Applied BIODYNAMICS©

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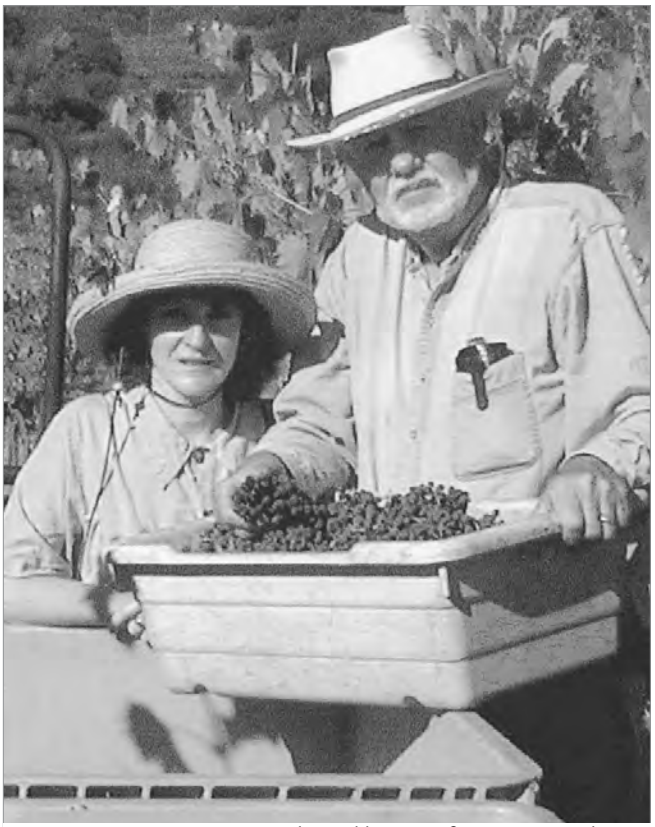
Patricia Smith

Biodynamics Brought to the Vine

When we think of biodynamic farming and gardening, we usually associate this activity with food. Growing vegetables, grains, fruits, and grazing pastures for livestock – all of these are treated with the biodynamic preparations. But what about a substance like wine? Can you imagine the wines that would come from biodynamically grown grapes? Well, you don't have to imagine anymore. Such wines have arrived and are gaining attention in the worldwide market. The following is a perspective from seven individuals who share their insights on biodynamic principles at work in the vineyards and in the wines.



Co-owners Patricia Damery and Donald Harms of Harms Vineyards & Lavender Fields

Harms Vineyards and Lavender Fields

Patricia Damery is co-owner with husband Donald Harms of the eight-acre Harms Vineyards & Lavender Fields in Napa, California. The entire acreage is farmed using biodynamic/organic methods. Harms Vineyards & Lavender Fields is working towards biodynamic and organic certification.

Patricia Smith: *What made you decide to have a biodynamic vineyard?*

Patricia Damery: Our first experience was inspired by desperation. At the time we had a vineyard which was at about 1600 feet, it was mid-October 1999, and the grapes weren't ripening. We had four varieties of grapes there: Chardonnay, Zinfandel, Pinot Noir and Syrah. The Syrah in particular was way behind. The Brix rating [the amount of sugar measured in the juice] was still 19 – we want at least 22, and it normally takes about a week for the Brix to raise a point. We were running out of time. To make it worse, the vines were also closing down, the grapes raisening, and the leaves yellowing. Our winemaker said that he no longer could use the grapes. At the time, a friend told us about a winemaker, Michael Topolos, who had used biodynamics to ripen his grapes. I called him and got his consultant's name. After a series of BD sprays over a period of ten days,

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Notes

The meticulous care and cultivation of vineyards has always been a timeless approach in patience and perfection. Growing grapes using biodynamic practices, the wines that are produced from them, and the people who bring biodynamics to the vineyards, are featured in this issue. While space in this publication limits the interviews to seven individuals for this subject, we hope this provides a favorable cross-section of the twenty-five-plus vineyards in the United States using biodynamic methods.

For your further interest in wines produced from biodynamic grapes, we have a directory of the vineyards that are listed by category of their observance of biodynamic practice.

Also in this issue is a sparkling review of Nicolas Joly's *Wine From Sky to Earth* by Steve Melchiskey.

Patricia Smith, Editor

Three Kings Preparation

Remember to place your order for the Three Kings Preparation. Orders must be received by December 23, 2002.

2003 Calendars Available

The *Stella Natura 2003 Biodynamic Agricultural Calendar* is available now at JPI for $13.95 plus shipping and handling. The theme of the 2003 calendar is "Exploring the Realm of Life".

Mission

The Josephine Porter Institute for Applied Bio-Dynamics Inc. (JPI), was founded to produce quality biodynamic agricultural preparations based on the spiritual-scientific research of Rudolf Steiner.

It serves as a living memorial to Josephine Porter, a pioneer for this work in America.

The mission of JPI also includes education and research in biodynamic agriculture. JPI undertakes these tasks so that the earth may be healed.

Please Write

We welcome your articles, letters, book reviews and shared experiences of observations in biodynamics. Send to: The Editor – *Applied Biodynamics*, P. O. Box 133, Woolwine, VA 24185.

Biodynamic Preparations Legend

BD #500 – Horn Manure
BD #501 – Horn Silica

BD #502 – Yarrow
BD #503 – Chamomile
BD #504 – Stinging Nettle
BD #505 – Oak Bark
BD #506 – Dandelion
BD #507 – Valerian

} Compost Preparations

BD #508 – Horsetail (*Equisetum arvense*)

Applied Biodynamics

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The Editor, *Applied Biodynamics*
P.O. Box 133
Woolwine, VA 24185, U.S.A.
Phone: (276)930-2463
Fax: (276)930-2475

Layout by Bruce Bumbarger

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the leaves began to turn green again, the grapes plumped up with no irrigation or rain, and the Brix came up to 24 on the Syrah. We harvested all the varietals within the week. The flavors of each were distinct and wonderful. This was so successful that we asked the consultant to work with us on another smaller vineyard which was floundering. Three years later, it is flourishing.

