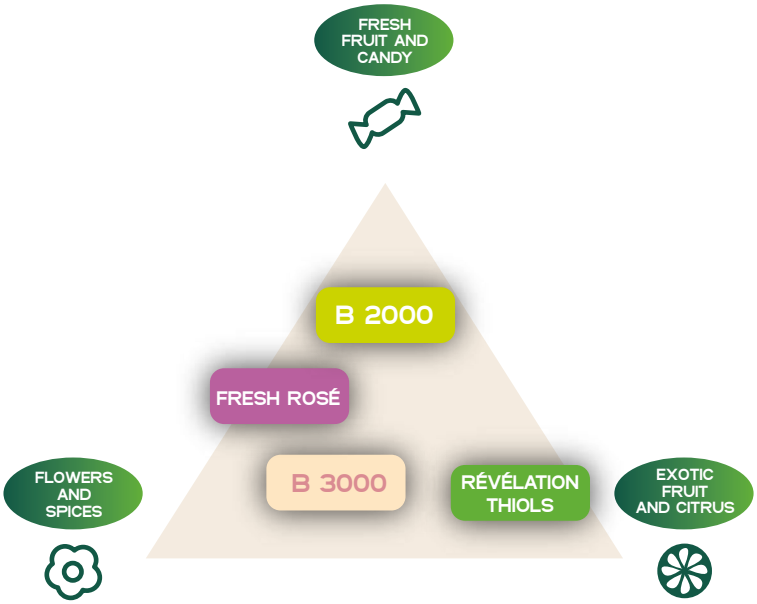
INSTITUT ŒNOLOGIQUE
DE CHAMPAGNE

Selected
œnological yeasts

ZI de Mardeuil - BP 25 - 51201 EPERNAY Cedex
Tél : +33 (0)3 26 51 96 00 - Fax : +33 (0)3 26 51 02 20
email : ioc@institut-oenologique.com
www.institut-oenologique.com

Yeasts for white and rosé wines

The IOC white and rosé wine range : yeasts for revealing the different aromatic fractions in grape varieties, on a case by case basis.

