HARVEST

DAL CIN

WINE GIVES COURAGE AND MAKES MEN MORE APT FOR PASSION
(Ovidio)

1949...
... His own passion for the science led Gildo Dal Cin to found his lab in Milan.

His own passion for the wine guided him to visit wineries and talk with enologists.

Today we continue his masterwork, listening and answering to a world which never stops: the enology.

organic certified product (EU Reg. 203/2012)

AF allergen free (Annex II, EU Reg. 1169/2011)

no animal origin product

in compliance with EU Reg. 203/2012

1 hl = 100 liters

INDEX

AROMAS AND LONGEVITY

The best results for white and rosé wines

THE THIOL CHARACTER

FERVENS EMOTHION. The yeast that expresses the aromatic potential of thiol-rich grapes. Fervens EmoTHIOn releases aromatic thiols even during low temperature fermentations (14°C).It grants a great presence of 3MH (grapefruit), 3MHA (passion fruit) and 4MMP (currant, boxwood) in the wine, giving it a fruity and tropical profile.

WYNTUBE REVELATHIOL. A pure organic nutrient, characterised by the excellent supply of glutathione.In the fermentation of musts with varietal thiol potential, the presence of only organic nitrogen favours the entry of aromatic precursors into the yeast cell and their transformation into their aromatic form. miniTubes™ technology.

THE FRUITY CHARACTER

FERVENS FRAGRANCE. For the fermentation of whites and rosés to obtain aromas ranging from tropical fruits to citrus notes. Indispensable to increase the longevity of bottled wines, in fact, it is a very low producer of riboflavin, precursor of the “light-struck” taste defect. When used with wynTube Fructal, top aroma production is achieved and riboflavin content is kept under control.

WYNTUBE FRUCTAL. 100% organic nutrient. The supply of amino acids encourages the production of fruity and tropical notes.When combined with Fervens Fragrance, in addition to giving complex and interesting aromatic results, it makes it possible to control the supply of riboflavin and therefore limits the increase in precursor compounds of the light-struck taste. miniTubes™ technology.

MUST FINING

KITOCLEAR. Fining agent based on pre-activated chitosan for the rapid clarification and significant reduction of indigenous microflora in white and rosé musts. Particularly suitable for flotation.

PHYTOKOLL VIP. Plant-based fining agent for the reduction of catechins in white and rosé musts.In static settling or in flotation, it eliminates potentially oxidisable unstable fractions from the musts.

WINE LONGEVITY

FITO-STOP, for removing pesticide residues. Removes a wide range of powdery mildew fungicides, downy mildew fungicides, botrytis fungicides, and insecticides.Facilitates the fermentation kinetics of S. cerevisiae, avoiding increases in volatile acidity. miniTubes™ technology.

DROP&GO, for removing metals. Thanks to the chelating power of the PVI/PVP co-polymer, when used in musts Drop&Go reduces the metal content, in particular iron and copper.Protects aromas, colour and stimulates alcoholic fermentation. miniTubes™ technology.

KOLIREX GO FRESH, for removing riboflavin. Specific fining agent for removing riboflavin content, considerably reducing the possibility of the “light struck” taste.Also effective when you need to correct polyphenolic content and achieve colour stabilisation over time. miniTubes™ technology.

REDUCING SO_2 USE

protection, freshness and aromas

ANTIOXIDANT PROTECTION

INFINITY BLU. Antioxidant protection for white, rosé and red musts.It can be used right from the unloading of the grapes into the hopper and then from the crushing onwards, to prevent oxidative and oxidasic reactions of anthocyanins, catechins, polyphenols and aromatic substances.

INFINITY VERT. Condensed tannin obtained from green tea, suitable for use in musts and white, rosé and red wines.In musts it helps protecting the aromas and colour from oxidation reactions, both by reacting directly with oxygen and by inactivating the oxidase enzymes.

INFINITY REDOX. It is used at the end of alcoholic fermentation to protect white and rosé wines from oxidative phenomena, both during tank storage and racking.

MICROBIOLOGICAL PROTECTION

BATTKILL XXL. Based on chitosan to inhibit the growth of lactic acid bacteria in musts during cold settling, pre-fermentative maceration and alcoholic fermentation. It is effective for SO_2 reduction protocol.

WYNTUBE ALERT. Complex nutrient with antimicrobial activity. Indicated to avoid the growth of lactic acid bacteria during alcoholic fermentation. It makes it possible to reduce the dosages of SO_2 favouring the dominance of *S. cerevisiae.*

ENODOC TD3. *Torulaspora delbrueckii* strain. In pre-fermentative macerations and cold settling it inhibits the growth of indigenous yeasts and bacteria, avoiding the start of wild fermentations while drastically reducing the use of SO_2.

