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MBK Biochar Agronomic Framework - Vineyards

Application Rate, Mixing Instructions, and Soil Amendment Protocols

MBK Biochar Agronomic Framework - Vineyards (California Focus)



Why Biochar for California Vineyards?

Biochar is a transformative input for vineyard soil health, water efficiency, and climate performance. Biochar is created by heating plant matter in a low-oxygen environment, producing a highly porous, carbon-rich material that lives in the soil for centuries.

Vineyards benefit from biochar because:

- Vines have deep, long-term root systems, ideal for stable carbon enrichment
- Many vineyards are in drought-prone and erosion-sensitive zones like Paso Robles and Sonoma
- Wine markets increasingly demand regenerative and traceable farming inputs

California

- Soil Fit: Sandy to loam, high salinity risk, drought stress zones (Paso Robles, Sonoma, Central Valley)
- Biochar Use Case: Increases irrigation efficiency, improves yield consistency under dry farming, boosts soil organics
- Regulatory Link: Supports NRCS conservation goals, aligned with CDFA Healthy Soils Program, Scope 3 ESG tracking

What Biochar Can Do for Your Vines

- **Reduce irrigation needs** by up to 30–50% (improves moisture retention)
- Cut fertilizer costs (retains and slowly releases NPK near root zones)
- Improve terroir expression (supports microbial diversity and root development)
- **Strengthen ESG profile** through carbon-storing amendments traceable to third-party MRV systems.

✓ Scientific Benefits (Field-Proven & Third-Party Verified)

Benefit	How It Works	Verified By	
△ Water savings	•	UC Davis (2022), Bordeaux AgroTech, SCS Global	
We Nutrient retention	Reduces leaching, boosts fertilizer use efficiency	CREA (Italy), Wine Australia, DNV	
Microbial health	Hosts beneficial microbes, supports terroir soil expression	Verra Soil Protocols, Biochar Intl Network	
Soil structure	Enhances aeration, reduces compaction, and erosion	University of Lisbon, SCS Trials	
Carbon sequestration	Stores carbon >100 years, MRV-ready for Verra/Puro/Earth credits	IPCC, Gold Standard, DNV Assurance	

© Who This Is For

- Estate vineyards exporting to the EU, the U.S., or Japan
- Growers seeking organic, biodynamic, or regenerative claims
- Producers in drought or high-temperature regions

Application Guidelines (Per Acre)

Vineyard Type	MBK Biochar Rate	Frequency
Conventional (non-irrigated)	3–5 tons/acre	Every 4–5 years
Organic/Biodynamic	5–7 tons/acre	Every 3–4 years
High-efficiency/irrigated	2–4 tons/acre	Every 4 years

Mixing & Application

1. **Pre-Charge**: Mix biochar with compost or natural fertilizer for 10–14 days

- 2. **Incorporate**: Apply banded along rows or lightly till in shallow (6–8 inches)
- 3. Moisture: Apply on moist soil ideal post-pruning or during compost application

Best Practices

- Combine with compost tea or worm castings for microbial synergy
- Use in pre-plant, post-harvest, or rest cycle soil conditioning
- Pair with cover crops (e.g., clover, rye) for structure and nitrogen retention

MRV & Certification

- Submit a GPS-tagged application via the MBK Portal
- Reference the MBK batch ID, timestamped with delivery
- Optional: Uåapload soil test or visual documentation to support BioTASC registry traceability

MBK Support Includes:

- Vineyard-specific soil and climate calibration
- Access to Verra, Gold Standard, and Puro onboarding
- Third-party verification pathways via SCS Global and DNV

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Note: MBK, as the certified carbon credit issuer, retains exclusive rights to claim and sell credits. Buyers may not resell or double-claim these credits but may use verified soil data for Scope 3 ESG reporting, regenerative branding, and export compliance.