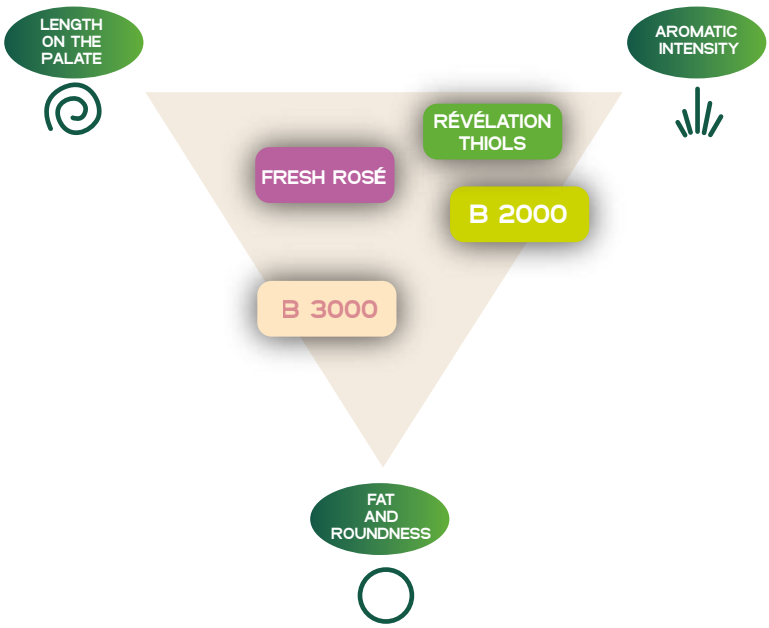


IOC Fresh Rosé
Floral and varietal expression

IOC Révélation Thiols
Full expression of fruity thiols

IOC B 2000
Freshness and aromatic intensity

IOC B 3000
Yellow fruit, flowers and volume on the palate

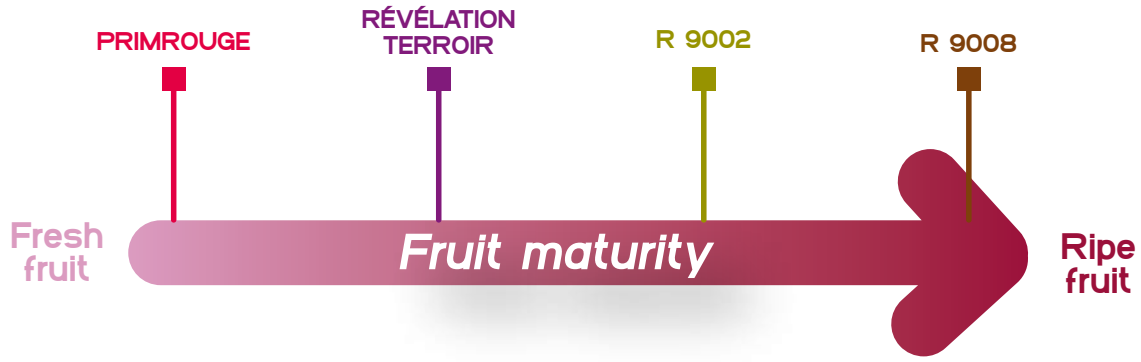


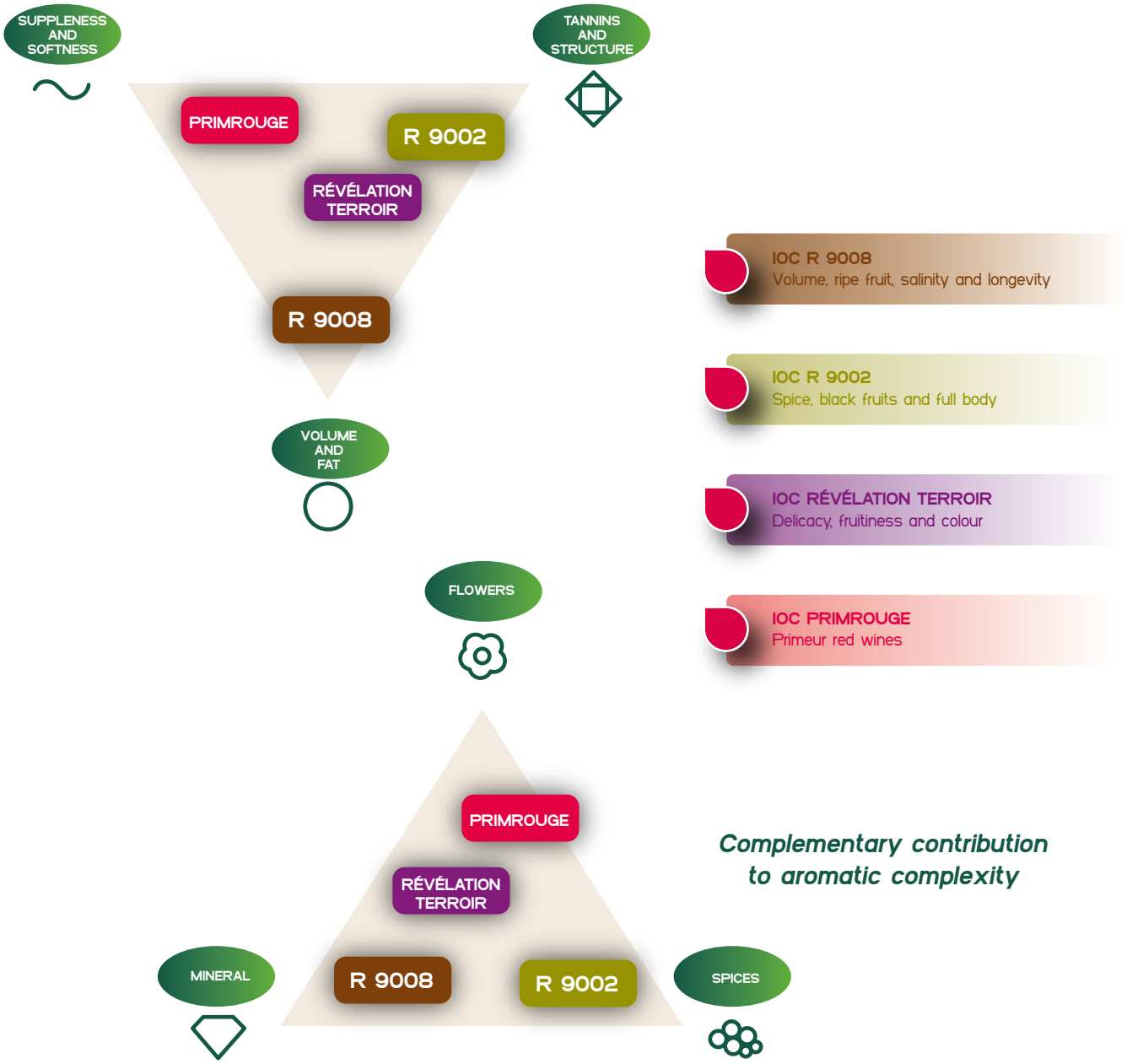
IOC I8-2007
Candour, cleanness
Fructophily and foam formation

