

Mulch in vineyards



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The AWRI

















Bare undervine

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Advantages

- low cost
- no competition
- tidy
- easy to manage
- high solar reflection and heat to protect against frost

Disadvantages

- poor infiltration
- uneven water distribution
- low soil biota
- high solar radiation and reflection



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A fit for purpose soil will:

- Suppress disease-causing and pest organisms
- Encourage good soil structure, improving water infiltration, oxygen diffusion, and water-holding capacity.
- Improve nutrient availability for plant growth
- Retain N, P, K, S and Fe
- Decompose plant residues rapidly

Mulch – impacts on soil



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Direct

- soil moisture
- nutrient content (?)
- radiation interception

Indirect

- temperature
- soil biota



Mulch = a layer of material spread on the soil to protect the surface, reduce weeds and provide nutrients for the soil (??)

Compost = Organic residues that have been 'stabilised' by biological decomposition

Mulch types





Mulch types







Mulch for use in a vineyard use should be:

- Relatively inert
- Of an appropriate particle size to provide aeration and surface protection to conserve water.

Mulch



Advantages

- Water savings
- weed suppressant
- improved/even infiltration
- ↑ soil biota
- ↓ solar radiation and reflection

Disadvantages

- cost
- pests (earwigs, rodents, snails)
- frost
- fire
- other management e.g. harvest



- Highly variable (product, availability, transport) (e.g. Straw)
- Application special equiment?







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Organic residues that have been 'stabilised' by biological decomposition



Compost - advantages



- Waste stream utilisation
- Slow release of nitrogen, extending nitrogen availability and reduced leaching.
- Medium to high level of P, K, Mg and Ca
- C:N ratio More efficient nutrient utilisation
- nutrient analyses
- A good source of bacteria and micro flora, stimulates worm activity Mature compost is usually pH neutral
- Organic matter improves physical soil characteristics
- Increased soil moisture retention
- Reduced reliance on herbicides





- Garden wastes collected by local councils
- Wineries
- Feedlots











- Must neutralise pH
- C:N optimised with partial breakdown

Problems:

- burning or death of young vines
- fungal and odour problems
- contribute to groundwater pollution if inappropriately stored





Grape marc



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cow manure

chicken waste





- Cost ~\$30/m³
- specialised application equipment

