

INCREASING FRUIT AND COLOUR INTENSITY IN MERLOT GRAPES

research information



CAN YEAST STRAINS EFFECT FRUIT AND COLOUR INTENSITY IN MERLOT?

There is some conjecture globally about the impact of yeast strains to make high quality Merlot wines, with some believing it is all determined by the vineyards and the grape quality. Trials have been conducted at Vinopôle Bordeaux-Aquitaine (Chambre d'Agriculture de la Gironde) under the control of Mr. Jean-Christophe Crachereau to show if this is true or false. Maurivin AWRI 796 was compared against a popular reference yeast used extensively in the region in a traditional vinification of black Merlot grapes of Bordeaux appellation (Entre-deux-Mers) during the 2016 vintage.



EXPERIMENTAL CONDITIONS USED

Destemming and crushing of the grapes was done in duplicate, along with SO₂ addition at 5 g/hL. Yeast were then inoculated at 20 g/hL and a nitrogen supplement added to reach 220 mg/L N. Daily cap punching during alcoholic fermentation was conducted and bacteria were seeded at 1 g/hL to conduct malolactic fermentation. The resultant wines were stabilised and clarified. After five weeks the wines were racked and cold stabilised at 4°C for 23 days. Free SO₂ was then adjusted to 25 - 30 mg/L and the wines bottled.

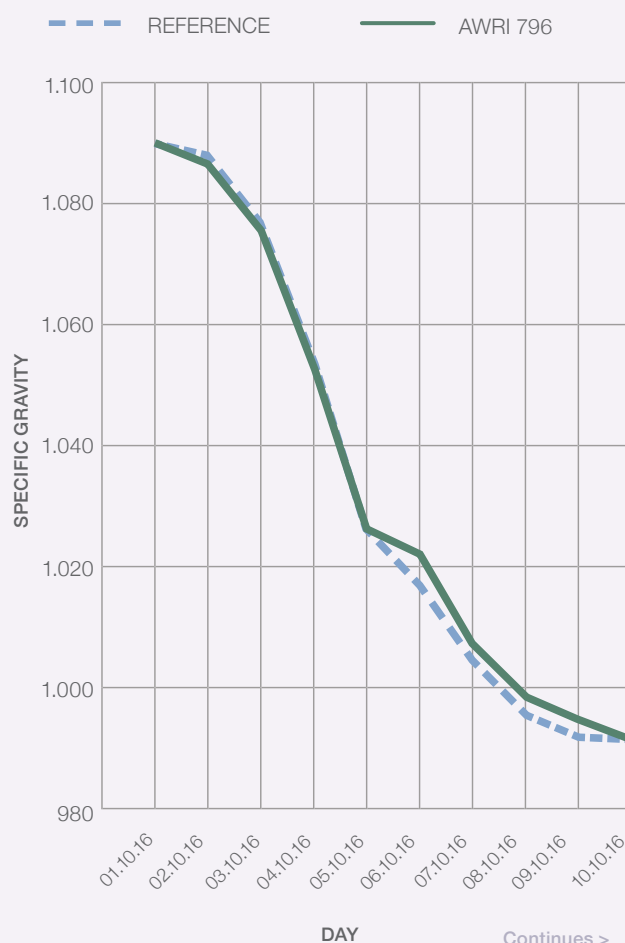


THERE IS LITTLE DIFFERENCE IN FERMENTATION KINETICS BETWEEN MAURIVIN AWRI 796 AND THE REFERENCE YEAST STRAIN

The fermentation kinetics was almost identical for the duplicates conducted with AWRI 796 and the reference (Figure 1), suggesting any wine differences were a direct result of the yeast strains and not related to time of fermentation. The implantation of the yeast strains was excellent throughout the test (data not shown).

FIGURE 1

Fermentation kinetics in black Merlot grapes using Maurivin AWRI 796 and the reference yeast strain.



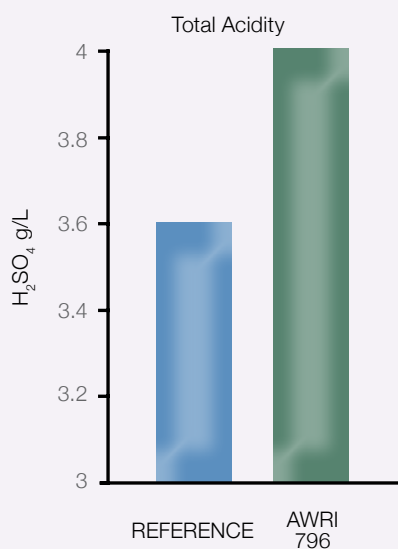


YEAST STRAIN CHOICE HAS AN IMPACT ON THE CHEMISTRY OF MERLOT WINE

The finished wines were assessed for basic chemistry with some notable differences between the yeast strains. Total acidity was higher for Maurivin AWRI 796 (Figure 2) and is most likely generated from higher succinic acid which this yeast is known to produce. This has positive flow-on effects for the wine and may become very important with global warming and the lower acidity being seen in many wine regions globally.

