

LAMOTHE-ABIET

Solutions for winemaking

// INNOVATIONS
Discover our innovations

// TRENDS
Authorised solutions for
organic and vegan wines

// PERFORMANCES
Protocols and decision-making tools



// FOCUS ON FRESHNESS

// Edito

“ This year, the focus is on freshness and balance in your wines!

Global warming has significant consequences on wines' equilibrium. Rising temperatures, alcohol content and pH levels make it challenging to produce fresh and balanced wines.

However, these are the wine profiles consumers are nowadays seeking! Drawing on its vast expertise, Lamothe-Abiet has developed **new targeted solutions** to meet winemakers needs, for **fresher, softer** and **easier to drink** wines.

Innovation is part of Lamothe-Abiet's DNA. It is the result of our **involvement** in local markets, the **constant cooperation** with our customers and the **expertise** of our R&D department.

In this catalogue, you will find all of our enological solutions, as well as technical tools and protocols, always guided by respect for the wine.



Guillaume Martineau
General Manager



A message from Ambre, our Environmental Manager

Our actions for the environment in 2022:

4 TONS

of products
recycled into
bio-waste
(methanization)

2,5 TONS

of recycled
plastics

6 TONS

of recycled
cardboard

260

planted trees in
France
(less than 250km away
from Lamothe-Abiet)

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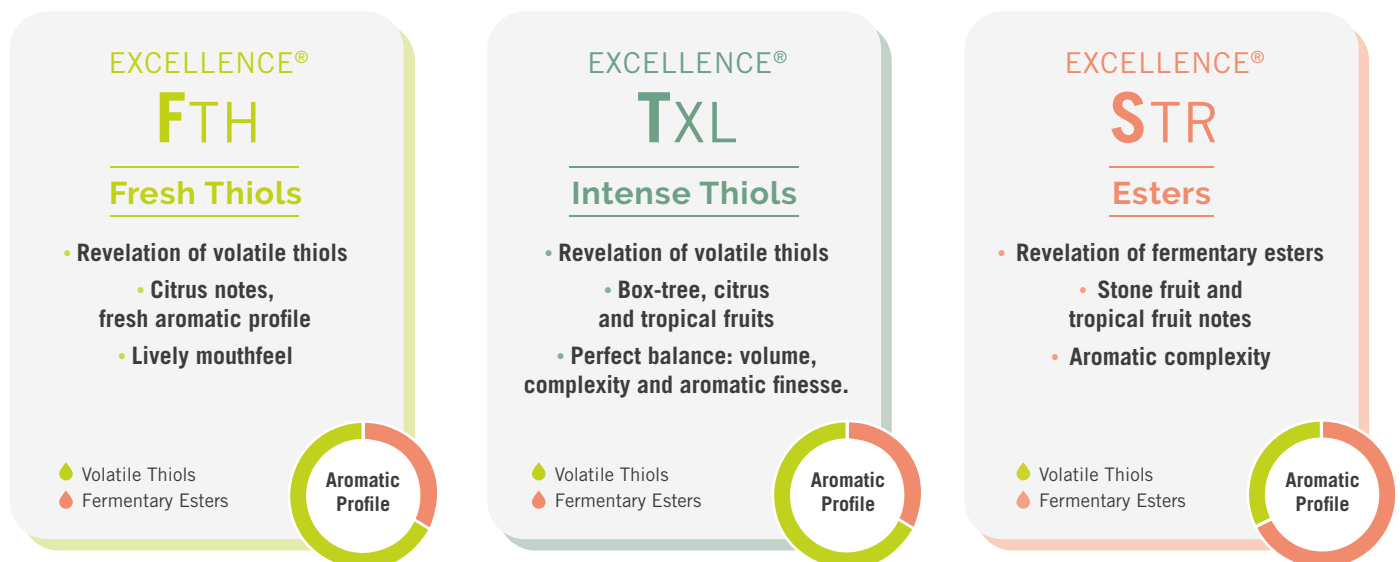
YEASTS

The high standards of the Excellence® yeast range are now widely recognised

Our yeasts are very rigorously selected and developed at the Institut des Sciences de la Vigne et du Vin (ISVV) of Bordeaux by our R&D teams which have proven themselves, over time, to be the most talented in the field.



Excellence® FTH, TXL and STR are benchmark strains for the production of aromatic white and rosé wines. These yeasts' specific capacities and their resilience to fermentation result in clean wines with intense aromatic profiles.



Aromatic index (AI)
[thiols] [fermentary esters] / perception threshold
Sauvignon Blanc, 2016 • Pessac Léognan, Bordeaux • ABV: 13 % vol. • pH = 3,3





Excellence® XR, DS, SP and FR are specifically suited to the production of red wines. These yeasts can be used for various winemaking objectives, in order to obtain precise profiles whilst respecting varietal typicity and ensuring excellent fermentation dynamics.

EXCELLENCE®

XR

Grand rouge

- Powerful wines with structure and volume
- Ideal for carrying out MLF in co-inoculation
 - High polysaccharide production: stabilisation of colour and volume increase
- Adapted to high potential alcohols, low production of volatile acidity

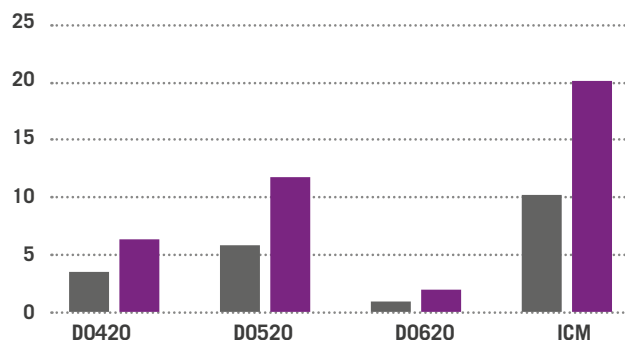
- ◆ Structure, volume
- ◆ Fresh red fruits
- ◆ Ripe fruits, spices

Aromatic Profile

Static color stabilisation - post MLF analysis

Harvest 2019 • Cabernet Sauvignon • Adelaide Hills, Australia

◆ Control ◆ Excellence® XR



EXCELLENCE®

DS

Prestige

- Fleshy profile, fresh fruit aromas
 - Traditional vinification / thermovinification
- Adapted to high ABV, low volatile acidity production

- ◆ Structure, volume
- ◆ Fresh red fruits
- ◆ Ripe fruits, spices

Aromatic Profile

EXCELLENCE®

SP

Spicy

- Structured profile, spice aromas
- Very good fermentation dynamics
- Ideal for fast rotation wines or for medium-length bottle ageing

- ◆ Structure, volume
- ◆ Fresh red fruits
- ◆ Ripe fruits, spices

Aromatic Profile

EXCELLENCE®

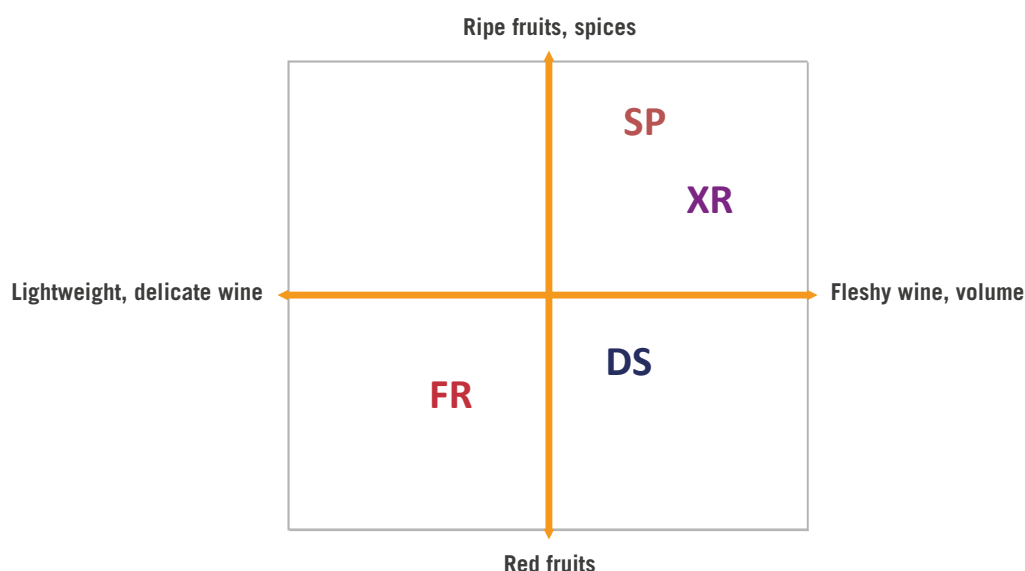
FR

Red fruits

- Easy-drinking profile, red fruit aromas
- Fresh and balanced wines
- Recommended for fermenting thermo-macerated grapes

- ◆ Structure, volume
- ◆ Fresh red fruits
- ◆ Ripe fruits, spices

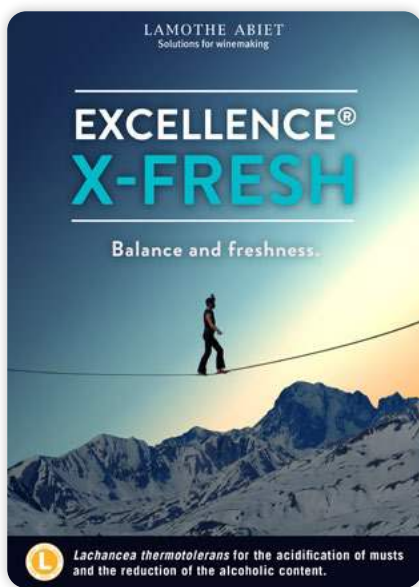
Aromatic Profile





Non-*saccharomyces* yeasts had been forgotten for a long time due to their weak fermentation abilities, but are now an **innovative** new solution. In fact, they have very interesting and diverse enological uses. From **bioprotection** to **natural acidification** of must, as well as **improving aromatic profiles**, these yeasts can be used to improve wines and add a modern touch to winemaking processes.

The **Excellence® X-FRESH** (*Lachancea thermotolerans*) and **Excellence® B-Nature®** (*Metschnikowia pulcherrima*) strains can be used just as well on white and rosé wines as on red wines. The unique characteristics of these yeasts can add real value to the produced wines.



EXCELLENCE® X-FRESH Balance and freshness

Strain of *Lachancea thermotolerans* (non-*saccharomyces* yeast).

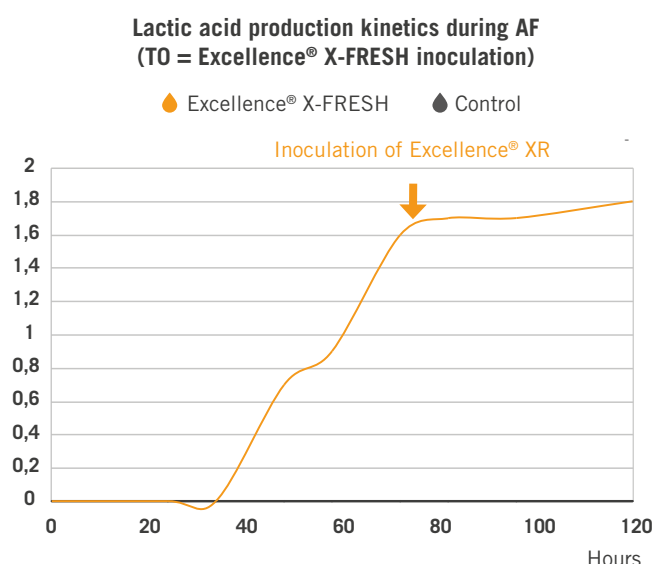
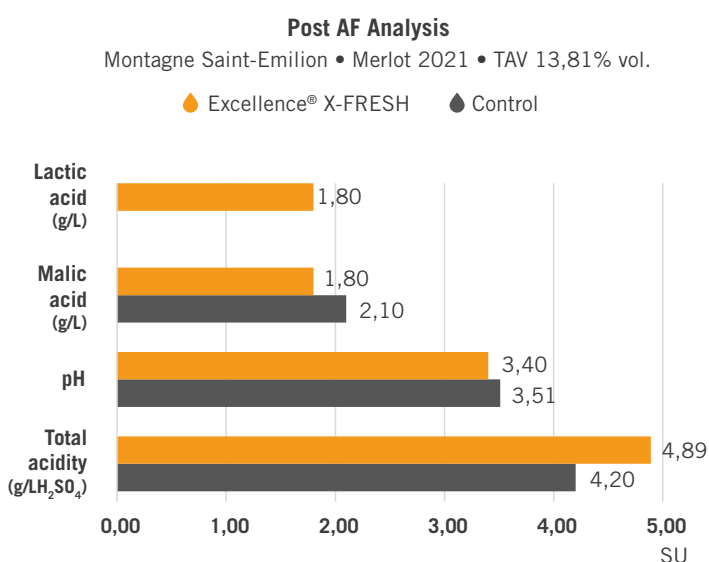
This yeast has a unique metabolism which enables it to transform fermentable sugars into **lactic acid** during the fermentation.

BENEFITS

This lactic acid production is directly linked to the following variations:

- ◆ Increased total acidity
- ◆ Lower pH
- ◆ Small decrease in alcohol content

Used in association with *Saccharomyces cerevisiae*, it restores **balance** and **freshness** to wines.



Excellence® X-FRESH was inoculated as the tank was filled and produced 1.80 g/L of lactic acid during the following 72 hours. Inoculation of **Excellence® XR** after 72h stopped lactic acid production and allowed for a complete AF.



EXCELLENCE® B-NATURE Bioprotection

Lamothe-Abiet, after extensive research, has selected Excellence® B-Nature, a strain of *Metschnikowia pulcherrima*

BENEFITS

- ◆ Control of the microbiological flora from the harvest
- ◆ Decrease of the dosage of SO₂ on the grapes
- ◆ Reduction of the compounds that combine SO₂
- ◆ Increased aromatic complexity of the wine
- ◆ Rapid consumption of dissolved oxygen in the must

Technical content /
Protocol /
SO₂ Control /

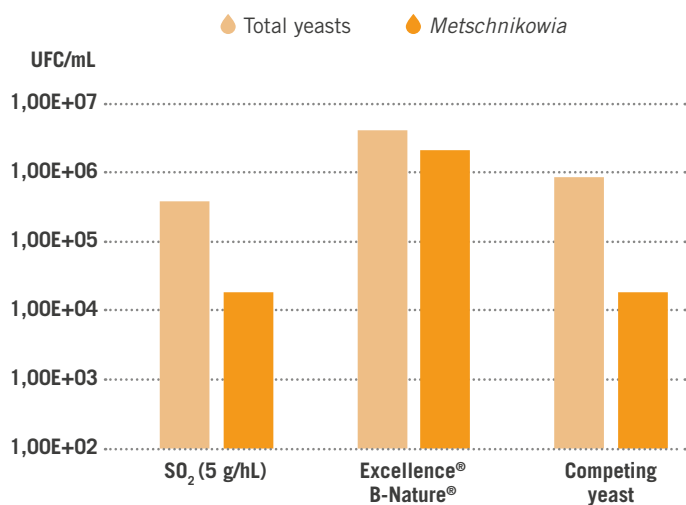


TO KNOW

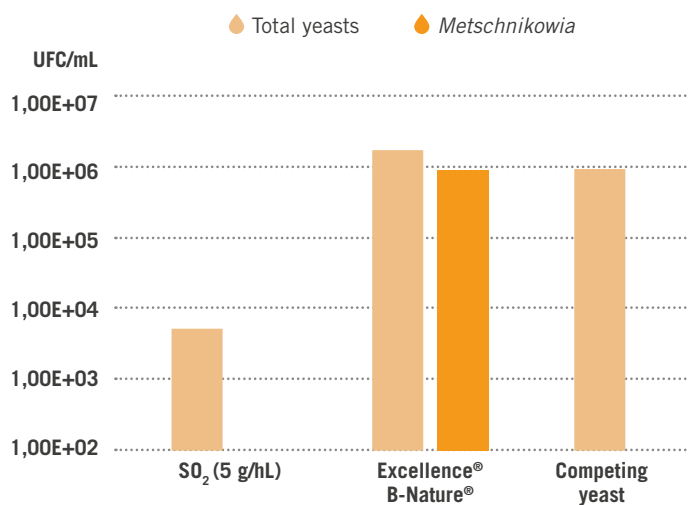
Bioprotection involves operating an early control of the natural flora that is present on the grapes. After harvesting and before yeast addition, this environment is extremely sensitive and represents a very risky period for the development of microbial alterations (non-*Saccharomyces* yeasts such as *Brettanomyces*, as well as bacteria, which are often the source of deviations).

As opposed to adding sulphur, which destroys these microorganisms, biological control involves inoculating a slower fermenting yeast, which occupies the niche and thus naturally prevents the growth of undesirable microorganisms.

Microbial population on D+1 after treatment
Bordeaux • Cabernet Sauvignon • 2019



Microbial population on D+4 after treatment
Bordeaux • Cabernet Sauvignon • 2019



The use of SO₂ makes the yeast population decrease drastically and leaves a microbiological gap. This poses a risk for the development of spoilage microorganisms in the environment.

In the modality B-Nature®, the total yeast population is essentially made up of *Metschnikowia*, indicating a very good implantation of our yeast, and therefore effective bioprotection. The competing yeast was not implanted in the juice as it was not detected on D+4.

A new strain in the Excellence® range!



EXCELLENCE® ROSÉ

A strain of *Saccharomyces cerevisiae* yeast selected by the Breeding technique for the production of rosé wines with a clean, intense aromatic profile.

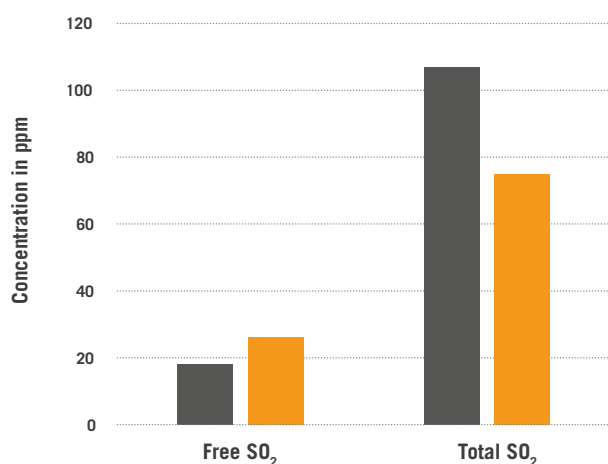
Benefiting from our R&D teams' latest knowledge of microbiology, **Excellence® Rosé** is characterized by its **high SO₂ consumption** and **low production of combining compounds** (acetaldehydes). This specific character trait intensifies the revelation of a **rich and intense aromatic palette**.

Wines have an aromatic profile marked by notes of **fresh fruit** and **flowers**, enhanced by an **intense freshness** on the palate. The **aromatic purity** achieved thanks to the absence of masking compounds gives wines their radiance and allows the winemaker to **reduce sulphite doses** while maximizing its effectiveness.

Excellence® Rosé is now the **reference** for the production of rosé wines with low levels of SO₂ and sulphur compounds.

