


“Let the Vine do its Job!”
 An Introduction to
 Biodynamic Winemaking

 Lucia Volk, PhD, CWE
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Let me introduce myself:

- Lucia Volk, PhD, CWE
- Wine Educator in the Bay Area: Mindfulvine.com
- Professor at San Francisco State University
- Favorite Wine: German Riesling



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Overview of today’s SWEbinar

- How do we define biodynamics?
 - ... and how is it different from sustainable, organic, or natural wine?
- Whose idea was it and how did it end up in my wine?
- What do biodynamic vineyard and cellar practices look like?
- Who makes biodynamic wine?

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1. What is Biodynamics?

- ▶ "A way to heal and revitalize the earth."
-Rudolf Steiner, 1924
- ▶ "In *biodynamie* we are connecting the vine to the frequencies it needs. Like tuning a radio, we are tuning the vine to the frequencies that bring it to life."
-Nicolas Joly, cited in *Wine Science* by Jamie Goode, 2013
- ▶ "This controversial practice has produced some impressive results but without the reassurance of conclusive scientific explanation."
-*The Oxford Companion to Wine*, 2015

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Biodynamic ≠

- *Sustainable*-> 1. give back as much as you extract; 2. limit/recycle your waste; 3. promote social equity; so that future generations can enjoy this planet [certified]
- *Organic*-> no chemical products in vineyard and winery to promote healthy soils, vines, and wines [certified]
- *Natural*-> low intervention winemaking: no fancy machinery, no additives, esp. no/minimum added sulfites [??]
- *Better Terms*: authentic or traditional or artisanal?

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March 2020 Legislation in France



- *Vin Méthode Nature* ("Nature Method Wine") approved by the French consumer protection agency DGCCRF to be used as label on wine bottles (Neither INAO nor the French Ministry of Agriculture and Food have spoken!)
- *Vin Méthode Nature* must use organic, hand-harvested grapes, and indigenous yeast. Up to 30g/l of added sulfites are permitted.



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Biodynamic looks at the bigger picture:

- Invisible spirits and cosmic forces influence life on earth, creating balance.
- A healthy, balanced earth grows healthy food, with which to feed healthy people.
- Everything is interrelated -> Think holistically!

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What does this mean in practice?

- Follow the lunar calendar
- Promote biodiversity—Avoid monoculture
- Think of yourself as a farmer, not only a grape grower/winemaker
- Produce and use compost, inoculated with special preparations
- Bury cow horns with manure and with ground quartz to be dispersed in vineyards following homeopathic principles

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Biodynamic = Trademark by Demeter

- annual audits (often done by Ecocert)
- annual membership fee, as well as 2% of revenues from selling trademarked goods [grapes and/or bottled wine]



since 1928



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Organic Certifications



California Certified Organic Farmers,
1973 in Santa Cruz



1990 National Organic Food Act

- > 100% Organic
- > Organic (>95%)
- > "With Organic..."



EU Organic, 2007

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Certifications for Wine only:



Oppenheim, Germany, 1985 for organic wines



France, 1996



Vienna, Austria, 2007

CERTIFICATION LOGOS:



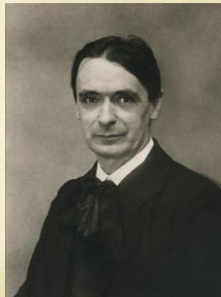
Indicates wine is made in a CERTIFIED SUSTAINABLE winery with grapes from California certified vineyards.

created in 2010 by the CA Sustainable Winegrowing Alliance (2003)

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2. Whose idea was it?

- ▶ Rudolf Steiner (1861-1925): Austrian philosopher, reformer, esotericist
- ▶ founder of Anthroposophic Society (1913) to promote people's spiritual development in an increasingly materialistic world
- ▶ founder of Waldorf Schools and Weleda cosmetics & homeopathic remedies
- ▶ firmly opposed to rising influence of Nazi ideology



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Leading up to Steiner's 1924 Lectures on Agriculture

- Anthroposophy advocated for food to nourish body, mind *and* soul, connecting the material and the spiritual realms
- 130 landowner-farmers in what is now Poland called on Steiner, because of diseases in animals and plants on their farms, esp. hoof and mouth disease in cows and pigs
- Steiner saw the application chemical fertilizers as cause for imbalance and illness and urged a return to traditional farming
- Some believe the instructions for biodynamic agriculture came to Steiner in a trance

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Steiner's instructions combine knowledge from

- Johann Wolfgang von Goethe's botanical writings in *The Metamorphosis of Plants* (1790)
- Indian zodiac
- Zoroastrian and Hindu beliefs
- Farmers' Almanacs



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Steiner launched Biodynamics at a time when...

