Annual precipitation is around 40 inches but all during the winter months. Summers are hot and dry.

40 year old head trained and dry farmed Petite Syrah is the centerpiece of this spectacular vineyard. On wide spacing and one wire trellis with graceful cordons and long, elegant spur positions. Pruning for 40 years and still having original spur positions is an amazing accomplishment. These old vines, scattered all around California, are a pleasure to behold, each is like its own sculpture. Vines are in balance with moderate canopy density and good sunlight penetration. Some leaf pulling is done, but not too much. Vines do not require a lot of care – they have found a comfortable place. New vineyards are planted 8x5 on 3309. Heat spikes can exceed 100 degrees and recently overhead irrigation has been used for cooling. Alan says the water evaporates before it hits the leaves, cooling the air but not causing disease problems. Again, the issue of managing light intensity was raised in order to control sunburn, cooked flavors in wine and overly alcoholic wines.

Most important parts of organic viticulture are tillage, irrigation and canopy management. Organic and biodynamic farmers must be better than everyone else to make the programs work. They need to be in the vineyard constantly, understanding their vines and reading the season. Scouting is the key to success in non-conventional farming, where prevention is emphasized. This is not a passive form of viticulture – this is very pro-active growing. Alan works with all the crews, from the field hands to tractor drivers on disease and pest identification. It’s very important to have loyal and experienced crews to make this work. Communication is essential at all levels on a farm this size.

In fall hill up vine rows with a specially designed disc. Take down in spring with grape hoe. Disc or spade every other row. Native cover crop is used in most places but sometimes seed is drilled.

Most vine rows are clean tilled in the summer. Lots of CA poppy in vine rows.

He consults with vineyard manager Chad Boardman – a Cal/Poly grad who did his thesis on biodynamic viticulture and came straight to Fetzer. Eutypa is a big problem. Cut it out when it’s found, go back one foot from furthest infection. Don’t use soft soap, don’t use any outside inputs when it can be avoided. They just don’t even think of that. They do not do anything but farm. Try to keep things very simple. Think about why they are doing what they do – don’t just do it. Eg. Chad wants to irrigate. Why? Do the vines really need it? The key is not to make a big deal of anything. Keep it all in balance. Avoid reductionist viticulture – trying to micro-manage instead of looking at the big picture.

Disease is not a big problem at Bonterra, basically powdery mildew and occasional botrytis. Manage PM with sulfur and Serenade. Glenn is convinced that humidity is just as important as temperature and that they don’t have problems because RH is so low. Only spray a few times a year, not on schedule but according to disease modeling/forecasting. Botrytis is managed with canopy manipulation and is not a problem unless it’s a huge problem and mostly only in Chardonnay. Rain is very rare at harvest. First spray is with wettable sulfur, after that it’s all dusting (3 apps). About 12 lb/ac/yr. Some wineries don’t want dust after set (S-C) and that can be a real challenge and problem. Sulfur is so important to successful organic grape growing. Copper is sometimes used but depends on the year. Use Adcon weather stations to monitor climate. Spray at 30 gpa to start, then finish with 60 gpa at end of season. Predatory birds of all types are encouraged, from hawks to bluebirds and barn swallows. Chickens roam the vineyards in search of cutworms and grubs. Gophers were ever present in almost every vineyard I visited before Bonterra. Here, there were none to be seen.

No herbicide at all, ever. Use grape hoe and hand hoeing for all weeds, but keep some weeds under vines and in rows. Some bindweed. Pig weed is a problem in new vineyards. Very clean and nice looking.

Tile drains have been installed in deep areas. Some fields have heavy clay at four feet.

Irrigation is used modestly, mostly on young vines. Older vines are given a shot to help them in warm years. Overhead cooling is used during heat spikes (up to 100 degrees). Water evaporates almost before it hits the leaves. Crew can still work in the vineyard while overheads are running. . Scheduling is done with pressure bombs and looking at the vines. Vines were shutting down at this time, looked like veraison is coming soon. Good timing, vines look very healthy. Huge reservoirs feed the irrigation system. Have ability to turn on/off individual lines. Alan would like to water individual vines with temporary drip lines.

There is excellent uniformity in most vine blocks, but sections taken out by Eutypa. Scouting and observations are secret to success. Crews are trained to identify PM and bugs. Leaf hoppers are main insect problem. Tolerate most infestations but will spray with Provado when absolutely necessary. Most leaves have yellow spots, especially older leaves. Working with a white spray material that covers lower leaf area and keeps hoppers away, a visual preventative measure.