Repartition of Total and Free SO₂

● Control ● Excellence® Rosé



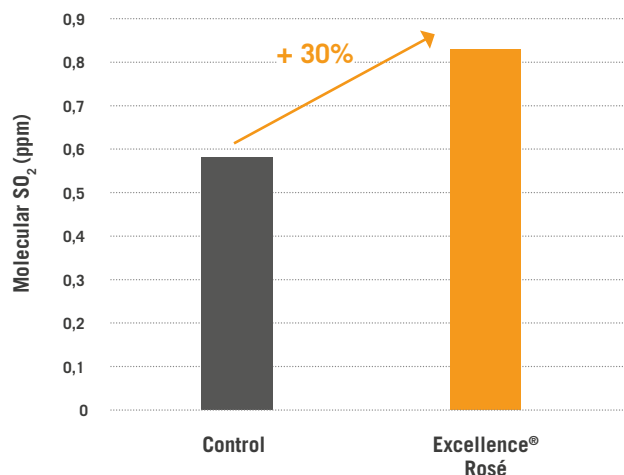
Excellence® Rosé Trial:

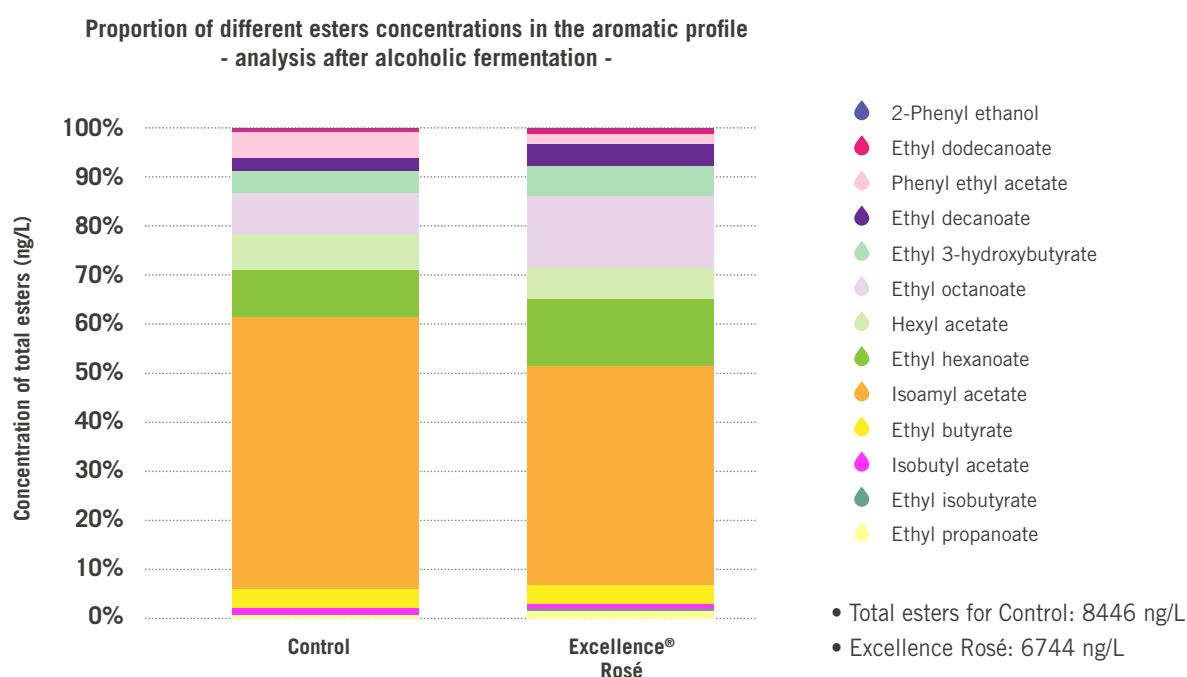
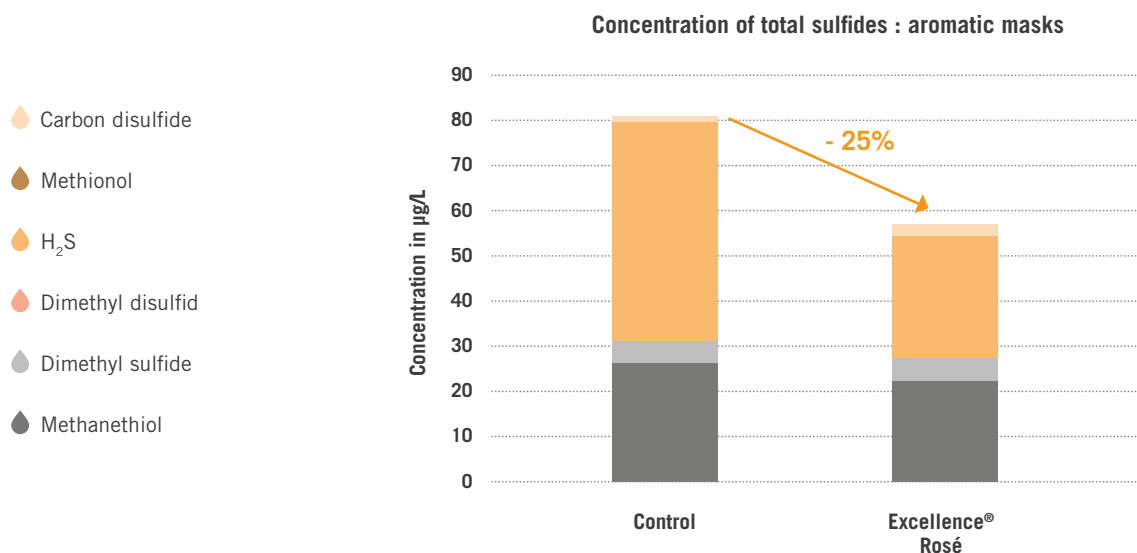
- Excellence Rosé vs. Control yeast*
- Rosé 2023 from Tasmania
- pH = 3,45

* Specific yeast for rosé wine production, suitable for very aromatic and clean profiles.

“With the strong decrease of sulphides in **Excellence® Rosé** trial, the wine looks much more **complex** and the **aromatic intensity** is greatly **increased** !

Focus on microbial stability (molecular SO₂)





" At Milton Vineyard in Tasmania we are constantly seeking to improve our wines, so the opportunity to try out a new yeast for our Rosé in 2023 was a great opportunity.

The aromatic profile of our rosé is of great importance, as it defines our style. For the control we used Excellence® STR, and this was fermented on Pinot noir juice in parallel with Excellence® Rosé. Fermentation kinetics were similar for both strains as were most of the chemical data on the final wines with the notable exception of TSO₂, which was significantly lower for Excellence® Rosé, and which certainly contributed to the stronger aromatic intensity and cleanliness of that wine.

We also found a very different aromatic profile with Excellence® Rosé, which displayed pronounced strawberry and floral characters, while Excellence® STR delivered a more tropical ester and thiol profile. Excellence® Rosé provided something unique for our rosé and will certainly be one of our go-to yeasts in future. "



**Jacqui ANDERSON, Winemaker and General Manager SA / TAS
Milton Vineyard, EAST COAST TASMANIA, AUSTRALIA**



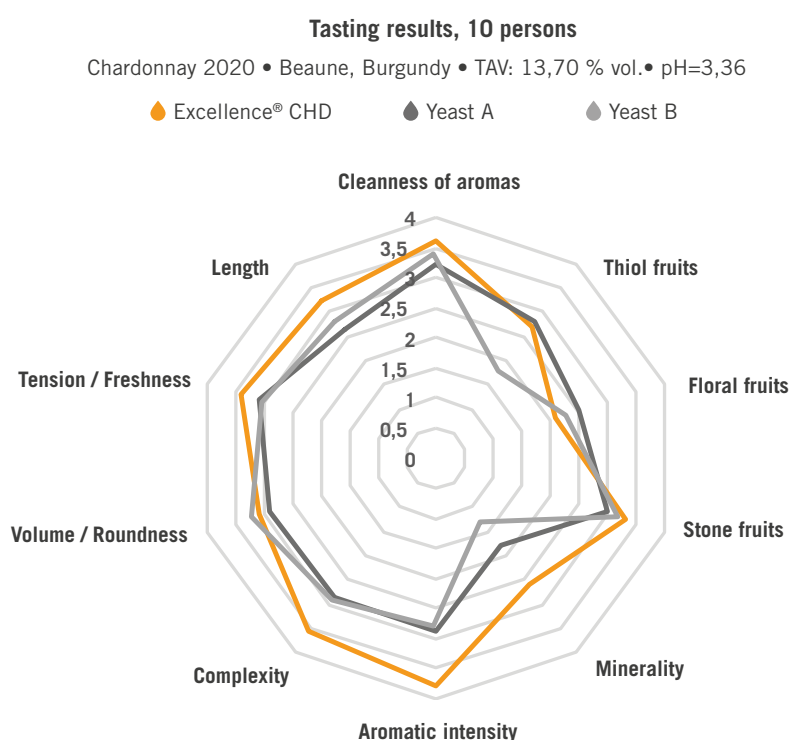
A new strain in the Excellence® range!

EXCELLENCE® CHD

Strain of *Saccharomyces cerevisiae* selected in Burgundy in partnership with the IFV (Institut Français de la Vigne et du Vin).

Specifically adapted to the demands of Chardonnay winemaking, this strain helps to obtain wines which fully express the **varietal typicity** of this iconic grape.

Excellence® CHD helps to express an intense aromatic complexity, combining aromas of fresh fruits and stone fruits. The wines it produces have an interesting tension and notably increased volume, ensuring a balanced palate.



"Constantly seeking diversity and complexity in the aromas of our Mâcon Chardonnays, the Cave de Lugny offered to be a trial site for Excellence® CHD in 2020.

*There were no problems with fermentation, implantation nor kinetics. Tasting revealed a lovely **aromatic complexity**, with fruity notes of peach and apricots, whilst maintaining freshness on the palate and a floral note.*

I therefore decided to use it again in 2021 to confirm its use. Despite the difficulties of the vintage, after fermentation I could observe an increased sucrosity on the palate and lovely aromas before the malolactic fermentation start."



**Grégoire PISSOT, enologist and cellar master,
Cave de Lugny MÂCONNAIS, FRANCE**



	STRAIN	THIOLS	ESTERS	VARIETAL	ROUNDNESS	SWEET	NITROGEN NEEDS	ALCOHOL TOLERANCE	VARIETALS	
EXCELLENCE® YEAST	NEW CHD Burgundy Selection	●	●●	●●●	●●●		Medium	15 % vol.	chardonnay	-
	NEW ROSÉ	●	●●●		●		Medium	14,5 % vol.	sémillon, viognier	grenache, shiraz, cinsault, mourvèdre, merlot, cabernet franc, cabernet sauvignon
	FTH Fresh thiols	●●●	●	●●		●	Medium	15 % vol.	sauvignon, riesling, gewurztraminer, vermentino	merlot, grenache, cinsault, cabernet franc, cabernet sauvignon, shiraz
	TXL Intense thiols	●●	●●	●●●	●●●	●●●	Medium	15 % vol.	chardonnay, sauvignon, gewurztraminer, grenache blanc, chenin blanc, riesling, vermentino, viognier, pinot gris	mourvèdre, grenache, cinsault, cabernet franc, cabernet sauvignon
	STR Esters	●	●●●		●		Medium	15 % vol.	chenin, chardonnay, muscadet, viognier, muscadelle	grenache, cinsault, cabernet franc, shiraz, merlot
	FW Floral	●●	●●				High	14,5 % vol.	chardonnay, sauvignon, chenin, muscat	-
	E2F® Sparkling	Production of wines with great aromatic finesse thanks to its resistance to alcohol and its fructophilic characteristics. Recommended for the second fermentation.					Low	17 % vol.	chardonnay, chenin blanc, muscat, mauzac, ugni blanc, pinot gris	pinot noir, pinot meunier
L.A. YEAST	NEW Spumante	Highlights the aromatic floral (Terpens) and fruity (Esters) notes of the wine. Recommended for sparkling wines made from second fermentation in pressure tanks (Charmat method).					High	14,5 % vol.	ugni blanc, mauzac, muscat, airen, viura, palomino, parellada, prosecco, glera	-



	STRAIN	FRUITY ELEGANT	FRUITY INTENSE	STRUCTURED	RESTARTING AF	NITROGEN NEEDS	ALCOHOL TOLERANCE	VARIETALS
EXCELLENCE® YEAST	XR Grand rouge	●●	●	●●●		Medium	> 16 % vol.	cabernet sauvignon, merlot, grenache, shiraz, pinot noir, malbec
	DS Prestige	●●	●●●	●●		High	16 % vol.	merlot, cabernet sauvignon, cabernet franc, shiraz, grenache, malbec
L.A. YEAST	L13	●●	●●	●●		Medium	16 % vol.	all



	STRAIN	ACTION	VARIETALS
EXCELLENCE SPECIFIC YEASTS	NEW X-FRESH	Non- <i>Saccharomyces</i> yeast for natural acidification of musts and reduction of alcohol content	all
	NEW B-Nature®	Non- <i>Saccharomyces</i> strain for musts and grapes bioprotection.	all
	FINISHER	A high fructophilic <i>Sacharomyces cerevisiae</i> specifically selected for AF restart.	all



BACTERIA

True pioneer in the technique of co-inoculation 15 years ago, Lamothe-Abiet has developed a deep and unique expertise in this process. The strains that we offer are adapted to the current demands for the control of the MLF.

ÆNO 1®

A strain of *Ænoccoccus œni* selected for its resilience to harsh conditions.

BENEFITS

- ◆ High quality production
- ◆ Control of the MLF and prevention of faults
- ◆ Speedy implantation
- ◆ No production of biogenic amines



"It is clear that Excellence® XR and Æno 1® make a perfect couple, even under difficult conditions. We recommend an early co-inoculation, which is very effective in cold regions which require a certain technical precision. In this way, we can obtain cleaner and more aromatic wines."

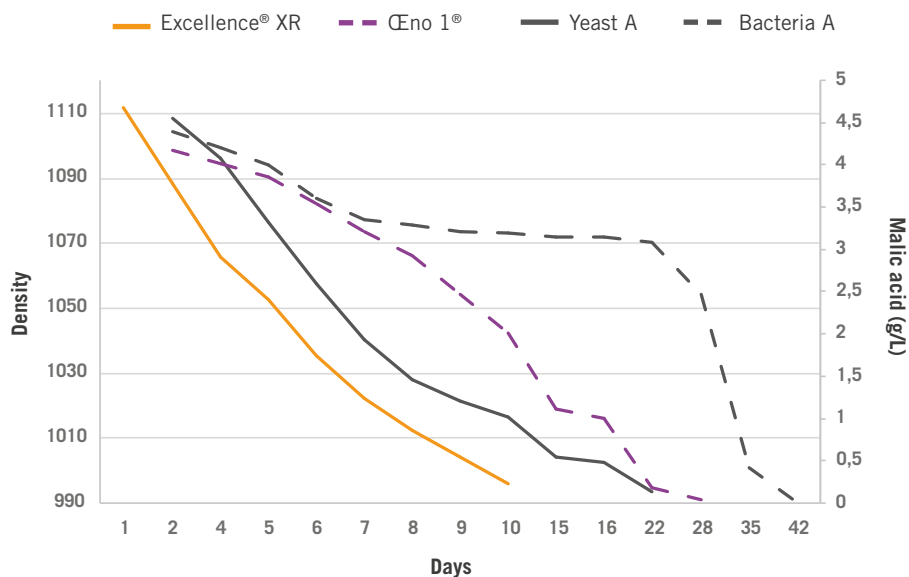
The yeasts and bacteria work hand in hand, it is therefore essential to choose complementary strains. This approach improves the wine's quality, the effectiveness of the production and makes the winemaker's life easier - everyone is a winner !"



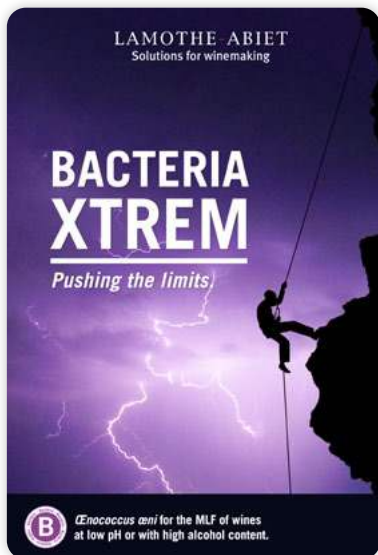
**Paul BOWYER PhD, Ænologist and Regional Manager,
BHF Technologies, SOUTH AUSTRALIA**

Monitoring of co-inoculations with Excellence® XR / Æno 1® and Yeast A / Bacteria A

Coonwara, Australia • Cabernet Sauvignon 2020 • TAVP 15,5% Vol.



For the coinoculated pair **Excellence® XR / Æno 1®**, the AF and the MLF took place together. For the second yeast/bacteria pair, inoculated with bacteria at the press tray, the MLF only really started after the AF had completely finished and some wild bacteria had been active during AF.



BACTERIA XTREM Pushing the limits

A strain of *Cenococcus œni* for MLF in difficult conditions.

Malolactic fermentation is a key stage in winemaking, **improving the organoleptic profile** by adding **softness** and **roundness** on the palate. It is a real solution to bring balance to wines that have high acidity.

Bacteria XTREM ensures and safeguards the beginning of the MLF, **thus avoiding the development of indigenous strains** which could lead to **organoleptic spoilages**.

BENEFITS

Bacteria XTREM can be added directly to the wine:

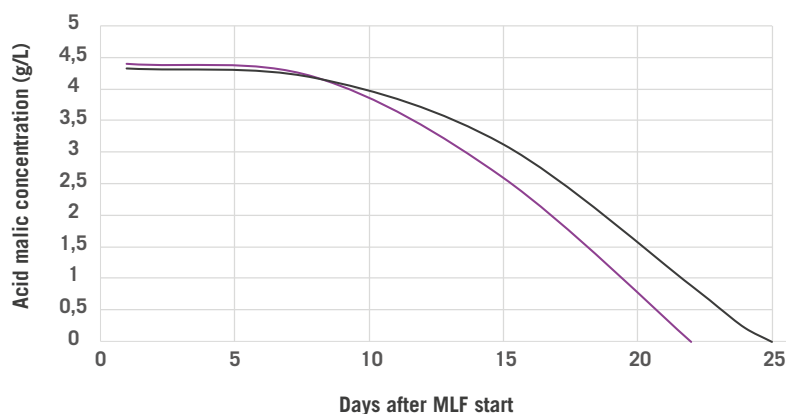
- ◆ Functions at very low pH (up to pH 3)
- ◆ Resists high alcohol contents (up to 16% abv.)
- ◆ Fast acid malic breakdown kinetics

Acid malic breakdown kinetics by the bacteria (g/L)

Spain, Albarino 2020 • TAV 12,88% vol.
pH 3,15 • Total acidity 5,87 g/L

● Control ◆ Bacteria XTREM

Bacteria XTREM, used in direct inoculation, helps to quickly complete the MLF. It shows itself to be as effective as the control bacteria which benefited from a rehydration and acclimatisation protocol.



