



AWRI
COMMERCIAL SERVICES
SO MUCH MORE THAN A GREAT LAB

Natural ferments, what makes them tick?

What is it?

AWRI Commercial Services is offering a new service (developed by AWRI Principal Research Scientist Dr Anthony Borneman) which uses next-generation sequencing technologies to provide information about the dominant yeast species present in 'natural' ferments.

Why is it important?

Natural, spontaneous, wild and uninoculated are several terms used to describe a wine fermentation that has not been inoculated with a commercial yeast strain. The population of yeast species is dynamic throughout an uninoculated fermentation due to the range of initial microflora present and changing conditions as the fermentation progresses. The yeast population is most diverse for the first few days of fermentation, after which *S. cerevisiae* tends to dominate as alcohol levels increase. This service will provide insight into the microflora present during fermentation that may contribute characteristic flavours to wine.

How does it work?

The genomic DNA is extracted from a ferment sample provided by the winery. Certain sections of the DNA are amplified and then sequenced which then provides information about the species present.

What does it involve?

The AWRI will provide a sampling kit containing a small esky, ice pack and sample tubes. The client should take a 50 mL sample of the ferment and then allow it to cold settle in the fridge overnight. The next day the liquid should be poured off and the solids that have settled out left in the tube and frozen. The client should then send the esky containing the sample and ice pack to the AWRI by courier. It is recommended that samples are taken during early stages of fermentation, for example at crushing and then after one, two and three days of fermentation. However a single sample in the early stages of fermentation is still able to provide a snapshot of species present.

What will the results show?

Results from the analysis will provide a list of the yeast species present in the sample and approximate proportions of different species.

How much does it cost?

The current introductory offer is \$275 (including GST) per single ferment sample submitted or \$792 for a fermentation course of three samples. Further discounts apply for bulk sample submissions.

Additional services available

- **Genetic characterisation of natural ferments to the strain level:** This is where all the genetic material is sequenced to the strain level. Such analysis can determine if a ferment contains commercial yeast strains and will also characterise strains that may be unique to a particular winery.
- **Isolation of dominant yeasts and cryogenic storage of them in the AWRI Wine Microorganism Culture Collection:** This may act as insurance for future vintages, preserving microorganisms that are likely to have an impact on wine characters.

For more information contact Dr Tina Tran at the AWRI (tina.tran@awri.com.au).



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