PS: *What biodynamic preparations do you use?*

PD: We use a series of sprays in March, June and October: barrel compost [Biodynamic Compound Preparation], 500, 501, 505 and 508. Starting in April we spray a fermented *Equisetum* [508] tea on the ground twice a month, at the new and full moon, and we do this through September and October. Of course, we treat our compost with the six bd preps: 502 through 507. We dig some into each vine, trying to do this yearly the first three years (we have done the first half of the vineyard in the first year and the second half was done in the second year, given the labor intensive quality of the task), as well as give the vineyard a homeopathic scattering of the compost at the time we plant the ground cover in the fall. A week or so before harvest, we spray 501 and 507 to enhance flavors and even out the ripening.

PS: *Are you using bd preps that you have made yourself and what are they?*

PD: We buy all our preps from JPI. We plan to grow the *Equisetum,* but so far, haven't.

PS: *What is the most challenging issue for your vineyard, cultivation wise?*

PD: Last year we would have said mildew and botrytis, but this year that has been under control. I will describe that later. We spend a huge amount of time and money on weed control, which is done manually. We are experimenting this year with mulching under the vines to see if that is effective. But perhaps in terms of the health of the vines, our biggest issue is how to get calcium to the vines in a certifiably organic way. We are in a transition period in our vineyard for having our grapes certified organic by CCOF [California Certified Organic Farmers]. We raise two varietals now: Sangiovese and Chardonnay. The Sangiovese is a heavy calcium feeder.

PS: *What is the most challenging issue for your vineyard, distribution wise?*

PD: There is a glut of grapes in the Napa Valley, so selling our grapes has been hard the last two years. In fact, last year we couldn't sell the Chardonnay, so we crushed it and fermented it in barrels ourselves. I am glad that we did this, because we discovered that it has developed into a very good wine. We sold it as bulk wine this year, but that didn't even cover the expenses. Obviously with the acreage that we have, we are going to have to sell our wine ourselves if we are going to more than meet expenses.

Map of Mendocino, Sonoma and Napa Counties showing locations of California vineyards profiled in this newsletter

PS: *Are bd wines mainly considered special collection variety or are some making it into the mainstream market?*

PD: I think that bd wine is a concept that is coming but is not here yet. And, although we farm biodynamically, we are not certified biodynamic yet, so we cannot call our wine or grapes biodynamic. I do know that there is a ground swell of interest here in the Napa Valley for the biodynamic process. I think that people really have no idea what it is, but that somehow the process has become synonymous with more nutritious food. On our lavender, we have said that it is grown using the practices developed by Rudolf Steiner, and an astonishing number of people recognize Steiner's name, and buy our lavender because of it. So I think as time goes by, people will seek it out more.

PS: *Do those managing bd vineyards rely on consultants or do most go with their own observations/experiences?*

PD: At first we contracted with a consultant, originally to ripen the grapes over a two-week period. We then signed a contract to work with him over the next year in learning the process. We paid a lot for this, probably too much, given that we had sold our larger vineyard and were working with only eight acres. But he was intuitive and could perceive the energy forces, and I learned a lot from him. Because bd works in another paradigm, I think that it helps to have a teacher work with you for a full year of seasons, to be able to do the compost with him, and to stir with him, to spray with him. He also spent some time with us reading Steiner's *Agriculture.* Now we do not have a consultant, although we have thought about hiring one to review where we are now. We do ask Hugh Courtney questions, and he is quite helpful.

But mostly, I think that we want to learn to do this ourselves. That is part of it, part of the reason that we are doing it. We are in an energetic dialogue with our land here, and we don't want a priest to intervene.

PS: *Grapes are considered one of the most difficult crops to grow without the use of synthetic chemicals, especially fungicides. How do biodynamic growers maintain their grape varieties in a natural environment, free of pesticides, fungicides and chemical fertilizers?*

PD: First we work to improve our soil, so the vines have a healthy ground to grow from. The compost is probably the most important part of this. Our vineyard is challenging, damp in places with several different kinds of soil and we have had some major botrytis strikes. The first strike happened the first year that we were doing the bd sprays. We were advised to spray copper sulfate, and it definitely killed the botrytis, but we almost lost the Sangiovese too. We sprayed it too late. The last two years we have sprayed Kaligreen before bud break, and we still use sulfur. This last year we also sprayed the fermented *Equisetum* tea at the new and full moons during the warmer months, and for the first time, we have had almost no mildew during a year that many have had mildew problems.

We do plant a ground cover of over twenty wildflowers, a selection chosen for each varietal by our original consultant. He wanted us to let them grow until bloom to help with pollination. They also help indicate and balance the minerals in the soil. We found, however, that they grew so prolifically that they were taller than our vineyard workers. They also made the vines more vulnerable to frost damage, as they impeded air flow, and their presence held in moisture. This year we mowed the flowers to about a foot tall in April. We also pull leaves on the vines, so air can get into the bunches.

PS: *What comments/observations have been made about the wines that you produce?*

PD: We have been told that the grapes have complex and wonderful flavors. Our Chardonnay has a hint of lavender, as it grows between two lavender fields. It has developed into a delicate wine that has made us to decide not to pull the grapes and plant something else. (Which we were seriously considering. The vines were stunted, producing few grapes which made a very mediocre wine.) We attribute this directly to the bd preps and the wholistic approach of companion planting.

PS: *Have you found a process or a way of observation that helps you determine which biodynamic preparations and/or methods that work best for your particular vineyard?*

PD: Trial and error, and, over time, a slow adaptation to a very different paradigm. The greatest indicator to us as to what is working is the way that our vines improved in health and size once we began the bd program, and then the improvement in the taste of the Chardonnay. We had farmed without chemical pesticides and fungicides for years, but when phylloxera, and then the black ooze, arrived in our valley, our replanted vines were compromised and did not thrive. Now they are. Each year is better.

Our harvest has been going unusually and unexpectedly well. We have gone from less than a ton per acre three years ago to three tons per acre this year, and this for both varieties.