LAMO THE ABIET BACTERIA LIST

L.A SOLUTIONS

BACTERIA	EARLY CO-INOCULATION	LATE CO-INOCULATION	SEQUENTIAL INOCULATION	CURATIVE INOCULATION	PROTOCOL
œno 1®	◆◆◆	◆◆◆	◆◆	◆◆	For co-inoculation, add directly without rehydration. In order to improve the distribution, rehydrate 15 minutes.
Bacteria XTREM		◆	◆◆◆	◆◆◆	Add directly without rehydration. Add directly without rehydration. In difficult conditions (pH < 3,2 or ABV > 15%), add 30 g/hL of OptiML.
INOCULATION TIMING	24 - 48 hours after the start of AF	1010 density	AF completed or running off	Contact us	
TECHNICAL OBJECTIVES	Save time, avoid alterations	Save time, ensure the traditional process AF	MLF after AF - MLF in barrel	Sluggish MLF - restarting MLF	

Optimal conditions for malolactic activity

BACTERIA	pH*	SO ₂ TOTAL*	TEMPERATURE*	ALCOHOL TOLERANCE* (% vol.)
œno 1®	≥ 3,3	< 50 mg/L	18- 24 °C	< 15
œno 2		< 60 mg/L		
Bacteria XTREM	≥ 3	< 50 mg/L		< 16

*these factors are co-dependent

Yeast nutrition and protection are key factors for a successful fermentation. Of course, this gives safe fermentation kinetics but also helps to optimise the production of aromas and to avoid organoleptic faults.

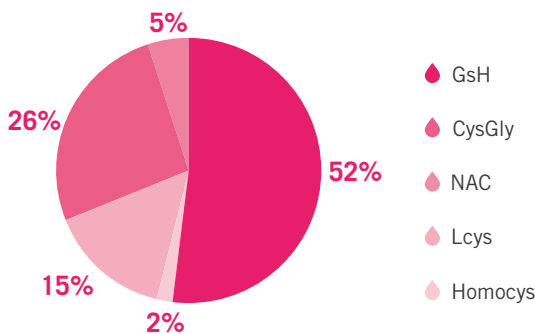
AROMA PROTECT®

Preparation of inactivated yeasts naturally rich in glutathione and its precursors.

BENEFITS

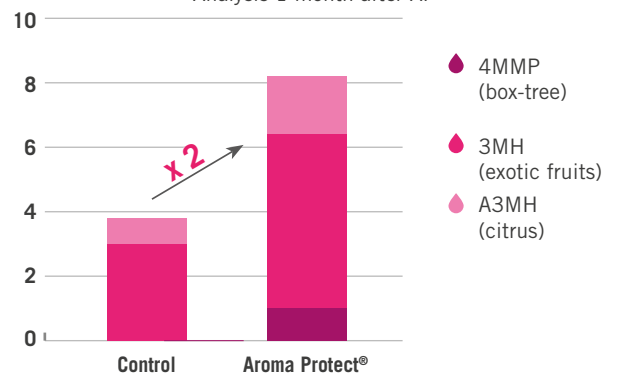
- ◆ Specific formulation for optimal protection of the aromas and freshness on white and rosé wines
- ◆ Instantly counters oxidative mechanisms thanks to its high glutathione (GSH) levels. This sulphur tripeptide is naturally formed by yeast and possesses a very strong reductive capacity

Aroma Protect®
Proportion of different reductive compounds in the formulation (%)



With over 50% glutathione, Aroma Protect® is the product of choice to preserve the aromatic potential during ageing.

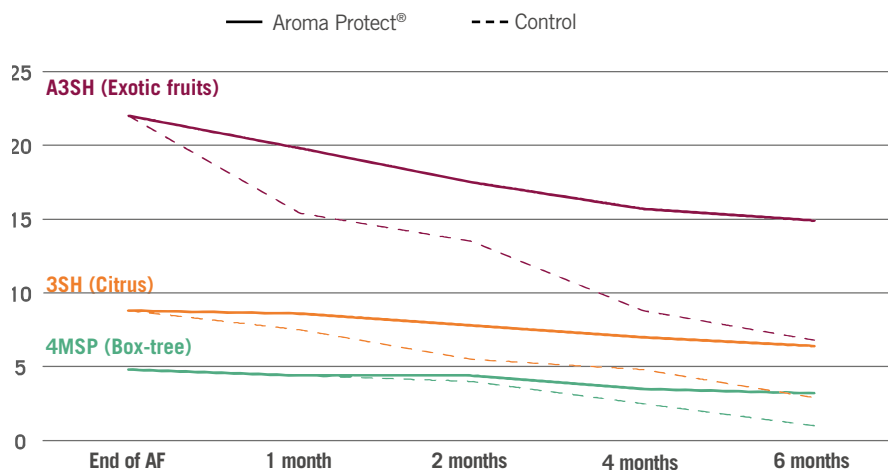
Aromatic Index (AI)
[volatile thiols] / perception threshold
Grenache rosé trial • South-East France • 2018
Analysis 1 month after AF



1 month after the end of the AF, the aromatic intensity is twice higher for the modality treated with Aroma Protect®.

The role of Aroma Protect® on thiols during aging

Sauvignon blanc • added at 30 g/hL at the end of AF (d ≈ 1.010)



Thanks to its expertise in the process of aromatic expression by yeast, Lamothe-Abiet has developed **specific solutions** to increase the **revelation of thiols and esters** during alcoholic fermentation. These products improve the aromatic profile of wines and extend their intensity.

OPTIESTERS®

Inactivated yeast naturally rich in amino acids and ergosterols, specific precursors of esters.

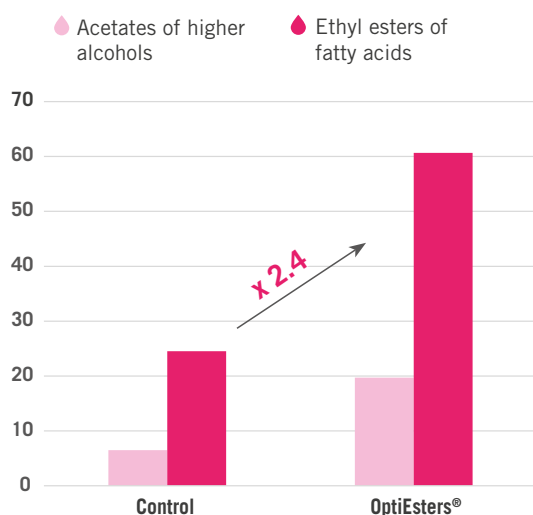
BENEFITS

- ◆ An essential tool for maximising the ester potential of white, rosé and red wines
- ◆ Revealing fruity and floral aromas, especially on wines lacking varietal aromatic precursors
- ◆ Crucial role in both the quality and quantity of these aromatic esters

Advice: Use a strain that has a high yield in esters: Excellence® STR or LA Arom.

Ester formation is closely linked to the nitrogen and lipid metabolism of the yeast and can therefore be improved by adding yeast derivatives.

Aromatic index (AI)
[fermentary esters] / perception threshold
Cognac trial • 2016



OPTITHIOLS®

Inactivated yeasts naturally rich in reducing compounds.

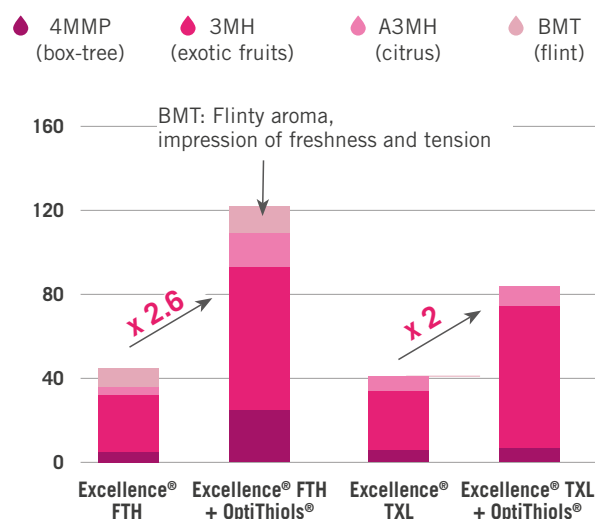
BENEFITS

- ◆ Essential tool to optimise the thiol potential of white and rosé wines
- ◆ Double effect: antioxidant and significant aromatic increase of thiols (4MSP, 3SH, A3SH), from 30% to 120%
- ◆ Regularity and repeatability of the results on many different harvests (variety, terroir)

Advice: Favour the use of Excellence® FTH and Excellence® TXL strains for an even greater revelation of volatile thiols!

Appropriate fining of the musts before addition will ensure better efficiency.

Aromatic index (AI)
[volatile thiols] / perception threshold
Cortese trial • Italy • 2019





OPTIFLORE® O

Complex nutrient based on yeast autolysates, rich in organic nitrogen (amino acids, peptides), vitamins and minerals.

BENEFITS

- ◆ Ensures qualitative yeast nutrition
- ◆ Avoids the risks associated with mineral-only nutritio
- ◆ Based on yeast derivatives, it brings more complexity and a better efficiency on the fermentation kinetics

TO KNOW

Recent studies have shown that the organic nitrogen provided by a yeast derivative such as OptiFlore® O is 2,5 to 4 times more efficient than an equivalent addition of mineral nitrogen (DAP for instance).

MINERAL NITROGEN NUTRITION

- Used preferentially by the yeast
- Fast consumption
- Fast increase in yeast population

In case of excess:

- Induced deficiency
- H₂S production
- Sluggish and/or stuck AF
- Excessive heat production
- Stimulatory effect on nitrogen catabolic repression (NCR)

ORGANIC NITROGEN NUTRITION

- Progressive use
- Repression of H₂S production
- Nutrition for yeasts and malolactic bacteria
- Does not cause nitrogen catabolic repression
- Increases the aromatic complexity



" The Côtes de Gascogne IGP is characterised by a great diversity of varieties and pedoclimatic conditions.

Optiflore® O quickly took its place for us as a useful and polyvalent tool. When faced with nitrogen deficiencies, high alcohol and low pHs, Optiflore® O optimises the activity of yeasts in the Excellence range. Optiflore® O safeguards conventional and organic vinifications, and has allowed us to resolve several issues surrounding the aromatic expression of our dry and sweet white wines, and the structure of our red and rosé wines."



**Benoit GISSON, Consultant winemaker,
CÉNOPOLE DE GASCOGNE, GERS, FRANCE**



AROMATIC PROTECTION & BOOSTER		AROMATIC REVELATION	VARIETAL PROFILE	COMPLEX AND FRUITY PROFILE	AROMATIC PROTECTION	COLOUR FIXATION	ROUNDNESS	DOSAGE (g/hL)
Aroma Protect®	P	•			•••			10-40
OptiEsters®	P	•••	•	•••			•	30 At the end of the first third of AF
OptiThiols®	P RA	•••	•••	•	•		•	30 At the beginning of AF
Natur'Soft®	P			•		•••	•••	20-100

COMPLEX NUTRIENTS		THIAMINE	AMMONICAL NITROGEN	ORGANIC NITROGEN	VITAMINS / MINERALS	DETOXIFICATION	STEROLS / UNSATURATED FATTY ACIDS	YAN INCREASE mg/L per 20 g/hL added	DOSAGE (g/hL)
OptiFlore® O	N/P			•••	••	•••	•	10 mg/L of YAN under organic form	20 - 40 Before end of AF
OptiFerm®	N/P	••	DAP •••	••	••	•		30	20 - 40
OptiML® (bacteria)	N/P			•	•••	••	•	0	20 - 40

YEAST PROTECTION		CELLULOSE POWDER	DETOXIFICATION	VITAMINS / MINERALS	STEROLS / UNSATURATED FATTY ACIDS	ORGANIC NITROGEN	DOSAGE (g/hL)
Enostim®	N/P		••	•••	•••		30
Actibiol	N/P	••	•	••	•	•	30 - 60
Flor'Protect®	N/P		•••				20 - 40 max. legal dosage in UE: 40

N: nutrition

P: protection

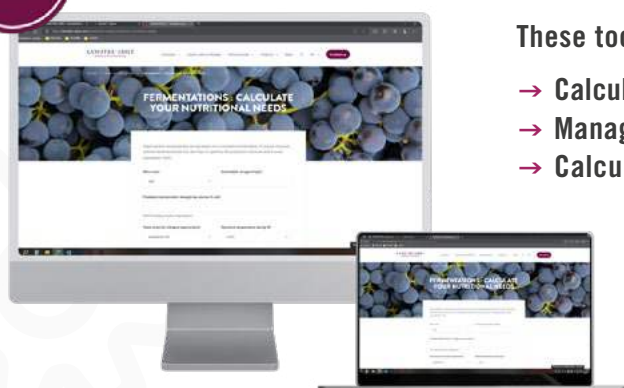
S: support element

RA: aromatic revelation



Discover our new decision making tools !

Available on our website at Technical tools / Decision-making tools.



These tools will help you to:

- Calculate your nutritional needs during fermentations
- Manage malolactic fermentations
- Calculate the active SO₂

TRY THEM NOW!
at www.lamothe-abiet.com



ENZYMES

Our expertise in oenology and biotechnologies enables us to offer you the most complete and trusted enzymatic preparations on the market. Lamothe-Abiet offers you the guarantee of enzymes that are certified by the latest FSSC 22000 quality standards.

ŒNOZYM® CRUSH

Highly concentrated enzymatic preparation specifically formulated for grape maceration.

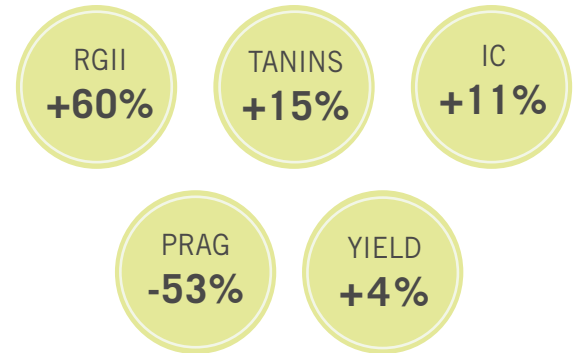
RGII: rhamnogalacturonane | IC: Color Intensity
PRAG: polysaccharides rich in arabinose and galactose

ON RED GRAPES:

- ◆ Improve extraction of skin compounds:
 - Phenolics compounds
→ increase color intensity and stability
 - Plant polysaccharides
→ decrease astringency perception
- ◆ Optimize yield of free-run and press wines (6-10%)

ON WHITE GRAPES:

- ◆ Improve wine filterability
- ◆ Increase yield of free-run juice: 3-10%
 - Use lower pressure and shorter press cycle
→ less phenolic compounds extracted, less vegetal aromas, shorter pressing time



BENEFITS

ŒNOZYM® CLAR

Liquid enzymatic formulation to accelerate the clarification of musts before alcoholic fermentation.

- ◆ Increase juice yield by compacting lees
- ◆ Accelerate settling time: fast depectinization and flocculation
- ◆ Formulation active at low (<5°C) and high (<68°C) temperature
- ◆ Suitable for clarification by static settling and flotation
- ◆ Suitable for thermo-vinification
- ◆ Improve wine filterability

BENEFITS

ŒNOFLOW MAX

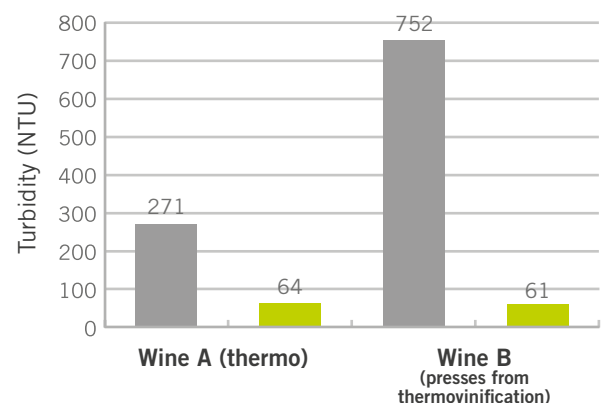
Mixed formulation of pectolytic enzymes from *Aspergillus niger* and β -glucanase from *Trichoderma harzanium* to improve the filterability of wines and musts.

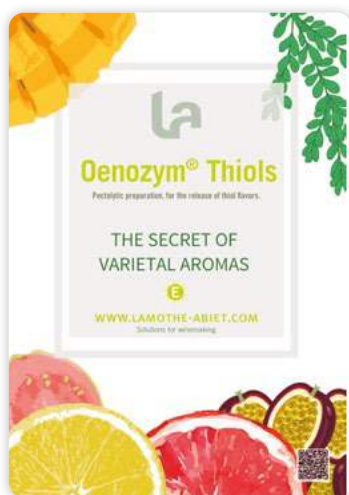
The characteristics of the grape variety and the harvest have a major influence on the level of filterability of the wines.

The 2022 harvest reminded us of this, with wines that are concentrated, rich in polysaccharides and sometimes difficult to filter. These filtration issues are often due to incomplete hydrolysis of the pectic matrix. As traditional pectinases are not sufficient, other enzymatic activities are needed to extend the spectrum of action.

Œnoflow® Max, with its formulation rich in specific enzymatic activities (pectinase, AG-II-hydrolase, cellulase, hemicellulase and β -glucanase) acts on the most branched areas of the pectin and optimises its hydrolysis. Wines are thus freed from suspended polysaccharides (pectins and glucans), which significantly improves filterability and filtration yields.

Trial 1 - Turbidity measured after treatment
Cabernet sauvignon - Bordeaux - 2021





CENOZYME® THIOLS The secret of varietal aromas

Pectolytic enzyme preparation from *Aspergillus niger*, rich in secondary activities and purified from cinnamyl esterase activity.

Depending on the moment of application, it can **modulate the aromatic profile** of wines:

BENEFITS

- ◆ *Used during alcoholic fermentation:* enhances the liberation of thiol aroma precursors such as 4MSP (box-tree) and 3SH (citrus fruit) and thus indirectly increases conversion by the yeast to A-3SH (tropical fruits).
- ◆ *Added during maturation or a few weeks before bottling:* will help to free thiol precursors (4MSP and 3SH) already present in the wine (which, when in precursor state linked to cysteine or glutathione, are non-oxidizable compounds). The conversion to A3SH by the yeast is impossible in this case.



CENOZYME® RED EXPRESSION

Bring together sweetness and freshness

A new pectolytic enzyme preparation extracted from *Aspergillus niger*, rich in secondary activities and free from cinnamyl-esterase activity.

Drawing on our expertise in thiol varietal aroma revelation, Lamothe-Abiet has developed CENOZYME® Red Expression. When used during fermentation, this enzyme.

BENEFITS

- ◆ Helps to extract polysaccharides and aroma precursors, thus revealing the intensity of "fresh fruit" characteristics
- ◆ Brings softness and sucrosity to red wines

LAMOTHE-ABIET ENZYME LIST

L.A SOLUTIONS

LIQUID ENZYMES	MACERATION	CLARIFICATION	EXTRACTION	FILTRATION	TYPE OF WINE	DOSAGE	RECOMMENDATIONS
CENOZYME® Crush			10 - 30 mL/Ton	<ul style="list-style-type: none"> ◆ Improves extraction of skin compounds, color, phenolic structure, press yield. ◆ Improves extraction of skin compounds (aromatic precursors, polysaccharides), press yield.
CENOZYME® Clear		...				0.5 - 3 mL/hL	Addition at press pan or in tank ; static settling and Flotation. Can be used on wines to improves filtrability.
CENOZYME® Max			5 - 10 mL/hL	Specific enzyme to treat filterability problems on wines. Concentrated activities that greatly improve clarification.