Equipment is very important. Most tillage and spray equipment. Use small rubber tracked crawlers with front end loaders and smaller tractors. Mowers, grape hoes mount on front so it's easier to see. Tillage equipment includes a spader, flying V plow (five blades) and a railroad rail for a drag for summer cultivating – doesn't break up soil structure, double sided Clemens grape hoe with three vertical blades, disc is only used in the spring to take out cover crop, a deep ripper is there but Alan doesn't like it, seed drill and 400g Rear's sprayer for wettable powder sprayer. Sulfur dusters. Simple compost spreader that discharges in rear and two spinners spread compost in broadcast over 24 feet – three rows.

Soil are important – pH 6.5, organic matter is around 2.5 and soil structure is very important. They dig backhoe pits but don't seem to pay too much attention to soils, it's what is there. Rootstocks are used according to soil potential.

Composting is done on site using winery waste (pomace, seeds and stems) and horse manure – 50/50 by volume, 4:1 by weight. Compost is very nice, clean, earthy smell, crumbly, moist and great soil structure. Adds a lot to the soil. Turn with a front end loader, need piles to be 10 feet high (12 wide) and keep for two years. Glenn is doing research monitoring pile temps. Compost is not overused, just for specific needs to address an issue in the vineyard. It is used modestly as a fertilizer and to build soils and add OM.

VSP may not be the best system for McNab. Too exposed, too hot. They do some leaf pulling and lateral removal, all by hand. New plantings are mostly 8x5 spacing.

Biodynamic viticulture is integrated into the entire program. Special cellar is used to store preps. Some are home grown, others are purchased from JPI. They are stored in ceramic pots in a 3x2x1 wood box in a root cellar. Cow horns are also there. They make their own silica materials. Preps are applied according to proper astrological cycle. Preps do not smell, looks like dirt and need to be kept moist. Alan sprays with water with a spray bottle. A custom designed mixer is used – about 30 gallon SS just above cellar on platform with access to outside. Stirrer is automatic, with a forked end that will auto-reverse according to a timer – beats stirring by hand. Preps are sprayed with airblast. Silica is applied with a Cima with nozzles turned straight up and blowing a cloud over the vineyard, must be sprayed around sunset. People focus on preps, but they are just an amendment to good viticulture. Horn manure is applied at ¼ cup per acre. Barrel compost (eggshell, horn manure, bentonite prep) goes on at 1/3 cup per acre. Biodynamics is a great nutrient program for vineyards, low impact, slow release effect.

Compost, tillage and cover crop are main methods of maintain vineyard/vine balance and health. Silica is used carefully because it can be dangerous – will burn leaves and lungs if not used carefully and properly. Operators need to wear a respirator or have a cab tractor to apply safely.

Landscaping is vital to success of the overall program. Landscape corridors are both functional and beautiful and bring plant and insect biodiversity into the grapevine monoculture. Plants are especially selected for the climate and as hosts for beneficial insects. Lots of color – palms, aloe vera, flowering plants and so much

more. Tremendous biodiversity in the vineyards with olive trees, cypress, oaks, it makes it look very beautiful. Jesus was a crew member that Alan trained to take care of landscaping, he tends all the landscape space on the farm and does a beautiful job. He didn't "get it" at first, but worked hard and now does the work of two people. The habitat divides are more labor intensive than the vineyard. Containers are woven from yellow willow. The bridge rails were made of willow. Vines are tied with cat tail stems. Landscape areas tie riparian zones to the vineyard. They need the most water and use more water than the vineyard. The integration of plant life is called conductivity, connecting vegetative zones within the vineyard. Blocks are divided up to allow for strips of vegetation. The habitat divides accent the vineyard and remove the vine monoculture. They bring a sense of harmony to the farm and create a more diverse and active ecosystem. It is a very holistic way to farm.

Farming costs are about \$3500 per acre. In line with conventional farming costs, includes landscape costs. Very frugal, they don't use or do anything thing that is not really needed. A good way to farm independent vineyard and keep costs in line. But can't do the best grapes this way. Pay scales are lower than Napa and Sonoma. \$6 for field hand in Mendocino, \$8 in Sonoma, \$10 in Napa. Costs go up to \$6500 in hills

The barn on the property doubles as Chad's office, equipment and shop and entertainment space. A room is set aside with commercial kitchen and windows opening to patio for entertainment. All old wood and very rustic. All buildings on the property fit with the environment – pump house sheds and a wonderful observation tower that looks down rows and landscaping. It has a full bathroom on the second floor. Drainage ditches are lined with rock. Everything is so well integrated – vineyard, landscape, structures – they all fit together very nicely, harmoniously. Alan ties it together. Giant palms are brought in - \$5000 each.

