

MAXIFLORE
RANGE OF MALOLACTIC
FERMENTING BACTERIA

WHAT ABOUT DOING THE MALOLACTIC FERMENTATION FOR GOOD

REASONS



Maxiflore: what if there were other reasons to give malolactic fermentation a go ?

Denied for many years in the oenology field, the sensory impact specific to each lactic bacteria strain is today a reality worth taking notice of. The scientific and technical evidence continues to accumulate thanks to the work of a large number of research institutes.

Beyond simple biological deacidification, our MAXIFLORE fermenting agents are perfectly placed to meet your requirements in terms of improving wine styles.

Maxiflore Elite and Maxiflore Satine : two tools to differentiate your wine styles

MAXIFLORE ELITE	MAXIFLORE SATINE
AROMATIC COMPLEXITY AND STRUCTURE	PURITY OF FRUIT AND MASKING OF ASTRINGENCY
 <p>Production of 2-phenylethanol and terpenols (floral, spicy and balsamic aromas)</p>	 <p>Very weak and late production of diacetyl: fruity notes not masked by buttery/milky notes</p>
 <p>Production of diacetyl that may overshadow some plant notes and contribute to notes of dried fruit and toasted bread</p>	 <p>Production of fruity esters (in particular decanoic acid and ethyl laurate): black fruit and red fruit aromas</p>
 <p>Consummation of hexanol and reduces herbaceous notes</p>	 <p>Consummation of hexanol and reduces herbaceous notes</p>
 <p>Highlights oak and body of red wines</p>	 <p>Roundness and reduction in astringency</p>

A few options for choosing your Maxiflore strain

WINE TYPOLOGY	COMPLEX AND STRUCTURED WINES		INTENSE AND FRUITY WINES
	SPECIFIC STYLE	Spicy, floral and balsamic	Pure fruitiness and roundness
PREFERENTIAL OENOLOGICAL BACTERIA AND TIMING OF INOCULATION	 MAXIFLORE ELITE Inoculation 2/3 AF or post-AF	 MAXIFLORE SATINE Inoculation 2/3 AF or post AF	 MAXIFLORE SATINE Immediate co-inoculation

In what way can an oenological bacterium direct the style of a wine ?

THE BUTTERY NOTES : the most obvious contribution of oenological bacteria concerns the potential for production of diacetyl, high concentrations of which are responsible for buttery aromas (Rankine et al, 1969). Previously considered to be a necessary step of malolactic fermentation (MLF), and often masking to fruity notes, the production of diacetyl depends on the oenological bacteria at work and the timing of the inoculation. Several rare bacteria only produce it in weak concentrations (Bartowski et al - AWRI, 2010), and very late in the process, making it possible, through good post-MLF sulphiting, to avoid any presence of diacetyl.

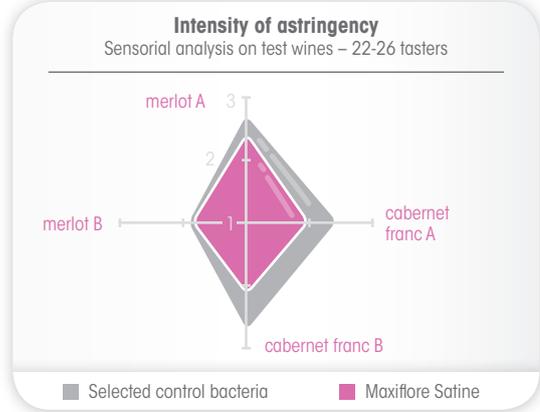
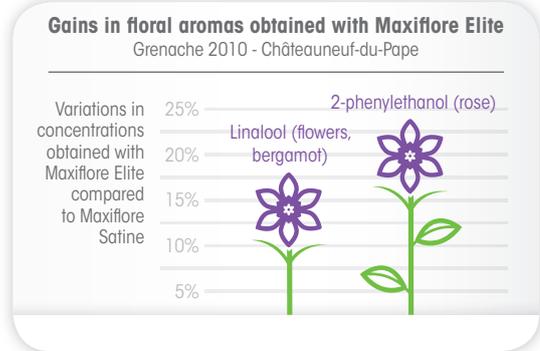
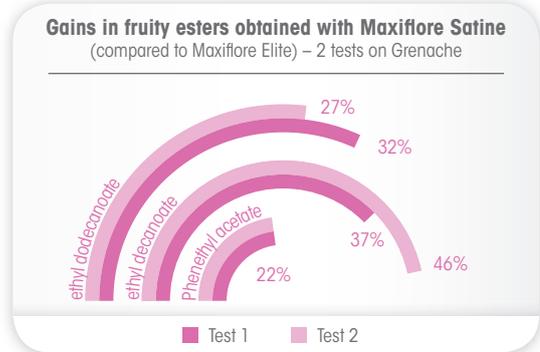
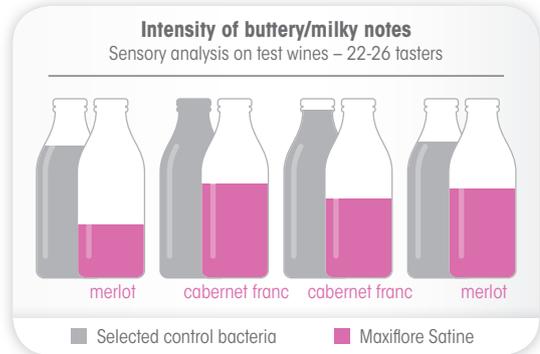
BLACK FRUIT AND RED FRUIT NOTES : depending on their esterase activities, some lactic bacteria can degrade compounds of fruity aromas, acetate esters and fatty acids, while others can release them in significant amounts (Bartowski et al, 2009; Knoll et al, 2011).