SPECIFIC ENZYMES		CLARIFICATION	FERMENTATION	MATURATION	FILTRATION	TYPE OF WINE	DOSAGE	RECOMMENDATIONS
CENOZYME® Red Expression		-	... Freshness and sweetness	... Freshness and sweetness	-		4-6 mL/hL	Add after the start of AF to benefit from natural inerting. When used in combination with an extracting enzyme, we recommend to slightly reduce its dose.
CENOZYME® Thiols	L	-	... Revelation of thiol aromas	... Revelation of thiol aromas	-		4-6 mL/hL	Add after the start of AF to benefit from natural inerting. - During AF: revealing 3MH, 4MMP and 3MH thanks to the synergy with yeasts. - During ageing: revealing 3MH and 4MMP.
Vinotaste® Pro*	P	•	-	... + Roundness	...		4-10 g/hL	Active at all pHs Increase the dosage by 30 % if Temp. < 12 °C

L: liquid

P: powder

* Level of purification FCE < 0,5 CINU/1000 PGNU certified by the latest standard FSSC 22000



The result of a fast-moving research, our tannins are created in our specialised production unit. The quality of the products and their effectiveness are guaranteed by rigorous selection of the raw materials, and by our knowledge and control of the production process.

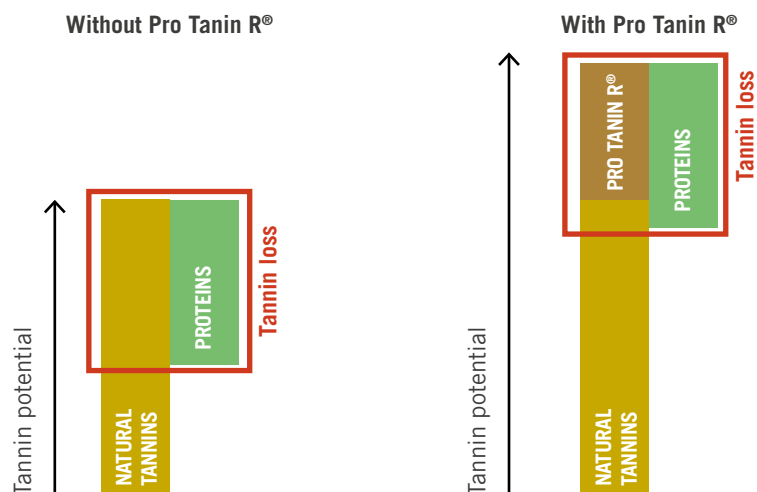
The specific micro-granulated (MG) and granulated (G) formulation of our tannins, with instant solubility, allows direct addition to must or wine. Homogeneous dispersion by stirring or pumping over guarantees immediate and effective action of the tannin.

PRO TANIN R®

Preparation of instantly soluble proanthocyanidic tannins.

BENEFITS

- ◆ Binds the must proteins that cause an early loss of desirable phenolic compounds.
- ◆ Inhibits laccase, an enzyme that causes drastic and irreversible oxidation in botrytised musts and wines.



//1: Preserving the tannin potential

The tannin potential of a must is preserved thanks to the buffer effect of Pro Tanin R®.

//2: Inhibition of laccase activity

A small laccase activity in the must considerably diminishes the visual quality of the future wine.

The use of Pro Tanin R® suppresses this laccase activity and maintains the colour potential of the future wine.

Trials conditions:

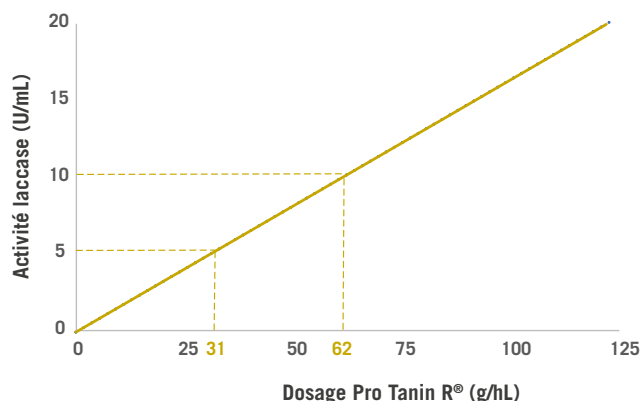
Cabernet Sauvignon, Graves, 2016 • ABV: 11,5% vol, pH = 3,52

	Laccase activity on must (U/ml)
Control	4
½ dosage Pro Tanin R®.	1
1 dosage Pro Tanin R®.	0

*Dosage recommended by Botrytest



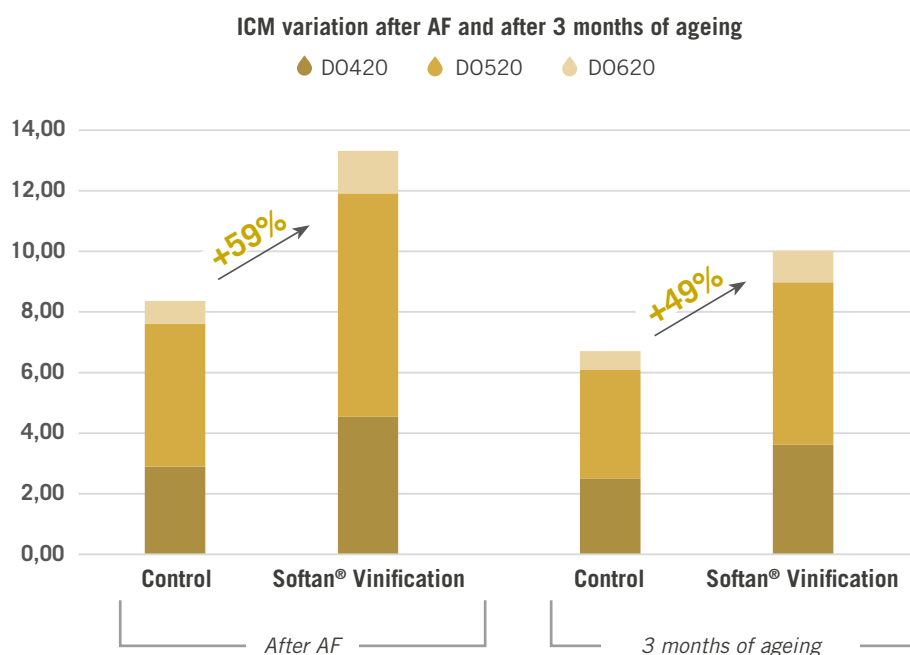
Amount of Pro Tanin R® to inhibit laccase activity



SOFTAN® Structure and softness

The **Softan®** range is based on a technology that is exclusive to Lamothe-Abiet. It offers solutions for each step of wine production thanks to its formulations of specific tannins combined with **natural polysaccharides of plant origin**. This technology is based on a phenomenon which naturally takes place in wines wherein the tannins combine with polysaccharides.

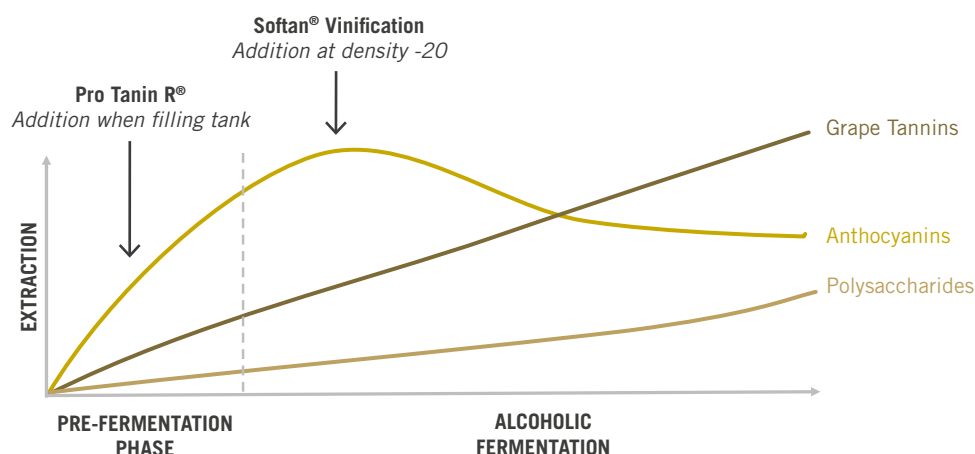
Softan® products significantly increase the **volume** and **length** on the palate **without adding dryness or astringency**.



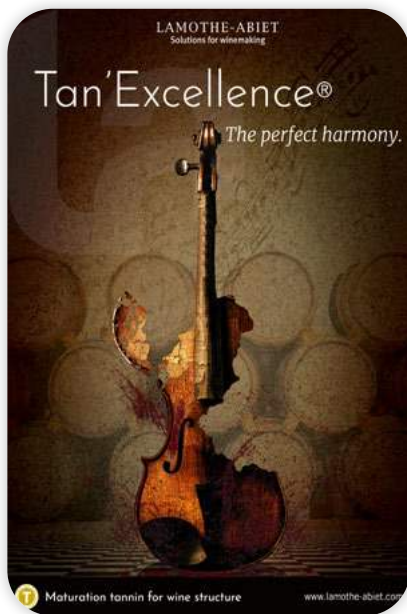
Softan® Vinification Trial:

- Thermovinified Merlot, Bordeaux
- TAV: 14,1% vol, pH = 3,45
- 30 g/hL Softan® Vinification added at D+1

Optimisation of colour stabilisation during alcoholic fermentation



The synergistic action of Pro Tanin R® and Softan® Vinification, when added at the right moment, is effective in preserving the tannin potential and stabilising the colour.



TAN'EXCELLENCE® The perfect harmony

Maturation tannin resulting from a rigorous selection of oak tannins, grape tannins and proanthocyanidic tannins.

Its directly soluble formulation makes this tannin easy to use.

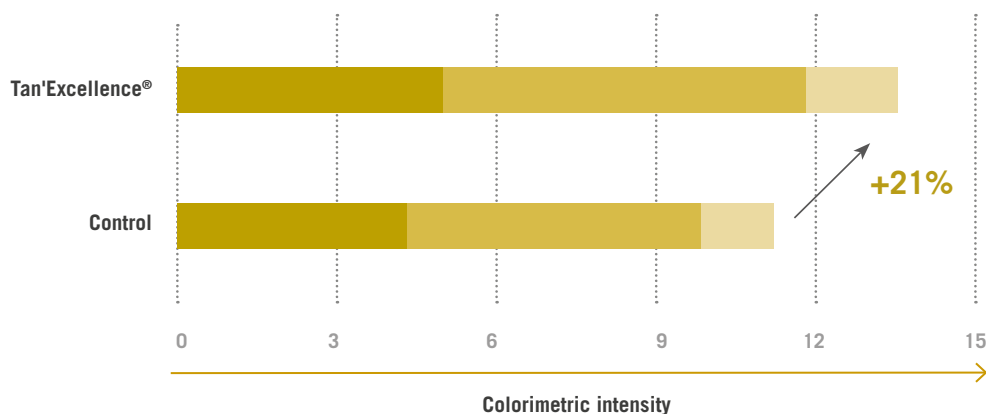
BENEFITS

- ◆ Durable colour stabilisation
- ◆ Protection against wine oxidation
- ◆ Improves the structure and provides a harmonious balance to great red wines

Colorimetric analysis

Cabernet Sauvignon • 2019 • Lamothe-Abiet Experimental Center
Tan'Excellence® at 10 g/hL - Analysis 1 month after bottling

◆ D0420 ◆ D0520 ◆ D0620



TAN&SENSE® The final touch

High quality oak and grape tannins for ageing.

When added during ageing or before bottling, Tan&Sense® tannins help to **protect wines against oxidation**, whilst respecting the wine's **balance** and **fruitiness**.

Thanks to a unique extraction process, and a gradual toasting, the tannins from the Tan&Sense® range express a great potential to give harmonious wines that meet winemakers' objectives.



- ◆ Improves the volume, length and resistance to oxidation



- ◆ Participates in the structure and aromatic persistence

Intensely toasted tannins

Untoasted tannin



- ◆ Adds complexity and softness on the finish



- ◆ Gives tension and freshness on the finish

	VINIFICATION TANNINS	COMPONENTS	INHIBITION OF LACCASE ACTIVITY	ANTIOXYDANT ROLE	REACTIVITY WITH PROTEINS, EASE OF FINING	COLOR STABILISATION	ROUNDNESS	ADDITION TIME	TYPE OF WINE	DOSAGE g/hL
MUST AND WINE	Pro Tanin R®	Proanthocyanidic tannins	●●●	●●	●●●	●●		tank filling	●	Healthy harvest: 10 - 30 Affected harvest: 30 - 80
	Softan® Vinification	Catechic tannins bound to vegetal polysaccharides	●	●	●●	●●●	●●●	Δ-30 or D+1 post tank filling	●	10 - 40
	Tanin gallique à l'alcool	Galic tannins	●●●	●●●	●●●			Spoiled mechanical harvest, Pre-fermentation maceration, pressing, fining	●●●	3 - 15

	MATURATION TANNINS	COMPONENTS	COLOR STABILISATION	CONTROL OF REDOX POTENTIAL	STRUCTURE	ROUNDNESS	PROFILE HARMONISATION	TYPE OF WINE	DOSAGE g/hL
START OF BREEDING	Tan'Excellence®	Grape tannins, oak tannins and catechic tannins	●●●	●●●	●●	●●	●	●	3 - 30
	Softan® Power	Proanthocyanidic and ellagic tannins bound to vegetal polysaccharides	●●●	●●	●●	●●●	●	●	10 - 40

DURING THE BREEDING PROCESS	Vinitan® Advance	Grape tannins	●●●	●	●●●	●	●	●	1 - 10
	Tan&Sense® Volume	Pure oak tannins	●	●●●	●●	●	●	●●●	● 1 - 10 ●● 0,5 - 3
	Softan® Sweetness	Proanthocyanidic and ellagic tannins (from fresh and toasted oak) bound to vegetal polysaccharides	●●	●	●●	●●●	●●	●●●	● 10 - 40 ●● 1 - 3

END OF BREEDING PROCESS	Tan&Sense® Origin	Pure tannins of toasted oak of stave quality	●	●●	●●	●●●	●●●	●●●	● 1 - 10 ●● 0,5 - 3
	Tan&Sense® Expression	Medium toasted oak tannins	●●	●●	●●●	●	●●●	●●●	● 1 - 10 ●● 0,5 - 3
	Tan&Sense® Forte	Intensely toasted oak tannins	●●	●●	●●●	●	●●●	●●●	● 1 - 10 ●● 0,5 - 3
	Softan® Finition	Toasted oak tannins bound to vegetal polysaccharides	●	●	●●	●●●	●●●	●●●	● 10 - 40 ●● 1 - 3

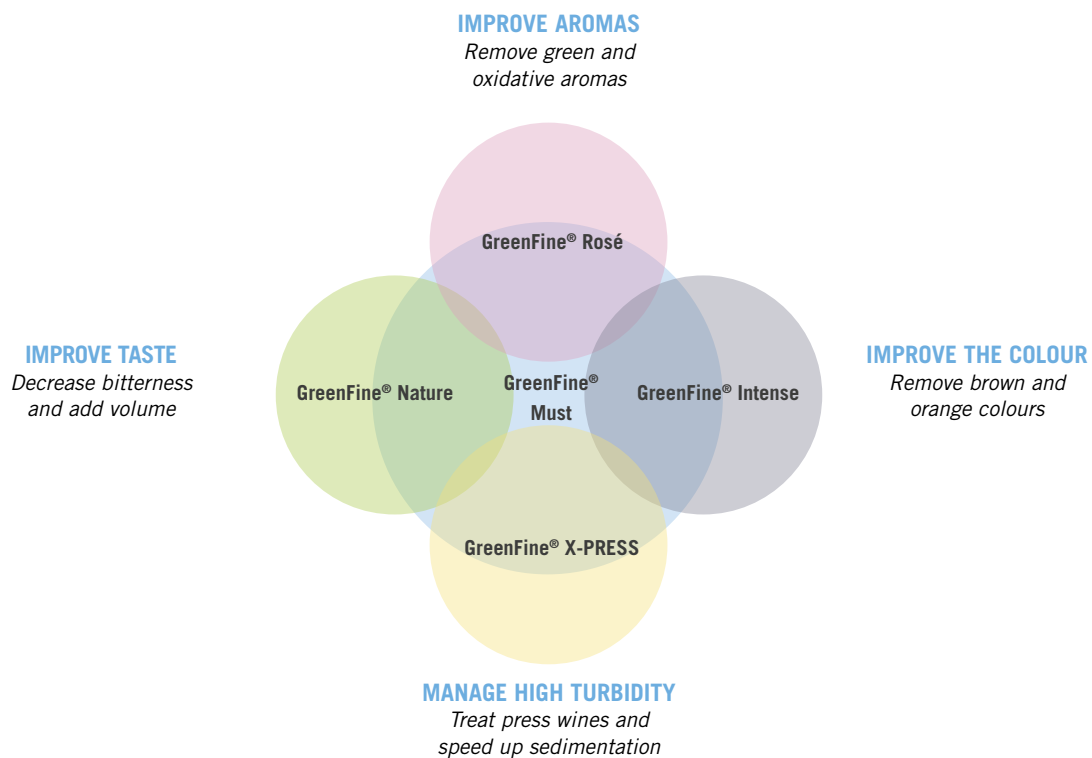
* Guidelines only: carry out trials to determine the optimal dosage for each type of wine.

Must fining, carried out before or during alcoholic fermentation, is an essential step in white and rosé winemaking. Lamothe-Abiet offers enological solutions that are adapted to the winemaker's objectives.

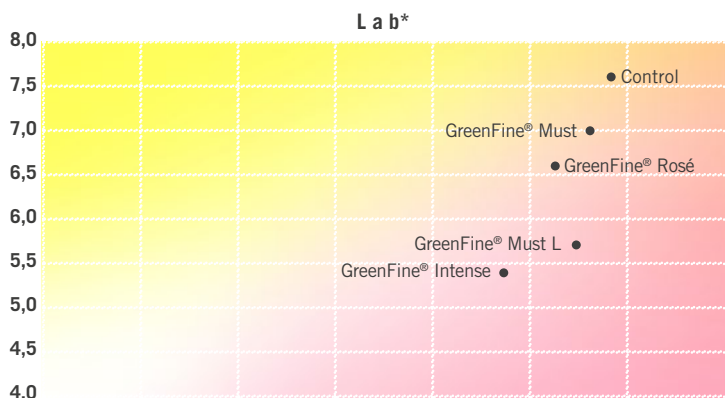
GREENFINE® Give peas a chance

Based on pea vegetal proteins and without allergen*, products from the **Greenfine® range** are complex formulations that specifically fulfill varying objectives:

* Except GreenFine® Must L, stabilised with sulphur dioxide (E220).

