

Composted *Mulch*

Composted mulch was made from recycled yard trimmings. The material was ground, composted for 15 days, kept at a temperature of 131° F, and turned at least five times. This process kills weed seeds and potential disease-causing pathogens.

The mulch was sieved through a 1.5-inch or smaller diameter screen and the moisture content ranged from 35 to 55 percent.

The mulch, at a minimum moisture content of 35 percent, was applied in the vine rows with mulch spreaders. To ensure uniformity inside the site plots, the mulch was applied by hand with five-gallon buckets inside the plots to the depth specified for the assigned treatment.

Rate of *Application*

A spreadsheet chart that calculates the amount of mulch needed to apply in the vine row is available from Will Bakx at (707) 664-9113.

Mulch products made from recycled yard clippings are widely available throughout California: www.ciwmb.ca.gov/Organics/SupplierList/.



Contact *Information*

**Natural Resources
Conservation Service,**
(707) 252-4189
**Napa County Resource
Conservation District,**
(707) 252-4188

Sonoma Compost Co., (707) 664-9113
California Integrated Waste Management Board,
(916) 341-6620 or visit www.ciwmb.ca.gov/Organics/

Project Participants: USDA Natural Resource Conservation Service; U.C. Cooperative Extension, Napa County; U.C. Cooperative Extension, Sonoma County; Napa County and Sotoyome Resource Conservation Districts; USDA Agricultural Research Services; Sonoma Compost Company; Napa Garbage Services; Walsh Vineyards Management; Beringer Vineyards; Iron Horse Vineyard; Everett Ridge Vineyard.

For more erosion control data, see the full project report at www.ciwmb.ca.gov/Organics/

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Mulch spreader applying mulch between the vine rows.

Let's do *mulch!* in the Wine Country

Composted Mulch
in Hillside Vineyards for:

Erosion Control

Moisture Conservation

Weed Suppression

The Study



This mulch demonstration project was set up to determine if mulch derived from partially composted yard trimmings could successfully reduce soil erosion in hillside vineyards. The study was conducted in Napa and Sonoma Counties during the winter months of 1999 and 2000.

Composted mulch was applied in vine rows planted vertically up the slope at four vineyard sites. At each site, nine contiguous rows were selected for uniformity in slope, soil texture and soil structure, pore size, and percent rock fragments. Plots were installed in each vine row and mulch was applied to create three replications of three treatments in randomized complete block design. Treatments and trial size were identical in all four vineyards.

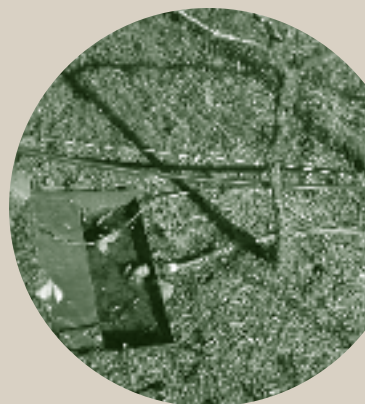
Vineyard row with mulch plot and overflow sock. A metal strip borders the perimeter of the plot.



Plot Layout

All site plots measured 29 feet long by 18 or 24 inches wide. A metal border was installed on the perimeter of the plot to create a controlled storm-runoff environment.

Sediment trap on downslope end of plot connected by hose to an overflow sock.



Rainfall Simulator

A rainfall simulator was used at one vineyard site. The specific, episodic response to a simulated rain event at this site allowed for measurement of erosion and runoff volume.



Rainfall simulator operating in a vineyard.

Plot Treatments

Treatment 1: A 3-inch layer of mulch was applied the first year and a 1.5-inch layer was reapplied the second year.

Treatment 2: A 3-inch layer of mulch was applied the first year with no additional applications.

Treatment 3 (Control): No mulch was applied either year; weed control was maintained under the trellis wire.

Study Results

Each site was analyzed under the Revised Universal Soil Loss Equation (RUSLE), a model developed to annually predict long-term average soil loss. RUSLE analysis predicted reductions in soil loss using a 3-inch mulch depth covering the soil. Field data from the simulator tests confirmed RUSLE's predictions. By the second year, **soil loss was reduced by 78 to 98 percent in mulched vine rows** versus the control vine rows that had no mulch and little-to-no cover.