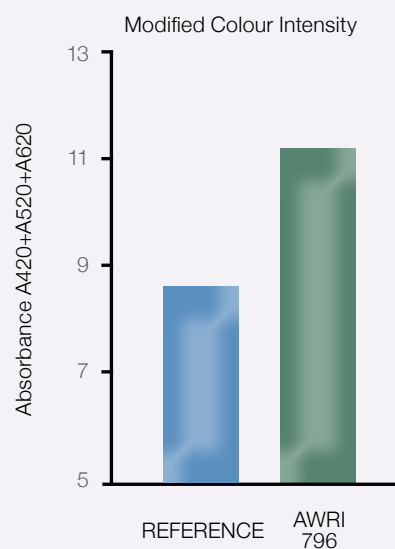
There was also a substantial and significant difference in the perception of colour between the yeast strains. Using the OIV Colour resolution methods, it was determined that Maurivin AWRI 796 had much higher colour intensity compared to the reference strain (Figure 3).

FIGURE 2



Total acidity differences between Maurivin AWRI 796 and the reference yeast strain in Merlot grapes of Bordeaux appellation. This was the most significant chemistry difference between the yeast strains (other data not shown).

FIGURE 3



Colour intensity of Maurivin AWRI 796 and the reference yeast as determined by the OIV Colour resolution method using absorbance of A420+A520+A620.



MAURIVIN AWRI 796 PRODUCES MORE FRUITY AND COLOUR INTENSE WINES

Two separate tasting sessions in Bordeaux brought together 17 winemakers in May 2017. TASTEL software allows the ranking of descriptors by judges to assess the overall quality of the product and to compare against other wines.

Figure 4 (see overleaf) shows the result of this analysis and clearly shows Maurivin AWRI 796 producing more fruity aromas and more intense colour in Merlot wine of Bordeaux appellation. It also suggests that herbaceous and bitterness flavours may be reduced.

Continues >

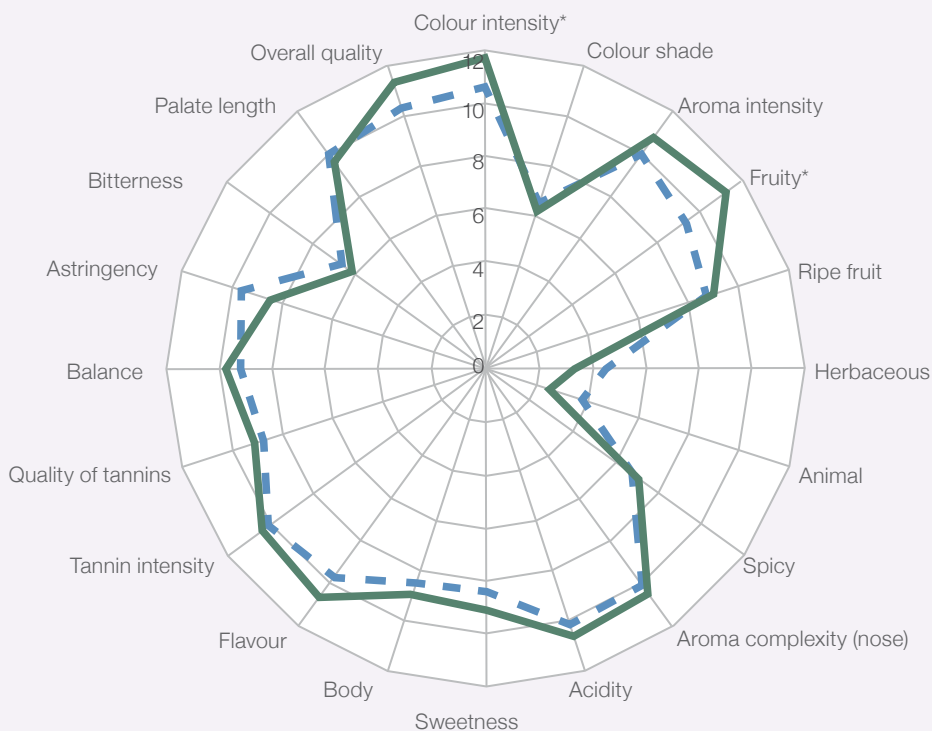
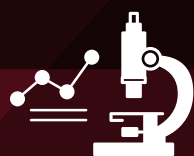


FIGURE 4

Aroma descriptor wheel showing the different aroma and flavour characteristics of black Merlot wines of Bordeaux appellation made with Maurivin AWRI 796 and the reference yeast.

--- REFERENCE
 — AWRI 796

*statistically different (Newman Keuls 5%)



CONCLUSIONS OF THIS RESEARCH:

The yeast Maurivin AWRI 796 had very similar fermentation kinetics and produced very little additional acidity compared to the reference yeast strain.

Regarding polyphenols, Maurivin AWRI 796 improved the colour stability of Merlot and was more intense after bottling. The strain modified the reactivity of the tannins resulting in the improvement of the balance and final taste which appeared less astringent with respect to the control strain.

Maurivin AWRI 796 produced a significantly more intense wine for the nose and mouth, with enhanced fruity notes and an attenuation of herbaceous and animal notes (which can be linked to slight reduction notes of the reference strain).