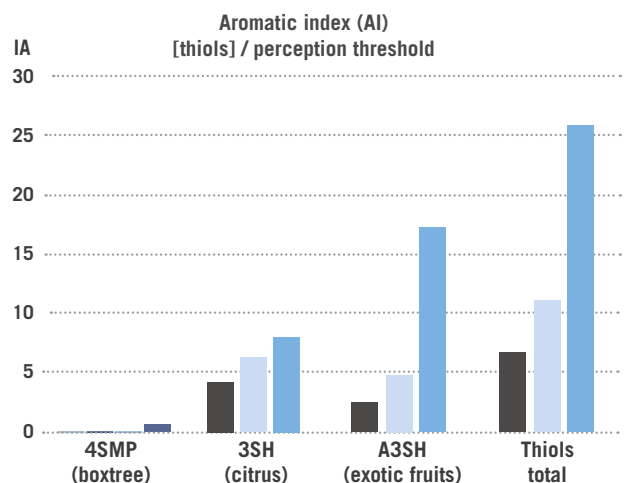


Effect of must fining on the colour of rosé wines
Mourvèdre • Provence • 2018
Dosage: 50 g/hL - Addition during clarification



*analysis by chromametry (Lab) enables a simple, quick and objective measurement of must and wine colours as perceived by the human eye.

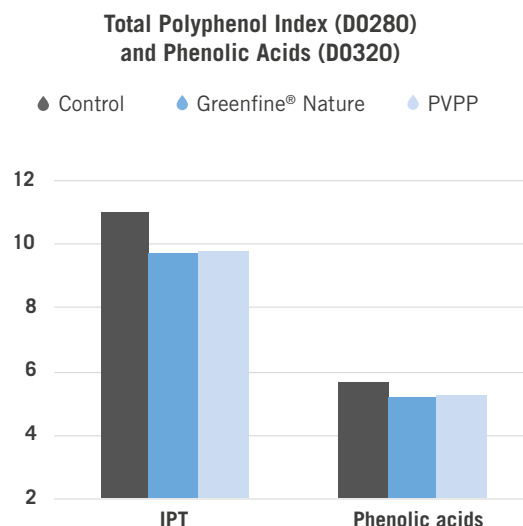
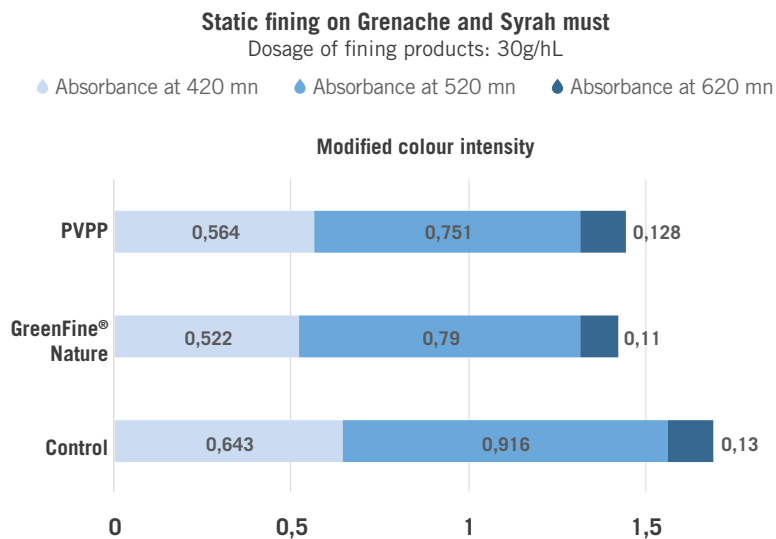
Effect of must fining on wines' aromatic profile
Sauvignon Blanc • Graves • 2016 • Dosage: 50 g/hL
● Control ● GreenFine® Must ● GreenFine® Rosé



GREENFINE® NATURE Your fining, naturally

Next generation fining agent, made from 100% natural products, allergen-free and authorised for organic and vegan winemaking. It is a good alternative to PVPP.

It improves the organoleptic characteristics of musts and wines (white, rosé and red) by decreasing bitterness whilst adding volume. GreenFine® Nature provides excellent results for removing colour and revealing fruity notes.

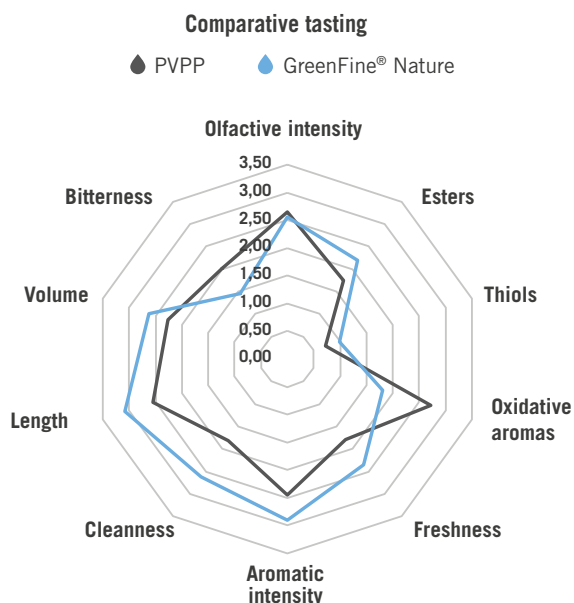
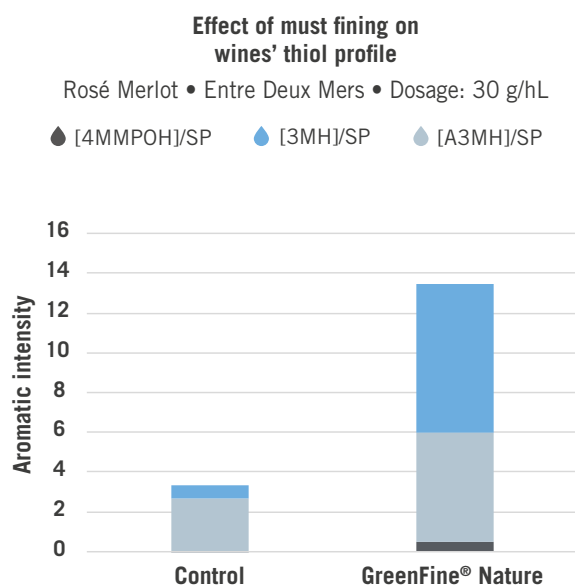


"We use **GreenFine® Nature** on all types of white and rosé musts, changing the dosage depending on what kind of correction needs to be made. It can also be used during fermentation, if prior fining doesn't appear to be enough.

Having been an active player in the development of this formulation, **GreenFine® Nature** is today an essential product in the GreenFine® range, allowing **early improvement of must colour**, but also **increasing finesse** and **removing bitterness** when necessary. GreenFine® Nature is an excellent alternative to casein on musts affected by downy mildew."



**Gilles BAUDE, Oenologue conseil,
PROVENCE OENOLOGIE, FRANCE**



GREENFINE® ROSÉ Synergy between pea protein and PVPP

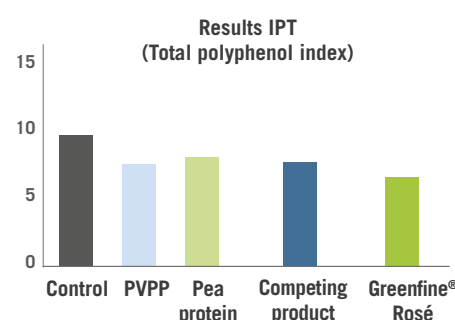
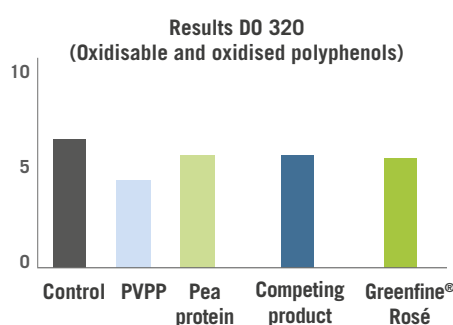
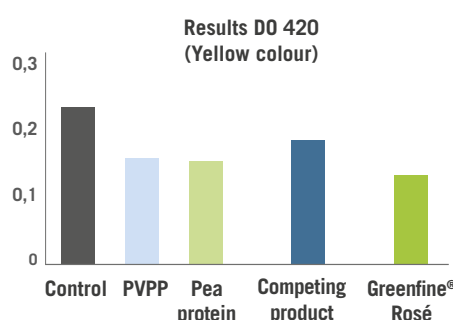
Allergen free formulation for preventative and curative treatment of white and rosé musts.

BENEFITS

- ◆ The association of pea proteins and PVPP offers a complete action to reduce oxidisable (DO320) and oxidised (DO420) phenolic compounds. It decreases bitterness and off flavours (mouldiness/greenness).
- ◆ Removing undesirable elements from musts maximises the aromatic potential and optimises aromas preservation in the wine.
- ◆ Efficient in decreasing yellow colours, thus reducing orange tones.



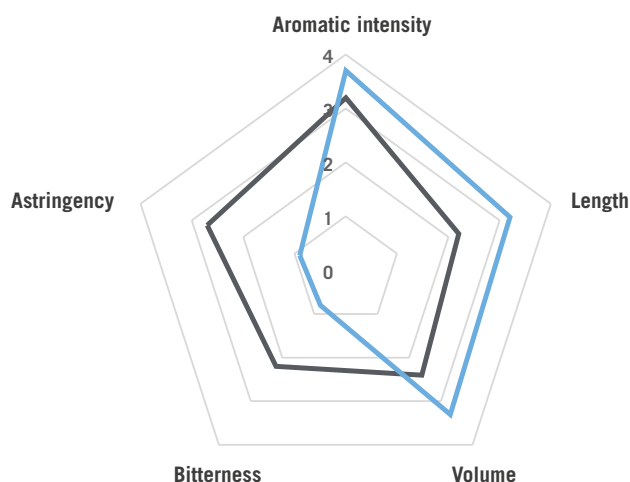
Fining trial on white must Sauvignon blanc must



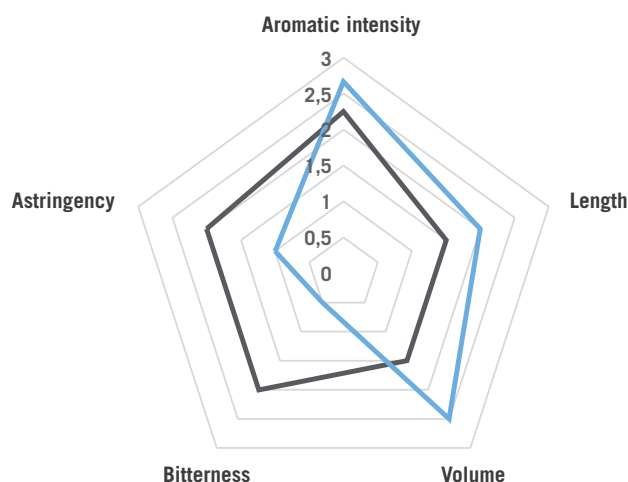
Red wine fining: Vegan alternatives!

Red wine tasting results (15 experienced tasters) after use of GreenFine® range fining agents





Fining: GreenFine® Nature
Pinot noir • Alsace • 2021 • 20 g/hL
● Control ● GreenFine® Nature








Fining: GreenFine® X-PRESS
Gamay • Beaujolais • 2021 • 30 g/hL
● Control ● GreenFine® X-PRESS



Our trials have demonstrated the **efficiency** of the Greenfine® range products for fining red wines in **removing astringency** and **increasing volume**. Each wine being different, we recommend that you carry out fining trials beforehand in order to find the product the most adapted to your objectives.

FINING PRODUCTS BASED ON PEA PROTEINS		STRUCTURE	COLOR STABILITY	DECREASE VEGETAL	TREAT OXIDATION	TYPE OF WINE / APPLICATION	DOSAGE*
	GreenFine® Nature (Pea proteins, inactivated yeasts, calcium bentonite)	•	••	•••	•••	 Must / Wine	10-80 g/hL
	GreenFine® Must Greenfine® Must L: liquid (Pea proteins)	•	•	•••	•••		10-50 g/hL L: 10-50 cL/hL
	GreenFine® X-PRESS (Pea proteins, PVPP, calcium bentonite, Chitin-Glucan)	••	••	••	••		10-80 g/hL
	GreenFine® Rosé (Pea proteins, PVPP)	•	••	•••	•••	 Must / Flotation	10-100 g/hL
	GreenFine® Intense (Pea proteins, discolouring activated carbon, PVPP, calcium bentonite)		•••	••	••		10-120 g/hL

PROTEIN FINING AGENTS		STRUCTURE	ROUNDNESS	COLOR STABILITY	DECREASE VEGETAL	TREAT OXIDATION	TYPE OF WINE / APPLICATION	DOSAGE*
	Natur'fine® Prestige (Inactivated yeasts, pectolytic enzymes)	•••	••	•	••		 Wine for laying down	5-40 g/hL
	Colle de poisson LA	••			•		 Wine for laying down	1-3 g/hL
	Geldor® (Gelatin)	•		•••	••		 Young wine/ Thermovinification	1.5-6 cL/hL
	Gélatine Spéciale Vins Fins	•		•••	••		 Aged wine	2-10 cL/hL

L: liquid

P: powder

*Guidelines only: carry out fining trials to determine the optimal dosage for each type of must and wine. Respect the maximum authorized dosages according to the current regulations.



GREENFINE® NATURE

A naturally respectful fining

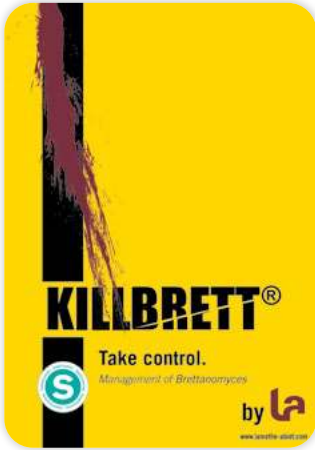
New formulation based on pea proteins, allergen-free, vegan and usable in organic.





STABILISATION

Stabilisation strategy helps to increase the effectiveness of œnological treatments, to limit the number of subsequent treatments, and also to limit organoleptic losses (colour, aromas).



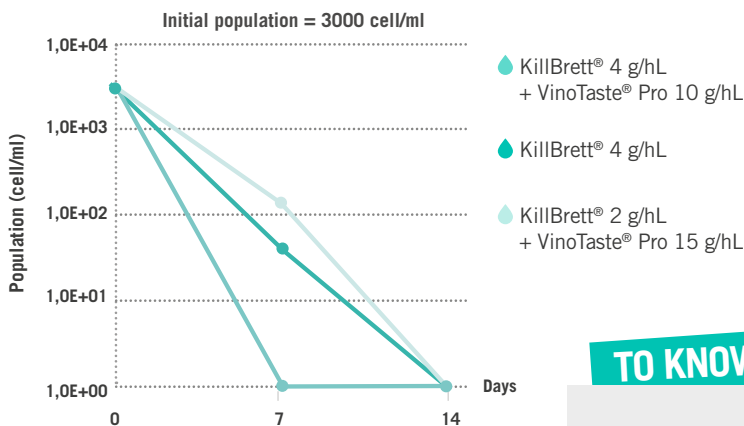
KILLBRETT® Take control

Made 100% from a high purity chitosan exclusively of fungal origin.

To eliminate *Brettanomyces*, KillBrett® is shown to be the **easiest** and **most wine-friendly alternative** to DMDC and physical treatments. Chitosan contained in KillBrett® causes the lysis of the cell walls of *Brettanomyces* and its sedimentation at the bottom of the barrel or tank.

KillBrett® is a natural product, non-animal origin and non-allergenic, produced of 100 % fungal chitosan (*Aspergillus niger*) which the reduction of microbial load is widely demonstrated.

Effect of KillBrett® on *Brettanomyces* populations



Recommended dosages:

Initial contamination	Recommended treatment
Moderate $\pm 10^2$ cell/mL	KillBrett® 4 g/hL
High $\pm 10^3$ cell/mL	KillBrett® 4 g/hL + VinoTaste® Pro 10 g/hL
Very high $\geq 10^4$ cell/mL	KillBrett® 6 g/hL + VinoTaste® Pro 10 g/hL
Preventive treatment (after MLF)	KillBrett® 4 g/hL

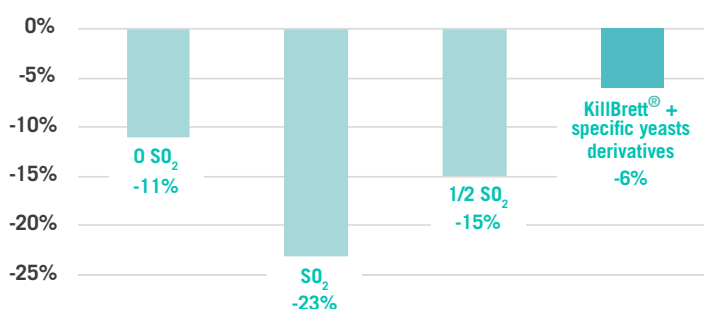
TO KNOW

KillBrett® causes cellular lysis and a fining of *Brettanomyces* thus saving your wines from contamination. We recommend that you adapt the treatment according to the observed population of *Brettanomyces*.

KillBrett® enables the microbial environment to be managed during red wine maturation. Combined with a yeast derivative rich in reductive compounds (like glutathione), it's an excellent tool to **reduce or even get completely rid of sulfites** during ageing. An early addition helps to preserve the wine colour intensity as well as its organoleptic profile.

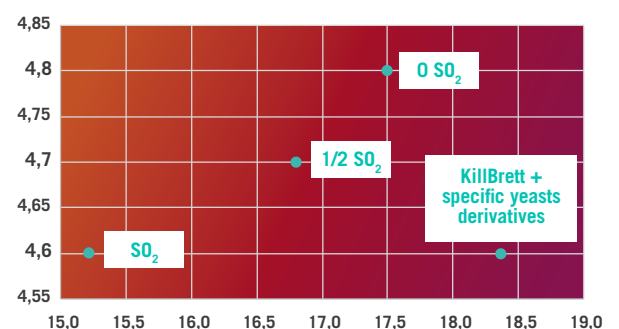
Loss of ICM between start of maturation and after 9 months

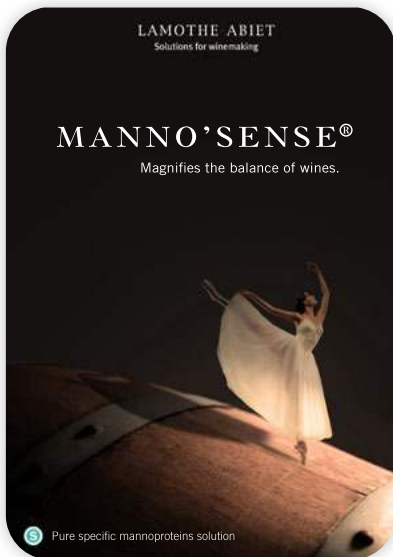
Burgundy • Static 2019 • Pinot Noir



Loss of ICM between start of maturation and after 9 months

Burgundy • Static 2019 • Pinot Noir





MANNO'SENSE® Magnify the balance of wines

Formulation of mannoproteins rich in sapid peptides Hsp12.

