

YEAST ASSIMILABLE NITROGEN

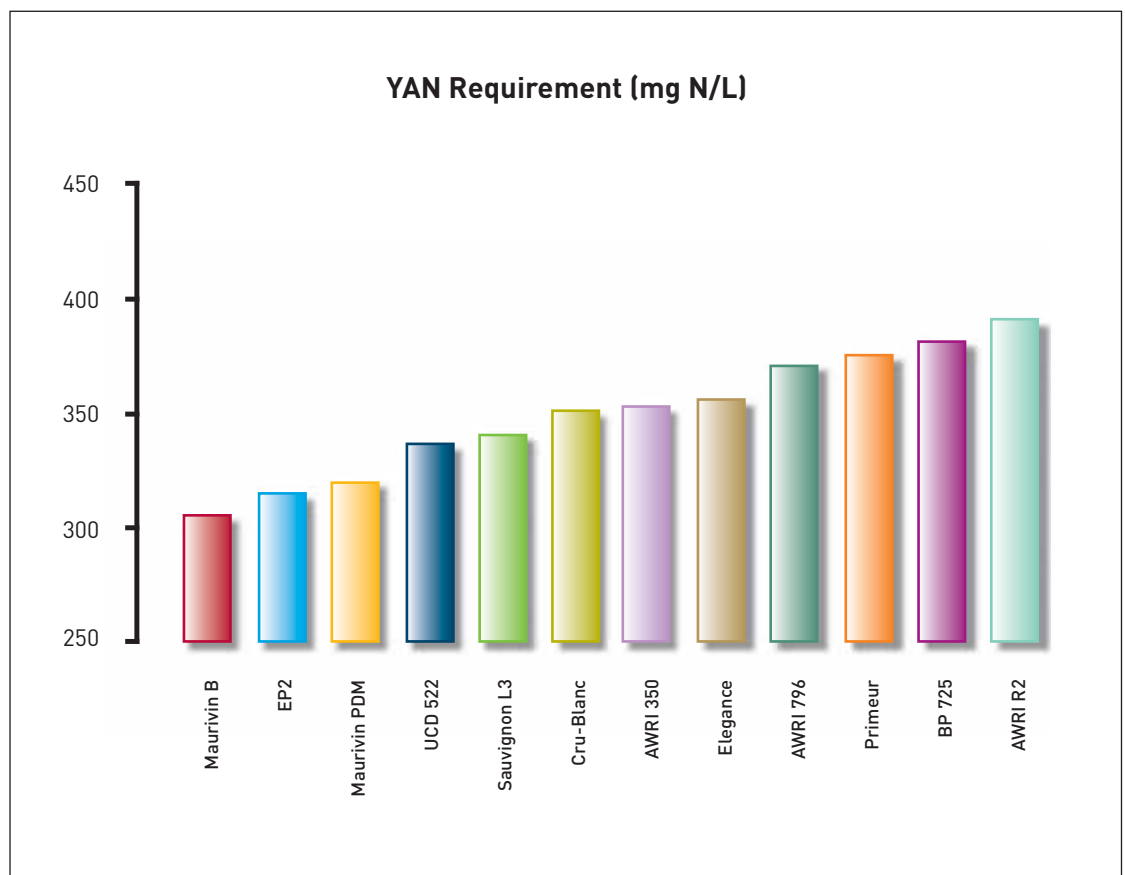
research information

Wine yeast utilise ammonia and alpha-amino nitrogen during fermentation, known collectively as yeast assimilable nitrogen (YAN). YAN is required for the synthesis of proteins, cell wall components and enzymes. Insufficient YAN in the juice/must can result in sluggish or stuck fermentations and the production of hydrogen sulfide.

To avoid such problems, di-ammonium phosphate (DAP) is added to the juice/must prior to and during fermentation. Yeast strains differ in the amount of YAN they require, hence the volume of DAP added depends partly on the strains of choice.

Research undertaken at the University of Adelaide revealed the amount of YAN required differs significantly between Maurivin strains. The average YAN requirement was 350 mg N/L. Strains such as Maurivin B and EP2 have a lower than average YAN requirement during fermentation. Interestingly, Maurivin B also produces lower yields of ethanol and consumes higher levels of malic acid compared to other strains [see *Ethanol Yield* and *Malic Acid Research Information* sheets].

Conversely, BP 725 and AWRI 796, which are popular strains of varietal red winemaking, have a higher than average YAN requirement; likewise with Elegance, Primeur and AWRI R2, which are ideal for producing aromatic white wines. Increased quantities of DAP, as well as the use of Mauriferm fermentation aids, are recommended when fermenting with strains such as these that exhibit higher YAN requirements.



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) and 750mg N/L as ammonium sulphate. All ferments went to dryness within 7 days. All ferments were carried out in triplicate with mean values provided. YAN requirements of each strain may differ for different juice/must.