IOC Expression
Aroma and aptitude for fortification in fortified wines and late harvests

Yeasts for red wines

The IOC red wine range : yeasts for expressing the fruity aromas of your grapes, in all their diversity.





Complementary contribution to aromatic complexity

Oenological properties

The behaviour of each yeast, both in sensory terms and kinetics, is highly dependent on its environment (available nitrogen, sugar concentration, must contamination...). In order to optimize its enzymatic activity, it is important to respond to the specific needs of each yeast strain. Additionally, it is essential to integrate alcoholic fermentation into a more general management system of vinification. Notably, strong interactions exist between yeasts and lactic acid bacteria. Following a research programme, we have been able to determine the most favourable yeast/bacteria pairs for triggering malolactic fermentation (MLF).

	Killer character	Tolerance to alcohol	Nitrogen requirements	Production of volatile acidity	Production of glycerol	Production of SO_2	MLF (malolactic fermentation) : recommendation co-inoculation	MLF (malolactic fermentation) : recommendation sequential inoculation
IOC 18-2007	Killer	15%	low	low to medium	nd	very low		
IOC B 3000	Sensitive	14%	moderate	low to medium	moderate	very low	INOFLORE	
IOC B 2000	Killer	14%	low	low	moderate	faible à moyenne		
IOC RÉV. THIOLS	Killer	15%	moderate	low to medium	moderate	moyenne		INOBACTER (pH>2,9) MAXIFLORE ELITE (pH>3,15) MAXIFLORE SATINE (pH>3,3)
IOC FRESH ROSÉ	Killer	16%	moderate	low	moderate	faible		
IOC EXPRESSION	Sensitive	14%	élevés	low	high	very low		
IOC PRIMROUGE	Sensitive	14%	élevés	low	high	very low	INOFLORE	MAXIFLORE SATINE
IOC R 9002	Killer	15%	élevés	low	nd	very low		MAXIFLORE ELITE MAXIFLORE SATINE
IOC RÉV. TERROIR	Killer	15%	élevés	low to medium	moderate	very low	MAXIFLORE SATINE EXTRAFLORE (TAP<14,5%)	EXTRAFLORE MAXIFLORE SATINE
IOC R 9008	Sensitive	16%	low	medium	high	very low	INOFLORE (TAP<13,5%) MAXIFLORE SATINE (TAP>13,5%)	MAXIFLORE SATINE EXTRAFLORE (TAP<14,5%)

- **Killer factor** : *certain yeasts are capable of producing a toxin that can kill the yeasts that do not produce it. They are known as having the Killer K2 factor. These yeasts have a slight advantage in terms of implantation in the must, especially if the latter already contains a large wild population.*
- **Nitrogen requirements** : *the nitrogen requirements of a moderately demanding yeast are 150 mg/L of assimilable nitrogen. These requirements can vary according to the level of potential alcohol and the yeast strain. Please refer to our nomogram for optimising AF conditions for further information.*
- **Production of volatile acidity** : *certain strains have a tendency to produce less volatile acidity than average. The production of acetic acid as an absolute value remains however strongly linked to the must to be fermented.*
- **Production of glycerol** : *thought to promote sensations of fat and roundness, glycerol is produced in varying quantities by certain yeast strains. However this release remains dependant on other factors, including temperature or potential alcohol to be fermented.*
- **Production of SO_2** : *indigenous yeasts are generally likely to produce high quantities of SO_2. Certain selected yeasts produce significantly less. This production is strongly influenced by fermentation conditions (quantity of initial SO_2, temperature, type of yeast nutrition, etc.).*

