



Increasing Conservation & Soil Health in Connecticut Vineyards



WHAT ARE HEALTHY SOILS?

Healthy soils are living, resilient, and dynamic ecosystems that support essential vineyard functions by:

- Maximizing Living Roots
- Minimizing Disturbance
- Maximizing Biological Variety
- Maximizing Soil Cover
- Incorporating Livestock

Viticulture in the northeastern United States is diverse. Cultivars in a vineyard have different growth habits, training systems, disease and insect susceptibility, and are grown for different outcomes. Unique soils, slopes, and climates influence outcomes, but the health and quality of a vineyard's soil directly benefits vine health and productivity. Managing a vineyard with soil health in mind will increase soil protection, improve water retention, support vine root health, and balance nutrient needs – ultimately building vineyard resiliency and longevity.

Recommended vineyard activities to achieve components of healthy soil, along with some of the benefits that a grower can anticipate in the short- and long-term, are listed on the next page.

LIFE IN THE SOIL SUPPORTS LIFE IN THE VINE

The goal of every producer should be balanced physical, chemical, and biological processes. Key soil health indicators include soil aggregate stability, carbon cycling, microbial activity, carbon and nitrogen food sources for soil microorganisms.

Actions in the vineyard should be based on measurable analysis of the soil nutrients, soil health attributes, plant tissue analysis, observed productivity and vigor, and the goals of the grower.

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- ✓ Increased moisture retention
- ✓ Improved water infiltration
- ✓ Increased soil fertility & nutrient cycling
- ✓ Proper soil aeration
- ✓ Increased diversity of soil organisms
- ✓ Increased soil organic matter & soil stability
- ✓ Decreased nutrient loss
- ✓ Increased pollination
- ✓ Decreased herbicide use
- ✓ Increased weed suppression
- ✓ Decreased soil erosion

Resources & Workbooks:

- [New England Management Guide, Hosted by UMass.](#)
- [New York Guide to Sustainable Viticulture Practices, VineBalance.](#)
- [Sustainable Practices Workbook for Wine Grape Growing in Maryland, Maryland Grape Growers Association.](#)
- [New Soil Health Guide for Napa Valley Vineyards, North Coast Soil Hub.](#)

Practice		Description	Benefits
Soil Tests		Conduct: » Soil Nutrient Testing » Soil Health Testing	» Improved understanding of soil nutrient levels (N, P, K) and soil health indicators. » Use soil test results to apply the right amount of nutrients at a rate that plants need.
Nutrient Management		Apply the right nutrients at the right time, rate, and location to optimize the soil's chemical properties.	» Improved vine nutrition with fertigation or foliar application of compost tea. » Improved vineyard economics with appropriately calibrated nutrients.
Soil Cover Between Rows		Establish vegetative perennial cover crops or annually apply mulch between rows.	» Reduced soil erosion. » Increased moisture retention. » Improved weed suppression. » Reduced herbicide use. » Improved soil organic matter content.
Soil Carbon Amendments		Add organic soil amendments under trellis.	» Improved plant nutrition by direct application to soil. » Increased soil water-holding capacity. » Improved soil aggregation.
Pest & Disease Management		Identify pests and diseases throughout the season - focus on early detection & response.	» Reduced inputs. » Increased pollination. » Improved plant immunity & defense. » Increased soil microbes.
Soil Compaction		Use lighter equipment to minimize soil compaction. Avoid using equipment when soil is saturated.	» Increased water infiltration. » Improved soil quality and health.
Diversify Land Use		Graze livestock in the vineyard for high-density, short-duration events.	» Increased soil fertility. » Improved cover crop management. » Increased weed suppression. <i>*If pesticides are used, follow any setback restrictions and delayed grazing recommendations.</i>

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