



# Shiloh Estate

SHILOH VINES & WINES KNOWLEDGE BASE SERIES

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## Biodynamics

by

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Comments Welcome

*The Biodynamic movement originated in 1924 in a series of lectures by the Austrian scientist and philosopher, Dr. Rudolf Steiner. ... In the course of over 6,000 lectures in Europe at the start of the twentieth century, Steiner laid the foundation for many of the new social, economic and spiritual impulses of our time. One of these was the Biodynamic agriculture movement, a holistic system of farming and gardening. The Biodynamic method regards the earth as a living organism and strives to renew the soil in order to produce food that is full of vitality and deeply nourishing. Biodynamics notes the interrelationship of all kingdoms - mineral, plant, animal and human - and their intricate correspondence to the rhythms and activities of the larger cosmos.*

<http://www.fbts.com/biodynamics.htm>

### Principles of Biodynamics

Rudolph Steiner—born in 1861 in Kraljevec, Slovenia (formerly Yugoslavia)—moved to Vienna in 1879, at age 18, to attend the Technical Institute. He was interested in combining the worlds of inner and outer perception within a conceptual framework of science, philosophy, and religion.<sup>1</sup> Years later, he concluded:

*... it is possible after all to come to an understanding of the experience of the spiritual world through one's soul only if one's process of thinking has reached such a form that it can attain to the reality of being which is in the phenomena of nature.*

The basic principles of biodynamics, according to Sherry Wildfeuer, include (paraphrased):<sup>2</sup>

**Broad Perspective**—To understand plant life we must expand our view to include all that affects plant growth. Plants are open to and formed by influences from the depths of the earth to the heights of the heavens.

**Book of Nature**—Careful observations of nature in shade and full sun, in wet and dry areas, on different soils, will yield a more fluid grasp of the elements. One learns to *read* the language of nature and to be creative, bringing new emphasis and balance through specific actions.

**Cosmic Rhythms**—The light of the sun, moon, planets and stars reaches the plants in regular rhythms. Each contributes to the life, growth and form of the plant. By understanding the gesture and effect of each rhythm, we can time our ground preparation, sowing, cultivating and harvesting to the advantage of the crops we are raising.

**Plant Life Inseparable from Soil Life**—The soil itself is alive, and this vitality supports and affects the quality and health of the plants that grow in it. One of Biodynamics fundamental efforts is to build up stable humus in soil through composting.

**New View of Nutrition**—We gain physical strength from the process of breaking down the food we eat.<sup>3</sup> Biodynamic farmers aim for quality, and not only quantity. Chemical agriculture results in a deadened soil and artificially stimulated growth. Biodynamics grows food with a strong connection to a healthy, living soil.

**Medicine for the Earth**—Naturally occurring plant and animal materials are combined in specific recipes and placed in compost piles bearing concentrated forces that *organize* the chaotic elements within. The resulting preparations are *medicines* for the Earth that draw new life forces from the cosmos.

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**The Farm as the Basic Unit of Agriculture**—Steiner posed the ideal of the self-contained farm with just the right number of animals to provide manure for fertility, and these animals should, in turn, be fed from the farm. This preservation and recycling of life-forces uses vegetable waste, manure, leaves, food scraps—all contain precious vitality—to build up the soil. Composting is a key activity in biodynamic work.

**Economics Based on Knowledge**—The Community Supported Agriculture movement—born of the Biodynamic movement—joins producers and consumers for their mutual benefit. Gardens or farms gather around them a circle of supporters who agree in advance to meet the financial needs of the enterprise and its workers, and these supporters each receive a share of the produce as the season progresses. Thus consumers become connected with the real needs of the Earth, the farm and the Community; they rejoice in rich harvests, and remain faithful under adverse circumstances.

### Related Agricultural Concepts

**Organic Farming**<sup>4</sup>—The definition of the *National Organic Standards Board* summarizes the U.S. Department of Agriculture regulations (See: <http://www.ams.usda.gov/nop/indexIE.htm>):

*Organic agriculture is an ecological production management system that promotes and enhances biodiversity, biological cycles and soil biological activity. It is based on minimal use of off-farm inputs and on management practices that restore, maintain and enhance ecological harmony. 'Organic' is a labeling term that denotes products produced under the authority of the Organic Foods Production Act. The principal guidelines for organic production are to use materials and practices that enhance the ecological balance of natural systems and that integrate the parts of the farming system into an ecological whole. Organic agriculture practices cannot ensure that products are completely free of residues; however, methods are used to minimize pollution from air, soil and water. Organic food handlers, processors and retailers adhere to standards that maintain the integrity of organic agriculture products. The primary goal of organic agriculture is to optimize the health and productivity of interdependent communities of soil life, plants, animals and people.*

Less emphasis on the cosmic and spiritual.