Mannoproteins are released during yeast autolysis and play a crucial role in the perception of sucrosity in dry wines.

Manno'Sense® is a natural solution which improves the organoleptic qualities of white, rosé and red wines.

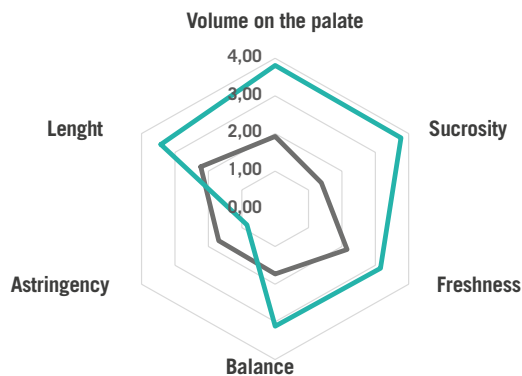
BENEFITS

- ◆ Increases roundness and sucrosity
- ◆ Provides balance and freshness on the palate
- ◆ Improves length of aromas
- ◆ Does not have an effect on the filtration clogging index or the CFLA (Lamothe-Abiet Criteria of Filtration)
- ◆ Contributes to tartaric stabilisation

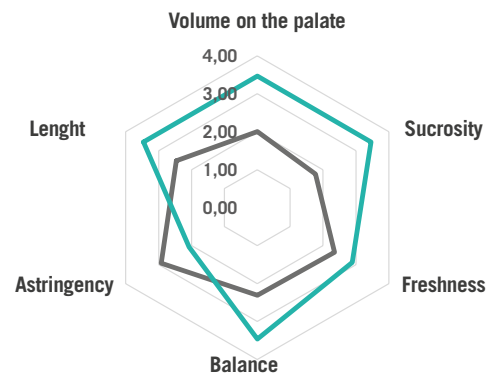
Tasting results of wines (15 trained tasters) after treatment with Manno'Sense® 10 cL/hL before bottling

● Control ◆ Manno'Sense®

White wine from Gers (Colombard), 2018



Médoc (Cabernet Sauvignon, Merlot), 2019



SUBLI'SENSE® Sublime flavors

Solution of arabic gum and mannoproteins for organoleptic improvements of your wines.

BENEFITS

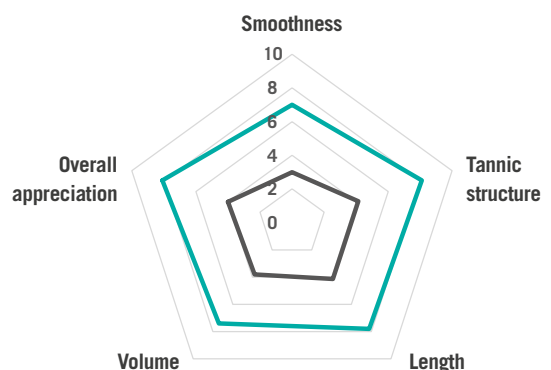
- ◆ Increases the unctuosity and flavour
- ◆ Enrobes the tannins
- ◆ Improves the softness and length on the palate
- ◆ Does not have an effect on the filtration clogging index or the CFLA (Lamothe-Abiet Criteria of Filtration)

SUBLI'SENSE®, improves the mouthfeel and flavour of wines without giving excess heaviness.

Results of tastings after treatment with Subli'Sense® 20 cL/hL before bottling

● Control ◆ Subli'Sense®

Côtes-du-Rhône (Syrah), 2019



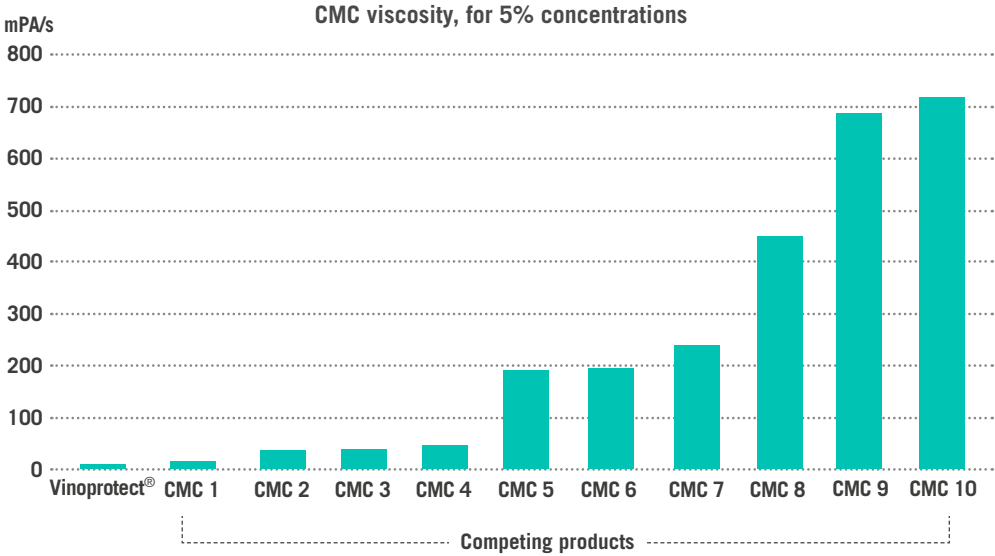
VINOPROTECT®

Cellulose gum for white and rosé wines stabilisation regarding the risk of precipitation of potassium bitartrate.

in addition to its remarkable effectiveness, Vinoprotect® allows you to save preparation time, to reduce the risk of filter clogging and any risk of over- or under-dosage in the final product.

TO KNOW

- Vinoprotect®, is a product with a very low viscosity, it is actually a liquid solution which is both easy to use, to mix in the tanks, and well adapted to in-line injection using a dosing pump.



LAMOTHE-ABIET STABILISATION PRODUCT LIST

L.A SOLUTIONS

ARABIC GUMS & MANNOPROTEINS			STABILISATION				TYPE OF WINE	DOSAGE*
			COLLOIDAL	COLOUR	ROUNDNESS	FILTERABILITY		
	Vinogom®		•	•	•••	•••		5-30 cL/hL
	Subli'Sense®	L	• + tartaric	•	••	•••	•••	10-30 cL/hL
MANNOPROTEINS	Manno'Sense®		•• + tartaric	•	••• + sucrosity	•••		2,5-15 cL/hL

TARTARIC STABILISATION			STABILISATION			TYPE OF WINE	DOSAGE*
			TARTARIC	EFFECTIVENESS OVER TIME	INTERACTIONS WITH PROTEINS		
CMC	Vinoprotect®	L	•••	•••	••	•••	10-40 cL/hL
MANNOPROTEINS	STAB K®		••	•••	-	•••	≤ 40 cL/hL

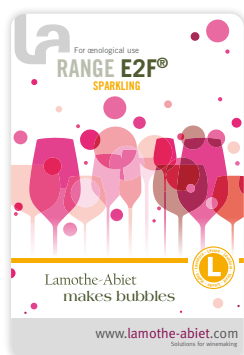
MICROBIOLOGICAL STABILISATION			STABILISATION				TYPE OF WINE	DOSAGE*
			BRETTANOMYCES	ACETIC BACTERIA	LACTIC BACTERIA	YEASTS		
CHITOSAN	KillBrett®	P	•••	-	•	-	•••	2-10 g/hL
SO ₂	Coeff 2 et 5 g	CE	••	••	••	••	•••	According to objectives

CHARBONS			STABILISATION		TYPE DE VIN	DOSAGE*
			COLLOIDAL/COLOUR	AROMATIC		
CHARBONS	Géospriv	P G	-	••• + decontaminating	•••	20-100 g/hL before end of FA

L: liquid G: granulated P: powder MG: micro-granulated C: crystal CE: effervescent tablets

* Guidelines only: carry out trials to determine the optimal dosage for each type of wine. Respect the maximum authorized dosages according the current regulations.

Lamothé-Abiet has developed a **range of specialised products** for the production of **sparkling wines**. These are equally suitable for winemaking using the "traditional method" as for in closed tanks (Charmat method).



1. BASE WINE PRODUCTION

For the alcoholic fermentation of the base wine, and for the secondary fermentation, we have selected 3 yeast strains capable of giving the different wine profiles that may be sought after:

- ◆ **Excellence® E2F**: the most hardy yeast, for the objective of aromatic purity.
Yeast resistant to alcohol, pressure, to hostile environments, produces a good quality of bubbles.
- ◆ **Excellence® TXL**: varietal yeast, for the objective of volume and finesse.
- ◆ **Excellence® STR**: the most aromatic yeast, for the objective of aromatic impact.
- ◆ **L.A. Spumante**: the most suitable yeast for second fermentation in pressure tank (Charmat method).

	STRAIN	BASE WINE	SECONDARY FERMENTATION	RESTARTING AF	NITROGEN REQUIREMENTS	ALCOHOL TOLERANCE (% Vol.)	VARIETALS
EXCELLENCE® YEASTS	E2F®	...	...	...	Low	> 17	all
	TXL	..	-	-	Medium	16	all
	STR	..	-	-	Medium	15	all
L.A. YEAST	NEW SPUMANTE	..	...	-	High	14,5	all

Yeast nutrition:

ÆnoStim®: used at a rate of 30 g/hL in the yeasts' rehydration water, ÆnoStim® gives the growth factors (vitamins, minerals) and survival factors (sterols, unsaturated fatty acids) necessary for the increase in the number of viable cells. It ensures the yeasts' survival under difficult conditions.

OptiFlo® O: rich in organic nitrogen, OptiFlo® O gives a rich nutrition to yeasts throughout the alcoholic fermentation. This can decrease the appearance of reductive aromas and ensures regular fermentations and aromatic purity.

2. TIRAGE

Tirage liquor:

TANIN E2F®: selection of gallic and ellagic tannins.

- ◆ **Protection role**: natural antioxidant, blocks polyphenol oxidases and improves the effectiveness of SO₂.
- ◆ **Stabilisation role**: causes the precipitation of unstable proteins and protects the organoleptic qualities of wines.
- ◆ **Organoleptic role**: adds elegance and structure to white wines without adding astringency.

Riddling adjuvants:

BENTOSOL Protect®: Mixture of pure bentonite

Easily neutralised by proteins, you must therefore first check that the base wine is not too rich in proteins. If it is, it is advised to increase the adjuvant dosage by 1 to 2 cL/hL.

3. DISGORGING LIQUOR

- ◆ Gomme LA, **Polygom®**, **Vinogom®**: colloidal stabilisation and/or addition of roundness.
- ◆ **Subli'Sense®**: Add roundness, sweetness, flavour and aromatic persistence.
- ◆ **Softan® Finition**: production of a liquor with a profile adapted to consumer demands: roundness and sweetness.
- ◆ Citric acid: adds liveliness and freshness.
- ◆ Acide ascorbique (ascorbic acid) (only to be used with a 10 mg/L minimum of free SO₂): antioxidant effect and limits premature ageing.
- ◆ Solution de bisulfite (bisulfite solution): microbiological and anti-oxidising protection.
- ◆ Copper sulfate solution: limit reductive tastes.

Œnoboïs® continue in this direction with the launch of 18mm Staves. The use of "thick" oak with a longer contact period allows the oak compounds to diffuse progressively. The compounds in the oak and the wine will polymerise gradually. The aromas last longer over time, and the wine finds a better balance, with greater finesse and elegance.

STAVES & BLOCKS ŒNOBOIS® 18mm

Œnoboïs® 18mm Staves are the result of a two-step toast (Double Toast Process):

- the first slow toast **works evenly on the whole wood mass**;
- the second superficial toast **helps to increase aromatic complexity**.

The resulting profiles are characterised by **intense** and **complex** aromas **that emphasise the wine's finesse** and **length on the palate**.

Œnoboïs® 18mm Blocks are made from **Œnoboïs® 18mm Staves**. Their small size allows wines with shorter maturation to benefit from a new dimension of organoleptic complexity.



ORIGIN



EXPRESSION



ABSOLUTE

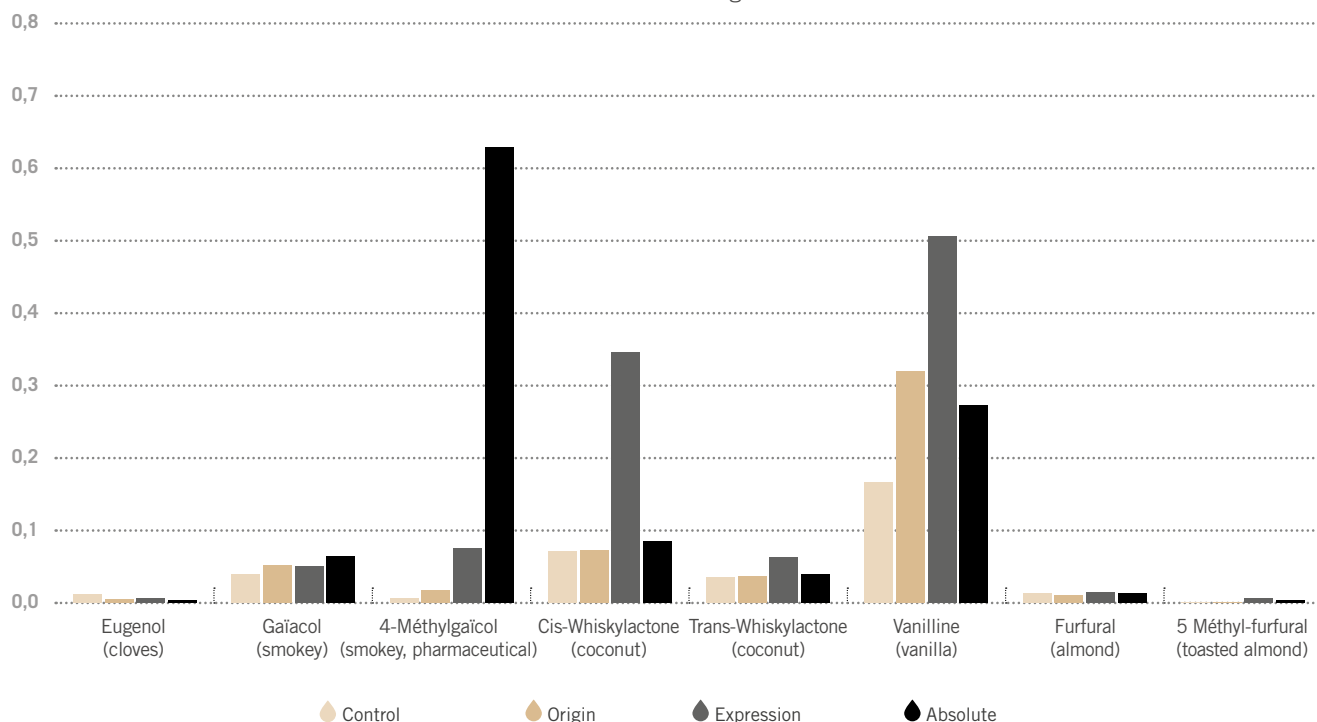
- ◆ The "lightest" toasting profile
- ◆ Freshness of the fruit, coconut and vanilla aromas
- ◆ Sweetness and roundness

- ◆ The most "moderate" toast
- ◆ Notes of vanilla, caramel, crème brûlée and roasted coffee
- ◆ Complexity and length

- ◆ The toast with the most "character"
- ◆ Intense aromas of roasted coffee, mocha, smokiness, but also fresher as licorice and eucalyptus
- ◆ Freshness and tension

Analyses of wood volatile compounds after 9 months of contact (µg/L)

Cabernet Sauvignon • Bordeaux



STICKS & ŒNOBOIS® 3D

The aim of **Œnobois® Sticks** is to obtain the most integrated **toasting profile** as best as possible, since the wood/wine exchanges can take place throughout the entire winemaking process. This has **two effects** on the taste: the **aromas** are found to be more precise, and the **tannic structure** is found to be more fine and silky.



Vinification with sticks

«Objectives and benefits of the process: vinification with sticks is an alternative technique that does not replace barrels. It allows a qualitative, integrated oak character whilst addressing the issues of production costs.

Linked to the thickness of the stick, this practice provides roundness, volume, a complex aromatic profile, and participates in a greater colour intensity. It has a great benefit on midquality batches with the objective of integrating them into the top wine.»



Antoine MÉDEVILLE, Œnoconseil Laboratory
PAUILLAC, FRANCE

The cube shaped **Œnobois® 3D** (with sides of 22mm) are made from **Œnobois® Sticks**. They therefore exactly match the delicate and complex aromatic profiles obtained through the toasting of the sticks. They combine the singular effects of the thickness of the **Œnobois® Sticks** with the ease of use of chips. They help to guide the maturation of wines with precision and finesse.



HIGHLIGHT



MEDIUM



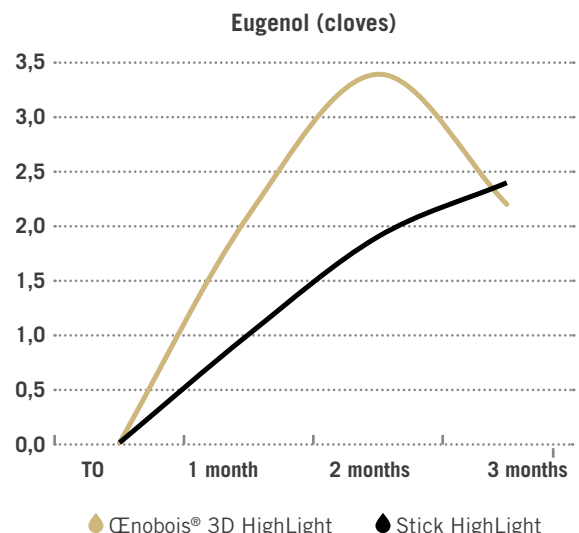
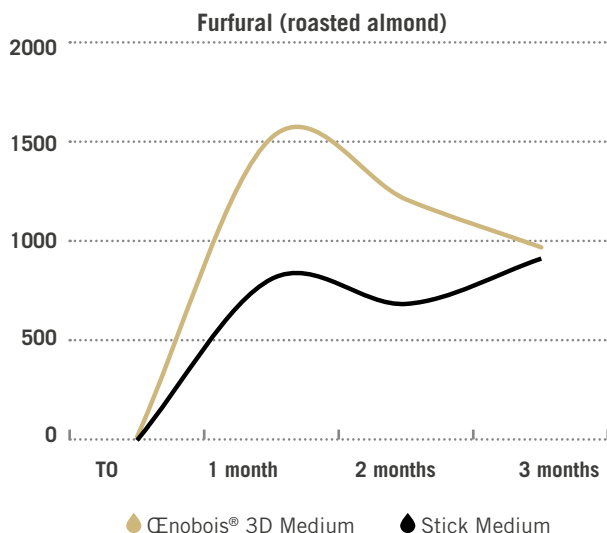
MEDIUM+

- ◆ Fruity notes of the wine
- ◆ Support its natural structure

- ◆ Sweet aromatic profile
- ◆ Notes of caramel, vanilla and speculos
- ◆ Silkiness on the palate

- ◆ Intense notes of roasted almonds and mocha
- ◆ Complexity and persistency

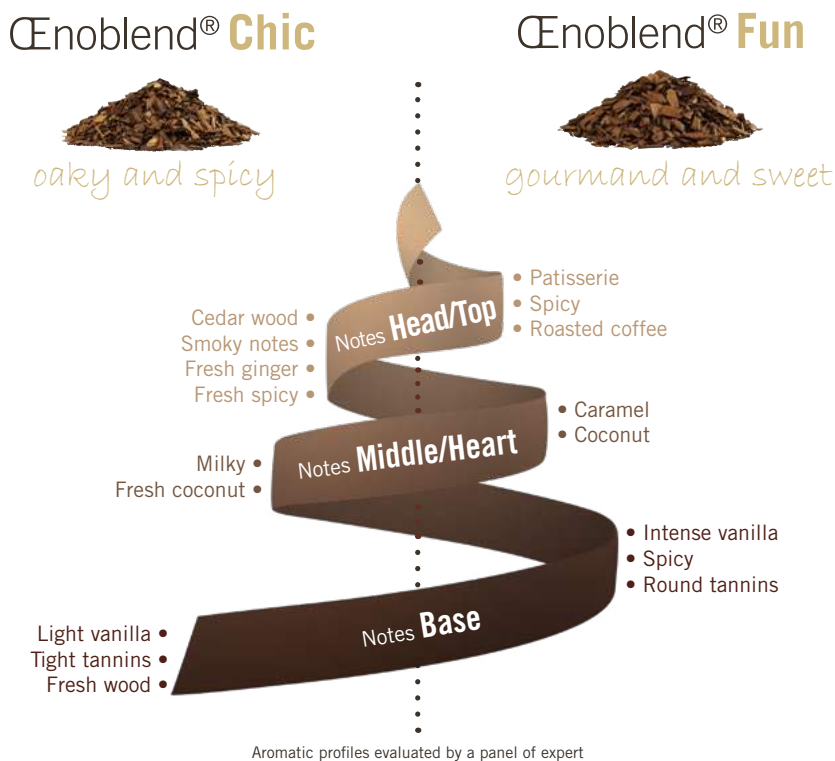
Aromatic analyses Merlot • Bordeaux



ÆNOBLEND® CHIPS

Ænoblend® is a unique and original range of chips created by blending oaks of different origins and different toasts.