- ▶ ... Europeans and Americans were alarmed by new/increasing rates of diseases in humans, animals, and plants in the Western world
- ▶ ... anthropologists reported about "healthy natives" in other parts of the world
- ▶ ... modernity and progress were questioned, and tradition was being re-discovered

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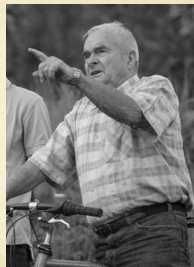
How did Biodynamics become a viticultural practice?



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Eugène Meyer, Alsace

- biodynamic since 1980
- turned family vineyards after exposure to chemical sprays made him seriously ill
- today, 5.6% of Alsace vineyards (880ha) are certified biodynamic
- among the 70 Alsace producers: Marc Kreydenweiss, Zind-Humbrecht, Ostertag, Weinbach and Jean-Pierre Frick



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Nicolas Joly

- took over his family's estate Château de la Roche aux Moines in Savennières in 1977 after a career in banking
- turned estate over to biodynamic farming in 1984 when he saw negative effects of chemical sprays on vines
- in 2001, he founded La Renaissance des Appellations/"Return to Terroir" (today 230 members from 18 countries)
- *What is Biodynamic Wine? The Quality, the Taste, the Terroir* (2007)



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Claude & Lydia Bourguignon



Photo taken in El Dorado County's Madroña vineyard, where Bourguignons evaluated soils and vine roots in 2012. Clients in over 30 countries: DRC: Chateau de Beaucastel, Harlan Estates, Bonny Doon, etc.

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- ▶ "If you continue spraying, Burgundy vineyards will contain less life than Sahara desert sand."
 - soil microbiologist Claude Bourguignon, 1989



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Alan York (1952-2014)

- Student of Alan Chadwick, biodynamic consultant, horticulturalist, avid yogi
- president of the Biodynamic Association and editor of the quarterly *Biodynamics* journal
- Starting in the 1980's, he consulted widely in California and Oregon, Chile, Argentina, South Africa, Italy, Israel, and France



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3. What does biodynamic vineyard and cellar work look like?

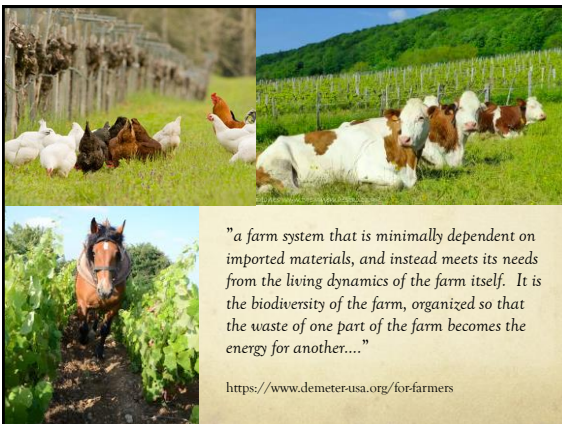


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Compost delivers balance:

- Biodynamic growers also argue that successful crops need three things:
- *the mineral* (magnesium, potassium, calcium)
- *the vegetal* (digested pasture plants that cows might eat and then excrete as manure)
- *the animal* (the digestive juices the cow provides during digestion).

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Preparing 500 and 501



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Applying 500 and 501



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Preparation 500

- Cow horn packed with manure of lactating bovine, buried 2.5-5 feet underground during winter when earth energies turn inward
- by spring, manure looks like pulverized coffee grounds, and smells like fresh earth
- in small doses, this "aged manure" is diluted in water, stirring for an hour to "dynamize" it
- the solution is sprayed on vineyard soil in spring and autumn to support root health and root growth



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Preparation 501

- take ground quartz powder and mix it with water to dough-like consistency
- bury inside a cow horn over the summer months, where it absorbs growth energy of the earth
- diluted in small quantities in water, stirring for an hour, the quartz solution is sprayed on leaves in spring to promote bud break, photosynthesis, and fruit ripening



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Plant Preparations 502-507+508



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Preparation 502

- Dried yarrow flowers stuffed in deer bladder, buried over winter; add to compost
- encourages vine's absorption of nutrients



"Native Americans used yarrow for wounds, infections and bleeding. Chinese medicine gives it praise for the ability to affect the kidney, spleen, and liver. Animal studies have also shown support for the use of yarrow in cleansing wounds and controlling the bleeding of wounds, cuts and abrasions."

-- from www.herbwisdom.com

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Preparation 503

- Chamomile flowers packed in cow intestines and buried for the winter; add to compost
- stabilizes nitrogen and improves plant growth



"Chamomile is an age-old medicinal herb known in ancient Egypt, Greece and Rome. Chamomile's popularity grew throughout the Middle Ages when people turned to it as a remedy for numerous medical complaints including asthma, colic, fevers, inflammations, nausea, nervous complaints, children's ailments, skin diseases and cancer."