**Sustainable Agriculture**—According to UC-Davis (see: <http://www.sarep.ucdavis.edu/concept.htm>):

*Sustainable agriculture integrates three main goals-- environmental health, economic profitability, and social and economic equity. Sustainability rests on the principle that we must meet the needs of the present without compromising the ability of future generations to meet their own needs. Therefore, stewardship of both natural and human resources is of prime importance. Stewardship of human resources includes consideration of social responsibilities such as working and living conditions of laborers, the needs of rural communities, and consumer health and safety both in the present and the future. Stewardship of land and natural resources involves maintaining or enhancing this vital resource base for the long term. A systems perspective is essential to understanding sustainability. The system is envisioned in its broadest sense, from the individual farm, to the local ecosystem, and to communities affected by this farming system both locally and globally.*

More emphasis on human resources and labor.

### Shared & Differentiating Perspectives

Biodynamic, organic, and sustainable agriculture share several interrelated fundamentals including big picture perspective, biodiversity, minimization of chemicals, maximization of natural elements, emphasis on quality rather than quantity, community perspective, and stewardship for future generations.

The Biodynamic Agricultural Organization (<http://www.biodynamic.org.uk/index.htm>) states that biodynamic differs from organic farming in the following ways:

1. Every biodynamic farm aims to become self-sufficient in compost, manures and animal feeds.
2. All external inputs are kept to a minimum.
3. Compost is treated with special herb-based preparations.
4. Crop quality is improved using natural manure and quartz based preparations.
5. Ecological diversity is a goal of landscape management.
6. An astronomical calendar is used to determine auspicious planting, cultivating, and harvesting times.

## Biodynamic Farming Guidelines<sup>5</sup>

**Self-Sufficient Farms**—One of Steiner's guiding principles is that farms should strive to become self-sufficient "organisms," each with its own unique individuality. The ideal is for the farm to generate everything it needs within the farm and become a self-contained, sustainable ecosystem. All the elements of the farm should work together to support the whole system and little or no waste should be created: animals eat the food grown on the farm, then their manure fertilizes the soil, and an upward spiral of enlivened soil, food, animals, and people evolves. All parts work in harmony and the whole farm (including people and animals) can become healthier and healthier.<sup>6</sup>

**Minimum External Inputs**—Self-sufficiency within a single farm (or collective) leads to less reliance on external inputs. America's oldest biodynamic farm was established in 1943 by Dick Zinniker near East Troy, Wisconsin; he was joined in 1961 by Ruth whose father, Immanuel Voegele, attended Steiner's seminal lectures in Europe and became a leading proponent of biodynamics. This low-income farm is able to support their whole family because it lives lightly off the land and has become the biodynamic ideal of a self-sustaining unit. Dick and Ruth Zinniker grow 90% of their own food. Though small by some standards—165 acres—the Zinniker farm is known worldwide, and it is an active center for biodynamic activities.<sup>7</sup>

**Herb-Based Composts**—Six medicinal plants (and the essential elements they provide, support, or stabilize)—yarrow (sulfur and potassium), chamomile (calcium), stinging nettle (nitrogen), oak bark (calcium), dandelion (silica), and valerian (phosphorous)—are fermented and added to composting material. The following herbs require animal organ materials (as fermentation vessels) to make them effective:<sup>8</sup>

Chamomile flowers	Bovine intestine
Oak bark	Skulls (mature cows, sheep, pigs or horses)
Dandelion flowers	Bovine mesentery
Yarrow flowers	Male deer bladder

When ready these humus-like substances are added to the composting material in minute amounts where they radiate their effects throughout the heap.

**Natural Manure & Quartz**—Spray preparations made from cow manure and quartz meal are known, respectively, as 'Horn Manure' and 'Horn Silica':<sup>9</sup>

- **Horn manure** is cow manure that has been fermented in the soil over winter inside a cow horn. The essence from one horn is sufficient to spray 2.5 acres.
- **Horn silica** is finely ground quartz meal that spends the summer in the soil inside a cow horn. One horn is sufficient for 60 acres.

Compost and spray preparations (medicine for the earth) can be made on the farm, mail-ordered, or ordered over the Internet. [However, according to the Biodynamic Agricultural Association (BDAA) web site, biodynamic agriculture is threatened by legislation designed to prevent the spread of BSE and other diseases. Tough new rules came into effect on May 1st 2003 concerning the use of animal materials including those needed to make the biodynamic preparations. This hygiene regulation affects the handling, use and disposal of all animal by-products not used in food production.]

**Ecological Diversity**—Although the U.K.-based BDAA listed this as a factor that differentiates biodynamics from organic and sustainable agriculture, the latter two movements are heading in this direction with increased emphasis on practices such as cover crops, birdhouses (owls vs. gophers), and beneficial insects.

