

## Overview

“Organic” and “sustainable” agriculture systems value soil health and biodiversity as integral to growing any crop. Although the terms are not completely interchangeable, both describe an approach to growing that sees the farm or vineyard as a large integrated loop. In this loop, plant, animal, and microbial life, aided by soil and water quality, contribute to the overall health of the environment and therefore the development and quality of the crop.

Sustainability is particularly relevant to the field of viticulture. Protecting the health of the vineyard’s soil and surrounding environment can be seen as intrinsic to enhancing *terroir*. Other benefits of growing winegrapes under sustainable practices include building consumer interest, encouraging natural vine hardiness, and the foundation for a healthy place to live and work.

Research into specific practices of sustainable viticulture published over the course of the past ten years has shown some benefits of the approach in parameters including grape, wine, and vineyard soil quality as well as vine balance.



Techniques such as cover cropping have been found to increase “soluble solids, anthocyanins and other phenolic components” of grapes (Guerra and Steenwerth, 2011), increase microbial biomass of soil (Ingles, Scow, Whisson, and Drenovsky, 2005), while controlling grapevine canopy growth (Testic, Keller, and Hutton 2007). Some studies found these advantages resulted in wines judged more highly than those from non-cover cropped grapes (Guerra and Steenwerth, 2011).

Organic mulches have been found similarly to improve vine balance and reduce disease and pest pressure in the vineyard, as well as suppress weed growth (Guerra and Steenwerth, 2011; Hostetler, Merwin, Brown, and Padilla-Zakour, 2007). Research has also linked increases in vineyard biodiversity to increases in natural predation on pest populations (Altieri, 2005).

Many organic/sustainable grape growers advise that the transition from conventional agriculture be taken slowly, at a pace suited to both the individual grower and vineyard. These growing systems require pragmatic observation, monitoring, and intimate knowledge of pests and disease pressures to assure success. Despite the increased labor investment in some cases, many growers describe a payoff not only through the peace of mind associated with their practices, but in the quality of their grapes.

The term “organic”, when used on a label or in promotion of a product, refers specifically to the USDA’s National Organic Program,. Participation in this program requires certain practices and prohibits synthetic chemical inputs. “Sustainable” agriculture does not entail any official registration or certification, but does connote adherence to its well-developed philosophy of the

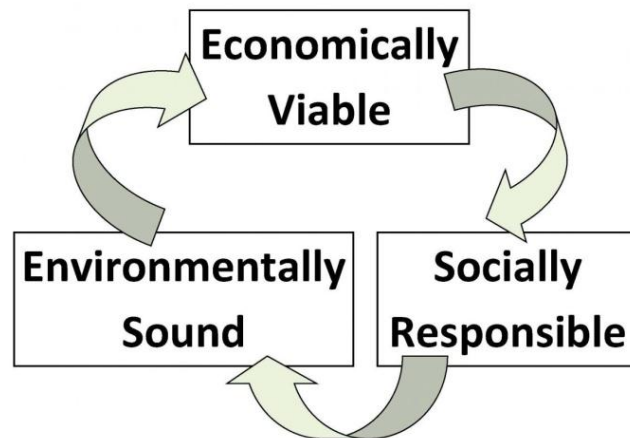
“triple bottom line”. These systems involve producers conscientiously promoting; 1) environmental, 2) economic, and 3) social wellbeing in their operations.

In addition to the National Organic Program, various sustainable-oriented certifications are available to grape growers. [Certification](#) can be the most effective way to communicate your agronomic philosophy to your audience. Outlines are generally available that provide in-depth technical information on transitioning a vineyard towards each program.

By building organic matter and biodiversity in the vineyard while reducing synthetic chemical inputs, sustainable growing can protect the health of the vines, land, and employees while enhancing the character and quality of the grapes.