Developed by a team of aromaticians and enologists, this range makes use of the sensorial pyramid, as described by experts in the field of perfumery and aroma creation. Their profiles are a perfect illustration of the alliance of aromatic precision with modern styles.



STICK INSIDE



Customise your Sticks Inside:

Ænobois® now offers the possibility to **custom-make personalised recipes** by blending different toasts into the same Stick inside. The goal is to add complexity and individuality to the aromas for each barrel.




Optimise your choice of oak for winemaking:




On our ÆnoSolutions mobile app,
available on the Appstore and Google Play Store

STICKS, 3D, STAVES AND BLOCKS		HIGHLIGHT THE FRUIT, RESPECT THE TYPICITY	BRING ROUNDNESS AND WEIGHT	CARAMEL, SMOKY NOTES	BRING FINESSE	AF	MLF	AGEING	TYPE OF WINE	GUIDELINES
Staves 1,8 x 5 x 90 cm Blocks 1,8 x 5 x 5 cm French oak	Origin	● ● ●	● ● ●	●	● ● ●					Contact time (varies according to dosage, wine and objective): 3D: 2 to 4 months Sticks: 6 to 10 months Blocks: 3 to 6 months Staves: 6 to 10 months
	Expression	● ●	● ●	● ●						
	Absolute	●	● ●	● ● ●						
Sticks 2,2 x 2,2 x 90 cm 3D 2,2 x 2,2 x 2,2 cm French oak	Highlight	● ● ●	● ● ●		● ●	●	● ● ●	● ● ●	● ● ●	
	Medium	●	● ● ●	● ●						
	Medium +	●	● ●	● ● ●						

STICKS INSIDE	HIGHLIGHT THE FRUIT, RESPECT THE TYPICITY	BRING ROUNDNESS AND WEIGHT	CARAMEL, SMOKY NOTES	BRING FINESSE	AF	MLF	AGEING	TYPE OF WINE	GUIDELINES
HighLight	● ● ●	● ● ●		● ● ●	●	●	●	● ● ●	During AF for white and rosés. During MLF or maturation for reds. Contact time: 4-10 months
Medium	●	● ● ●	●		● ● ●	● ● ●	● ● ●		
Medium +	●	● ●	● ●		● ● ●	● ●	●		

CHIPS AND GRANULARS		HIGHLIGHT THE FRUIT, RESPECT THE TYPICITY	COCO, VANILLA, SWEETNESS	CARAMEL, SMOKY NOTES	BRING STRUCTURE	AF	MLF	AGEING	TYPE OF WINE	GUIDELINES		
Chips French oak	Fresh	●●●	●●		●	●●●	●●	●		During the AF, the MLF or the maturation. Contact time: 4 - 8 weeks		
	Light	●●	●●		●			●●				
	Medium	●	●●●	●●	●●	●						
	Medium +	●	●	●●●	●●							
Chips American oak	Medium	●	●●●	●●	●	●		●●●			●●●	
	Medium +	●	●●	●●●	●							
Chips CENOBLEND®	Chic Oakly and spicy	●●	●●	●●●	●●●	●						
	Fun Gourmand and sweet	●●	●●●	●●●	●●							
	Pure Natural and fruity	●●●	●		●●	●●●		●●			●	

Granular French oak	Œnofresh®	● ● ●	●		●	● ● ●	-	-		From vatting, throughout AF. Contact time: 1-2 weeks Possible to use during MLF or ageing according to recommendations of your winemaker.
	Fresh	● ● ●	●		●			-		
	Light	● ●	● ●	●	●					
	Medium	●	● ● ●	● ●	● ●		●	●		
Granular American oak	Medium	● ●	● ● ●	● ● ●	●	● ● ●				
Granular ŒNOBLEND®	Ferm'Oak	● ● ●	● ●	● ●	● ●		-	-		



DECLARATION ON HONNOR

We hereby confirm that all products and auxiliaries listed below, contain **no substances of animal origin**. Furthermore, we confirm that for the production of the raw materials no processing aids of animal origin are being used. The substances **weren't tested on animals** (conducted or sponsoring directly by our company). This is individually true for all substances (ingredient or auxiliary material), and for the final product.

PRODUCTS AND AUXILIARY MATERIALS CONCERNED

All our products are concerned by this document, except these listed below*.

Information provided on this product information sheet is intended solely for internal use or for Vegan certification and hasn't to be send in other case.

** Products that couldn't be used with this document:*

Albumine d'œuf poudre, Caséimix, Caséine soluble, Colle de poisson LA, Gélatine spéciale vins fins, Gélatine Supérieure, Geldor®, Gelfine®, Gelflot®, Ovaline®, Lacticide, Polymix®.

Ambre RAIBON,
Quality Manager
le 12/04/2023

Protocols

// L.A SOLUTIONS



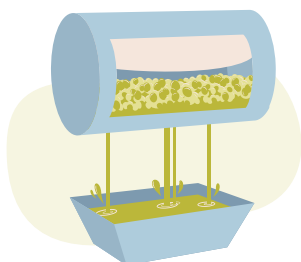


Fermentary esters

Optimal turbidity = 50 – 100 NTU

Optimal AF temperature = 14-16°C

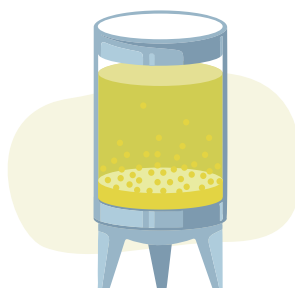
Pressing



Novoclair® Speed

Application: after pressing.

Benefits: ♦ fast depectinisation of must
in cold clarification or flotation

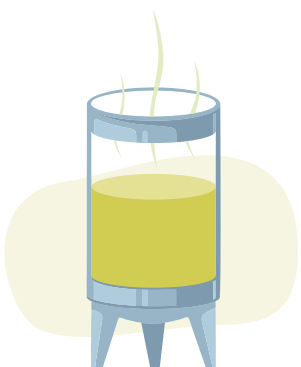


Settling tank

Gamme GreenFine®

Application: at settling.

Benefits: ♦ clarification of must
♦ removal of polyphénols
♦ colour management



Fermentation tank

œnoStim®

Application: in rehydration water for the yeast.

Benefits: ♦ optimised fermentation kinetics
♦ better implantation of selected yeast
♦ best revelation of aromas by yeast

Excellence® STR

Application: yeast addition.

Benefits: ♦ synthesis of fermentary esters
♦ good fermentation kinetics

OptiEsters®

Application: at the end of the 1st third of AF.

Benefits: ♦ stimulate synthesis of fermentary esters during AF

TO KNOW

The production of fermentary esters depends directly on the strain of yeast used. Certain enzymatic activities specific to the yeast are essential for an optimal revelation of acetate esters and ethyl esters of fatty acids. Excellence® STR was selected for this very reason.



Thiols

Optimal turbidity = 150 – 200 NTU

Optimal AF temperature = 18°C

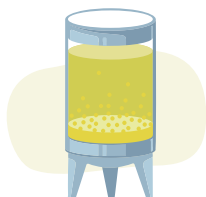
Harvest



Vinozym® FCE G

Application: on fresh grapes as soon as possible.

Benefits: ♦ depectinise must
♦ extract aroma precursors

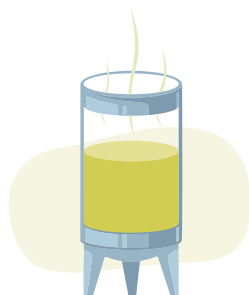


Settling tank

Gamme GreenFine®

Application: at settling.

Benefits: ♦ clarification of must
♦ removal of polyphénols
♦ colour management



Fermentation tank

OptiThiols®

Application: before AF.

Benefits: ♦ stimulates the synthesis of thiols during AF
♦ better preservation of thiols after AF



œnoStim®

Application: in rehydration water for the yeast.

Benefits: ♦ optimised fermentation kinetics
♦ better implantation of selected yeast
♦ best revelation of aromas by yeast

Excellence® FTH / TXL

Application: yeast addition.

Benefits: ♦ reveal aroma precursors (4MSP, 3SH et A3SH)
♦ good fermentation kinetics

œnozym® Thiols

Application: start of AF.

Benefits: ♦ reveal volatil thiols 4MSP, 3SH and A3SH

Optiflore® 0

Application: after 1st third of AF.

Benefits: ♦ no effect on nitrogen catabolic repression
♦ increased aromatic complexity



Aroma Protect®

Application: after AF or during ageing.

Benefits: ♦ protection of thiol aromas thanks to high concentration in glutathione

œnozym® Thiols

Application: during ageing.

Benefits: ♦ liberation of volatils thiols (4MSP, 3SH)

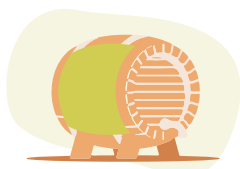
TO KNOW

The B-Lyase enzymatic activity of the yeast frees 10 to 15% of volatil thiols from cysteinyl and glutathionyl precursors during AF.

This leaves a dormant aromatic potential that can be exploited during maturation.

The use of a pectolytic enzyme such as œnozym® Thiols will help to release remaining thiols still available in the wine, and maximize the aromatic potential of white and rosé wines.

Ageing





On white and rosé wines



Excellence® B-Nature

Application: on fresh grapes, as soon as possible.

Benefits: ♦ control of microbial flora
♦ reduction of compounds that combine SO₂
♦ consumes dissolved oxygen

Aroma Protect®

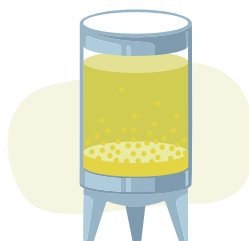
Application: on fresh grapes, as soon as possible.

Benefits: ♦ consumes dissolved oxygen
♦ reacts with quinones

Tanin gallique à l'alcool

Application: on fresh grapes, as soon as possible.

Benefits: ♦ inhibition of oxidases (tyrosinase, laccase)



Settling tank

Gamme GreenFine®

Application: at settling.

Benefits: ♦ decrease oxidised and oxidisable compounds



Fermentation tank

Excellence® FTH / TXL / STR / CHD

Application: yeast addition.

Benefits: ♦ low production of SO₂ and compounds that combine SO₂

Vitaferment® PH / Optiflore® 0

Application: during AF.

Benefits: ♦ answer to yeast nitrogen requirements
♦ optimisation of selected yeast metabolism

Aroma Protect®

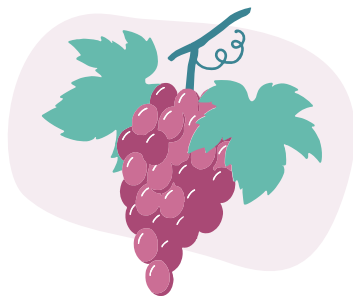
Application: at the end of AF (if MLF not desired) or MLF.

Benefits: ♦ consumes dissolved oxygen
♦ reacts with quinones



On red wines

Harvest



Excellence® B-Nature

Application: on fresh grapes, as soon as possible.

Benefits: ♦ control of microbial flora
♦ reduction of compounds that combine SO₂
♦ consumes dissolved oxygen

Tan&Sense® Volume

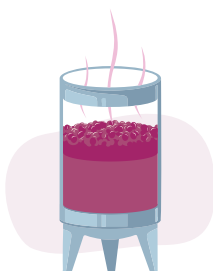
Application: on fresh grapes, as soon as possible.

Benefits: ♦ consumes dissolved oxygen
♦ protects grape tannins and anthocyanins

Pro Tanin R®

Application: on fresh grapes, as soon as possible.

Benefits: ♦ inhibition of oxidases (tyrosinase, laccase)
♦ grapes tannic potential preservation
♦ colour preservation



Fermentation tank



Excellence® XR / DS / SP / FR

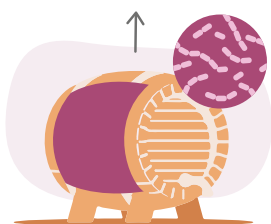
Application: yeast addition.

Benefits: ♦ low production of SO₂ and compounds that combine SO₂

Vitaferment® PH / Optiflore® O

Application: during AF.

Benefits: ♦ answer to yeast nitrogen requirements
♦ optimisation of selected yeast metabolism

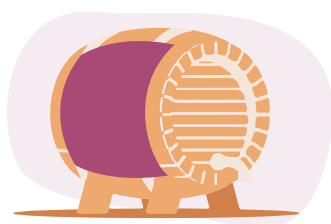


Malolactic fermentation

œno 1® / œno 2

Application: in the hours following the start of AF.

Benefits: ♦ shorten the gap between AF and MLF through controlled inoculation: limit microbial contamination and oxidations



Ageing

Killbrett® / Lacticide

Application: after FML.

Benefits: ♦ eliminate *Brettanomyces* populations (Killbrett®) and lactic bacteria (Lacticide)
♦ reduce populations of lactic bacteria and non-*Saccharomyces* yeasts (Killbrett®)

Tan&Sense® Volume Tan'Excellence® / Softan® Power

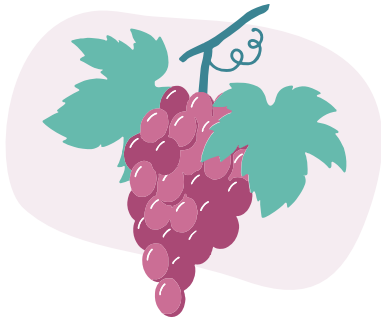
Application: after MLF.

Benefits: ♦ consume dissolved oxygen
♦ protect grape tannins and anthocyanins
♦ colour stabilisation



On red wines

Harvest



Vinozym® Vintage FCE

Application: on grapes.

Benefits:

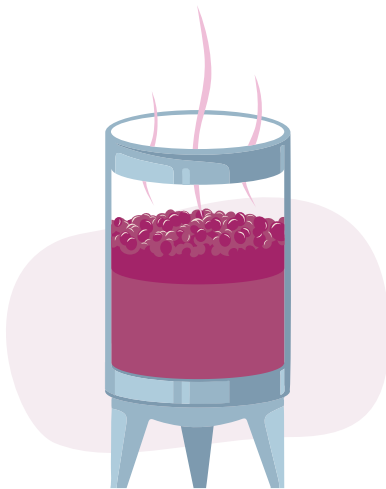
- ◆ extraction of beneficial phenolic compounds
- ◆ increasing colour and its stability
- ◆ improving filterability

Pro Tanin R®

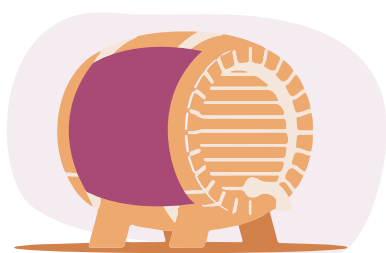
Application: on grapes.

Benefits:

- ◆ fast reaction with must proteins
- ◆ keep beneficial phenolic compounds
- ◆ inhibit laccase when *Botrytis cinerea* is present on grapes (refer to *Botrytest* to modulate the dosage)



Fermentation tank



Ageing (End of Fml)

Excellence® XR / DS

Application: yeast addition.

Benefits:

- ◆ high production of polysaccharides during AF, contributing to stabilisation of wines
- ◆ steady fermentation kinetics that enable optimal extraction of phenolic compounds

Softan® Vinification

Application: beginning of AF.

Benefits:

- ◆ catechic tannin that is highly reactive with ethanal enabling specific anthocyanins to be stabilised
- ◆ better colour stability
- ◆ brings structure and balance to wine profile

Natur'Soft®

Application: beginning of AF.