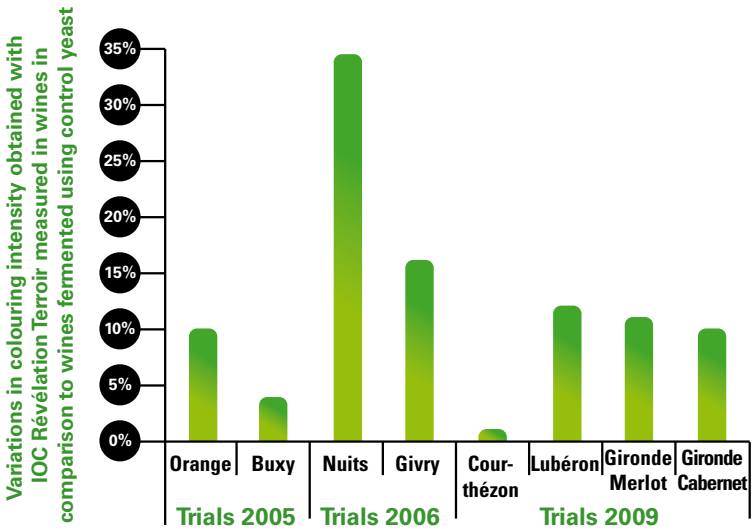
The sensory impact of yeasts

Can yeasts have an impact on wine colour ?

Yes ! While direct action on the extraction phenomena of pigments has not been proved, yeasts do however interact in a number of ways with colouring matter:
- By adsorption: certain yeasts have a tendency to fix pigments, which slightly discolours the wine,
- By increasing the pH: at a low pH, anthocyanins are more often found in their coloured form,
- By polysaccharide production: these complex molecules can link to pigments and stabilise them over time,
- By SO_2 and/or ethanal production : SO_2 discolours while moderate quantities of ethanal contribute towards stabilising pigments.

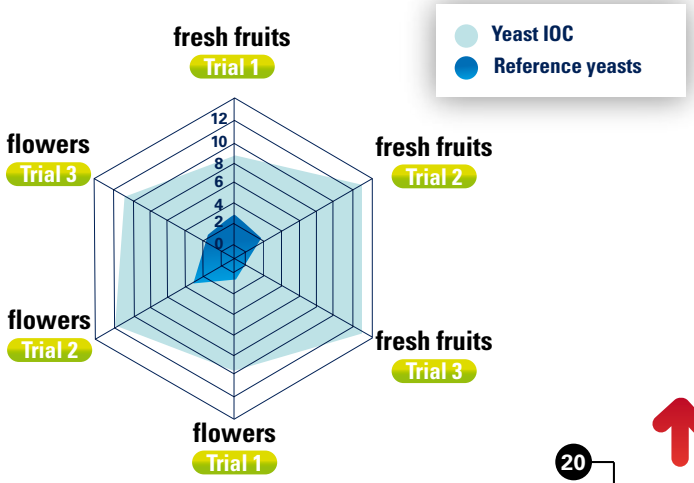
IOC RÉVÉLATION TERROIR : a yeast for colour stabilisation

A gain in colouring intensity in comparison to control yeasts (in %)



Can yeasts have an influence on aroma in wine (even red wines) ?