### Sustainability’s Triple Bottom Line

Sustainability, as a philosophy, integrates economics, ecology, and community into the farming operation. [Glenn McGourty](#), viticulture extension agent for California’s Mendocino and Lake Counties, summarizes sustainable decision making in the vineyard as being:



*For more see: McGourty, GT, J Ohmart, and D Chaney, 2011.*

**Economics:** For a business to be truly “sustainable” in the long term, it must support itself, the owners, and employees financially. Examples of practices to support the economic sustainability of a business include developing a comprehensive business plan and researching new marketing strategies.

**Environment:** Soil, water, and air quality are protected and enhanced through integrated farming techniques. Key components in the vineyard include cover cropping, composting, minimizing the use of synthetic chemical inputs, and farmscaping to support biodiversity. This ensures that the land will be able to support healthy crops while contributing to larger scale environmental health over the long term.

**Community:** People are both an asset and vital component to farm operations. Socially responsible business decisions include fair treatment of employees and pursuing positive community relationships. Social equity in employment practices, as well as consideration of farm neighbors, mutually supports the longevity of both the business and local economy.

## Getting Started

Familiarizing yourself with organic and sustainability certification programs can provide a thorough introduction to sustainable winegrowing techniques. You may find that you are already practicing sustainable techniques in your vineyard or discover a few improvements to your current practices that benefit your operation. Programs such as Cornell's Vinebalance, Washington State's Vinewise, Oregon LIVE, and Lodi Rules provide practical guides in moving vineyards towards sustainable best practices. *For more on these programs see our [Certifications](#) page.*

Both "organic" and "sustainable" approaches can be expanded from the vineyard to the winery and tasting room providing marketing advantages, improving energy use through strategic design, construction, and technology, or contributing to positive relationships with the surrounding community.

Widespread interest in sustainability continues to grow beyond a trend into a philosophy about food and beverages. Many consumers, however, have also shown increased confusion and skepticism in regards to the practice of "greenwashing," in which a company exaggerates or misrepresents its eco-friendly practices for marketing gain. For this reason it is especially important that growers and producers can back up "green" claims with legitimate practices.

### Wine Quality and Sustainability

*Ed Boyce, Black Ankle Vineyards*

Several prominent growers worldwide who have switched to growing wine grapes organically or Biodynamically claim that their wines have gotten better. Few of these claims are scientifically tested, but most would be difficult to test in any case, so growers need to make up their own minds about what is fact and what is wishful thinking (the author does not endorse these claims, but does believe some of them). If any of these claims are true, it stands to reason that efforts toward sustainability should bring a portion of the benefits, even if the grower never reaches full Organic/Biodynamic status.

#### Claims made by most of the growers listed below:

- Earlier ripening
- More even ripening
- Thicker berry skins
- Better expression of terroir
- Berries absorb less water from fall rains
- Longer lived vines
- Revitalization of older vines

#### Vineyard Claims made by specific individuals:

- Higher Brix at ripening (Leroy – Burgundy; Domaine Huet – Loire; Dominique Lafon - Burgundy, Andre Ostertag - Alsace)
- Later budbreak (Lafon and Ostertag)
- Vines stop growing earlier (Lafon and Ostertag)
- Smaller berries (Brick House - Oregon)

#### Winemaking Claims made by specific individuals:

- More extractable phenols and anthocyanins (Chateau La Nerthe - Rhone)
- Higher malic acid, especially in low acid years (Anne-Claude Leflaive - Burgundy, Domaine Huet)
- Lower pH (Chateau la Nerthe)
- More body (Domaine Huet)
- Higher acidity and easier malolactic fermentation (Marc Kreydenweiss - Alsace)

*Ed Boyce is owner/winegrower for [Black Ankle Vineyards](#) in Mt. Airy, MD. The winery has received numerous awards for its wines, including being named one of the "10 Hottest Small Wine Brands" by Wine Business Monthly in 2011. The 22 acre all vinifera vineyard is farmed without herbicides, insecticides, and chemical fertilizers.*

## References

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***For more on sustainable viticulture see our [Practices](#), [Certifications](#), and [Resources](#) pages.***