ROAD TO...
whites & rosé

BEFORE WINEMAKING

VKS

PREPARE THE MUST

DROP&GO

LONGEVITY OF COLOUR AND AROMAS

FERVENS FRAGRANCE

ENHANCE THIOLS

WYNTUBE REVELATHIOL

PLEASANTNESS EXPLOSION

WHEN THE WINERY IS “CLEAN”:

SO_2 plays only an antioxidant role	→ reduction or elimination of sulphites
Selected yeasts and bacteria are dominant	→ intensity and immediacy of aromas
Recontaminations are negligible	→ wines without organoleptic defects
Safety in spontaneous fermentations	→ organic or biodynamic winemaking
Corrective actions are less frequent and invasive	→ great sustainability
The use of products and equipment is more effective	→ savings in terms of time and money

CORRECT HYGIENE PRACTICES

To make cleaning operations more effective, it is recommended to:

- Always start by removing coarse dirt with potable water
- After cleansing, rinse thoroughly with potable water
- Sanitise only after cleansing
- After sanitisation, rinse thoroughly, preferably with microfiltered water
- After the final rinse, check that the water is neutral
- Respect the recommended dosages, contact times and temperatures

SURFACTANTS AND CONDITIONERS

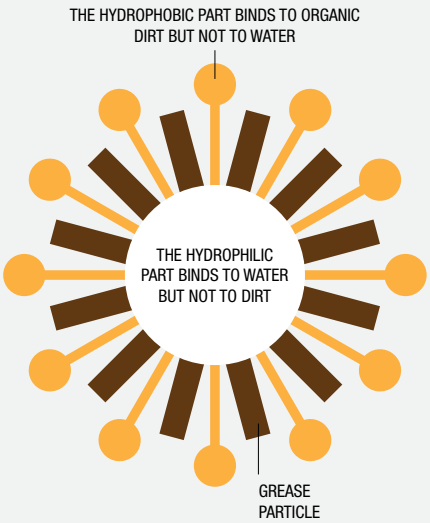
A simple alkaline aqueous solution is not a good detergent.To be effective, the disintegrating action of soda must be supported by other active ingredients.

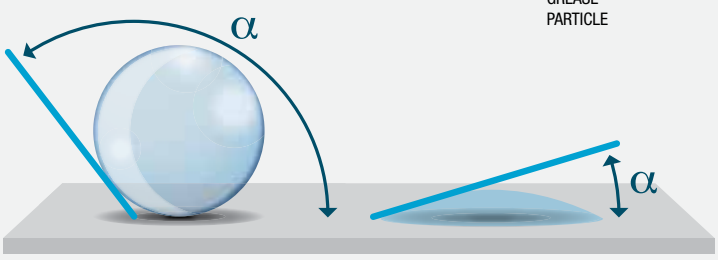
Surfactants are substances which, in detergents, play different roles. The most important is to reduce the surface tension of the washing solution, improve its wettability and, therefore, facilitate surface/detergent contact.

These surfactants allow the dirt/water emulsion preventing the dirt from re-depositing on the surface and assisting its removal through rinsing.

Other surfactants are used to avoid foaming (e.g. for products to be used in CIP) or, on the other hand, to create persistent and clinging foam (foaming products).

The conditioners are indispensable for binding Ca and Mg ions and to avoid the formation of limescale deposits, especially when using hard water, high temperatures and alkaline products. Conditioners are indispensable in products for washing bottles and kegs and in formulations of lubricants for belts.





Lowering of surface tension and increasing wettability.

1

WINERY HYGIENE

A CLEAN WINERY DOES 50% OF THE WORK!

We reduce the use of SO_2 and avoid recontamination, we respect the aromas of wine, we limit subtractive treatments and improve the production sustainability.

		REMOVAL OF COARSE DEPOSITS	REMOVAL OF DIRT, COLOUR AND MICROFLORA	MICROFLORA REMOVAL
	**CARTS, CARGO BEDS, CLOTHS, BOXES** Plant residues, juice, microflora	*Daily:* WATER **SKIUNÒ SAN**	*Every other day:* **DICISAN SPECIAL**	*Before and after the harvest* **VKS**
	**GRAPE RECEIVING** Plant residues, juice, microflora, colour	*Daily:* WATER **SKIUNÒ SAN**	*Every 3 days:* **SPUMASAN** or **DICISAN SPECIAL**	*Before and after the harvest* **VKS**
	**PRESSES, DESTEMMERS** Plant residues, juice, microflora, colour	*Daily:* WATER **SKIUNÒ SAN**	*Every other day:* **DICISAN SPECIAL**	*Weekly:* **VKS**
	**PUMPS AND HOSES** Plant residues, must, wine, lees, microflora, colour	*Daily:* hot H_2O flux (not reusable)	*Every other day:* **DICISAN SPECIAL**	*Weekly:* **VKS**
	**ROTARY DRUM FILTERS** Perlite residues, diatomaceous earth, plant residues, microflora	*Daily:* hot H_20 with low pressure washer presión	*Every 3 days:* **DICISAN SPECIAL** **SPUMASAN**	*When needed:* **BIOXAN**
	**STEEL TANKS** Tartrates, colour, yeasts, bacteria	*At every racking and to remove tartrates:* **SGROMMATORE** or **SGROMMATORE Liquid**	*At filling:* *(after long period)* **DICISAN SPECIAL**	*When needed:* **VKS**
	**CONCRETE AND FIBREGLASS TANKS** Tartrates, colour, yeasts, bacteria	*At every racking and to remove tartrates:* **SGROMMATORE** or **SGROMMATORE Liquid**	**DICISAN SPECIAL** **SPUMASAN**	*When needed:* **VKS**

Sgrommatore DC

Alkaline detergent in flakes, surfactant, buffered and with conditioners. For the removal of tartrates from tanks, barrels, systems, filter cloths.

Dosage
1-10% in water preferably at 30-40 °C.

Packaging
1 kg, 10 kg and 25 kg bags.

Sgrommatore Liquido

Alkaline liquid detergent, surfactant and with conditioners. For the removal of tartrates from tanks, barrels, systems, filter cloths.

Dosage
3-9% in water preferably at 30-40 °C.
Up to 12-15% for stubborn dirt.