PS: *Are there any other questions you would like to address?*

PD: The economics of being organic or biodynamic, and maybe farming at all, are daunting. I understand that in Germany such efforts are subsidized, and this feels correct. We are doing an environmental service. So much of what we are doing is also experimental. We are cleaning up and improving fertility, and hopefully, working to bring spirit back into the environment and ourselves.

I wish that the organic process dovetailed better with the biodynamic. For instance, we make our compost by layering the various manures with straw, putting in the bd preps, covering it with straw, and leaving it. It makes a wonderful sweet and rich compost. We have decided to become certified organic because we believe the consumer should know what they are getting.

For the first time Harms Vineyards & Lavender Fields will be releasing two wines under their own label, their 2002 Chardonnay and 2002 Sangiovese which will be available in June 2003.

Robert Sinskey Vineyards

Kirk Grace is the vineyard manager for Robert Sinskey Vineyards. The 190 acres of vineyard in Napa, California are farmed using biodynamic/organic practices.

At Robert Sinskey Vineyards, the transition from conventional towards sustainable agriculture occurred in the early 1990s when they began to notice dead soil devoid of earth-

worms. This began the change to build soil health and eventually, as Kirk Grace states, "build whole farm health."

Robert Sinskey and winemaker Jeff Virnig were both open to alternatives. They originally tried cover crops, composting and other related practices to generate a healthier soil. At the time, they didn't have a farm manager, but a contract manager, who was managing other farms so he couldn't put his attention into one specific vineyard. As Kirk describes it, "There was no conductor." Sustainable agriculture methods had begun but the vineyards lacked individual care and there were not enough positive results from the transition. In 1997, Kirk was approached by Robert Sinskey asking what could be done.

Kirk Grace started reading about biodynamics when he was 17. He had done grape farming in the 1970's and kept hearing how growing grapes without conventional agriculture was economically impossible. He left the vineyard in 1993 to pursue a degree in history, which he completed in 1997. In that same year Robert Sinskey contacted him because of a conversation they had in 1989 regarding biodynamic agriculture. Kirk says, "This gave me an opportunity to farm the way I wanted to farm." He then became middleman for the contract manager and the vineyard. In 1998, biodynamic practices began at Robert Sinskey Vineyards. So content were they with the results of the 1998 harvest, using only one fungicide application, they decided to go from sustainable to biodynamic/organic.

All of the biodynamic preparations are used. Everything receives biodynamic sprays: 500, 501, and most everything has had biodynamic compost applied. Valerian preparation 507 is used to reduce the amount of frost damage.

In California, harvesting wine grapes generally is from late August to mid-October, about six to eight weeks. In early fall of 2000, there was a bad weather pattern, very cool and wet. The grapes were not moving towards being ripe. With several rainstorms and disease concerns, an application of both 501 and 507 was sprayed. Kirk explains, "After the application, we were picking and nobody else was. The results were the Brix rating [the amount of sugar measured in the juice] went up one and a half points in forty-eight hours. This also corresponded with improving pH as well as TA [total acid]."

This year, 501 and 503 are being made. Eventually, Kirk would like to make all the preps on site. Other sources of biodynamic preps are ordered from JPI. The Pfeiffer Field Spray has been used but they are getting away from this and sticking to compost preps 502 to 507.

A lot of compost tea is made. Using the compost preps 502 through 507, they are individually layered in teabags in a compost tea brew and injected through the irrigation system. When testing the brewed compost tea in the lab, invariably the higher free-living nitrogen-fixing bacteria were found to be present. The lab did an assay of this about two or three times with the same results. For foliar application, a 'foliar' tea is made consisting of untreated compost, i.e., not treated with biodynamic preparations. This spray is used to increase the microbial population.

The biggest challenge for cultivation is weed control underneath the vines. "We are on a steep learning curve for experimenting with different types of mechanical cultivation equipment," Kirk says.

The challenge of distribution of biodynamic wines is to see how responsive the market is. "There are some in the consumer audience wanting to recognize unseen forces and support paying attention to them. Yet we are hesitant to put biodynamically grown on the label because we do not practice a full biodynamic program," says Kirk. Since 1999, all the wines from Robert Sinskey Vineyards have been made using biodynamic/organically grown grapes. The vineyard is certified organic.

Patricia Smith: *Are bd wines mainly considered special collection variety or are some making it into the mainstream market?*

Kirk Grace: In general, the classification problem is with demand. For those interested in the BD marketability, their program may be lacking something because they don't embrace biodynamics from a cultivation/philosophical standpoint, but only from the economic view of getting five or ten dollars more per bottle. This is starting to happen in the market. For all those vineyards that are biodynamic, 75 to 80 percent are farming biodynamically for the healing benefits to the land and the other 20 to 25 percent are the fringe who take advantage of the niche marketing of the biodynamic name.

Concerning whether to use a consultant, Kirk says, "It's about fifty-fifty, the vineyards who rely on consultants. They are able to give structure, but it is still down to the vineyard manager to integrate practices that work."

PS: *Grapes are considered one of the most difficult crops to grow without the use of synthetic chemicals, especially fungicides. How do biodynamic growers maintain their grape varieties in a natural environment, free of pesticides, fungicides and chemical fertilizers?*

KG: In California, it is easy to grow without chemicals. Farmers have lost the instinct of what is needed for the farm in such a manner by trading in for less artisanal and more technological methods. We gain this instinct back by using biodynamic and other alternative methods. Other growers completely divorce themselves from observation and awareness of solar or lunar rhythms. Some people approach studying biodynamics on their knees, and not at the table.

They have a tendency to look at biodynamics as a metaphysical entity in a biblical sense, instead of interpreting for themselves from their own observation and intuition. Production becomes so important it is difficult to adhere to planting calendars when you only have limited time to do things and cannot go according to the calendar.

