

OREGON WINE



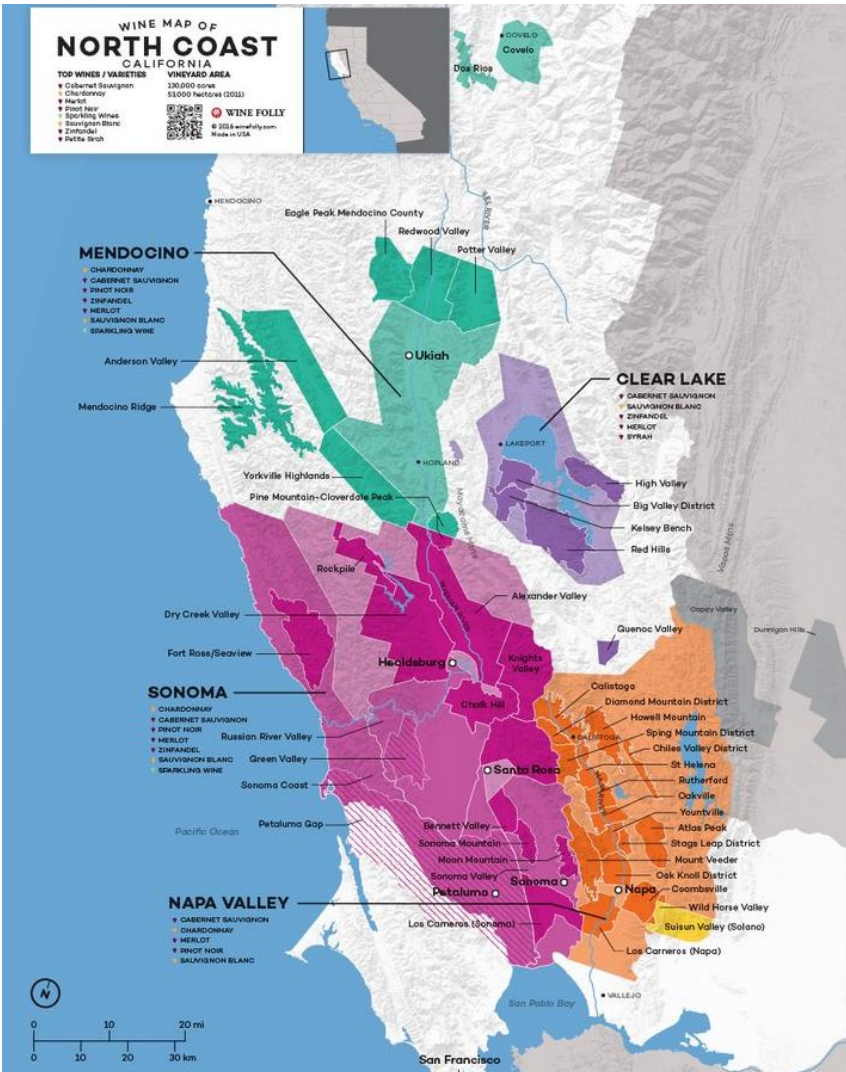
SYMPOSIUM

Compost and Biochar Trials in Napa County

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The North Coast Soil Health Hub



Resource Conservation District
Mendocino County

NAPA RCDD

MARIN RESOURCE CONSERVATION DISTRICT

SONOMA RESOURCE CONSERVATION DISTRICT

Lake County RCD

GOLD RIDGE

RESOURCE CONSERVATION DISTRICT

NORTH COAST SOIL HUB

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OREGON WINE SYMPOSIUM
FEBRUARY 15-17, 2022

The North Coast Soil Health Hub

Goals:

- To increase the adoption of agricultural management practices that help maintain and improve soil health.
- Facilitate technology transfer regarding soil health indicators and soil health management systems
 - Dissemination of information through website and e-newsletters.
 - Hosting workshops/field days.
- Soil health research
 - Establishment/monitoring of trial sites across Sonoma, Mendocino, and Napa counties.
 - Quantify the effects of different soil management practices on soil health.

Soil Health Interpretation Tool

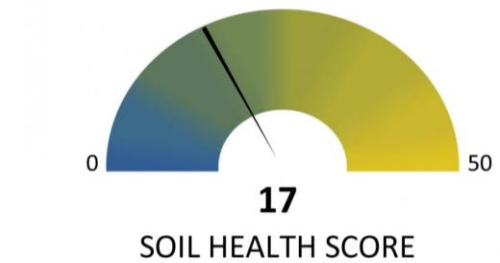


- Soil health assessments conducted in 75 vineyards.
- Close to 500 soil samples collected since 2017.
- Samples collected represent a variety of soil types, microclimates, and topography.
- Samples have been collected from vineyards with a variety of soil management regimes:
 - Undervine management
 - Management in between vine rows:

Soil Health Interpretation Tool

Soil health assessment database and interpretive guide as a tool to evaluate measured soil health indicators, management practices and regionally specific parameters in order to assist in making interpretations and guide soil health management decisions.