Packaging
1 kg bottles, 15 kg and 24 kg jerrycans, 220 kg drums and 1300 kg IBC.

Skiunó San

Liquid detergent consisting of surfactants and complexing agents. Useful during harvesting as a substitute for soda, for frequent use on all equipment, including press cloths.

Dosage
3% in water at 18-20 °C. Leave on for at least 10'.

Packaging
5 kg jerrycans.

Dicisan Special

Liquid chlorine-alkaline detergent. Removes organic residues, colour and microflora from systems, tanks and equipment.

Dosage
0.5-4% in water.

Packaging
1 kg bottles, 10 kg and 25 kg jerrycans, 250 kg drums and 1100 kg IBC.

Spumasan

Foaming chlorine-alkaline detergent, with conditioners. Suitable for cleaning and removing microflora from vertical surfaces.

Dosage
3-5% in water and spray with a special cleaning hose.

Packaging
25 kg jerrycans.

Bioxan

Peracetic acid-based solution with effective microflora removal action. For fermentation vessels, filtration sheet systems and rotary drum filters.

Dosage
0.2-1% in water at room T or < 40 °C.

Packaging
10 kg and 25 kg jerrycans.

VKS

Oxidising detergent with broad spectrum action for removing microflora. Suitable for hoppers, pumps, tanks, autoclaves, PVC and steel pipes, equipment.

Dosage
0.1%-2% depending on the contact time.

Packaging
5 kg drums.

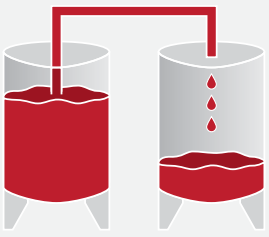
IN WINEMAKING AND DURING RACKING TO PROTECT AND STABILISE

Protect the organoleptic properties in a timely manner during harvesting, transport and arrival in the winery against oxidative phenomena.

Protect the must from oxidative phenomena affecting aromas and polyphenols. Promote the condensation of anthocyanins.

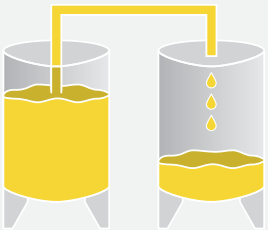
In fermentation and maceration to protect and promote the stabilisation of anthocyanins (direct condensation). Improve the structure of the future wine.

During fermentation to protect the aromas and colour. Promote the expression of terpenic aromas and improve the structure.



During devatting and racking, the wine is protected from oxygen, the polymerisation of the anthocyanins is favoured and the use of SO_2 is reduced.

Protect wine from oxygen during storage and racking by reducing the use of SO_2.



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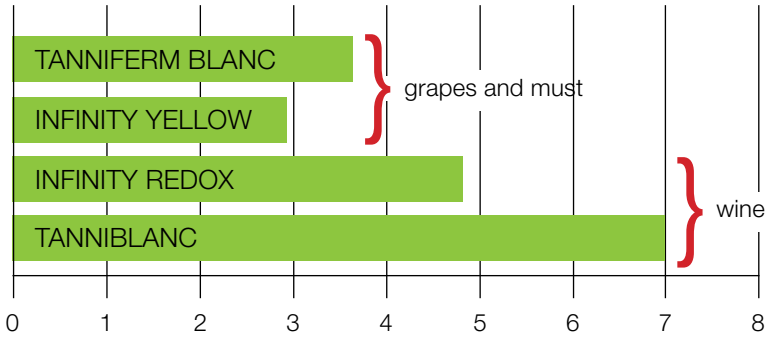
TANNINS

THE ESSENCE OF WOOD

The properties of wood to protect, stabilise, prevent defects and laying the foundations for an excellent vintage.

WHITE AND ROSÉ WINEMAKING



Antioxidant capacity measured with TEAC method.

Tanniferm Blanc

AF

It is used from the harvest onwards, to prevent oxidative and oxidasic reactions of catechins, polyphenols and aromatic substances. The protective action takes place by binding the oxygen present and making it unavailable for reactions with polyphenols and inhibiting the oxidative enzymes, responsible for colour degradation and consequent browning. Tanniferm Blanc lets you obtain wines with a lighter colour and citrus hues that are less susceptible to browning. The aromatic components retain great intensity and freshness.

Dosage
For rot affected grapes: up to 20 g/100 kg.
When filling the tank and during fermentation: 3-10 g/hl.

Packaging
500 g and 12.5 kg bags.

Infinity Yellow

A tannin solution to enhance the terpene and norisoprenoids aromatic precursors to be used during winemaking. With distinctly varietal yeasts, e.g. Fervens GN or Enodoc BV-03, the wines are noticeably richer in fruity, floral and citrus notes. With aromatic yeasts it is advisable to use with Aromazina DC in order to guarantee the release of terpenes and their effect will add to the fermentation aromas produced by the yeast.

Dosage
2-10 g/hl in the fermenting must.

Packaging
1 kg bottles.

Infinity Redox

AF

It is used at the end of alcoholic fermentation to protect white and rosé wines from oxidative phenomena, both during tank storage and racking. The antioxidant action is particularly effective thanks to the presence of mainly gallic hydrolysed tannins which, by binding the oxygen present in the wine, prevent degradation reactions of the polyphenols, in particular catechins, and the aromatic components.
Infinity Redox is ideal for winemaking with reduced use of SO_2, in particular when combined with the use of Tannex, Tanniferm Blanc or Infinity Blu on the grapes and must, and the use of Tanniblanc or Infinity Fruity White in pre-bottling.