PS: *What comments/observations have been made about the wines?*

KG: The wines we make are meant to be consumed with food and friendship. The wines that win prizes tend to be less subtle. Robert Sinskey Vineyards is trying to work with acidity and work with the wines to compliment the food. I notice at meals, the first empty bottle is a Sinskey one. This happens because we have paid attention to how wine is consumed, and not as a contest in wine judging. Wine judging is like a competitive sport, the wines that win are powerful, but do not necessarily go well with food. Robert Sinskey Vineyards tries to have good acidity and good fruit preservation. Our wines are clean, crisp and bright.

PS: *Have you found a process or a way of observation that helps you determine which biodynamic preparations and/or methods work best for your particular vineyard?*

KG: It's the whole package. Can't do it in a programmed way, need to be anticipatory, certainly with biodynamic/organic it takes longer, yet it is a longer lasting effect from those efforts.

PS: *Are there any other questions you would like to address?*

KG: Over-tillage of perennial crops robs the soil of organic matter. With this practice, we could possibly be making it harder for beneficial soil microorganisms to survive and could be creating an environment where only less desirable microorganisms would be able to exist. Here in the Napa Valley, around April 1 or April 15 one farmer sees the neighbor tilling and they decide they should till. It's technology versus craftsmanship. Farming is an art, using powers of observation.

Fragrant Farms

By Mark Trela

Mark Trela is General Manager of Fragrant Farms, located in New Harmony, Indiana. The twenty-five acre farm consists of three acres in cut flower/vegetable production and six acres in vineyard.

Our biodynamic vineyard was established for several reasons. The state ag school, Purdue, was promoting vineyard establishment in Indiana in order to supply the rapidly expanding Indiana winery industry. It seemed to be a complementary crop to our major spring crop, cut flower peonies. We reasoned that our income would be enhanced by this late summer crop. And finally, grape quality is essential in the creation of a good wine and biodynamics is the best way to positively influence this quality.

All of the preps are used in our vineyard. Spring applications of 500 and barrel compost [Biodynamic Compound Preparation] are followed by 508 applications during the season and three sprays of 501 on fruit days [when the moon is in one of the fire constellations of Aries/Ram, Leo/Lion or Sagittarius/Archer] in the six weeks leading up to harvest. We also have employed a field broadcaster since March of 2001.

We have made 500 ourselves for a number of years and apply this version in the fall. We did make the yarrow preparation [502] one year. The preparations that we do not make are obtained from JPI.

We face several challenges trying to grow good quality biodynamic grapes here in southwestern Indiana. Our climate is very humid and mildew is a huge issue along with fruit rot. Lack of manpower also hinders us from getting all of the vines in the condition we'd like. Our vineyard is very young. We established the six acres over a period of two years – 1997 and 1998. Some areas are picture perfect and others are not.

We have been very fortunate to have our grapes purchased by an Indiana winery, Terre Vin, in Rockville, Indiana, located about 140 miles northeast of Fragrant Farms. The owner and winemaker, Dave Gahimer, is a dynamic fellow and a very savvy marketing man. He has developed a label for our New Harmony wine that taps into the history of our town which was founded in the early 1800s. Those early settlers, the Harmonists, were looking for religious freedom but also were keen vinedressers from Germany. Their wines were called Wabaschwein, after the Wabash

The vineyard at Fragrant Farms in New Harmony, Indiana

River which flows alongside our town. That name is on the bottles of our Cayuga White wine.

From my own limited perspective, biodynamic wines are probably in the special collection niche at this juncture. But I anticipate a shift that will bring serious wine drinkers and biodynamic wines together. It is inevitable that as the quality of biodynamic wines increases, they will attract attention. At this point, our Wabaschwein is not marketed as a biodynamic or even organic wine. We are not certified for one, and organic or biodyanmic would not increase the marketability of our wines in this region.

Our vineyard has been managed primarily by the seat of our pants. We have relied on timely advice from Messrs. [Hugh] Lovel and [Hugh] Courtney and have read both conventional and biodynamic literature for tips on how to improve our cultivation techniques.

Since 1997 our vineyard received only biodynamic preps. Prior to establishment and in response to soil tests, we had lime and some other minerals applied. Our fungus problems became so severe that we began using sulfur in the 2002 season. Our application rate was miniscule by any standards and we noticed some relief that hadn't been detectable before. We would like to rely solely on biodynamic sprays

and feel that this is indeed possible. Yet our own limitations have brought us to this present point. We try different interplantings and cover crops. Yarrow grows everywhere in our vineyard and we have planted it at the base of many vines. We also have small patches of valerian and stinging nettle in the vineyard.

The only way to determine what and how the preps are working is to use them and watch the results. We feel that using all of the sprays in a sequence works better than sprays applied individually and in isolation.

The first bottling of Cayuga White wine from our vineyard in 1999 won a bronze medal at the Indianapolis Wine Competition. It was also mentioned in last year's *Wall Street Journal* as a refreshing wine to beat the summer heat!

The vineyard does not have a name . . . yet. Future plans do not include a winery, although such a development would be a perfect fit for the town which has a tourist-based economy.

Everett Ridge Vineyards and Winery

Darek Trowbridge is vineyard manager for Everett Ridge Vineyards, four ranches on 115 acres in Healdsburg, California. Everett Ridge is certified biodynamic.

Darek Trowbridge got his start in Windsor, CA, working at his mother's family vineyard, Martinelli Vineyards and

Winery in 1989. His studies led him to earn a Bachelor's and a Master's Degree in Viticulture. There were only a few courses on biological controls. As Darek explains, "By the time I received my Master's Degree, I was fed up with the chemical treadmill. One chemical leads to the next. Once you marry that system, you have to use one chemical after another. If you spray for one insect, you kill all the beneficials. Even nitrogen plays a part. Like caffeine for plants, nitrogen takes away the plant's natural ability to grow and makes it vulnerable to pest attack."

After receiving his Master's Degree in 1997, Darek began work at Everett Ridge Vineyards and Winery. As he began to learn about biodynamic methods, Darek used a consultant for one year and then went on his own, building into his own plan and following his intuition. "I wanted to try it out and see what it was about. After doing so I was excited to see the results of working with nature instead of against it," Darek explains.

