

10+ ways to reduce your environmental footprint



Improving fuel use efficiency in the vineyard:
Technology, planning, maintenance

Growers will soon be responsible for the amount of greenhouse gases (GHG) that their vineyards produce.

- Carbon dioxide produced by
- ↳ burning of fuels in machinery
 - ↳ power generation for irrigation systems
 - ↳ nitrous oxides from fertilisers
 - ↳ others.

As it is inevitable that a price will be fixed to the tonnes of GHG produced, it is important to consider ways to decrease the GHG emission levels of your vineyard.



Improving fuel use efficiency in the vineyard:
Technology, planning, maintenance

New management strategies



- 1. multi-row equipment**
- ↳ reduce the number of passes
 - ↳ save fuel
 - ↳ save money



Improving fuel use efficiency in the vineyard:
Technology, planning, maintenance

What is the most efficient equipment for the job?



- 2. multi-tasking**
- ↳ Over the row tool carrier
 - ↳ Tractor
 - ↳ ATV
 - ↳ Walk!



Improving fuel use efficiency in the vineyard:
Technology, planning, maintenance

3. Regular maintenance and servicing to ensure equipment is running at maximum efficiency
4. Outsourcing vineyard operations to contractors who have multi-row capacity and will be responsible for their own carbon costs and offsets in the future



Improving fuel use efficiency in the vineyard:
Technology, planning, maintenance

5. Use of biodiesel or blended fuels
6. Use of grazing livestock during the off season to –
 1. reduce the number of slashing passes required
 2. reduce herbicide inputs.

Careful selection is needed as some livestock, such as cattle, have high GHG emissions therefore are of no benefit. On average a sheep produces approximately 13g/day of methane and cattle produce more than 100g/day.

*Methane is a 20 times more damaging GHG



Improving fuel use efficiency in the vineyard:
Technology, planning, maintenance



- 7. Integrated pest management systems to reduce the reliance on chemicals, e.g. use of flowering plants that increase the habitat for predatory insects
- 8. Remote sensing equipment, such as soil moisture sensors and plant stress indicators to reduce irrigation times and improve water use efficiencies

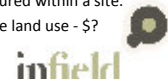


Improving fuel use efficiency in the vineyard:
Technology, planning, maintenance

- 9. Capture or sequestration of carbon to offset and actively reduce the GHG footprint of a vineyard.



- ↳ Carbon is captured in the development of woody tissues
- ↳ Vine woody tissues increase with age, the amount of carbon captured is largely unknown.
- ↳ The planting of woody plants in unused areas of the vineyard is one way to increase the amount of carbon captured within a site.
- ↳ May be a viable land use - \$?



10. **Electric tractor** powered by renewable solar or hydrogen

When battery technology is available this could be possible. Say 75 kW tractor
Fuel savings alone of \$8.77 /hour



R & M savings in the order of \$2 / hour
75 kW – TCO identical value is \$150K