Dosage
In racking 1-2 g/hl.
During storage: 2-5 g/hl.

Packaging
500 g and 12.5 kg bags.

Tanniblanc

AF

Gallic tannin extracted exclusively from oak gall, it protects white and rosé wines against oxidative phenomena. It enhances the taste of white wines without affecting astringency, even at the highest dosages.

Dosage
1-5 g/hl after the first racking or even afterwards, as needed.

Packaging
500 g and 12.5 kg bags.

RED WINEMAKING

Tanniferm Flash

It is used in the press-destemmer to prevent oxidative reactions of anthocyanins. Gallic and ellagic tannins consume oxygen and inhibit oxidative enzymes, laccases and polyphenol oxidases, responsible for colour degradation, especially in rot affected grapes. Procyanidin tannins support these actions and are directly involved in anthocyanin stabilisation reactions. Tanniferm Flash lets you obtain wines with higher polyphenolic content and better colour stability.

Dosage
For rot affected grapes: 20-60 g/100 kg.
During maceration and fermentation: from 20 g/hl.

Packaging
500 g and 12.5 kg bags.

Tannirouge

Pyrocatechinic tannin, capable of binding anthocyanins and stabilising them at least partially, preventing colour depletions that can occur during fining and stabilising treatments.

Dosage
5-20 g/hl during maceration, also with subsequent additions.

Packaging
500 g and 12.5 kg bags.

Top Tan CR

Grape tannin derived from grape seeds, specific for colour stabilisation in red wines. Used from maceration, it integrates with all the polyphenols of the wine, as well as contributing to the condensation of the anthocyanins to increase the softness and structure of the wine. Adding Top Tan CR lets you obtain a strong colour retention and a sensation of a full body and complexity of the wine.

Dosage
5-10 g/hl during maceration, also with subsequent additions.

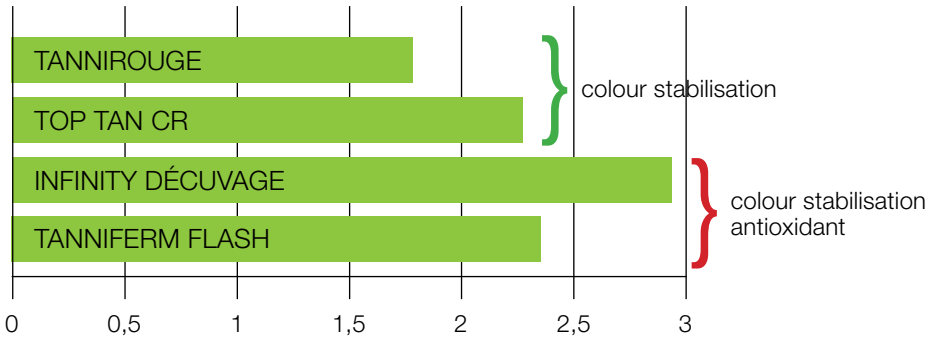
Packaging
500 g jars.

Infinity Décuvage

When used at devatting, it allows an initial polymerisation of the anthocyanins to stabilise the colour, both by direct condensation and mediated polymerisation. The excellent antioxidant capacity protects the colour and aromatic substances during racking. Infinity Décuvage can be used in winemaking with reduced use of SO_2, in particular if used with Tannex, Tanniferm or Infinity Blu on grapes and must, and with Infinity Fruity Red in pre-bottling.

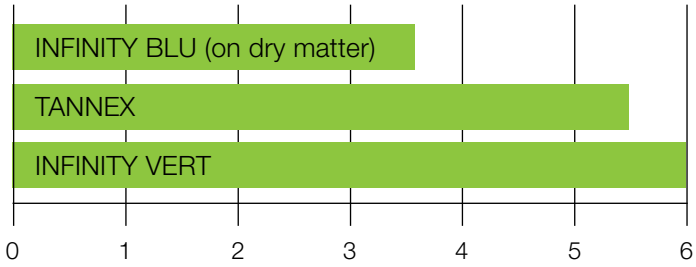
Dosage
At devatting for colour stabilisation: 5-10 g/hl.
During racking for antioxidant protection: 3-5 g/hl.

Packaging
500 g and 12.5 kg bags.



Antioxidant capacity measured with TEAC method.

WHITE, ROSÉ AND RED WINEMAKING



Antioxidant capacity measured with TEAC method.

Infinity Blu

Right from the harvest, it protects musts, white, rosé and red wines against oxidative reactions of catechins, aromatic substances, polyphenols and anthocyanins. As it is liquid, it is practical and quick to use. It binds oxygen making it unavailable for reactions with polyphenols and allows it to inhibit oxidative enzymes, laccases and polyphenol oxidases, responsible for colour degradation, and subsequent browning. Essential especially in grapes affected by rotting. In red wines, after devatting, at the end of alcoholic fermentation and in the early stages of ageing, it allows the formation of the ethyl bridge and tannin-anthocyanin condensation.

Dosage
For rot affected grapes: up to 50 g/100 kg.
When filling the tank and during fermentation:8-30 g/hl.
Up to 15 g/hl for the ageing of red wines.

Packaging
5 kg and 25 kg jerrycans, 250 kg drums.

Tannex

Gallic tannin with high antioxidant power, for the vinification of both white and red grapes. The high reactivity with oxygen protects the aromas and colour from oxidative phenomena, in addition the oxidative enzymes, laccases and polyphenol oxidases, responsible for the degradation of the colour, especially in grapes affected by rotting, are inhibited. It does not interfere with the structure of the wine.