In 1997, the vineyard that had been conventionally farmed for thirty years was converted to biodynamic in one year. The first full year that Everett Ridge was farmed biodynamically was 1998. As Darek explains, "We are non-till, however, what is challenging is steadily trying to rectify the problems conventional agriculture caused with soil compaction. Pests and fungus, they're not on the radar anymore. If there is a problem with fungus, we spray sulfur dust and usually only twice per year. The sulfur that is acceptable cannot be a byproduct of another industry. Any sulfur mined is acceptable to the Demeter standard.

The biodynamic preparations used at Everett Ridge are 500 through 508, barrel compost [Biodynamic Compound Preparation] and Pfeiffer Compost Starter. Preparations are not made at Everett Ridge, but come from JPI. Darek makes only one version of the 508 [Horsetail, *Equisetum arvense*], as he describes: "We ferment the *Equisetum* after making a tea and find this makes a high quality product."

Darek is not afraid to put ten tons of compost per acre. For some, it depends upon if they can find cheap enough products for making the compost pile. The typical application is three to five tons of compost per acre.

The most challenging issue for the vineyard, with regard to distribution is, "Marketing the product of a relatively new winery and reaching our consumer", Darek says. "We have Demeter handouts for consumers [at the winery], but when they are at the wine shops or grocery stores, they are not as into the biodynamics. We are 100 percent BD Demeter Certified, and do not have it on the label since the consumer doesn't recognize it."

"A winery can perceive higher quality and can come out with a $24 wine," Darek explains. "But in this market, people aren't willing to buy standard American wine for over $20. To have more interest in the [biodynamic] wine, the industry in the next three years needs to sell at the $6 to $10 a bottle pricepoint."

Patricia Smith: *What comments/observations have been made about the wines?*

Darek Trowbridge: Some people get a headache from wine. These same people have told us that our wine doesn't give them a headache. When you eliminate the toxic chemicals that pass through to the wine, you also eliminate the additive effects these have on the human system. Clean grapes make clean wine. Our Dry Creek Zinfandel is noted for being loaded with cherry flavors.

PS: *Are biodynamic wines mainly considered special collection variety or are some making it into the mainstream market?*

DT: There are but two or three available from California. And so far they don't command a higher price. However, the French biodynamic wines are doing well at a premium. Lalou Bize-Leroy's wine [Domaine Leroy] sells for $100 a bottle.

Regarding consultants for biodynamic vineyards, Darek estimates, "Most biodynamic vineyards seem to rely on consultants. Consultants give a regime to make sure the vineyard management carries out the plan. For me, it is in my head to do it rather than rely on a consultant. I'm very passionate about it, I see it as a good thing that the person making the call be in the vineyard every day."

PS: *Grapes are considered one of the most difficult crops to grow without the use of synthetic chemicals, especially fungicides. How do biodynamic growers maintain their grape varieties in a natural environment, free of pesticides, fungicides and chemical fertilizers?*

DT: Not true. Grapes are one of the easiest crops to go organic with (wine grapes, that is), because we don't worry about fresh market eye appeal-we make wine with them. Some varieties are easier than others. Organic matter in the soil is the first requirement for a vine to take over its own health and resist common diseases. The BD preps enhance the vines' immunity to common diseases and also make it more sensitive to its environment-which is better for flavor quality.

Coming from the chemical company ads, grapes look as if they are hard to grow. You see it all there, leveraging to use chemicals, so fierce about it, saying biodynamics doesn't work. The fact is, Rudolf Steiner drew from peasant wisdom. It's good that he did, because the peasant wisdom is gone.

Porter-Bass Vineyard

Sue Bass is co-owner along with her husband Dirck Bass of the 80-acre property, Porter-Bass Vineyard, with twenty acres of vineyards farmed biodynamic/organic in Guerneville, California.

For Sue Bass, deciding to have a biodynamic vineyard was a result of twenty years involvement with Waldorf education as a parent of two children attending Waldorf Schools, and the dissatisfaction with chemical fertilization. The property she has worked for the past twenty-three years was a fruit farm for one hundred years with very poor soil.

The biodynamic preparations that are used at Porter-Bass Vineyard are 500 through 508. The preparations that are made at the vineyard are 500, 501 and 508. The compost preps [502 through 507] are obtained from JPI and the nettles [which are used for tea] come from an Oregon biodynamic herb grower.

For cultivation, the most challenging issue at Porter-Bass Vineyard is terraces. Sue was able to quit using Roundup [an herbicide] when she purchased a Weed Badger that adjusts to terrace faces. Cultivating vines on a terrace is difficult with most tools since they are not made for a small hillside. The Weed Badger, which is attached to a tractor, has 'teeth' and squirrels up the soil under the vine. Another helpful tractor attachment, a spader, cultivates every other row with a cover crop which includes vetch, clover, barley and oats.

Maintaining a natural environment for the vineyard, Sue uses applications of compost tea and nettle tea for their nutritional properties, chamomile tea to treat leaf scald and heat shock, and light applications of sulfur dust when necessary for mildew. Diversification also is part of the program in the vineyard which includes plantings of olive trees, roses in the vine blocks and a chicken yard. Sue works with a consultant and also participates in a monthly study group of grape growers.

Patricia Smith: *What is the most challenging issue for the vineyard, distribution wise?*

Porter-Bass Vineyard

Sue Bass: There is a grape glut in over-planted California – we are fortunate to have loyal winemakers who stand by us.

PS: *Are biodynamic wines mainly considered special collection variety or are some making it into the mainstream market?*

SB: I think the mainstream success is being led by the French. Things are improving in California as some bigger producers of quality wines enter the public eye.

PS: *Have you found a process or a way of observation that helps you determine which biodynamic preparations and/or methods that work best for your particular vineyard?*

SB: I keep careful records. Interesting patterns appear. We have been doing biodynamics for three years and can definitely see a new vigor.

