



## Compost for vineyards – a case study from Treasury Wine Estates, SA

### Who

Treasury Wine Estates

### Where

Fleurieu vineyards,  
McLaren Vale and Langhorne Creek,  
South Australia

### What

Wine grapes

### Aims

- reduce evaporation losses
- increase soil health and structure
- reduce under vine temperature

### Outcomes

- water savings and improved drought resistance of vines
- stronger and healthier vines
- some yield increases
- increased organic carbon in soil profile
- a 2-3 year payback time and 3-5 years of full benefit from the mulch application

### Treasury Wine Estates - Fleurieu vineyards

Treasury Wine Estates, part of the Foster's Group, owns extensive vineyards on the Fleurieu Peninsula in South Australia. Globally, Treasury Wine Estates has more than 12000ha of vineyards and 20 wineries. Their portfolio of 50 wine brands includes some of the most iconic in Australia.

With production areas located in Australia, Italy, and North America their wines are sold in over 70 countries around the world.

Treasury Wine Estates consider themselves guardians of their vines, particularly the heritage vines that produce their world famous brands. The company is committed to looking for sustainable vineyard management practices to ensure their vines continue to produce well into the future.

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**“We wanted to reduce evaporation losses from our soil, increase organic matter and improve soil structure to increase water infiltration.”** Fleurieu vineyard manager

## Why compost mulch?

The Fleurieu vineyard management team wanted to reduce evaporation losses from winter rainfall and irrigation, increase the organic matter in their soils and improve the structure of their soils to increase water infiltration. They also wanted to reduce the temperature of the soil under vines so that roots could survive in the top 200mm of soil. Compost mulch has been used on the vineyards for 12 years.



### Making the most of compost mulch

To get the most out of your compost application it is essential that good irrigation management is in place.

Monitoring soil moisture and understanding soil water availability will allow you to adjust your irrigation schedules to suit the needs of the crop and help maximise the benefits of your compost. This is especially important to maintain yields, particularly where a mid-row cover crop or sward is used.

As well as irrigating less throughout the season, applying compost mulches can also delay the need for irrigation, often postponing the first irrigation application by a month, or one-two irrigations depending on soil type and management factors.

Good irrigation management practices will help you to determine when you need to begin irrigating as well as how often.

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**“One of the best investments we currently make to our vines.”**

Fleurieu vineyard manager

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### The compost product

Initially they produced compost mulch on site but now all the product they use is sourced from commercial suppliers.

Generally, two blends are used. One is a fine compost mulch chosen because it will decay quickly and give rapid improvement in the soil structure. This is applied to blocks where a quick lift in vigour is needed. The other blend is a multi-particle size blend consisting of 33% fine material (1-10mm), 33% medium material (11-20mm) and 33% coarse material (21-30mm). This blend is used mainly to reduce evaporation losses and where slow release of nutrients is required over a five year period.

Over the years, Treasury Wine Estates has tried a wide range of mulches including grape marc, manures, straw, rice husks and their best results have been achieved with the two composted blends they now use.

## The advantages of compost mulch

There are many benefits of using compost mulch in the vineyard.

Mulch insulates the soil surface, regulating the temperature in the root zone so that roots are able to survive better in the top 200mm of soil. Mulch also improves soil structure by adding organic matter and increases water infiltration. Generally this translates to water savings of around 30%.

When applied under vines it acts as a slow release fertiliser over several years, releasing potassium initially and then nitrogen and phosphorus over several years.

Soil tests can help you work out which nutrients the mulch is contributing so you can adjust your fertiliser applications.

### Anything to watch out for?

The Fleurieu vineyard manager has noticed that weeds also love compost and they grow bigger and stronger along the perimeter of any vineyard that has been mulched. If the product is coarse then spreading can also be a challenge as application equipment can become blocked easily. It's really important to use spreading equipment that is suited to your compost product to avoid the frustration of frequent blockages.

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**“We get 3-5 years of full benefit from a mulch application and it pays for itself after 2-3 years.”** Fleurieu vineyard manager

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### Compost mulch application

The needs of individual blocks are assessed on a case by case basis but mulch is generally applied at a rate of 110–150m<sup>3</sup>/ha every 3–5 years.

If immediate results are needed the fine blend will generally be applied, while if longer lasting effects are needed then the multi-particle size blend is applied. The company has tried numerous rates over the years and found these rates meet their requirements.

The Fleurieu vineyard team has its own equipment for applying the mulch to the vine rows. Depending on the type of product and the application rate, the compost costs between \$3000 and \$4500 per hectare, including the cost of carting from the supplier to the site.

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### The bottom line...

Yield impacts (and financial gains) vary widely from season to season but the Treasury Wine Estates experience has seen a 2-3 year payback time on their investment as well as 3-5 years of full benefit from a mulch application.

The company has measured a range of benefits from using compost mulch at their Fleurieu vineyards.

Their vines are stronger and healthier with increased trunk diameters, increased pruning weights and higher numbers of leaves on mulched vines compared to unmulched vines. This has translated to increased yield in some blocks. Improvements in vigour are generally evident at the end of the first season after applying mulch. In some cases leaf greenness improvements have been seen within one month of applying mulch. Improvements in the root system, particularly near the soil surface, can be seen within a few months.

Soil health has also improved with an increase in organic carbon levels throughout the soil profile. Infiltration of irrigation has improved - they've saved water and improved the drought resistance of vines. There has also been a noticeable increase in the biodiversity of the insects living in the mulch on the vineyard floor.





## Advantages of compost mulch

### short-term

- immediate and substantial water savings

### long-term

- increased capacity of the soil to capture and store water
- increased yields
- moderated soil moisture and temperature fluctuations
- reduced farm management costs
- improved soil structure and decreased erosion

## Factors that can influence nutrient uptake from compost:

- climate and season
- soil type
- vineyard location
- compost type
- current and previous cultural practices
- irrigation method

### Where to from here

Treasury Wine Estates viticulture team is happy with the results they're achieving with compost mulch but are always on the lookout for better ways to use the product. They consider compost mulch to be one of the best investments they currently make in their vines and would welcome the opportunity to further increase the benefits of the product.

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**“We’ve saved water, improved drought resistance and our vines are stronger and healthier.”** Fleurieu vineyard manager

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For more information on the program contact:



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