TERPENE AROMAS OF SPICES AND FLOWERS : several oenological bacteria possess specific glycosidic activities, making it possible to release aromas such as alpha-terpineol, linalool and their derived esters. In red wines, this is responsible for spicy, resinous and floral aromas.

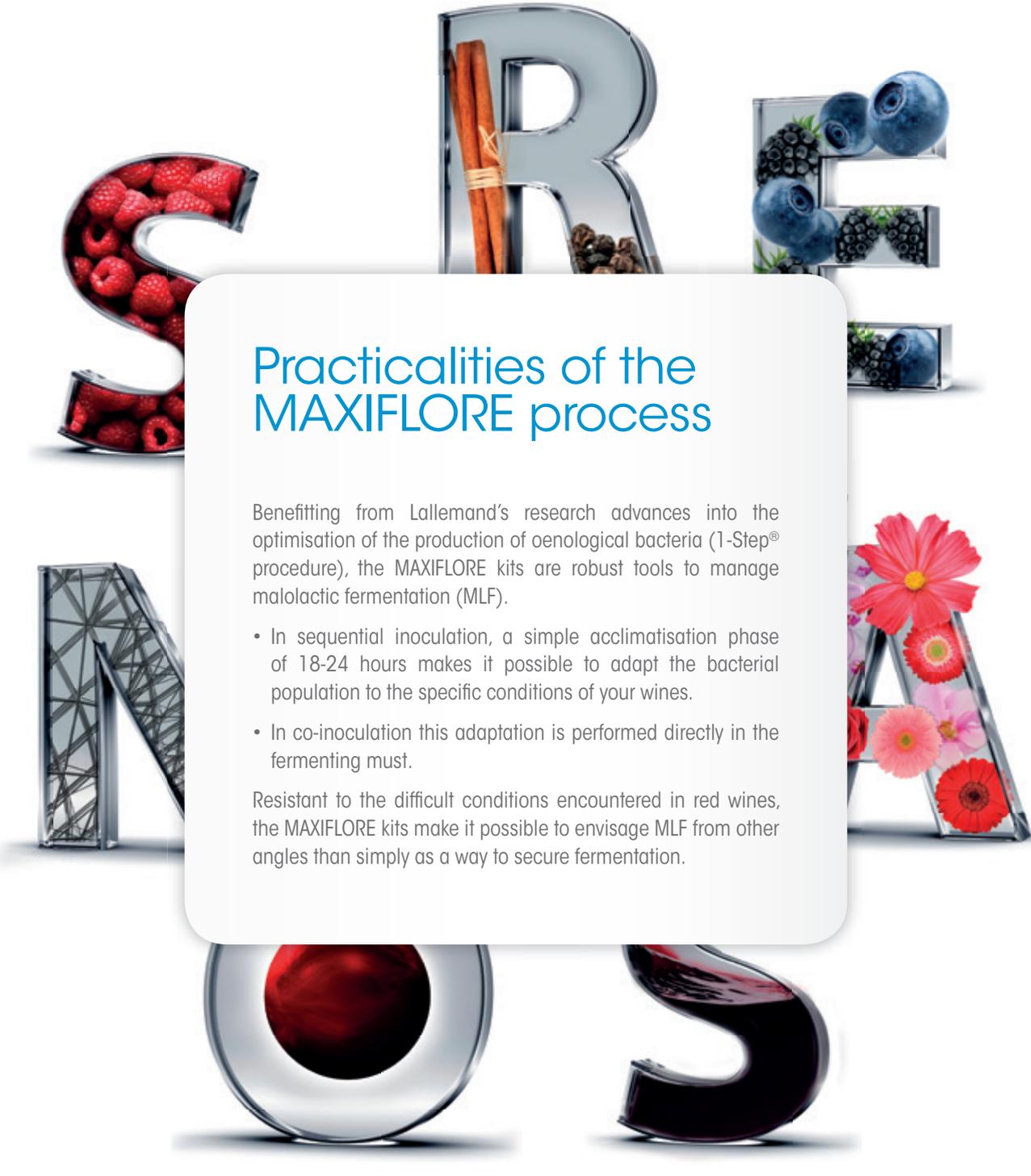
THE PLANT CHARACTER : Vestner et al (2012) demonstrated that several oenological bacteria could more powerfully degrade hexanol and hexanal, responsible for herbaceous aromas. According to our work, some could also be capable of transforming fatty acids (C6 and C8), which have plant odours, into their fruity esters.

THE WOODY NOTES : more recently (Bartowsky & Hayasaka, 2009), it has been proven that the enzyme activity of oenological bacteria interacts with the aromatic compounds that stem from oak. Depending on the strain used, strong modulations of the woody aromas are caused by these interactions during malolactic fermentations performed in barrels or in the presence of wood alternatives.

ASTRINGENCY AND VOLUME IN THE MOUTH : our work shows that Maxiflore Satine contributes to the roundness of wines and to a decrease in astringency. This effect could be due to the production of polysaccharides by this bacterium.



Far from being insignificant, these sensory impacts can today be harnessed thanks to the subtle characterisation of our oenological bacteria.



Practicalities of the MAXIFLORE process

Benefitting from Lallemand's research advances into the optimisation of the production of oenological bacteria (1-Step® procedure), the MAXIFLORE kits are robust tools to manage malolactic fermentation (MLF).

- In sequential inoculation, a simple acclimatisation phase of 18-24 hours makes it possible to adapt the bacterial population to the specific conditions of your wines.
- In co-inoculation this adaptation is performed directly in the fermenting must.

Resistant to the difficult conditions encountered in red wines, the MAXIFLORE kits make it possible to envisage MLF from other angles than simply as a way to secure fermentation.

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