PS: *Are there any other questions you would like to address?*

We are not certified biodynamic, though it's not relevant at the moment, I know that it's going to change. Until last year we sold all our grapes and while we are still selling most of them, this year we are starting to make wine on our own. Our wine has received comments of good expression of *terroir* – strong flavors. The wineries are looking for *terroir* which reflects its property. It means earth in French but it is defined in a way that identifies a particular site and all the different components of the site such as soils and sun exposure. Biodynamics helps to bring about *terroir*.

Sonoma-Cutrer

Terry Adams is the winemaker for Sonoma-Cutrer, a 1000-acre vineyard in Windsor, California. Sonoma-Cutrer uses sustainable agricultural methods and is working towards a transition to biodynamic/organic practices. One hundred acres are farmed biodynamically.

Patricia Smith: *What made you decide to have a biodynamic vineyard?*

Terry Adams: A presentation to our "Focus on Chardonnay" Symposium in 1994 by Anne-Claude Leflaive was the

first inspiration. Tasting her biodynamic wines in subsequent years was an additional inspiration. This experience coupled with environmental concerns and the possibility of making better wines was the beginning.

Once a year, Terry Adams journeys to France to visit Anne-Claude Leflaive's biodynamic vineyard, Domaine Leflaive. Since 2000, Sonoma-Cutrer has a vineyard that is farmed biodynamically with the guidance of a consultant. "The ultimate goal is the *terroir* expression of the wine," explains Terry, which is why he is involved with the grape cultivation. "Farming our own grapes, it's rare to maintain your own farm in California." Kirk Lokka is the vineyard manager at Sonoma-Cutrer.

The biodynamic preparations 500 through 507 are used at the vineyards. Compost is made with pomace [the solids that are left after the juice or wine is pressed off], manure and biodynamic preparations 502 through 507. "We use the biodynamic compost to improve soil, it isn't only on the biodynamic area, we apply it to the other vineyards," explains Terry. "There is not enough to apply everywhere. One year one place, next year, maybe another place." Horn manure [500] and barrel compost [Biodynamic Compound Preparation] are made on site. The other preparations are obtained from JPI.

For the vineyard, "Our most challenging issue is control of mildew," says Terry. "We did have a very severe mildew in one area this year. It seemed the problem took off and got established in a few days. We were able to remove the infected clusters of the grapes to take care of the problem." The 508 is not used on the farm. Instead, they use Kaligreen, an organic anti-fungal treatment that contains potassium bicarbonate.

PS: *Grapes are considered one of the most difficult crops to grow without the use of synthetic chemicals, especially fungicides. How do bd growers maintain their grape varieties in a natural environment, free of pesticides, fungicides and chemical fertilizers?*

TA: I think the most significant ingredient here is vigilance-watching the vineyard and responding immediately to developing problems – best is to anticipate problems.

Producing Chardonnays for the past twenty years, ninety-five percent of Sonoma-Cutrer wines are distributed to the restaurant trade. The remaining five percent are for retail. In the next five years as they develop new vineyards, Sonoma-Cutrer plans to increase the retail market to 15 percent. "Growing sufficient quantity at the highest quality to satisfy the market place," says Terry, is the most challenging distribution issue for the vineyard.

Terry is hopeful for the future of having more biodynamic wines at Sonoma Cutrer.

Presently, the purely biodynamic wines are for experimental purposes only and are not available to the public; Sonoma-Cutrer bottles just a few cases for in-house use. However, most of the biodynamically grown grapes go into the making of other wines. Terry explains, "The biodynamic wines that we make contribute to our Russian River Ranches blend. Eighty percent of our production is the Russian River Ranches, which are a composite blend from six different vineyards, one of them being our 100-acre biodynamic vineyard."

PS: *What comments/observations have been made about the wines that you produce?*

TA: I have a wine produced in 2001, a Chardonnay from our Shiloh Vineyard, which has had no inputs except SO_2 [sulphur dioxide]. We did not add tartaric acid, yeast, malolactic culture, fining agents or filtration. All who have tasted this wine like it.

We do not enter contests, but partner with the restaurant trade. *Wine and Spirits* magazine has rated Sonoma-Cutrer the top wine for the past thirteen years.

PS: *Have you found a process or a way of observation that helps you determine which biodynamic preparations and/or methods that work best for your particular vineyard?*

TA: We are still in the steep part of the learning curve. What I like about biodynamic farming is that it is proactive, there are many things to do, both viticulturally and personally. It is very much about growing in all aspects of life. To me, the term means being more involved. Biodynamic means bio – the human part, and dynamic, that is the doing part.

Frey Vineyards

Luke Frey is the vineyard manager of the 750-acre Frey Vineyards in Redwood Valley, California. Frey Vineyards has been certified biodynamic since 1996 and certified organic since 1980. Sixty acres are farmed biodynamically.

Patricia Smith: *What made you decide to have a biodynamic vineyard?*

Luke Frey: Drawn to it. What made me decide? Spiritually it was the right thing to do. It's more to do with inner travels. I was influenced to go the biodynamic way, thoughtfully trying to meet the farm with compassionate eyes of understanding.

PS: *What biodynamic preparations do you use?*

LF: I use them all.

PS: *Are you using biodynamic preps that you have made yourself and what are they?*

LF: I made all of them at some point on the farm for the past couple of years. I'll call on JPI when in need of preps.

PS: *What is the most challenging cultivation issue for your vineyard?*
LF: Vineyards, cultivation-wise there can be challenges in producing quality fruit. Some vines love heavy cultivation yet over-cultivation is hard on the soil. So an extra vigorous cover crop program for the wintertime helps keep this in balance. Vines by their nature know how to struggle to get along in the worst conditions. Being exposed to a lot of fertility in the soil, they become bored. It's like somebody being in a big armchair all day long doing nothing. They're not too interesting. Timing is important too. Care is taken not to pulverize the soil while trying to meet the needs of the vine.

Timing and moisture vary from one end of the field to the other-one end being a little too dry for proper cultivation, while in the middle or end, sinking everything in two feet of mud.