Benefits:

- ◆ autolysed yeasts rich in polysaccharides that fix colour during the alcoholic fermentation
- ◆ adds volume and roundness on the palate

Tan'Excellence®

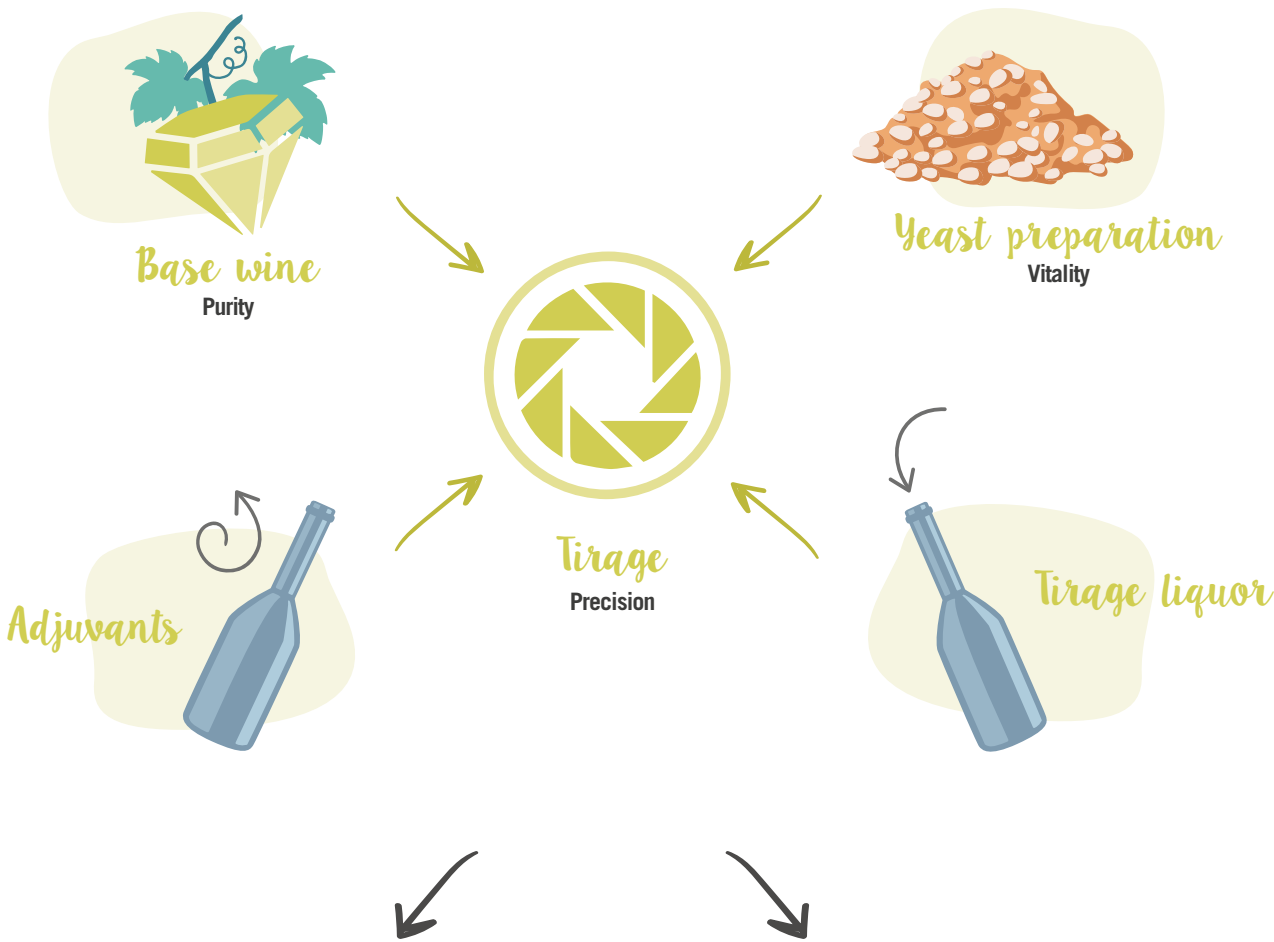
Application: end of FML.

Benefits:

- ◆ stabilise colour thanks to its formulation rich in catechic tannins
- ◆ manage oxidation thanks to ellagic tannins



Sparkling wine:
the basics



Traditional method

- Second fermentation / Maturation
 - ◆ Precision
- Riddling
 - ◆ Clarification
- Disgorging
 - ◆ Limpidity
- Disgorging liquor addition
 - ◆ Finalisation

Charmat method

- Second fermentation / Maturation
 - ◆ Precision
- Stabilisation / Filtration
 - ◆ Clarification
- Disgorging liquor addition
 - ◆ Finalisation
- Isobarometric bottling
 - ◆ Bottling

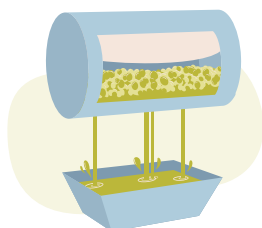


Base Wines Process

Optimal turbidity = 100 – 150 NTU

Optimal AF temperature = 15-17°C

Pressing



Novoclair® Speed

Application: when filling tank.

Benefits: ♦ rapid depectinisation of must
♦ in cold sedimentation or flottation



Settling tank

Gamme GreenFine®

Application: at settling.

Benefits: ♦ must clarification
♦ polyphenol removal
♦ colour management



Fermentation tank

EnoStim®

Application: in yeast rehydration water.

Benefits: ♦ optimised fermentation kinetics
♦ better implantation of selected yeast

Excellence E2F®

Application : yeast addition.

Benefits : ♦ the strongest yeast, to reach aromatic purity

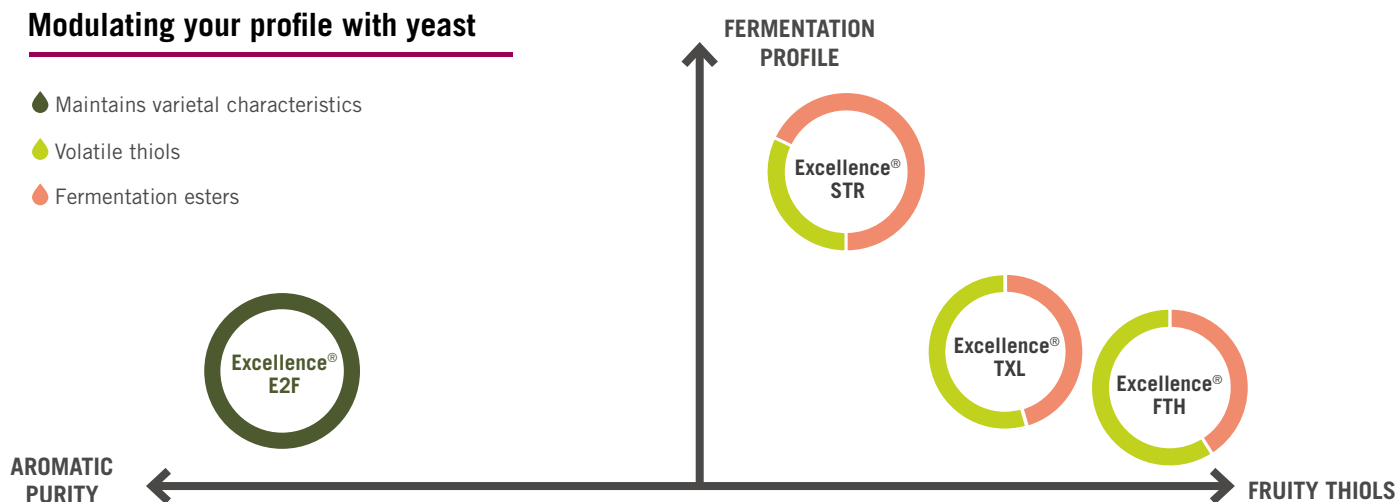
OptiFlore® 0

Application: after one third of the AF.

Benefits: ♦ high quality yeast nutrition, limits appearance of reductive aromas

Modulating your profile with yeast

- ♦ Maintains varietal characteristics
- ♦ Volatile thiols
- ♦ Fermentation esters





Second fermentation and bottling



Excellence E2F®

Application: in the tirage liquor.

Benefits: ♦ resistant to alcohol, pressure, and difficult conditions, produces a high quality mousse

Tanin E2F®

Application: in the tirage liquor.

Benefits: ♦ antioxidant
♦ causes unstable proteins to precipitate
♦ brings elegance and structure

Bentosol Protect

Application : adjuvant de remuage pour méthode traditionnelle.

Intérêts : ♦ clarification optimale des levures, forme un dépôt compact



Disgorging & Dosage

Vinogom®, Subli'Sense®, Manno'Sense®

Application: at disgorging / dosage.

Benefits: ♦ adds roundness, sucrosity, aromatic persistence

Softan® Finition / Gamme Tan&Sense®

Application: at disgorging / dosage.

Benefits: ♦ adjust your wine profile to market demands, mitigates bitterness

TO KNOW

SO₂ can strongly disturb the second fermentation.

The level of active SO₂ must be less than 1.5 mg/L. It is important to avoid adding sulfites at least fifteen days before the tirage.



Calculate at any moment your active SO₂ and optimise your secondary fermentations, thanks to our mobile app **CEnoSolutions** available on the AppStore and Google Play Store.

ŒnoSolutions

by Lamothe Abiet.

A TURNKEY TOOL

Discover Œnosolutions, Lamothe-Abiet's mobile app available on Android and IOS.

User-friendly, this app features enological calculators, such as sulphiting, acidity management or oenological auxiliaries management.

Using a virtual assistant,
Œnosolutions helps you to manage:



YEAST NUTRITION



ALCOHOLIC FERMENTATION



SECOND FERMENTATION



MALOLACTIC FERMENTATION



CHOICE OF ENOLOGICAL
WOODS



ŒNOSOLUTIONS IS AVAILABLE ON
APPSTORE AND GOOGLE PLAY STORE.



Decision making tools

// L.A SOLUTIONS





Unbalanced due to astringency

Medium to high in tannins

Gélatine supérieure: 3-5 cL/hL
Polymix® Natur': 30-80 g/hL
Clarfine: 30-60 g/hL
GreenFine® X-PRESS: 30-80 g/hL

Low in tannins

Gélatine supérieure: 1-2 cL/hL
Geldor®: 1,5-4 g/hL
GreenFine® Nature: 20-40 g/hL
Natur'Fine® Prestige: 20-40 g/hL

Other causes of imbalance

Treat the cause of imbalance
ex: lack of sweetness
> Subli'Sense®, Manno'Sense®,
> Softan® Sweetness
ex: lack of roundness/volume
> Vinotaste®Pro + works on lees



Finishing

High in tannins

Gélatine spéciale vins fins: 5-10 cL/hL
Gelfine®: 5-10 g/hL
Ovaline®: 5-9 cL/hL
GreenFine® X-PRESS: 30-80 g/hL

Medium in tannins

Geldor®: 3-8 cL/hL
Gélatine spéciale vins fins: 4-8 cL/hL
Gelfine®: 2-4 g/hL
Ovaline®: 3-6 cL/hL
GreenFine® Nature: 20-40 g/hL

Low in tannins

Geldor®: 1,5-4 cL/hL
Gélatine spéciale vins fins: 2-4 cL/hL
Natur'Fine® Prestige: 10-30 g/hL

Excess of polyphenols

Secondary oxydation

Polymix® Natur': 40-80 g/hL
Polymix®: 40-80 g/hL
Clarfine: 40-80 g/hL
PVPP: 30-60 g/hL
Caséimix: 40-80 g/hL
GreenFine® Must: 10-50 g/hL

Bitterness, astringency

Polymix® Natur': 15-30 g/hL
Polymix®: 15-30 g/hL
Clarfine: 10-30 g/hL
GreenFine® Rosé: 10-50 g/hL

Colour management

GreenFine® Intense: 40-120 g/hL
GreenFine® Rosé: 30-80 g/hL
Polymix®: 40-100 g/hL



Finishing

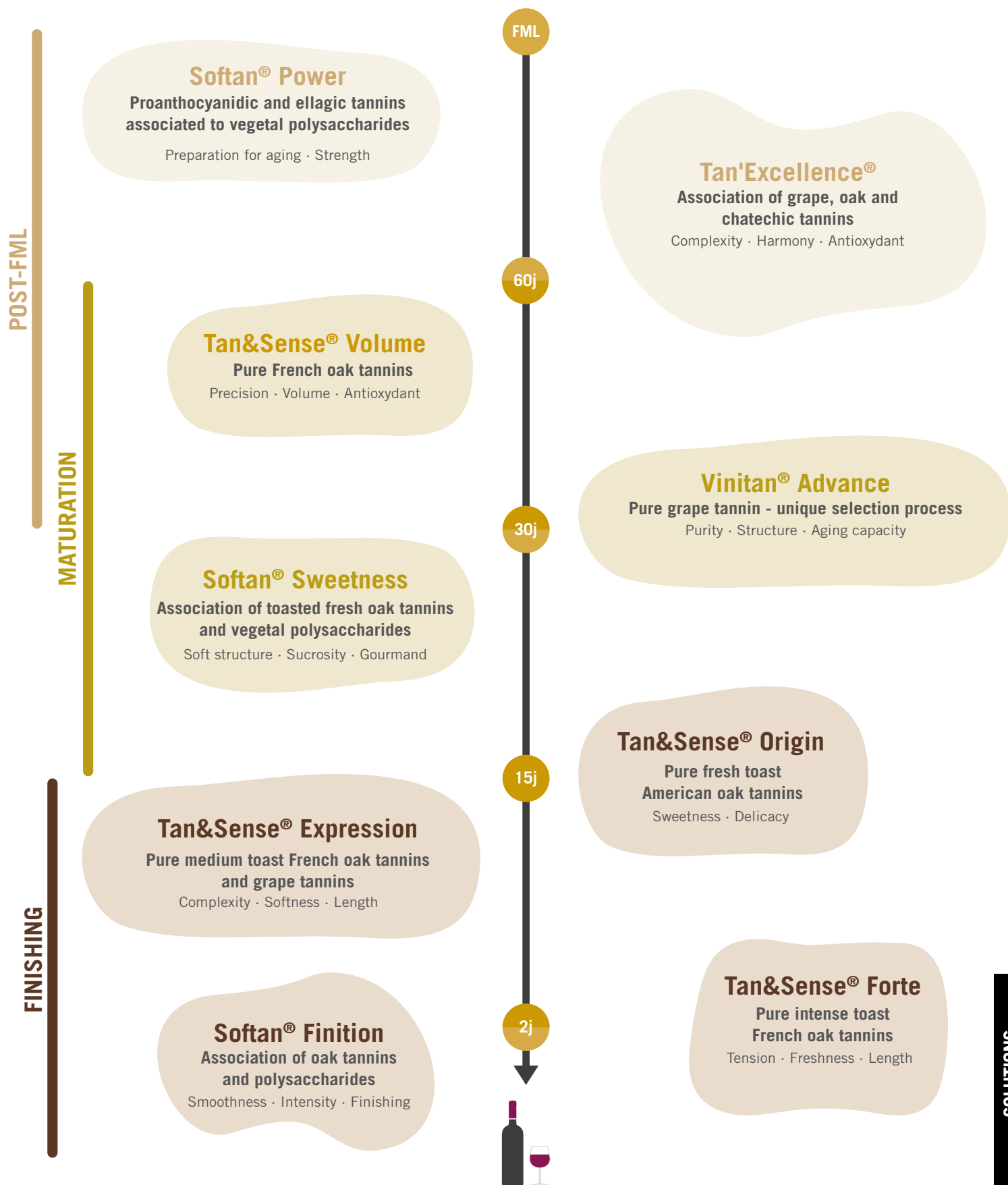
Colle de poisson LA: 0,5-1,5 g/hL
Gélatine spéciale vins fins: 1-3 cL/hL
Geldor®: 1,5-3 cL/hL
Natur'Fine® Prestige: 10-30 g/hL
GreenFine® Nature: 10-30 g/hL

Brightness

Colle de poisson LA: 1-3 g/hL
Blankasit 2 cL/hL + Gélatine spéciale vins fins: 3-5 cL/hL
Polymix®: 15-30 g/hL

Protein stability

Bentosol Protect (granulated)
Bentosol poudre
Bentosol FT (tangential)
Dosage to be determined by heat test



Clarity and the absence of deposits are essential for white, rosé, and red wines. Therefore, stabilisation is a crucial step. Lamothé-Abiet provides specific solutions to obtain tartaric, protein and aromatic stabilisation in wines, whilst respecting their organoleptic characteristics.



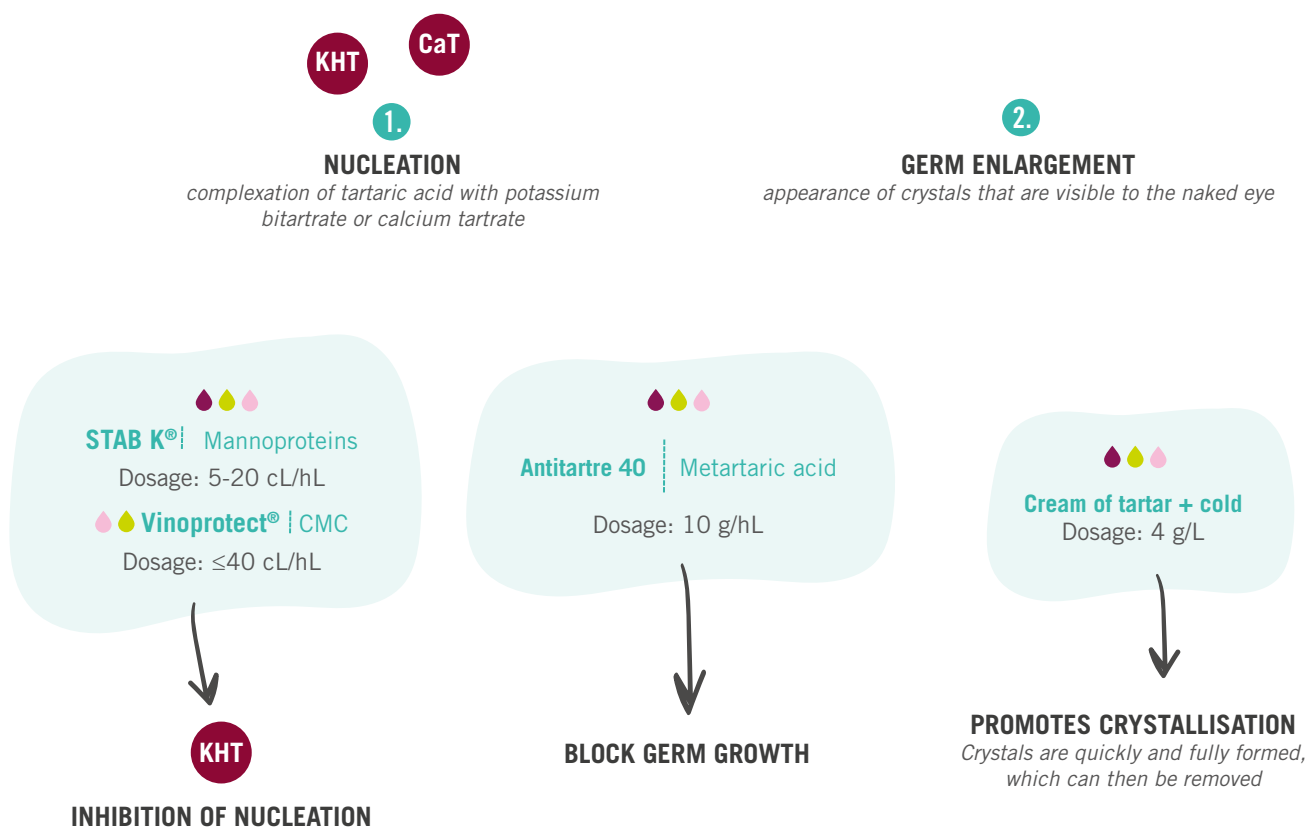
WHAT IS TARTRIC PRECIPITATION?

Tartaric acid is the acid with the highest concentration in grapes. When the concentration is too high (saturation) in musts or wines, it precipitates during the vinification or storage. The crystals (tartar, potassium bitartrate or KHT) can then be seen at the bottom of the bottle. Although these crystals do not affect the organoleptic qualities of the wines, **many consumers reject wines that contain them, thinking that they are a fault.**

Tartaric acid is found in equilibrium in wines in the form of two salts: potassium hydrogen tartrate (KHT) and neutral calcium tartrate (CaT).

These salts have specific solubilities which vary according to the temperature, the pH and the alcohol content. If the amount of KHT or CaT are greater than the solubility limit at a given temperature, there is therefore the risk of "precipitation".

Tartar crystal precipitation in two steps:







LAMOTHE-ABIET

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