Dosage
In red wine fermentation from 10 to 20 g/hl.
In white and rosé wine fermentation from 3 to 10 g/hl.

Packaging
500 g and 12.5 kg bags.

Infinity Vert

Condensed tannin obtained from green tea, suitable for use in musts and white, rosé and red wines. In musts it helps protect the aromas and colour from oxidation reactions, both by reacting directly with oxygen and by inactivating the oxidase enzymes.

Dosage
In must: 2-10 g/hl.

Packaging
500 g jars.

Infinity Vert's contribution to the sensory profile of wines

RED WINEMAKING

PHASE	OBJECTIVE	PRODUCT	WHY CHOOSE IT
HARVESTING TRANSPORT UNLOADING	**Substitute for SO_2** Protection against O_2 Laccase inactivation	**INFINITY BLU**	Practicality of the liquid form in entry level wines
		TANNEX	High antioxidant capacity and respect for the sensory profile in premium wines
PRESSING	**Substitute for SO_2** Protection against O_2 Laccase inactivation	**INFINITY BLU**	Practicality of the liquid form and convenience
		TANNEX	High antioxidant capacity and respect for the sensory profile
		TANNIFERM FLASH	Partial stabilisation of anthocyanins and excellent value for money
FERMENTATION MACERATION	**Colour stabilisation** Enhance structure	**TANNIFERM FLASH**	Partial stabilisation of anthocyanins and excellent value for money
		INFINITY BLU	Stabilising action and convenience
		TOP TAN CR	Anthocyanin condensation and structure in premium wines lacking in anthocyanins or tannins
		INFINITY VERT	High antioxidant capacity in premium wines
DEVATTING RACKING	Protection against O_2 Substitute for SO_2 **Colour stabilisation**	**INFINITY DÉCUVAGE**	Antioxidant capacity and colour stabilisation in sulphite-free winemaking
		TANNIROUGE	Contribution to the structure

WHITE AND ROSE WINEMAKING

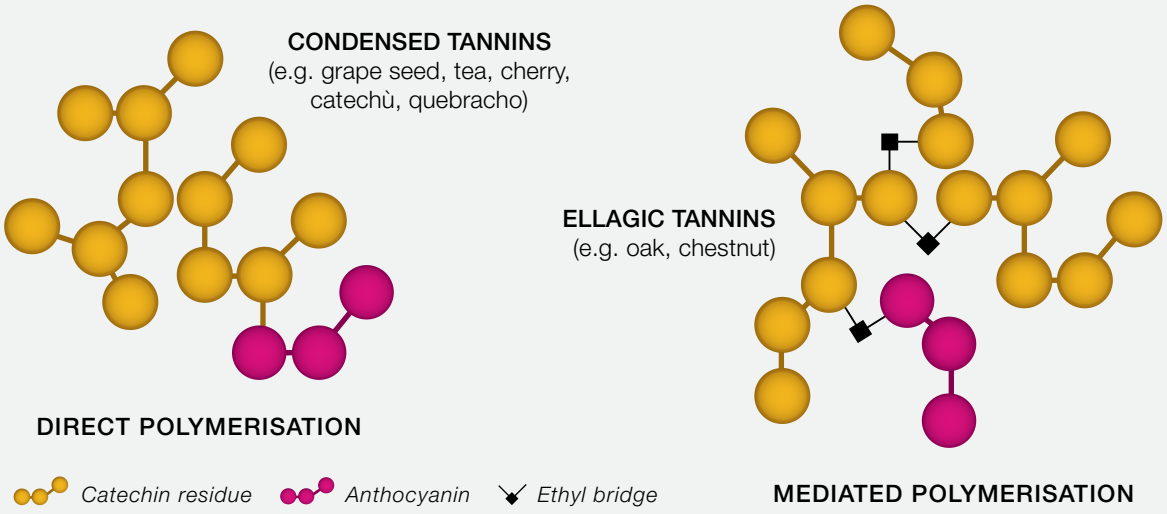
PHASE	OBJECTIVE	PRODUCT	WHY CHOOSE IT
HARVESTING TRANSPORT UNLOADING PRESSING	**Substitute for SO_2** Protection against O_2 Laccase inactivation	**INFINITY BLU**	Practicality of the liquid form in entry level wines
		TANNEX	High antioxidant capacity and respect for the sensory profile in premium wines
		TANNIFERM BLANC	Good antioxidant capacity and excellent value for money
FERMENTATION	**Protection against O_2** Laccase inactivation Increase of aroma	**TANNIFERM BLANC**	Good antioxidant capacity and excellent value for money
		TANNEX	High antioxidant capacity and respect for the sensory profile in premium wines
		INFINITY VERT	High antioxidant capacity in premium wines
		INFINITY YELLOW	Increase of aroma and good antioxidant capacity
RACKING	**Protection against O_2** Substitute for SO_2	**INFINITY REDOX**	Good antioxidant capacity and excellent value for money
		TANNIBLANC	High antioxidant capacity and respect for the sensory profile in premium wines

TANNINS: A HETEROGENEOUS FAMILY INVOLVED IN MANY REACTIONS

STABILISING ACTION

- **oxidase and oxidative phenomena:** tannins inhibit oxidase, tyrosinase and laccase enzymes, both by inactivating them through aggregation (tannin-protein reaction), and by capturing oxygen (antioxidant power) making it unavailable for oxidases. Polyphenols in general and tannins in particular are the first oxygen acceptors in must and wine. Thanks to this, in musts, both red and white, they help to protect against oxidation, assisting the action of SO_2.