Slow cultivating is the way to go. Cultivation is different if it goes too fast. If it normally takes eight hours of cultivation, do it in ten hours. Too fast is really hard on the microbial life. Most farmers like to get it disked quick. There's a shock wave of pressure from excessive speed. What I've noticed, it's harder on the soils and all life within it.

Viktor Schauberger [water researcher, see *Living Energies,* p. 13] talks about the electromagnetic energy that goes through the soil when plowing at a certain speed, reducing the surface tension of the water molecules, which makes it less capable of carrying necessary nutrients for all soil life. Ever since I read that, it makes sense to get everything done slowly when you plow.

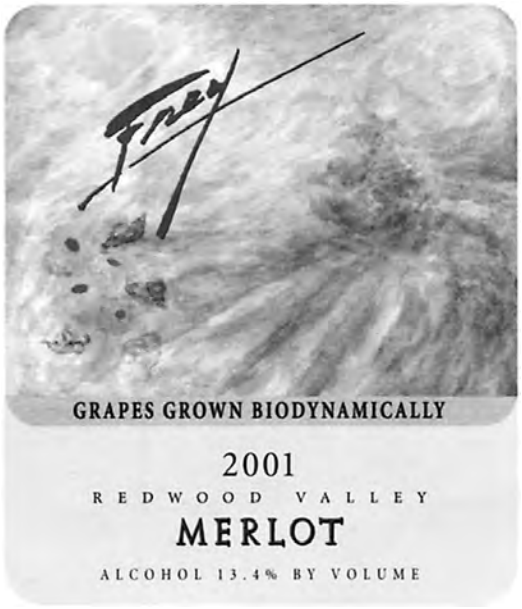
If the vines aren't stressed, they have less character. Their archetypal design is to strive and struggle, to survive in a harsh place. If not allowed to exercise and grow in their own natural way, they're not fully living.
PS: *Do those managing biodynamic vineyards rely on consultants or do most go with their own observations/experiences?*
LF: Yes, I converse with other people from time to time. Some use consultants and some rely on their own study.

Frey Vineyards

PS: *Grapes are considered one of the most difficult crops to grow without the use of synthetic chemicals, especially fungicides. How do bd growers maintain their grape varieties in a natural environment, free of pesticides, fungicides and chemical fertilizers?*
LF: Well, it's different from that I think. Grapes are actually one of the easiest things to grow. Grapes by nature are survivors. In certain years, mildew can be a challenge.
PS: *What is the most challenging issue for the vineyard, distribution wise?*
Katrina Frey, Sales and Marketing at Frey Vineyards: There is not a lot of consciousness or consumer awareness for biodynamics. It's a Catch-22 situation. We need more packaging of BD products in this country to promote biodynamics, yet we can't necessarily guarantee a market for those that produce these goods. I see a need for a lot of support for increased awareness.

Our wines are made without sulfites, only using the natural yeast population with some lots of wine. We cannot use the term 'biodynamic wine' on the label because the federal authority, the BATF [Bureau of Alcohol, Tobacco and Firearms] doesn't recognize biodynamic wines, and Demeter [certifying association for biodynamic products] has chosen to not be part of the Organic Standards. We've been certified biodynamic since 1996 and certified organic since 1980.
PS: *Are bd wines mainly considered special collection variety or are some making it into the mainstream market?*
KF: Yes, they are making it into the mainstream market such as wine shops and large national retail outlet chains.
PS: *What comments/observations have been made about the wines that you produce?*
LF: Wine is a very personal experience for me. It's not right to take everybody's word. I try not to take in any story too deeply if I heard it second-hand unless I actually saw what took place. Everybody has a different taste.

We are fermenting the biodynamic wines on their own yeast. We have observed that the natural yeast living on our biodynamic grapes is very vigorous. Adding sulfites to the wine kills the natural yeast, as well as the life forces of the wine. When you add sulfites and foreign yeast, it takes away from the authenticity of the wine and the region. We want to make wines that reflect the inner character of the land.
KF: Frey Vineyards has entered wine judging shows and received medals. The 2001 BD wine Merlot has won five medals in five different wine competitions. People can taste the true varietal grapes in the wine. The first biodynamic wines were in 1996. One of the qualities is that they are going to age nicely.
PS: *Have you found a process or a way of observation that helps*



you determine which biodynamic preparations and/or methods that work best for your vineyards?
LF: What I seem to do, I use a selfless-observation guided by experience and the light of intuition. That's the way I work, through observation, listening to intuition, watch and hope!
PS: *Are there any other questions you would like to address?*
LF: Anybody who comes into real contact with the workings of the preps, most often are visited with wonder. If you do get a person who wants to use the preps just because it makes more money, the whole goal will change, they may soon find themselves really wondering about things other than making money. The influence of the preps rubs off on people, even those skeptical of them. The underlying form of the preps seems to be love, carrying a theme of caring.

Book Review

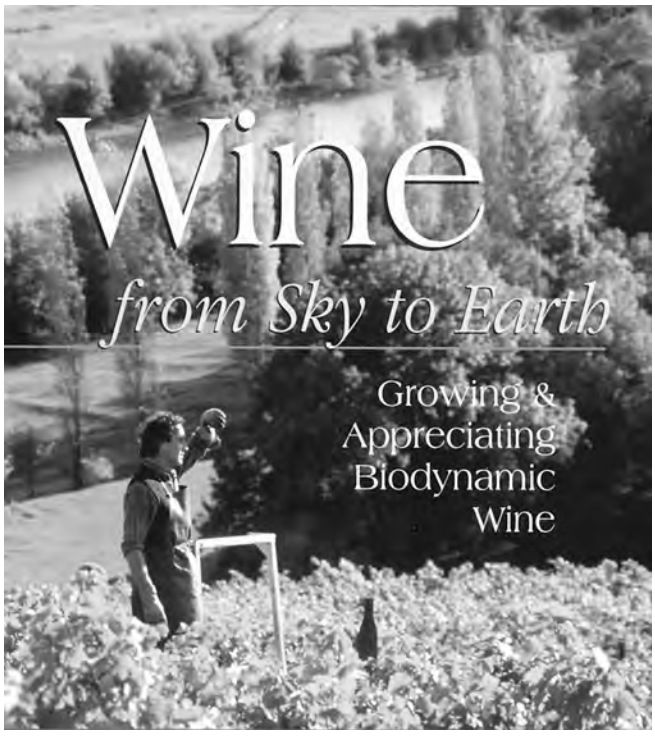
Wine From Sky to Earth – Growing and Appreciating Biodynamic Wine by Nicolas Joly

