

# Biodynamics in winemaking

## A GLOBAL TREND

Stephen Quinn spoke to winemakers in France, Chile, Italy, Australia and New Zealand to find out why they believe that biodynamics makes for better wine – and happier workers

Monty Waldin, a world authority on biodynamic winemaking, believes it is possible to make a good business case for this process. He maintains that the ability to grow quality fruit to make quality wine is the main reason for choosing this approach, and further maintains that it does not need to be expensive.

Some of the world's most famous wine estates such as Domaine de la Romanée-Conti in Burgundy and Château Pétrus in Bordeaux are biodynamic. Why would they risk their reputations by embracing biodynamics? Because it improves the quality of the wine, Waldin said. "They have better acidity, [are] more digestible and easier to drink because of lower alcohol, more refreshing. Ultimately people feel enlivened by it and continue to pay their high prices."

Winemakers who love their estates have

an emotional link with their vines and want to do the best for them. Farming is a long-term and cyclical business, Waldin said. Farmers introduce fertilizers to boost crop yields. But fertilizers also help weeds grow so the farmer needs weed-killers. These chemicals weaken the soils so the farmer needs fungicides and pesticides to protect the vines. The result is poor quality grapes that are difficult to ferment, so the winemaker needs chemicals to enhance the winemaking process.

A vineyard's unique selling point is its terroir. Biodynamics boosts that sense of place, Waldin said. "Terroir is about the micro-biology of the soil as much as it is about the climate and location. Biodynamics is very conscious of that microbiology, and it gives a wine a unique sense of individuality. The fewer external elements you bring into your vineyard, the better your chance to represent your terroir. Biodynamics produces healthier



Above: Château Pétrus, a renowned producer in Pomerol is a practitioner of biodynamics.  
Right: Monty Waldin, a world authority on biodynamic winemaking



soil with more disease resistance, and deeper rooting plants. Averaged over time, with biodynamics yields, are more consistent.

"Soil is held together by micro-organisms and if you distort or kill them you get erosion. You also lose the influence of the terroir, that 'somewhere-ness' that makes a wine stand out." Winemakers also run the risk of pesticides – which are effectively poison – in the soil affecting vineyard staff. "Two years ago, for the first time, the French government gave the cause of death of a vineyard worker as vineyard chemicals."

What are the main costs of going biodynamic? Waldin, a British winemaker based in Italy, said the major set-up costs were buying the equipment that allows a farmer to work with nature. One main issue is controlling weeds under the vine and compost is the best way to do that. The cost of compost spreaders is one financial factor.

"Generally you will spend more money on manual labour. A French study in 2014 showed that an organic vineyard will statistically have more staff and be much more likely to handpick grapes. It's often said the best sound in a vineyard is the sound of the winegrowers' feet." The formula for compost is very important, Waldin said, because compost returns the nutrients in the grapes left after winemaking back to the soil. "Recycling is better for the environment because you're not dumping your waste products but returning it to your terroir."

In general, organic farming requires more

people and that is why countries with low labour costs like Chile or Argentina have an advantage. France has high labour costs but the European Union provides subsidies for vineyards seeking to invest in organic growing methods and ways to improve the environment.

“The cost of labour is the key economic factor that anyone interested in biodynamics has to get their head around. That is: The cost of the worker, the cost of supervising that worker, and the cost of making sure you’ve got enough work for that worker, and making sure that worker comes back to you (in the sense that training vineyard staff is an investment).”

The influence of the moon was not that important, Waldin said. “Your wine is not going to be made because of the moon, it’s going to be made well because your weed control and pruning are very good, canopy management is good so the relationship between fruit and sun control is good so you get good fruit. This is far more important than the moon.”

Waldin affirmed people are becoming increasingly concerned about what goes into their bodies and are aware of the dangers of chemicals. “No trees on a vineyard means no birds and no birdsong. That does not look good. Vineyards blitzed by weed killer look like shit,” he said. Biodynamics also offers a unique way to market wine. “In terms of upscaling your brand, biodynamics works because people who visit your vineyard or taste your wine will become your ambassadors.”

