

# ETHANOL YIELD

## *research information*



### ETHANOL YIELD VARIES BETWEEN STRAINS

Different wine yeast strains can generate different amounts of ethanol during fermentation. Some strains are highly efficient at converting sugar to ethanol, whereas other strains convert sugar to metabolites other than ethanol, thus resulting in wines with a lower percentage of alcohol.



### STRAINS WITH A LOWER ETHANOL YIELD

Research undertaken by the University of Adelaide confirms selected Maurivin strains have a lower ethanol yield. During fermentation, both Maurivin B and AWRI 796 use higher amounts of sugar to produce 1% ethanol, 18.2g and 17.1g of sugar, respectively. This makes these strains ideal when there is a need to minimize a wine's alcohol content. AWRI 796 is a popular yeast for both varietal red and white winemaking due to its strong fermentation capacity and high glycerol output. Maurivin B is used for varietal red winemaking and is favoured by many winemakers for its capacity to consume high levels of malic acid (see *Malic Acid Research Information* sheet). Sauvignon, popular for its ability to enhance the varietal characters of Sauvignon Blanc, is another strain that exhibits a lower ethanol yield.



### STRAINS WITH A HIGHER ETHANOL YIELD

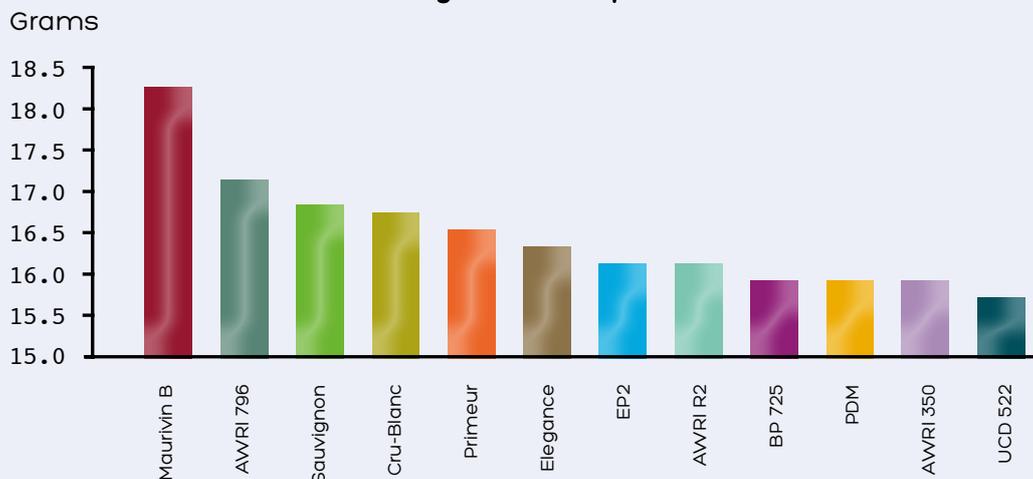
Conversely, UCD 522, AWRI 350, BP 725 and PDM are more efficient in converting sugar to ethanol during fermentation. These strains require on average less than 16g of sugar to produce 1% of ethanol, making these strains ideal when there is need to maximize ethanol yield.



### APPLICATION TO WINEMAKING

The strain chosen for fermentation can play an important role in determining a wine's alcohol content. Whilst some strains have a high alcohol yield, other strains can be used to minimize the amount of alcohol in the wine.

**Grams of Sugar Utilised per 1% Ethanol Yield**



Research was undertaken by Dr Vladimir Jiranek and Dr Paul Grbin from the Discipline of Wine and Horticulture, The University of Adelaide (2005). Fermentation was undertaken in chemically defined grape juice medium (CDGJM) as defined by the Australian Wine Research Institute with an initial sugar concentration of 200 g/l (glucose/fructose). All ferments went to dryness within 7 days and the ethanol measured by HPLC. All ferments were carried out in triplicate with mean values provided. Ethanol yield may differ for different juice/must.