--from herbwisdom.com

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Preparation 504

- Stinging Nettle, dried in early summer, and buried for a whole year until fully decomposed; add to compost pile
- support humus creations and the vine's nutrient absorption capacity



"Stinging Nettles have been used for centuries to treat allergy symptoms, particularly hay fever which is the most common allergy problem. It contains biologically active compounds that reduce inflammation."

--from herbwisdom.com

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Preparation 505

- ▶ Oak bark pieces, packed into skull of a farm animal and submerged in rain barrel with decomposing plant matter [or a swamp] for winter, so bark undergoes anaerobic decomposition; add to compost
- ▶ increases calcium and raises pH, which helps prevent plant diseases



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Preparation 506

- Dried dandelion blossoms, stuffed into cow's stomach tissue (mesenteries) and buried over winter, added to compost pile
- raises potassium and silica content



"Dandelion has been used for centuries to treat jaundice and the yellowing of the skin that comes with liver dysfunction, cirrhosis, hepatitis and liver disease. Modern naturopathic physicians use dandelion to detoxify the liver and reduce the side effects of prescription medications."

--from herbwisdom.com

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Preparation 507

- Valerian blossoms pressed into juice, which is diluted and sprayed onto compost pile
- brings phosphorus to the soil



"Valerian is a valuable treatment for insomnia, the sedative effect due to the valepotriates and the isovaleric acid. At least two double-blind studies have demonstrated that valerian extract can significantly reduce the amount of time it takes people to fall asleep without changing the stages of sleep."

--from herbwisdom.com

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Preparation 508

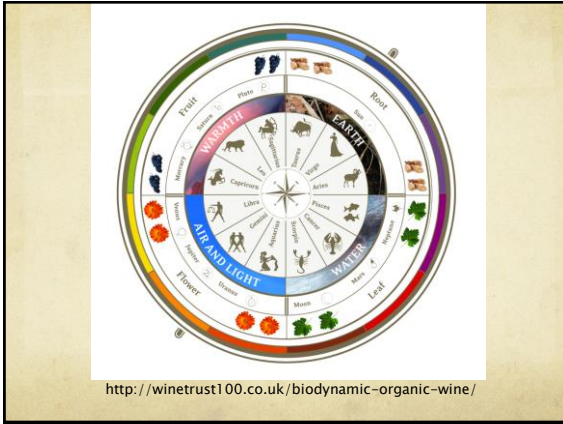
- Horsetail tea used as needed sprayed on soil in springtime to
- prevents/controls fungal diseases



"Horsetail is a member of the Equisetaceae family; the sole survivor of a line of plants going back three hundred million years. ... Because of its content of silica, this plant is recommended when it is necessary for the body to repair bony tissues. Silica helps to fix calcium, so that the body can store more quantity of this mineral and then use it to repair bones, collagen and other body tissues. Horsetail can therefore be useful for osteoporosis (and a host of other diseases, such as fevers and inflammatory ailments)."

--from herbwisdom.com

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Maria Thun (1922-2012)

confirmed Steiner's lunar calendar, further dividing a month into

- ▶ root days (earth signs)
- ▶ leaf days (water signs)
- ▶ fruit days (air signs)
- ▶ flower days (fire signs)

and planning soil preparation, planting, growing, harvesting tasks accordingly.




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Lunar Cycles

Clemens Busch (Mosel) consults his biodynamic calendar outside his estate to determine when he will bottle his wines.

His winery became organic in 1984 and biodynamic in 2006. He joined the VDP in 2007.



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Thun's Biodynamic Calendar in the Vineyard and Cellar

- prune your vines during root days when moon passes through earth sign constellations of Taurus, Virgo or Capricorn
- do leaf work when moon passes through water signs Pisces, Cancer, Scorpio; also a good time for grafting and transplanting
- leave plants alone during flower days when moon passes through air signs Libra, Gemini, Aquarius
- harvest grapes or rack your wine during fruit days when moon crosses fire constellations of Aries, Leo, or Sagittarius

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4. Who makes biodynamic wine?

- In March 2018, there were more than 616 wineries with Demeter biodynamic certification worldwide with more than 8,200 ha (20,254 acres) of vineyards.
- Demeter France certified 5,500 ha (12,350 acres) of biodynamic vines from 418 wine-growers
- Demeter USA certified 647ha in California and 528 ha in Oregon.
- Chile's Emiliana Winery owns the largest biodynamic certified vineyard of 843ha in Colchagua Valley.
- Not all biodynamic producers get certified, and many organic producers use some biodynamic practices.

