

# Regenerative farming opens a bright horizon

Research shows that organic and Biodynamic® farming methods build soil health and support soil's natural power to store carbon and help fight climate change.

## The background

Over the past 60 years, a variety of human activities including conventional farming have contributed to topsoil erosion and the release of soil organic carbon (SOC) into the atmosphere.



### The study

A one-year comparative study of vineyard soils conducted by Bonterra Organic Vineyards and Pacific Agroecology measured the relationship between farming practices and organic-carbon storage in soil. The study included:

**13**  
vineyards

- 9 organic
- 3 Biodynamic
- 1 conventional

**507**  
vines

Biomass measurements from 507 vines

**16**  
grape types

For making both red wine and white wine

**30**  
years

Age of most mature vines sampled

**108**  
soil samples

Taken in 2017 and 2018



### The importance of organic carbon stored in soil

More SOC leads to:

- improved biodiversity, drought resistance, and erosion prevention
- increased soil resilience and, in turn, increased plant resilience
- a vineyard that more effectively reintegrates atmospheric CO<sub>2</sub>

## Soil stored 9–12% more organic carbon in organic and Biodynamic vineyards

### CONVENTIONAL

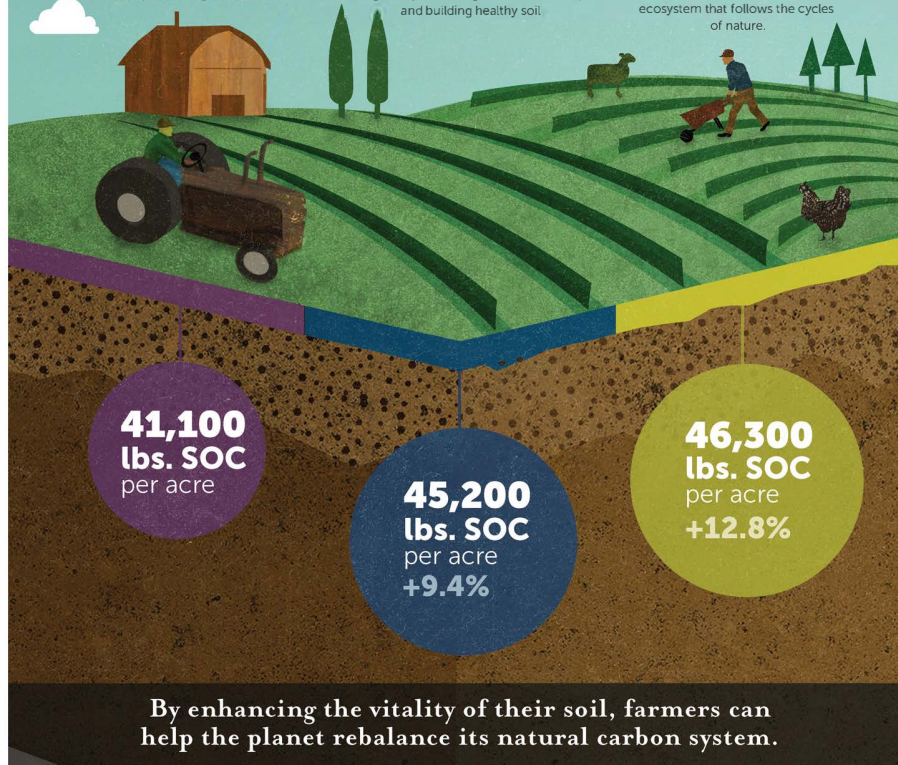
Farming practices adopted widely in the 1960s that permit the use of synthetic herbicides, pesticides, and fertilizers for management of crops and competitive vegetation.

### ORGANIC

Agricultural practices that exclude the use of synthetic inputs—such as herbicides, pesticides, and fertilizers—in favor of fostering the natural vitality of the farm through integrated pest management, cover crops, and building healthy soil.

### BIODYNAMIC

Formally defined in 1924, an approach to organic cultivation that views the farm as a living organism where plants, animals, and humans interrelate as members of an intricately connected ecosystem that follows the cycles of nature.



## Committed to healthy soil

Bonterra, America's favorite organically farmed wine, is excited to facilitate research that helps farmers and wine enthusiasts discover how positive impact is possible—in our vineyards and on the wider world.

Learn more at [bonterra.com/our-commitments](https://bonterra.com/our-commitments)

SOURCE: Morande, J.A., M.G. Vaghti, J.N. Williams, J. Medislin-Azura, & J.H. Viers. 2019. Carbon Inventory and Annual Increment Analysis of Vineyard Soils and Adjoining Wetlands of Bonterra Organic Vineyards. Pacific Agroecology LLC Project Report. Davis, CA. 25 pgs.

**Bonterra**  
ORGANIC VINEYARDS