

Horns of plenty

If burying manure in a cow horn seems an odd way to work the vineyard, take a deep breath - because that's what biodynamic winemakers want their land to do: inhale, exhale and achieve the perfect balance that expresses itself in the bottle

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One month ago, during the new moon, Mike Benziger rose at 5 a.m. and began filling a 60-gallon stainless-steel tank with water. When the tank was full, a machine began stirring the liquid, into which Benziger poured 6 tablespoons of gray-brown powder.

"Horn silica," Benziger says. "Preparation 501."

After a minute of stirring, the machine paused for a few seconds, then reversed direction. Benziger's biodynamic consultant, Alan York, says that this interval, known as chaos, is a time "when the minimal amount of material has the greatest potential for expression."

After an hour, Benziger turns off the machine and drains the liquid into two sprayers attached to a pair of tractors. By that time, the sun has risen and Benziger's field crew has assembled for work.

Preparation 501 must be applied within an hour of stirring, before dew has dried on the leaves, "when the Earth is exhaling and the plant is coming to meet the sun," York says.

"I like to apply 501 when there's moisture in the air," Benziger says. "If the weather is too warm, there's a danger of burning the plants. Silica consists of ground quartz crystals. They make photosynthesis more efficient. By applying 501, we hope to get more varietal flavors -- flavors associated with this property."

Before Benziger made his solution from horn silica, the substance had been buried in a cow horn for six months, throughout the spring and summer. This week, on the other hand, on the autumnal equinox, Benziger, York and David Koball (manager of Bontarra Vineyards' McNab Ranch) buried manure in cow horns to create Preparation 500, which will be dug up in the spring and later sprayed on soil to stimulate root growth.

It took an hour to empty the spray tanks. The solution was distributed over 24 acres. The idea that 6 tablespoons of powder dissolved in 60 gallons of water could affect an area of

such size is a notion that even some devoted practitioners admit requires a leap of faith. But then, faith is an intrinsic element in biodynamic farming.

Over the past half-dozen years, an increasing number of North American winegrowers has been adopting this esoteric farming practice. A dozen California vineyards are currently certified by Demeter, the organization that maintains standards for biodynamic farming and winemaking worldwide, and four more applied for certification this year. A number of respected wineries -- including Araujo, Benziger, Bonterra, Grgich, Quintessa, Sinskey, Phelps and Sonoma-Cutrer -- have been working to some degree with biodynamically farmed fruit.

Biodynamics is an agricultural system based on the ideas of Rudolf Steiner, an Austrian philosopher and scientist who died in 1925. Although it's perceived as an extremist offshoot of organic agriculture -- which similarly advocates cover crops and rejection of chemical fertilizers and pesticides --

biodynamics preceded and in some ways inspired modern organic farming.

As Steinerian legend has it, about 100 years ago, not long after the introduction of chemical fertilizers and specialized agriculture, European farmers began to complain about a decline in their soil quality and the health of their crops and livestock. In response, Steiner delivered a series of lectures (collected in the book "Agriculture") prescribing a system of holistic practices intended to rehabilitate land. Derived from his study of ancient and peasant agriculture, the central idea is the "whole farm" concept, which envisions an agricultural property as an individual organism.

"Steiner said that a farm is as healthy as the level of the inputs that have to be brought into it," says York, who is widely considered the foremost expert on biodynamic grape growing in the United States. "A living organism has the ability to self-regulate -- to grow, replenish, reproduce and cleanse itself. A healthy farming system should also be diverse enough to sustain itself, with pastures for livestock and habitat for insects to control pests. It should capture its waste stream and convert it into a nutrient system through compost and recycling. If you look at a property as an organism,

the question is how to develop its individual characteristics."

Though biodynamics isn't intended specifically for wine grapes, Alan York thinks vineyards are ideally suited to it. After all, he points out, "grapes already have the estate concept." The urge to express a property's uniqueness fits hand in glove with the concept of terroir, or wine's vaunted ability to convey the character of the place where it's grown.

Veronique Raskin, who sells biodynamic wines through the Organic Wine Company in San Francisco, says that they "tend to be high-personality wines, very alive and different from one year to the next. Whatever quality is present in the wine will be magnified from vintage to vintage."

Biodynamics manifesto

This observation is often made about wines produced by the leader of the contemporary biodynamic movement -- Nicolas Joly, whose Coulee de Serrant property in the Loire Valley produces some of France's most distinctive wines from Chenin Blanc grapes. In his book "Wine from Sky to Earth" (Acres U.S.A.), a manifesto for biodynamic winegrowing, Joly proclaims biodynamics as nothing less than a means of recovering the significance of appellations -- individual regional character, which Joly believes has been eradicated by chemical farming.

Biodynamic vintners report better balance, improved texture, darker color,

deeper flavor, more power and greater density in their grapes and wines. Wines made by Joly and Jim Fetzer -- whose new label Ceago Vinegarden features wines made exclusively from biodynamic fruit -- improve in flavor for days after the bottles are opened. By that same token, Larry Stone -- sommelier of San Francisco's Rubicon Restaurant -- finds that biodynamic wines, especially those from Europe, often require decanting and considerable aeration.

"I don't know if it's biodynamic or stylistic," Stone says. "There's a trend in Europe now to make wines anaerobically, although (biodynamic winegrowers) would probably say it's because of the tension between the earth and the sky -- since their plants are in harmony, they're resistant to oxidation."

Because it views land as a living organism, it isn't surprising that biodynamics should pay attention to things like inhalation and exhalation, as well such other natural rhythms as dawn and dusk, summer and winter, gravity and levity, et al. By also investing importance in lunar cycles and planetary alignments, some practitioners inspire eye-rolling among scientific onlookers. Skeptics also look askance at the so-called preparations, the concoctions extracted from plants, animals and minerals and buried before being applied in homeopathic concentrations to land and compost.

