GUIDELINES FOR

Dealing with green characters?

How to manage the making of red wine from fruit that has been picked before optimal ripeness.

Picking fruit before phenolic maturity (or optimal ripeness according to past Australian specifications) is becoming more prevalent in Australia for numerous reasons:

- **Lower alcohol wines, Current wine style trends**

  Wine Australia "momentum in the trade towards lower (as opposed to low) alcohol wines". Sam Harrop (09/2010) "More is less is the mantra for the future, wine is not to be overly alcoholic or over oaked"

- **Environmental factors**

  Such as a cooler summer, whereby fruit cannot achieve physiological ripeness, heat waves, whereby fruit may be picked early to avoid heat stress, or fruit picked early to avoid rain and potential mould infections.

  Picking fruit at this time can expose the winemaker to various challenges including but not limited to:

  - A reduction in colour intensity of the wine,
  - A lack of body and mouthfeel,
  - Expression of green and herbaceous characters rather than preferred rich berry fruit.

Lallemand has numerous solutions that can improve the aroma and structure of the above mentioned wines. Please find overleaf a table of recommended solutions.

SPECIFIC YEAST DERIVATIVES

SInce 2000, Lallemand has been developing and improving a unique process whereby a carefully selected Saccharomyces cerevisiae yeast strain undergoes a specific refining process which results in an inactivated yeast with high levels of polyphenol reactive cell wall polysaccharides. Different oenological yeast strains have been used to produce the various Lallemand SYD products for red wines namely OptiMum Red® and Noblesse®, for different applications.

The use of SYD's in musts provides early polysaccharide availability for complexing with polyphenols as soon as they are released and diffused, which results in red wines with more stable colour, rounder mouthfeel and improved integration of harsh green tannins. These inactivated yeasts are used during fermentation to provide the following:

Increase mouthfeel

The polysaccharides released from SYD's bind to tannins to form tannin –mannoprotein complexes. These complexes reduce any perceived astringency. In addition the wines have a rounder more supple mouthfeel.

Improve colour

Polyphenol – mannoprotein complexes increase the colour stability of the wine and reduce colour drop out. It has been noted that OptiMum Red® improves the wines longevity from low maturity fruit.

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GUIDELINES FOR

ENZYMES

	DOSAGE	TIMING OF ADDITION
Rapidase Extra Fruit™	20-30 g/T	Add evenly to grapes, must
Red grape macerating enzyme to aid juice and colour extraction. Has been formulated to facilitate colour improvement while limiting harsh and green tannins, even in fruit of low maturity.		

SPECIFIC YEAST DERIVATIVES

	DOSAGE	TIMING OF ADDITION
OptiMum Red®	30 g/hL	Add during early phase of fermentation
Use in cool climate fruit. Provides early High MW polysaccharide availability for complexing with polyphenols which results in red wines with more intense colour, rounder mouth feel and improved tannin integration.		
Noblesse®	30 g/hL	Add Post Fermentation (dosage by bench trial)
Used to help smooth and stabilise the wines colloidal balance, resulting in a more intense structure, initial volume and smooth round finish.		

YEAST OPTIONS: Yeast options include those strains that promote mature fruit expression, promote colour stability, high polysaccharide producers hence contribute to palate structure and / or their ability to reduce herbaceousness.

	RELATIVE NITROGEN DEMAND	ALCOHOL TOLERANCE	DESIRABLE FERMENTATION TEMPERATURE RANGE
Lalvin ICV D254™	Medium	16% v/v	15 - 30°C
Lalvin ICV GRE™	Medium	15% v/v	15 - 30°C
Ferment separately and blend post fermentation. This combination promotes mature fruit expression. Results in enhanced mouthfeel (high polysaccharide production), whilst masking vegetative characters.			
Lalvin BM45™	Medium - High	15% v/v	18 - 28°C
Lalvin BM4x4™	Medium - High	16% v/v	18 - 28°C
BM45™ has superior colour stability, minimises vegetative green characters whilst enhancing aroma complexity. A high polysaccharide producer hence enhances mouthfeel. BM45™ is a relatively slow starter and suited for long maceration programs. BM4x4™ has same attributes but more reliable.			
Enoferm CSM™	Medium	15% v/v	15 - 32°C
Diminishes vegetal aromas, particularly low maturity Cabernet Sauvignon, enhances red fruit aromas and mouthfeel.			
Lalvin ICV D21™	Low	16% v/v	16 - 30°C
Allows full expression of fruit whilst decreasing herbaceous characters in Cabernet sauvignon.			
IOC R9008™	Low	16% v/v	18 - 30°C
Decreases herbaceous characters & minimises bitterness and dryness; high glycerol producer.			

MALOLACTIC FERMENTATION

	pH	ALCOHOL TOLERANCE	TEMPERATURE LIMIT
Enoferm Alpha™	> 3.2	15.5% v/v	> 14°C
Offers security and mouthfeel over a wide range of difficult conditions. Enoferm Alpha™ has a very positive effect on wine complexity which tends to mask green and vegetative characters. Available in the MBR and 1-Step protocols.			