Terroir

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Soil Chemical Composition & Soil Testing

customer oumpre in.	-		
Crop Grown: G Analysis	Results	CL*	Units
lpH	6.7	(5.8)	-
Conductivity	128	(-)	umho/cm
Nitrate-N	1	(-)	ppm**
Phosphorus	31	(50)	ppm
Potassium	46	(150)	ppm
Calcium	869	(180)	ppm
Magnesium	98	(50)	ppm
Sulfur	11	(13)	ppm
Sodium	33	(-)	ppm
Iron	41.11	(4.25)	ppm
Zinc	3.41	(0.27)	ppm
Manganese	13.74	(1.00)	ppm
Coppor	0.45	(0.16)	ppm
Boron	0.05	(0.60)	ppm
Limestone Requirement			

Crop Grown: GRAPES				
Analysis	Results	CL*	Units	
pН	7.6	(5.8)	-	
Conductivity	227	(-)	umho/cm	
Nitrate-N	1	(-)	ppm**	
Phosphorus	4	(50)	ppm	
Potassium	79	(150)	ppm	
Calcium	1,505	(180)	ppm	
Magnesium	227	(50)	ppm	
Sulfur	14	(13)	ppm	
Sodium	354	(-)	ppm	
Iron	18.66	(4.25)	ppm	
Zinc	7.15	(0.27)	ppm	
Manganese	3.10	(1.00)	ppm	
Copper	0.43	(0.16)	ppm	
Boron	1.43	(0.60)	ppm	
Limestone Requirement				

8-16" deep



0-8" deep

Soil Profile

Horizons:

A: topsoil (minerals, organic matter)B: subsoil (clay, low organic matter)C: parent materialD: rock base





Particle size (Texture)

- Sand: 2-0.05mm
- Silt: 0.05-0.002mm
- Clay: <0.002mm

Texture influences:

- Structure
- Air, & water availability
- Water & nutrient holding capacity







Sand



Clay

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Clay





Loam

Clay Loam

Clay



Jar Test





Image from: rainbird.com

Soil Structure

The arrangement of primary particles into naturally formed secondary particles (aggregates) due to the particles tendency to stick together.





Impact of Floor Management

- Erosion potential
- Soil structure
- Soil moisture
- Nutrition
- Vigor
- Pests and disease



Impact of Floor Management on Vigor



Width of Weed-Free Zone











Water Holding Capacity



Textural Class	Plant Available Water*
Clay	2.0
Clay Loam	2.4
Loam	2.1
Sandy Loam	1.8
Loamy Sand	1.2
Sand	0.5
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*inches of water per foot of soil



Cation Exchange Capacity

Texture	Cation Exchange Capacity (cmol/kg)
Organic matter	40-200
Sand	1-5
Sandy loam	2-15
Silt loam	10-25
clay loam/silty clay loam	15-35
Clay	25-60



Annual Average Precipitation

United States of America













From: Netzer et al. 2009

Record numbers of days above 100°F



Factors Affecting K+ Concentration

More K⁺ with longer hang-time, high water availability and water stress, and dense shading, high soil K⁺





From: Walker et al. 2012

Organic Acids During Berry Development





Juice pH

Cluster thinning at fruit set – Cabernet Sauvignon







Rate of Maturation

Function of temperature, crop load, vine water status and health

Cluster thinning at fruit set – Cabernet Sauvignon -----20 Clusters/vine °Brix -40 Clusters/vine → 60 Clusters/vine ---- Not thinned Days after veraison



Questions?