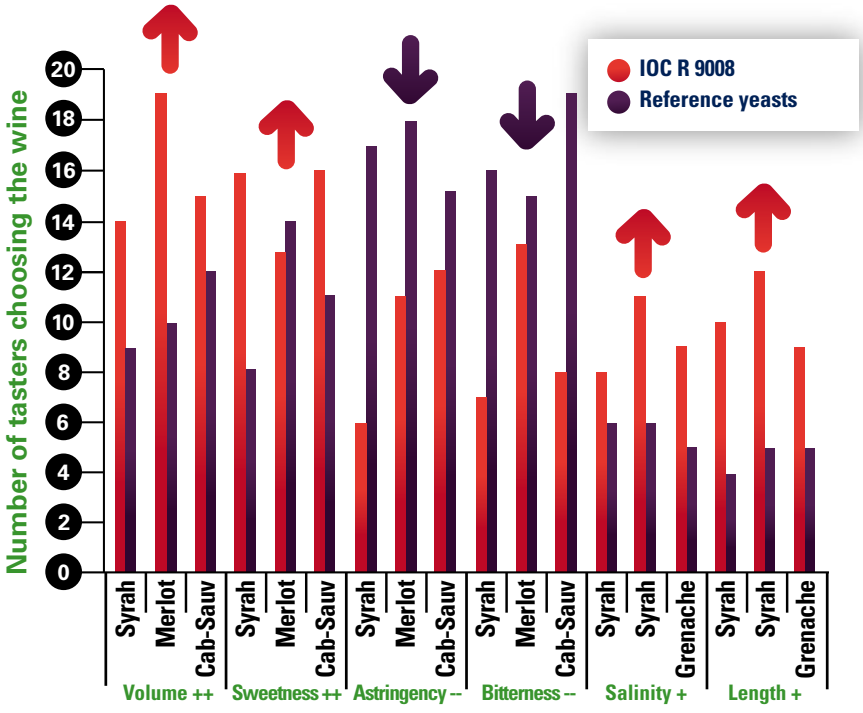
A yeast that reveals fresh fruit and flower aromas in premium red wines.



Yes! The influence of yeasts on the production of fruity, 'fermentation' aromas is well known, but for several years now their significant impact on varietal aromas has also been proved.

Our yeasts have been selected to offer great diversity to winemakers who wish to develop the aromatic potential of their grapes. Yeasts have a say in wine aroma, white, red or rosé, on an equal footing with grape variety and process: certain essential aromas can only be revealed thanks to certain yeast strains.

IOC R 9008 : a yeast that enhances volume on the palate, length and salinity of wines



Can yeasts have an influence on wine texture?

Absolutely! It is probably one of the most important impacts of yeast, and is essential in red vinification.
Certain strains are naturally endowed with the ability to precociously release polysaccharides that have a strong affinity with tannins. These yeasts will coat these sometimes dry tannins, consequently significantly reducing astringency and bitterness. Other yeast polysaccharides contribute towards the sensation of fat, and it is also known that yeast is implicated in the release of compounds (especially peptides) that influence wine sweetness and salinity. These are impacts that can also interact with the perception of aromas on the palate (intensity and persistence).

FAQ

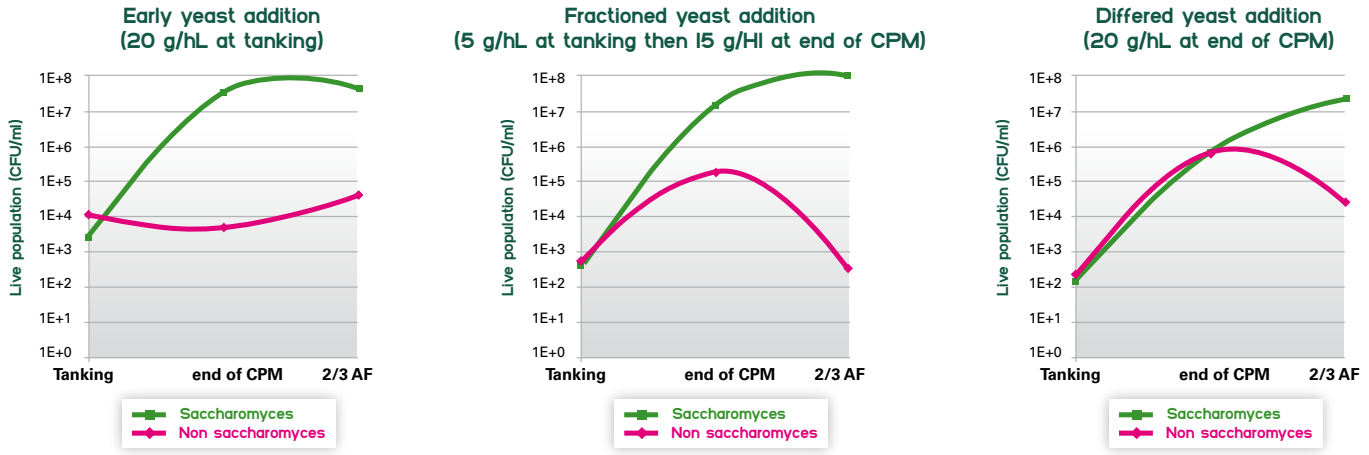
"Why use active dry yeast (ADY) when fermentations always start up without inoculation…?"
It is true that all grape must will eventually begin alcoholic fermentation (AF) under the action of indigenous yeasts. This practice does however present a certain number of risks. The first being stuck fermentation, as indigenous yeast that begin AF and eventually become established are not necessarily capable of resisting high alcoholic degrees at the end of AF. Moreover, sensory results can differ dramatically: acescence, sulphurous odours, SO_2 production and in the best case scenario, weak revelation of the grape's aromatic potential.