Solvita Soil Health Factors		RANKING:	Nutrients Value per hectare available		
Solvita - CO2 Burst	90	Medium	N + P2O5 + K2O hectare = \$221.78		
Solvita - SLAN, amino-N	48	Low	Nutrients Available kg/ha		
Aggregate Stability	35	Medium	N	P2O5	K2O
Organic Matter	3.2	Medium	115	229	210



Notes and Recommendations

USDA Cover Crop Recommendations

Types of Cover Crop Blends Suggested:
20% Legume 80% Grass/Non-legume

Nutrient Limitations/Recommendations

Nutrient Required (estimated) per hectare kg
56 17 84 (N - P - K)

NUTRIENT FERTILITY		
Analysis	Units	Level Found
Nitrate-N 0-6"	ppm	10
Additional Nitrate-N	ppm	nt
Ammonium-N 0-6"	ppm	nt
Profile Avail-N	ppm	10
Biological N-Min	kg/ha	97
N-Estimated For Crops		103
Phosphate as P	ppm	45
Potassium as K	ppm	78
Calcium	ppm	480
Magnesium	ppm	153
Sodium	ppm	37
pH	Units	6.3
EC	dS M	nt
Nutrient Index	Rating	1.00
Most Limiting Factor		None
Other factors		
Water Soluble Carbon	ppm	204
Water Soluble-N	ppm	16
Soluble C:N Ratio	Unit	12.8
Aluminum, Extractable	ppm	135
P-Saturation	ratio	14%
Iron, Extractable	ppm	186
Nutrient Deficit (by difference)		
0	0	0
(N - P - K)		

Soil Health Assessments


Soil Health Indicators:

- Texture
- Aggregate stability
- Available water holding capacity
- pH
- Electric conductivity
- Nutrients: nitrogen, phosphorous, potassium, calcium, magnesium
- Cation exchange capacity
- Total carbon
- Active carbon
- Soil respiration
- Potentially mineralizable nitrogen
- Bulk density
- Water infiltration
- Compaction

Soil Health Trials in California's North Coast Region

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Gamble Ranch Field Demonstration

by Kristin Cooper | Mar 12, 2018 | farm demos, featured farm demos | 0 Comments

This site demonstration is examining the effects of tillage on soil health and carbon sequestration in vineyard soil.



Jackson Family Wines Demonstration Vineyard

by Christine Kuehn | Nov 16, 2020 | farm demos, featured farm demos, H-N, project updates | 0 Comments

This demonstration site located in the Russian River watershed is examining the effects of tillage on soil health and carbon sequestration in vineyard soil.



Huichica Creek Sustainable Demonstration Vineyard

by annette | Apr 18, 2017 | farm demos, featured farm demos, H-N, project updates | 0 Comments

LandSmart certified vineyard in the Carneros area, owned by Napa County Resource Conservation District.



Ferrington Vineyard

by annette | Jul 7, 2017 | A-G, farm demos, featured farm demos, project updates | 0 Comments

Ongoing field trial testing cover crops and tilling regimes, with a carbon farm plan.

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Soil Health Trials in Napa County



- Benefits of compost and biochar under till and no till practices.
- Huichica Creek Sustainable Demonstration Vineyard.
 - Owned and operated by the Napa Resource Conservation District.
 - Located in the Carneros AVA.
- Gamble Ranch
 - Owned and operated by Treasury Wine Estates.
 - Located in the Yountville AVA.

Huichica Creek Sustainable Demonstration Vineyard



- Huichica Creek Vineyard is used by the Napa RCD as an educational tool.
- Planted in 1992-Chardonnay
- Immediately established an alternate till system.
- Till rows are seeded with a winter cover crop.
- Untilled rows have not been disturbed since establishment (29 years).
 - Natural vegetation was allowed to establish.

Huichica Creek Sustainable Demonstration Vineyard



- Section #1:
 - Control-no compost, no biochar applications.
 - Tilled rows: winter cover crop seeded every year
 - No till rows: natural vegetation established
- Section #2 and #3:
 - 10 tons of compost/acre + 3 tons of biochar/acre
 - Tilled rows: winter cover crop seeded every year
 - No till rows: natural vegetation established
- Wetland area used as comparison

Gamble Ranch



- Vineyard had been managed under full no till for a couple of years before trial was established.
- We asked to take 2 sections of the vineyard and begin tilling.
- Till rows are seeded with a winter cover crop.
- Untilled rows have not been disturbed for the past 5 years
 - Natural vegetation was allowed to establish.

Soil Health Trials in Napa County



Summary,

- Results are still preliminary
- The trial site at Huichica Creek Vineyard is ended this year.
- The trial at Gamble Ranch will be ongoing for at least a few more years.
- Treasury Wine Estates just established another compost/biochar trial at one of their other vineyards in Napa.

Thank You!

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