



Unwanted wine waste to be put to good use

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Filtering the suspended solids out of wine keeps drinkers happy, but leaves wineries with formidable quantities of unwanted organic sludge.

A new project to treat winery waste will trial a composting process that aims to put the unwanted by-products of major wineries in South Australia's Riverland right back where they started.

Flinders Bioremediation has won a grant from Zero Waste SA, the State Government's waste disposal agency, to investigate the feasibility of creating vineyard compost from unwanted sludge produced by wine filtration at Berri Estate; liquid waste left over by the process of distillation during brandy-making at Angoves will also be included in the study.

Dr Richard Stewart, General Manager of Flinders Bioremediation, said that most of the spadeable waste from the filtering process is currently sent to landfill, but with the progressive closure of Local Landfill dumps and the higher transport costs that result, wine producers are looking for alternatives.

The liquid waste from distillation also needs a new home: at present it is disposed of by direct irrigation on to the land, but because of the potentially detrimental effects of such a high nutrient load in the long term, the practice is not environmentally sustainable.

While composting is the obvious solution for both waste streams, Dr Stewart said that a suitable approach to composting has to be devised before the Riverland's major composting facility can accept the material. The Flinders Bioremediation project is proposing to roll the two streams into one.

"Instead of doing a trial for each, we will look at the data sheets to see what nutrients are available and attempt to combine them," Dr Stewart said.

"They are similar amounts involved, and we will look to combine them with straw or even grape marc [grape solids left over after crushing], which are drier and more friable, to produce a compost that can then be used on the vines."

Once the waste is analysed and theoretical calculations, such as carbon to nitrogen ratios, have been done, Flinders Bioremediation aims to undertake a 14-week trial composting project of the seasonal waste after Christmas. If the compost meets Australian standards, it can be used as vineyard mulch, a role that brings two-fold benefits, Dr Stewart said.

"Not only does it improve the health of the soil but it can reduce water use in the vineyard by as much as 30 per cent," he said. "This is a win-win-win scenario: you divert the waste from landfill, increase soil health, which then gives you better grapes that go back into the wineries and provide more recyclable organics for the process. We call it closing the recycling loop. And it also has water-saving benefits at a time when irrigation costs, especially from the Murray, are skyrocketing."

Dr Stewart does sound a note of caution: "This all sounds fine in theory, but until we know what is actually in these waste streams and how they can be combined, we don't know if we can produce a viable product".

If the trial is successful, however, the potential is enormous in the Riverland alone. "The Riverland has some of the largest wineries in Australia and the world," Dr Stewart said.

"If we are able to incorporate the grape marc that is currently being stockpiled or composted, in ten years time it may be possible that all winery solid waste can be recycled."

"This scenario may be able to be replicated across the whole industry in Australia and globally because the winemaking processes and waste streams are fundamentally similar."

Inevitably, there are possible snags in such a grand scheme. "Some wineries still use diatomaceous earth as a filtering agent," Dr Stewart said.

"It is very fine and abrasive in character, and if it dries out it can form a toxic dust that can be inhaled by animals and humans, which could make it unsuitable to use on vineyards. There is also evidence that it can be a threat to earthworms".

Dr Stewart said, however, that the overall future for composting winery waste is very healthy. "Because landfill rates are going up, industry is looking for cost-effective alternatives in treating waste. The good thing is that composting is not only cheaper, it is also environmentally friendly".