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Members of Renaissance des Appellations

 Allemagne - Germany (10)	 Australie - Australia (4)	 Autriche - Austria (7)
 Brésil - Brazil (1)	 Chili - Chile (2)	 Espagne - Spain (9)
 Etats Unis - USA (1)	 France (144)	 Georgie - Georgia (2)
 Hongrie - Hungary (1)	 Italie - Italy (48)	 Nouvelle Zélande - New Zealand (1)
 Portugal - Portugal (1)	 Québec - Canada (1)	 Sao Tomé & Príncipe (0)
 Serbie (1)	 Slovenie - Slovenia (4)	 Suisse - Swiss (3)

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Some Examples

- Saahs Family, Nicolaihof, Wachau, Austria
- Alvaro Espinoza, Antiyal, Maipo Valley, Chile
 - Bob Blue, Bonterra, Mendocino, CA
- Lalou Bize-Leroy & Aubert de Villane, co-owners of DRC until 1992; and Anne-Claude Leflaive, Domaine Leflaive, Burgundy, France
- James Milton, Gisborne, New Zealand
- And finally, a shout out to Oregon!

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Nicolaihof-Wachau, Austria

- First known winery in Europe to fully convert from organic to biodynamic in 1971
- Demeter certified since 1998
- Familie Saahs: Christine and Nikolaus Jr./Sr.



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○ 1995 Vinothek Riesling (12.5%) was the first Austrian wine to receive 100 Parker Points – the wine was first bottled in 2012!

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Álvaro Espinoza, Chile

- First to bottle single-varietal Carmenère in Chile, he now owns Antiyal, Maipo
- 1998 sabbatical at Bonterra; met Alan York
- Since 2000, consultant for Viñedos Orgánicos Emiliana, Concha y Toro's biodynamic arm
- In 2011, Concha y Toro buys Fetzer & Bonterra for US \$238 mio.



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Bob Blue, Bonterra, CA

- ▶ founder and winemaker for Bonterra, Fetzer's organic wine segments
- ▶ Bonterra vineyards 100% organic since 1987
- ▶ Bob added biodynamic McNab (1996), Butler (2001) and Blue Heron Ranch (2009)



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Domaine Leroy, DRC & Domaine Leflaive

- Lalou Bize-Leroy turned to biodynamics in 1989; left DRC in 1992 to run her own estates
- Anne-Claude Leflaive took the reigns of the family winery in 1994 and, in consultation with the Bourguignons, turned entire estate biodynamic in 1998
- Aubert de Villaine converted all of DRC's vineyards to biodynamics in 2008



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Millton Vineyard, New Zealand

- "To be a good biodynamic farmer one has to be a very, very good farmer."
- James Millton

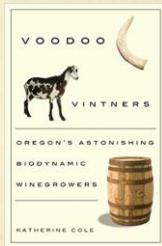


- Founded in 1984, Millton was New Zealand's first organic, then biodynamic winery.

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Oregon leads the U.S. in %

- nearly 6% of vineyard area is farmed biodynamically, as opposed to 0.1% nationally
- Beaux-Frères, Bergström, Brick House, Brooks, Cooper Mountain (1999), Cowhorn, Domino IV, Fullerton, Johan, Keeler, King Estate, Maysara, Montinore, Ponzi, Solena, Winderlea, Youngberg



<https://wineryhuntoregon.com/biodynamic-oregon-wineries/>

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You can learn about biodynamics:

- Rudolf Steiner College in Fair Oaks, CA
- Michael Fields Agricultural Institute in East Troy, WI
- Pfeiffer Center in Chestnut Ridge, NY
- Josephine Porter Institute, VA



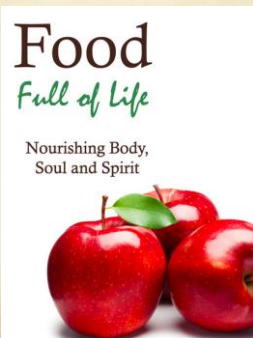
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Further Reading:

- ▶ Bacchus, Gill. *Food Full of Life: Nourishing Body, Soul and Spirit* (Edinburgh: Floris Books 2012)
- ▶ Cole, Kathleen. *Voodoo Vintners* (Corvallis: OSU Press, 2017)
- ▶ Conford, Philip. *The Origins of the Organic Movement* (Glasgow: Bell & Bains, 2001)
- ▶ Goode, Jamie and Sam Harrop. *Authentic Wine: Toward Natural and Sustainable Winemaking* (Berkeley: U of CA Press, 2011)
- ▶ Hemleben, Johannes. *Rudolf Steiner: A Documentary Biography* (Sussex: Henry Goulden Limited, 1975)
- ▶ Joly, Nicolas. *Biodynamic Wine Demystified* (South San Francisco: Wine Appreciation Guild, 2008)
- ▶ Thun, Maria. *Gardening for Life: The Biodynamic Way* (Gloucestershire, UK: Hawthorne Press, 1999)
- ▶ Waldin, Monty. *Biodynamic Wine* (London: Mitchell Beazley Classic Wine Library, 2006)

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Thank you all for joining me!



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