- **colour:** condensed tannins and hydrolyzable tannins are involved in the stabilisation of the colour of red wines through two different mechanisms.
  Condensation (copigmentation): weak reaction between anthocyanins and **condensed tannins**.
  These complexes are unstable in an alcoholic environment.
  Mediated polymerisation: through the formation of acetaldehyde bridges (ethyl), between anthocyanins and **gallic and ellagic tannins**.



CLARIFYING ACTION

- **protein removal:** gallic tannins are highly reactive with proteins; this feature is used in white wines to lower the dosage of bentonite necessary to achieve protein stability and to avoid overfining when using gelatine or other protein-based fining agents.

- **removal of sulphur compounds:** tannins complex and eliminate from the must or wine the molecules responsible for the off-odour problems, mercaptans and H_2S, bringing out the aromas of the wine and reducing or avoiding the use of copper.

- **metal chelation:** hydrolysable tannins, in particular gallic tannins, are capable of binding metals (e.g. iron and copper); the tannin-metal complex precipitates reducing the concentration of the latter in the wine.

The tannins used in the early stages of winemaking will not be found in wine after fermentation as they react with oxygen and other molecules (proteins, phenols, etc.) to form large complexes that are insoluble in wine.

INFINITY

INFINITY *Yellow*
For rich varietal characteristics in white and rosé wines

INFINITY *Blu*
For white, rosé and red musts protection

INFINITY *Redox*
To protect white and rosé wines from oxidation

INFINITY *Décuvage*
To protect and stabilize wine colour

INFINITY *Vert*
For a greater freshness and longevity in the wines

INFINITY

REMOVAL OF PESTICIDE RESIDUES DURING FERMENTATION

Even though there has been a general reduction of pesticide residues in wines compared to the past, for food safety reasons there is still considerable interest in minimising them even more. The use of specific oenological products in fermentation can help achieve this objective.

Research conducted with the Edmund Mach Foundation led to the creation of a specific adjuvant, called **Fito-Stop**, which is particularly effective against both fungicides and insecticides.

Using **Fito-Stop** during alcoholic fermentation allows you to make the most of the contact with the must, optimising the removal of pesticide residues even with very low dosages (2-5 g/hl).

Working with must has a number of advantages:

- maximising removal with low dosages of Fito-Stop;
- eliminating yeast inhibitors by facilitating alcoholic fermentation and improving the sensory profile results;
- avoiding invasive treatments on the wine, with the risk of lowering the aromatic quality of the product.

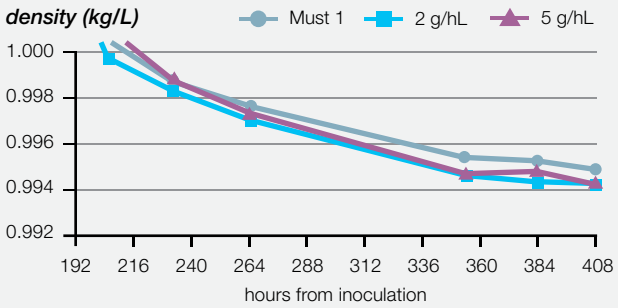
REMOVAL OF PESTICIDE RESIDUES:

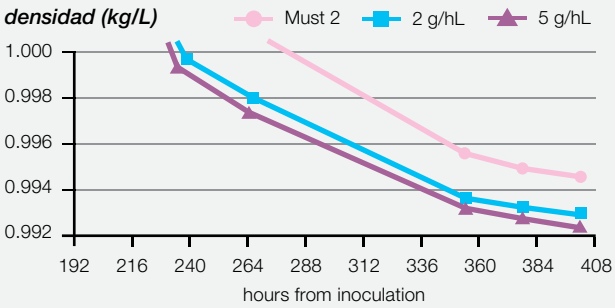
average results obtained on 5 musts with different active ingredients added and treated with Fito-Stop.

	ANTI-BOTRYTIS			ANTI-DOWNY MILDEW			ANTI-POWDERY MILDEW		
	Active ingredient (µg/l)	% residual	Quantity eliminated (µg/l)	Active ingredient (µg/l)	% residual	Quantity eliminated (µg/l)	Active ingredient (µg/l)	% residual	Quantity eliminated (µg/l)
Control	606	100	0	181	100	0	98	100	0
Fito-Stop (5 g/hl)	315	52	291	124	69	56	47	48	51

FERMENTATION KINETICS:

results obtained in two musts with different active ingredients added and treated with two doses of Fito-Stop.





AROMATIC IMPACT:

average results obtained on 5 musts with different active ingredients added and treated with two doses of Fito-Stop.

	Control	Fito-Stop (2 g/hl)	Fito-Stop (5 g/hl)
Volatile ac. (g/l)	0,52	0,48	0,47
Acetaldehyde (mg/l)	37,2	35,0	33,4
Isoamyl acetate (µg/l)	2707	3470	3673
ß-phenylethyl acetate (µg/l)	296	396	388
Ethyl octanoate (µg/l)	1529	1886	1860
Ethyl decanoate (µg/l)	753	898	866

STABILISING AGENTS

PROTECTING QUALITY RIGHT FROM HARVESTING

A collection of products that will let you obtain a must without any unwanted exogenous compounds (plant protection products, mycotoxins, etc.) and work with reduced use of SO_2.