Reviewed by Steve Melchiskey

It was a typical northern California spring day in March, cerulean blue sky, brilliant sunshine, crisp, dry air. The kind of day that makes life feel right. A good friend and sommelier at one of the best restaurants in San Francisco and I met for lunch at a small, friendly sushi bar in Marin County. He is a person of tremendous taste and aroma sensitivity and training. His true passion in life is figuring out how to combine food and wine on a higher plane. Frankly, it is a level of the wine world that escapes me. I know when wine is a good match for a food, but not why or how, or any of the other answers. Today, my friend was brimming with excitement. "I have been saving this twenty-five-year old bottle of wine from the Coulée de Serrant, Nicolas Joly's biodynamic wine estate," he said, "just for this sushi lunch with you. You'll be amazed at how they work together and how incredible this wine is."

Twenty-five year old white wine, I thought, oh boy, can't wait. Hope there is some room for a glass of sake. The last glass of even five-year old white wine I had was undrinkable. White wine rarely lasts more than a few years in a bottle before losing its fruit and oxidizing.

But then the sushi . . . glistening pieces of tuna, yellow-



tail, mackerel, shrimp. And the wine. Oh my, oh my, oh my. I have never had such an incredible experience with a bottle of wine. The panorama of flavors, texture, and aromas was stunning. Apricot, lychee nuts, magnolia flowers, key lime, minerals of quartz and wet granite. Simply amazing! Did it go with the sushi? You bet. And it ranks up there as one of the favorite wine and food experiences of my life.

So when Nicolas Joly writes a book on biodynamic grape growing, I guess what I'm saying is, that he is worth more than a casual listen. I taste wine for a living, and no producer has ever achieved what Joly has in bringing complexity and the taste of the earth, sky and water into his wine. Does biodynamics play a role? Undoubtedly.

Joly's book, *Wine From Sky to Earth* is the only vineyard-focused book that I know of on biodynamics. One of the most interesting parts of the book is the short section in the beginning relating the growth of the vine to the four states of nature: mineral, liquid, light and heat. From this analysis alone one can begin to put the vine itself into the context of biodynamic growing theory.

The next most useful sections are Joly's discussion of autumn and spring. In the section on 'Autumn', he engages in a fairly comprehensive evaluation of compost and the manures that are appropriate for creating compost for grapevines. He also discusses chamomile and nettle, and their relation to the vine.

In the section on 'Spring', Joly gives an excellent primer on all the preparations, horn manure, dynamization, quartz, and teas all specifically related to the growth of the vine.

His discussion of grapevine ailments is not as comprehensive as I would have liked to see, but he admits that by saying, "This chapter is not intended to deliver a dictionary of recipes." This is fine, but clearly someone needs to develop a dictionary of recipes and why not Joly? This kind of information is at the heart of expanding biodynamics to a wider audience of grape growers but without that information, it is difficult to do.

Joly also speaks to the actual production of wine with biodynamic principles, which given the 168 pages of the book was perhaps trying to put too much in too little space. He hits hard and short on certain winemaking procedures that he feels are at the heart of differentiating biodynamic wine from conventional practices. Consequently the chapter becomes a bit 'jumpy', moving too quickly for serious unfolding of knowledge, yet at too high a level for novices to really understand what he is discussing. Still, I don't know of any other book that even begins to talk about biodynamic principles in winemaking and, as such, is a good start.

The last few chapters of the book have to do with the planets, astronomy, Rudolf Steiner, crystallization and other general subjects in biodynamics, but not related specifically to the growing of grapevines.

Throughout the book, Joly uses every opportunity he can to attack the French governmental agriculture system and obviously harbors great antipathy towards this 'system'. As a frequent business visitor to France, I found it interesting to get a peek behind the scenes at the politics of agriculture in such an interesting country.

There are sixteen pages of color photos, giving a good dose of vibrancy and illustration to the text. Joly also includes a fascinating lecture given by Steiner in 1923 about mad cow disease and its causes. Steiner's foreshadowing of the current crisis in the beef industry is simply prescient and it was interesting to have Joly highlight it in his appendix.

If you grow grapes, you need this book. It is a serious discussion of techniques and theories of handling the growth of grapevines biodynamically. And if you sit down to read it with a glass of wine from Joly's biodynamic Coulée de Serrant, I can promise it will be an experience you will remember for a lifetime.

Steve Melchiskey is the managing partner of USA Wine West, a national wine distributor based in California. For many years he specialized in the distribution of organic and biodynamic wines. He currently lives outside Portland, Maine where he is in the process of developing Maine Coast Vineyards on an old chicken farm and in two years plans to open a winery. His next project will be a Maine cactus farm . . .

Living Energies Back in Print

After being out of print for awhile, the much sought after *Living Energies – An Exposition of Concepts Related to the Theories of Viktor Schauberger* by Callum Coats, is now available at JPI for $29.95 plus $4.50 for shipping and handling. This fascinating book describes the energies of Nature, especially water, in a way that has never been documented before. Published by Gateway/Gill & Macmillan Ltd., Dublin, Ireland.

"*Living Energies* may become the catalyst for re-writing all the textbooks of science and the manuals of politics and planning. It shows how humanity can take its place as the responsible guardians of a very precious centre of life in the Universe."

Alick Bartholomew
Publisher, Gateway/Gill & Macmillan Ltd.

"Altogether, we should be clear that the whole domain of Agriculture – including what is beneath the surface of the Earth – represents an individuality, a living organism, living even in time."

Rudolf Steiner – *Agriculture* (Adams translation), p. 34

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