As John Reganold, a soil scientist who studies organic agriculture at Washington State University and who is writing a book with York, says, "If I told you about a couple of farmers who do everything right -- they're completely sustainable, don't contaminate groundwater, get great yields, make a profit, have terrific employment policies, and are naked when they ride their tractor, all you'd remember is the last thing I said. The preparations are the naked farmer on the tractor."

Benziger got interested in biodynamics after he noticed that his Sonoma Mountain estate "seemed to be running down. We were continually fighting diseases," he says. "Some vines were sick, others were overly vigorous. There was no consistency -- every year, our best wine would come from a different part of the vineyard."

In 1996 Benziger hired York, who lives near the Mendocino County town of Hopland on McNab Ranch -- the location of Bonterra Vineyards, the world's largest producer of wine made from organically grown grapes.

At the invitation of Jim Fetzer (whose family sold its namesake winery to the Brown-Forman Corporation in 1992), York orchestrated an ecological symphony at McNab Ranch, whose vineyards are ribboned by riparian areas and colorful gardens of flowering shrubs both native and exotic.

Biodiversity showcase

York helped Benziger transform his property into a similar showplace of biodiversity, complete with ponds and reed-filled wetlands that filter the winery's wastewater. Half a dozen years out, Benziger says that his vineyard is now healthier, ripens more evenly, inspires more vigorous fermentations and confers more consistent aromas and flavors.

Other growers report similar viticultural effects. Jeff Dawson, a biodynamic consultant for Araujo Estate and Quintessa in Napa Valley, says that Araujo's Eisele vineyard in Calistoga "used to shut down in the heat -- the leaves got scorched and stopped the ripening process. Now we don't see that."

Are claims of biodynamics supported scientifically? Not really. Studies have been conducted since Steiner made his recommendations, but as Reganold says, "They weren't as scientific as they should have been. (They) didn't distinguish biodynamic from organic."

Reganold is currently overseeing such a study at McNab Ranch, comparing adjacent blocks of organically farmed grapevines, some of which receive biodynamic preparations and some of which don't. Nearing completion after six years, it hasn't found much difference in soil quality or viticultural performance, though a concurrent study of compost piles -- four organic and four biodynamic -- indicates that the latter retain more minerals and nutrients.

Some organic farmers are moving toward biodynamics because they feel that,

with increasing incursions by corporate agriculture, the "organic" label is declining in significance.

"I can be an organic farmer and still be a conventional thinker," says Koball. "I can buy (organic) fish emulsion but still not think: 'What cover crops should I plant to attract beneficial insects that will take care of my leafhopper problem?' "

U.S. WINERIES THAT PRACTICE BIODYNAMICS

While biodynamics might seem to invite classification under the category of California kookiness, its origins and impetus are European. France alone boasts some 80 producers working with biodynamic fruit. Only a handful of California grapegrowers and winemakers subscribe to the practice. North American wineries currently working with biodynamic grapes include:

Araujo Estate (Calistoga): The Eisele vineyard is all biodynamic, producing bottlings of Sauvignon Blanc, Syrah, a red wine called Altgracia and a \$150 Cabernet Sauvignon.

Benziger Family Winery (Glen Ellen): The biodynamic estate vineyard produces Sauvignon Blanc, Zinfandel, and Cabernet Franc. A Meritage-style red blend, Tribute, will be released next year.

Bonterra Vineyards (Hopland): The McNab Ranch vineyard is biodynamic, though the grapes are blended with organic fruit from other vineyards to produce an all organically grown line of wines. A red biodynamic estate blend is scheduled for release next year.

Brick House Vineyards (Oregon): About a third of the 30-acre vineyard receives biodynamic treatments, ultimately finding their way into Chardonnay, Gamay Noir and Willamette Valley and "Les Dijonnais" Pinot Noir bottlings.

Ceago Vinegarden (Redwood Valley): Jim Fetzer's new label consists completely of biodynamically grown wines, including Merlot, Petite Sirah and Sauvignon Blanc. His second label, Tule Bay Wines, grows biodynamic Chardonnay and Merlot at Fetzer's new property on the north shore of Clear Lake.

Frey Vineyards (Redwood Valley): The all-biodynamic estate vineyards produce varietal bottlings of Cabernet Sauvignon, Chardonnay, Merlot, Petite Sirah, Pinot Noir, Sauvignon Blanc and Zinfandel. Because it adds no sulfites to its wines, Frey is also the only Demeter-certified winery in the United States.

Grgich Hills (Yountville): This year, 22 of 365 organically farmed acres were converted, with plans for 105 to become biodynamic eventually.

Joseph Phelps (St. Helena): The winery is "experimenting" with biodynamics but has no current releases from the fruit.

Masut Vineyards (Redwood Valley): Bob Fetzer produces biodynamic Pinot Noir from a 26-acre vineyard.

Monte Volpe (Redwood Valley): Biodynamically grown Sangiovese.

Porter Creek (Healdsburg): The entire 22-acre estate vineyard, which produces Chardonnay and Pinot Noir, is biodynamic.

Quintessa (St. Helena): About one-fourth of the 175-acre Napa Valley vineyard is farmed biodynamically, with varying amounts of the grapes going into the estate wine each year.

St. Gregory (Redwood Valley): Biodynamically grown Pinot Noir.

Robert Sinskey Vineyards (Napa): Five of six organic estate vineyards have been "influenced" by biodynamic methods, with plans for all to become 100 percent biodynamic in the future.

Sonoma-Cutrer (Windsor): Sixty of the winery's 1,150 vineyard acres are farmed biodynamically, but so far none of the wine made from it has been released.

-- David Darlington

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