"Doesn't the use of selected strains lead to my wines becoming standardised in taste?"
Quite the opposite. Each ADY strain is selected by the IOC for its particular activity that reveals the grape's intrinsic qualities. This means that the qualities it can confer to a wine depend essentially on the grapes own qualities. For a given yeast strain, the results will thus be different from one must to another as they are linked to this potential.

"Why use 'a specialty strain' in AF when a generic and consequently less expensive strain gives good results?"
A generic oenological strain has not been selected according to its specific activities. In practice, it will principally carry out the transformation of sugar into alcohol. Of course it will also participate in revealing aromas and texture, but without showing optimum efficiency in this domain. It can thus give good results, but not necessarily the best.

"I would like to use one yeast strain for both my reds and whites, why shouldn't I?"
The desired flavours and aromas differ greatly from one wine colour to another, but also according to grape varieties, origins, markets etc. It is with this in mind that it is important to use the appropriate yeast on a case by case basis, to reveal the full unique potential of each type of matter.

"When should the yeast be added to the must? Can I wait before inoculating in prefermentative maceration?"
Certain musts can be highly contaminated by wild yeasts and this initial population can grow rapidly, jeopardising correct implantation of ADYs and also the wine's quality. For this reason, it is essential to add the yeast as early as possible, from the first tanking for reds, filled in instalments, and post must settling for whites and rosés. This is also relevant in cold prefermentative maceration (CPM) where risks remain high. Trials on fractioned yeast addition have given good results (5g/hL at tanking then 15 g/hL at the end of CPM) in cases where it is difficult to maintain low temperatures.



"As a rule, what should be the temperature of the must during inoculation for optimal implantation?"
Inoculation can be carried out with no risks as soon as the temperature of the must is superior to 8°C. It is recommended to use Bioprotect, but it is especially important to acclimatise the yeasts to the tank temperature by progressively adding must into the rehydration yeast starter.

"What is the correct yeast dosage?"
Adequate yeast dosage depends on must conditions. It is important to understand that the smaller the addition of yeasts at the start, the more they will have to multiply, which will lead to a dilution of the sterols in each daughter yeast cell, thus to a reduction in their tolerance to alcohol. We recommend a minimal dosage of 20 g/hL that can be increased to 25-30 g/hL in the case of advanced maturity and/or microbial alteration of the grapes. A study has also demonstrated that in ¼ of cases, a 10 g/hL addition of yeasts to juice did not result in implantation. It is also important to implement good rehydration and nutrition practices.

"Is it worthwhile inoculating the same must with different yeasts?"
This can be so especially in order to take advantage of specific complementary activities. However, to render the result more reliable and to avoid inducing unwelcome competition between the yeasts, it is advisable to carry out a complete study of the dynamics of the different populations present. A number of associations are indeed conflicting and can lead to stuck AF.