Vineyard Floor Management

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Aspects of Vineyard Floor Management

• Influence on grape and wine quality
• Soil Ecology - taking care of it and keeping it where it belongs
  – Soil health: chemical, physical, biological
  – Erosion
  – Vine nutrition
  – Water management: maintain PAW
  – Food web
• Plants – vines, cover crops, plants, weeds, etc.
• Disease and pest control
  – Nematodes
  – Phylloxera
  – Many insect pests reside in the soil – JBs, GRB, etc.
  – Fungi and bacteria
  – Vertebrate pests
• Economics of managing the floor
Terra Firma: the soil and what grows in it

- The French and Terroir
- The source of all nutrients and water
- The root zone
- It defines vine size
- We spend a lot of time on it but don’t think about or understand it
Soil Compaction: the enemy of good soil and vine health

- Soil tilth and structure
- Vines and soil organisms need to breathe, too
- Post planting top dressing with compost
- What equipment does to soil
- Mature vineyard in row ripping
Ways to Manage the Vineyard Floor

• Clean till
  – New vineyards
  – Mature vineyards

• Cover crop
  – Native
  – Introduced
    • Commercial grass mix
    • Special mix for plant diversity
When is a plant a weed?

- The American lawn mentality
- Adjusting to a new vineyard aesthetic: is it a weed or diversity?
- Encouraging biodiversity in a monoculture
- Sustainable and organic vineyard management systems
- Examples: Fetzer and Benzinger, Brickhouse, Zind-Humbrecht, Domaine Leflaive
Cover Crops

Benefits:
• Prevent soil erosion
• Improve water penetration
• Improve soil tilth
• Builds organic matter
• Nitrogen fixing bacteria
• Provides plant diversity
• Habitat for beneficials
• Aesthetic value

Disadvantages:
• Competing for resources
• Attract some pests
• Spring frost
• Cost of establishment and maintenance
Establishing a Cover Crop

• When? Late August through October
• Soil preparation: kill grass > disc > harrow > drag
• Planting – seed rate is very important
• Even distribution, use a seed drill if possible
• Pray for rain
• Don’t drive on it
Maintaining the Vineyard Floor

• Herbicides – pre and post emergent
• Cultivating - types of implements and timing
  – Rotovator, spader, disc, rippers
• In row management
  – Clean cultivate with hoe (manpower or mechanical)
  – Herbicide strip
  – Grass under the vines
Hilling up and Taking down

- cover up the grafts
- provides weed control
- requires skill and the right equipment
The book on vineyard floor management from UC Davis: oldie but still goodie