Creek sides were buried in blackberry, management wanted to cut it out despite Alan's protest. Next year PD appeared in vineyard, but it's under control. Leafhoppers are under control in the vineyard, some low impact insecticides are used infrequently.

A deer fence surrounds all vineyards, they are a problem, especially with older vines.

Viticulture is very high quality. Very clean and well kept vineyards. Producing wines for \$10-20 category but not striving for the best wines. No high density plantings or super premium viticulture or wineries. May depend on soils, it seems the climate will support it. Ideal spacing is to fill trellis without irrigation, use irrigation only to moderate the ripening process. Find the right vine balance.

Advice for the east – we need small plantings that can be well managed. Create open spaces in and around the vineyard and vines to maximize air movement and circulation. Less landscape zones are necessary, promote good drainage, both water and air. Need plants that are disease resistant and winter hardy. Find sites with poor nutrition and that will root deep. Need the right varieties that will ripen properly. Growers need to balance atmosphere and soil. Try to achieve a smaller crop per vine, not necessarily a bigger canopy.

You can see pictures of this beautiful ranch at <http://www.bonterra.com/>

The Fetzer and Benzinger families were among the kings of the "fighting varieties" during the 80s and 90s. They also had a vision of farming organically and made a commitment that at first seemed crazy, but now is easily accepted around the north coast. Both are now leaders in the organic wine movement. Ann Thrupp has been hired as a grower rep to work with independent growers on converting to organic viticulture. The Fetzer's attracted interest to their wines by creating a beautiful landscaped garden and food center with John Ash as chef. Kate Frey is the master gardener. Visit the garden at http://www.fetzer.com/comevisit/gard_main.html

Following my visit to Bonterra I met with **Glenn McGourty**, the UC farm advisor in Mendocino and Lake counties and an avid supporter of the organic grape growers in the area. He was busy planning a three day

workshop for grape growers put on by Fetzer for its growers who it wants to convert to organic farming. He manages an extensive trial of Mediterranean varieties including 10 Italian cultivar, 10 Rhone varieties and Spanish and Portuguese varieties, observing their basic phenology, yield and wine quality potential. He is also looking at how the practice of deficit irrigation may be impacting long term vine health and productivity. This practice is common in California, but no one really knows how it will affect the vine. Glenn's suggestion for organic grape production in the east is to identify our weakest links in our viticulture and learn how or if organic methods can be adapted or improved to strengthen those areas. If not, it may not work. Be prepared to lose part, or possibly all, of a crop in any given season. It takes much better farming to make organics work, and even then, the weather can beat you.

Sunlight came to my attention. There abundance of it and our lack of it. The Farmer's Almanac said the east would get 17 sunny days this summer. So far, I wouldn't disagree. I wonder if there is something that we can do to improve the photosynthetic capacity of our vines. Is it just a matter of leaving 6, 8, 12 or however many extra leaves, extending the hedger upwards? How to explain, then, the shorty canopies that produce fabulous wines in Bordeaux? Yields are also tied into this puzzle – getting just the right balance. I'll try to work on this and figure out how in the

I took 16 bottles of wine to California and came back with 18. The kindness and generosity of everyone I met on this trip was overwhelming and a welcome reminder of why I love being in this business so much, although their time was even more precious than their wines. I must have gained about 10 pounds as well, a tribute to the fine cuisine and wines that are so important to any visit to the wine country. The weather was perfect, of course, from the moment I deplaned in Santa Barbara until I left from Oakland. Sunny, dry, 80s and delightful. The farmer's market in Healdsburg was wonderful. I was assured by an elderly couple that I was buying the world's best mustard and it may well be just that. The Asian Art Museum in San Francisco is incredible and the Golden Gate shrouded in fog is a spectacular vision. I sometimes find myself with a serious envy complex, bordering on resentment, of California wine growers and their perfect weather and soils and \$150 cabs. On the other hand, I sometimes wonder, as a former grower, why anyone would choose to try to grow fine wine in the east. The powerful allure of wine is seemingly universal. Wherever there are people, there are vines stuck in the ground. That's one reason I love traveling around and seeing what people are doing. No matter where grapes are grown, there is always something to learn and admire and people to get to know and enjoy.

MLC, August, 2003