**Astronomical Calendar**—The calendar or 'rhythm of the seasons', one of the more controversial aspects of biodynamics, is based on Steiner's belief that the earth is living organism that "dynamically interacts ('breathes') with its cosmic environment through the cycle of the year." He taught that the earth is more open to cosmic effects during summer and that it turns inward during winter when a digestion of forces takes place that allows the earth to continue its life processes. Other rhythms such as moon cycles also generate influences. A German scientist, Dr. Spiess, has studied these rhythms through multi-year field trials and concluded that lunar rhythms boosted yields of various field crops (e.g., rye, peas, beans, carrots, radishes, potatoes).

An annual Biodynamic Sowing and Planting Calendar is available from the BDAA.

## Certifications

**Sustainable Agriculture**—Apparently, an official certification does not yet exist for Sustainable Agriculture. A workbook with suggested standards is available at:

<http://www.attra.org/fundamental.html>

**Organic Agriculture**—For certificates and standards at the national level and California state levels, respectively, see:

<http://www.ams.usda.gov/nop/indexIE.htm>

<http://www.ccof.org/>

**Biodynamic Agriculture**—Demeter is a leader of Biodynamic certification and awareness, investing in and activating self-sustaining resources that make an impact on farm communities and the consumers they serve.



In Greek, *demeter* is the goddess of fertility and abundance.

For certification, see:

<http://www.demeter-usa.org/site/>

In general, Demeter certification is in accord with many practices that characterize the certification of organic farms. However, certain practices are unique to biodynamic agriculture:

- Managing the whole farm as a living organism.
- Maintenance of a healthy, diverse ecosystem; an expectation that the farmer supports a broad ecological perspective that includes not only the earth, but also the cosmic influences and rhythms of which the earth is a part.
- Nutrient self-sufficiency, and soil husbandry; use of the biodynamic preparations to build soil health through enlivened compost, and to stimulate plant health.
- Integration of livestock with a requirement that at least 80% of livestock feed come from the farm. (some horticultural operations may be excused from this requirement).
- Since 1992, Demeter has prohibited the use of genetically engineered plant materials and organisms.

## Organic or Biodynamic Certification (Napa, Sonoma, Mendocino Counties)

AETNA SPRINGS CELLARS VINEYARD & WINERY  
BARRA OF MENDOCINO WINERY &  
REDWOOD VALLEY VINEYARD  
BENZIGER FAMILY WINERY & VINEYARD  
BONTERRA VINEYARD & WINERY  
COTURRI WINERY & VINEYARD  
DAVIS BYNUM VINEYARD AND WINERY  
DEERFIELD RANCH WINERY  
DEL BONDIO WINERY  
DOMAINE ST. GREGORY  
EVERETT RIDGE VINEYARD & WINERY  
FREY VINEYARD & WINERY  
FROG'S LEAP WINERY & VINEYARD  
HARTFORD FAMILY WINES  
KAZ WINERY  
LOLONIS WINERY & VINEYARD  
LA ROCCA WINERY AND VINEYARD  
MADONNA ESTATE-MONT SAINT JOHN  
VINEYARD & WINERY  
MASON CELLARS WINERY  
NAPA WINE COMPANY VINEYARD & WINERY  
NIEBAUM-COPPOLA ESTATE WINERY & VINEYARD  
PORTER CREEK WINERY  
SPOTTSWOODE VINEYARD & WINERY  
TOPOLOS VINEYARDS & WINERY  
TURLEY WINE CELLARS VINEYARD & WINERY  
VIGIL VINEYARD & WINERY  
VOLKER EISELE FAMILY ESTATE VINEYARD &  
WINERY  
WILD HOG VINEYARD & WINERY  
YORKVILLE CELLARS VINEYARD & WINERY

See: <http://www.townhallcoalition.org/>

<sup>1</sup> Hilmar Moore, "Rudolf Steiner: A Biographical Introduction for Farmers," *Biodynamics* (Nov/Dec 97). See: <http://www.biodynamics.com/steiner.html>

<sup>2</sup> Sherry Wildfeuer, "An Introduction to Biodynamic Agriculture," *Stella Natura* (1995). See: <http://www.biodynamics.com/biodynamics.html>

<sup>3</sup> For the General Anthroposophical Society see: <http://www.goetheanum.org/aag.html?&L=1>  
Holistic health movements abound. See: <http://www.shareguide.com/links.html>

<sup>4</sup> See: <http://www.ams.usda.gov/nosb/>

<sup>5</sup> For a 400+-page book on biodynamic agriculture see: <http://www.soilandhealth.org/01aglibrary/010114koepf/bd-ac.html>

<sup>6</sup> Tom Meier, "Life-Force Agriculture," *Conscious Choice* (May 1999)

<sup>7</sup> *ibid*

<sup>8</sup> Biodynamic Agricultural Association. See: <http://www.biodynamic.org.uk/index.htm>

<sup>9</sup> *ibid*