In the Marche area of Italy, near the Adriatic coast, locals estimate that perhaps 40% of vineyards in the region have embraced organic or biodynamic forms of viticulture. One of the rising stars is Riccardo Baldi, 25, who created his first vintage in 2009. His seven

### Advocates of biodynamics believe that life forces bring about balance and healing in the soil. It is a holistic approach to agriculture and treats the vineyard as a living system that interacts with the environment

hectares are biodynamic. All his wines have an energy that makes them stand out. Nearby, the red wines of Alessandro Moroder convey the harmony of the beautiful place in which they are made. The family has 32 hectares of vines on land overlooking the sea in the Mount Conero nature reserve, established to preserve the area’s unique Mediterranean flora and fauna. No pesticides or chemicals are used because the vineyards are in the nature reserve. The estate became biodynamic in 2008.

The term biodynamic comes from two Greek words: “bios” (life) and “dynamis” (energy). Advocates of biodynamics believe that life forces bring about balance and healing in the soil. It is a holistic approach to agriculture and treats the vineyard as a living system that interacts with the environment to build healthy soil. The methods are based on a series of eight lectures given by Dr Rudolf Steiner, an Austrian philosopher and scientist, in 1924. He showed how the health of soil, plants and animals depends on reconnecting nature with the creative forces of the cosmos. Biodynamic methods produce a living soil with increased biological activity, in alignment with planetary cosmic rhythms, particularly those of the sun and moon. Advocates believe a combination of earthly and cosmic energies produces healthy and nutritious plants.

James Halliday, the doyen of Australia’s wine writers, noted that around the world “more and more winemakers are moving to biodynamic”. The banning of herbicides and insecticides, often used in conjunction with under-row mulch (to minimise soil moisture

loss) increases microbial activity and boosts the worm population. “It is difficult to argue with the proposition that this allows vines to more freely explore the soil, and visual inspection of such vineyards tells you they are healthy, and likely more healthy than nearby vineyards using the full gamut of sprays of all kinds.”

Halliday said he would “rather have my cake and eat it”. That is, he would follow biodynamic principles “but be prepared to jump ship if disease breaks out that can only be controlled by systemic sprays”. In February he selected his five outstanding Australian wines. One of those was the 2013 Stefano Lubiana Settebello single block Pinot Noir. Stefano Lubiana is a fiercely independent winemaker from Tasmania whose questioning of mainstream practices led him to adopt organic principals in 2001, and his 23-hectare vineyard was certified biodynamic in March 2013. Conventional vineyards use herbicides to control weeds between the vine rows. Lubiana introduced miniature sheep called

Babydoll Southdowns, which never grow more than 60cm high, to control the weeds. “These Babydolls can just reach the bottom trellis wire but that’s not high enough to do any damage. They’ve done a good job de-suckering (removing excess growth on vines) this season,” *Elementals*, the Journal of Biodynamics Tasmania, reported in its Winter 2013 edition.

Mark Hoey has managed the Lubiana vines since 2009. “The vines have got a much better canopy and they are healthier.” And the vines produce lots of good fruit each year, rejecting the belief that biodynamics gives lower yields. Hoey actually drops fruit each year. “We do put the work into certain blocks where there’s been historically high quality, and we double up the berries dropped. In some blocks we drop 12 bunches per vine to achieve the certain taste that we are after.”

Lubiana said he concentrates on feeding the soil rather than feeding the vines. “If you work to get your vineyard and your soils into

The Marimar Estate in California became organic in 2003 and adopted biodynamic practices seven years later





Maria Velazquez of Casa Los Frailes, a biodynamic vineyard in Spain, explains the significance of the cow's horn filled with a special preparation

a really healthy state in terms of structure and organic matter, then your vines will be able to access everything that they need for good nutrition. Winter plays an important role in that process. It's the time of the year when everything above ground stops, but below ground the soil comes alive. It's during winter that we concentrate on feeding all of the fungi and the microbe populations that live underground. The aim is to get the biology of the soil here active and flourishing naturally."

Lubiana emphasised that the biodynamic preparations he used were not fertilizers. "They're really bio-stimulants or homoeopathic tonics. People sometimes ask, 'How can such minute dosages over an entire vineyard have any effect?' My answer is that it's a bit like using acupuncture in today's medicine. How can sticking a few needles into someone provide any kind of help? I don't think that we know that just yet. The fact is that acupuncture has been around for several

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thousand years, and it's gradually becoming an accepted form of Western medicine. In time - like biodynamics - maybe we'll figure out exactly how it works."

