

# Floor Management for Soil Health

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**VINEYARD TEAM**  
Promoting Sustainable Winegrowing



Cover crops have many benefits. When planting cover crops in fall, consider how they will be managed in the spring.

These findings are primarily from research conducted in Monterey county using Merced rye and Trios 102 triticale (see sources below for more complete information).

## Benefits of Cover Crops in Vineyards

### *Soil conservation and water quality*

- Reduce soil erosion
- Reduce runoff (45 – 80% reduction in one experiment (Smith et al. 2008))
- Reduce dust (When no-till or reduced tillage practices are adopted)
- Increase water penetration into the soil

### *Soil health*

- Increase microbial biomass in the soil
- Increase the amount of Carbon in the soil

### *Till less to build soil organic matter*

- Conventional tillage (multiple passes, <30% of crop residues left on the surface)
  - Less Carbon enters soil as organic matter
  - Releases Carbon back to atmosphere as CO<sub>2</sub>
- Conservation tillage (>30% of crop residues left on surface)
  - More Carbon enters soil as organic matter
  - Less CO<sub>2</sub> released back to the atmosphere
- No-Till systems (No disturbance of the soil surface)
  - Most Carbon stays in the soil as organic matter

### Sources:

Bettiga L. 2005. Long Term Impact of Vineyard Floor Management Practices. Presentation given at the 2005 Sustainable Ag Expo, San Luis Obispo, CA.

Smith R, Bettiga L, Cahn M, Baumgartner K, Jackson LE, Bensen T. 2008. Vineyard floor management affects soil, plant nutrition, and grape yield and quality. *California Agriculture* 62(4): 164-190.

Steenworth K. 2008. Vineyard Cover Crops and Tillage Practices. Presentation given at the 2008 Sustainable Ag Expo, San Luis Obispo, CA.