ANTIOXIDANT PROTECTION

Redox Arom

Added directly on grapes or must, Redox Arom creates an optimal oxidation-reduction environment, such as to allow the rapid stabilisation of the varietal aromas present and the phenolic components. This lets you avoid early oxidations or polymerisations, which compromise the subsequent proper evolution of the bouquet and colour.

Dosage
10-20 g/hl.

Packaging
1 kg bags.

Super Redox

Antioxidant agent characterised by an excellent reducing and stabilising power.It can be added at any time, starting from the harvest, to control the growth of the grape microflora and to prevent oxidation of the must.

Dosage
5-10 g/hl.

Packaging
1 kg bags.

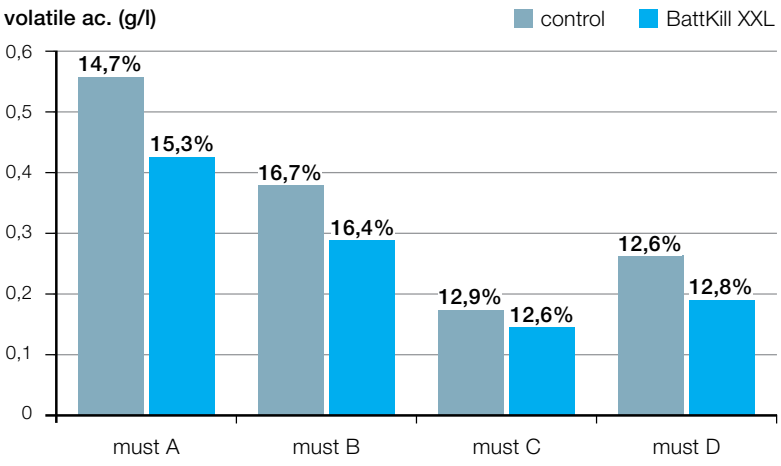
MICROBIOLOGICAL PROTECTION

BattKill XXL

Based on chitosan to inhibit the growth of lactic acid bacteria in musts during cold settling, pre-fermentative maceration and alcoholic fermentation. It forms part of an SO_2 reduction protocol.

Dosage
160-350 ml/hl.

Packaging
5 kg and 25 kg jerrycans.



With the same yeast and nutrition, the use of BattKill XXL (230 ml/hl) during alcoholic fermentation has made it possible to obtain wines with volatile ac. always lower than the control. The starting musts had a load of indigenous microflora around 500,000 cells/ml.
(The final alcohol content is shown on each column)

Liquisol 15K

Aqueous solution of potassium bisulphite with a titre of 15% SO_2.

Dosage
According to needs, considering that:10 ml/hl provides 15 mg/l of SO_2.

Packaging
1 kg bottles and 25 kg jerrycans.

Liquisol 63N

Aqueous solution of potassium bisulphite with a titre of 63% SO_2.

Dosage
According to needs, considering that:
10 ml/hl provides approx. 63 mg/l SO_2 and 13.8 mg/l YAN.

Packaging
25 kg jerrycans.

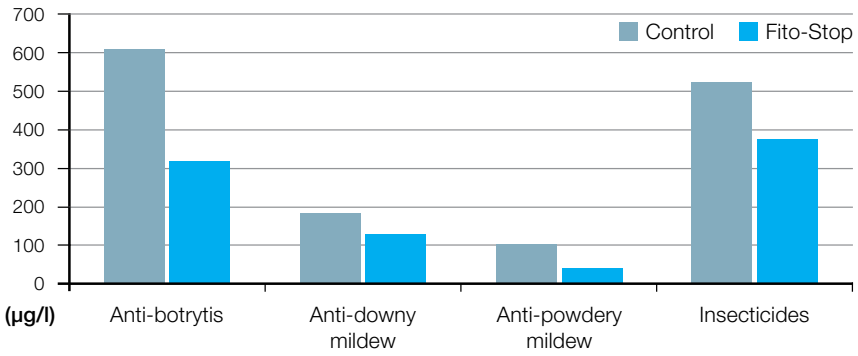
SPECIFIC TREATMENTS

Fito-Stop

Effectively removes a wide range of downy mildew fungicides, powdery mildew fungicides, botrytis fungicides, and insecticides. acilitates the fermentation kinetics of *S. cerevisiae*, avoiding increases in volatile acidity. miTubes™ technology.

Dosage
2-5 g/hl. Dissolve in a little water or must and add to the fermenting must.

Packaging
1 kg and 10 kg bags.



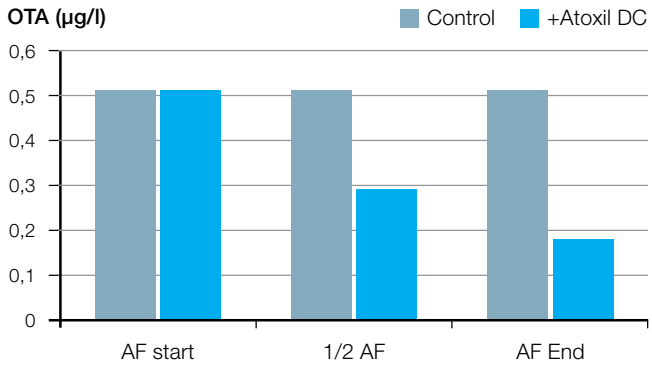
Removal of pesticides with Fito-Stop (5 g/hl) added at the beginning of alcoholic fermentation. Average results on 5 musts. The following were added to the starting musts:5 anti-botrytis, 2 anti-powdery mildew, 3 anti-downy mildew, 5 insecticides.