Felton Road is one of New Zealand's most famous vineyards. Their 32 hectares are all managed biodynamically. Vineyard manager Gareth King told wine writer Mark Smith that cover crops there play a major role in protecting and feeding the soil. They improve soil structure, enhance the availability of nutrients, reduce weed pressure and provide a habitat for beneficial insects. Owner Nigel Greening noted: "Biodynamics gets some weird press these days because people readily associate it with cow horns and stag bladders full of yarrow flowers. But it's not nearly as wacky as it sounds when you get down to it. It's simply a process of trying to understand how the land works, how fruit grows on the land, and how that fruit turns itself into great wine."

Wine writer Adam Lechmere has heard a range of opinions about biodynamics: "I gather from conversations with numerous winemakers that biodynamics is more expensive than conventional farming. There's no safety net, as one winemaker said." The benefits are difficult to quantify, Lechmere said. Frederic Engerer, whose 23 hectares at L'Enclos in France are biodynamic, described the difference in terms of minuscule changes in acidity, more expression without losing tannic structure. "A bit more smile on the wine." Louis-Michel Liger Belair said biodynamics forces winemakers to concentrate on the vineyard, study every vine, study the weather and know the soil. Vineyard workers are happier because they are not dealing with poisonous chemicals.

Tom Lubbe is the winemaker at Domaine Matassa in France. He says he is not a "biodynamic purist" but has used classic mixtures like Preparation 500 and 500P since he started, though lately he has put more

effort into perfecting fungus-rich aerated compost teas. "In the past five years I have been working with semi-permanent cover crops, using mixtures of plants which I plough in every three years and re-sow. This has undoubtedly been the biggest step forward in our viticultural work and I think accounts for drops in total alcohol of 1° to 2°." Eventually Lubbe hopes to have permanent cover crops and eliminate ploughing altogether "which would make many a bio-dynamic classicist in France a little edgy", he admitted with a smile.

Domaine Arlaud in Burgundy has been organic since 2007 and received biodynamic certification in 2010. Caprine Arlaud's mother grew organic vegetables and since childhood he has appreciated organic flavours. He noted that an organic approach changes the vines, but biodynamics changes both vine and wine. "Biodynamics makes you more aware of the subtlety of flavours and fruit."

Seña is believed to be the biggest biodynamic vineyard in Chile, with about 1,500 hectares of vines. In his latest report on Chilean wines for Robert Parker's *The Wine Advocate*, published at the end of 2015, Luis Gutiérrez gave the 2013 Seña 96 points out of 100, putting it at the top of his ranking. The 2012 Seña received 98 points in 2014, the highest score yet for a Chilean wine in global competition.

Veteran UK wine columnist Christine Austin has noted a "vibrancy of flavours" in biodynamic wines not present in traditionally-made wines. "Could this be imaginary? Could it be because the producers of biodynamic wines invest more time, energy and dedication in their vineyards, or is there an inherent quality uplift from all their hard work?"

Producers such as Olivier Humbrecht in Alsace, Cullen in Australia and Rippon in New Zealand all produce biodynamic wines, but not all declare it on the label, Austin said. "As the work of biodynamic producers continues around the globe, setting standards



The Babydoll Southdown variety of sheep - an integral part of winemaking at Stefano Lubiana's winery in Tasmania

and gaining experience, other winemakers will start to investigate the whole process. This will surely lead to an evolution of acceptance by consumers and perhaps an appreciation of these fundamental ideas."

Marimar Torres is the winemaker at Marimar Estate in California. The estate embraced biodynamic practices in the entire vineyard in 2010 after being organic from 2003. She sees the vineyard as an ecological whole - an organism in its own right. Bees and chickens and a range of animals contribute to the eco-sphere.

"Biodynamics is a leap of faith; it's impossible to quantify the success of the practices. But we firmly believe that our wines have become more reflective of their terroir. It's not just rows of grape vines, but the soil beneath them and the other flora and fauna in the area, growing together." Special "compost teas" prepared from herbs like yarrow and nettle are sprayed in minute quantities over the vines. "It's difficult to put a number on biodynamics but I've seen the improvement in my wine. Biodynamics just makes sense to me." Marimar Estate does not participate in wine shows but her wines are regarded as high quality around the world. "Biodynamics is about quality," she concluded. ♦