Atoxil DC

Used from the beginning of alcoholic fermentation, it effectively adsorbs the mycotoxins present in the must, in particular Ochratoxin A thanks to the joint action of activated carbon and Polimersei fibres.

Dosage
50-100 g/hl.

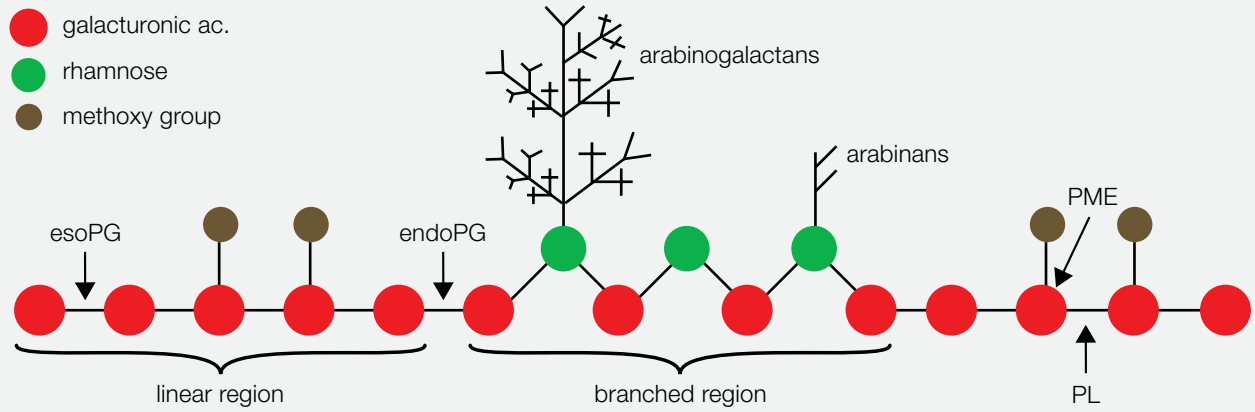
Packaging
25 kg bags.



Reduction of Ochratoxin A (OTA) during alcoholic fermentation obtained with the addition of Atoxil DC (100 g/hl).

ENZYMATIC ACTIVITIES

STRUCTURE OF PECTIN



Polygalacturonases (PG). In pectins they split the bond between two unmethylated galacturonic acid units. The esoPGs act on the terminal units of the chain; the endoPGs act within the chain causing a rapid decrease in the viscosity of the medium.

Pectin lyases (PL). They act between two units of methylated galacturonic acid and allow the rapid decrease of the viscosity of the medium.

Pectin methylesterases (PME). They hydrolyse the methoxy groups making available a new substrate for the action of polygalacturonases.

Cellulases and Hemicellulases. They are present as collateral activities in Pectolytic preparations, of which they increase the effectiveness especially during maceration on reds and cold soaking on whites. By acting on the cellular structure of the grapes, they favour the release of aromas and colouring matter.

β-glucanases. They act on the polysaccharide chain of the β-glucans splitting the bonds between the glucose molecules. Their action requires temperatures > 15 °C and generally longer times than pectolytic enzymes (from a few days to a few weeks).

β-glycosidases. They are present as collateral activities in Pectolytic preparations. They help the release of terpenes and norisoprenoids present in a glycosylated and therefore odourless form.

Cinnamyl esterases and Anthocyanases. Cinnamyl-esterases release the cinnamic acids precursors of the off-flavour volatile phenols; the anthocyanases act on the anthocyanins freeing them from the carbohydrate portion and consequently making them highly unstable. In Dal Cin enzymes, thanks to specific production methods, both of these harmful activities are absent.

OPERATING CONDITIONS

Temperature. Our enzymes are active between 10 and 45 °C approx. Therefore normal operating temperatures in the winery (15-25 °C) are suitable for their action. When operating conditions require low temperatures (e.g. skin maceration), the effectiveness of the enzyme can be maintained by increasing the dosage or the period of contact with the substrate.

pH. Enzymes produced for winemaking, unlike those developed for other food sectors, are active at the pH of the must and wine, with an optimum of around 4. Between pH 3.0 and pH 4.0 they express about 80% of their activity.

SO_2. Sulphur dioxide concentrations up to 70-100 mg/l do not affect the enzymatic activity.

4

ENZYMES

NATURAL CATALYSTS

Enzymes are a valuable ally to improve must fining, to increase the extraction of aromas and colour, and to facilitate the filtration of wines.

WHITE AND ROSÉ WINEMAKING

ULTRasi G

Specific microgranular pectolytic enzyme for fining and clarifying white grape musts, with fast action (a few hours). Active in a wide pH range.

Dosage
1-4 g/hl.

Packaging
100 g jars and 500 g bags.

ULTRasi L

Specific liquid pectolytic enzyme for fining and clarifying white grape musts, with fast action (a few hours). Active in a wide pH range.

Dosage
1-4 ml/hl.

Packaging
5 kg jerrycans.

ULTRasi Select

Specific enzyme for difficult conditions: unripe grapes, low pH, varieties such as Moscato, Malvasia, Traminer, etc. The high concentrations of pectolytic and hemicellulasic activities allow the rapid fining of musts coming from grapes with a pectic content that is difficult to hydrolyse with regular pectinases.

Dosage
0,5-2 g/hl.

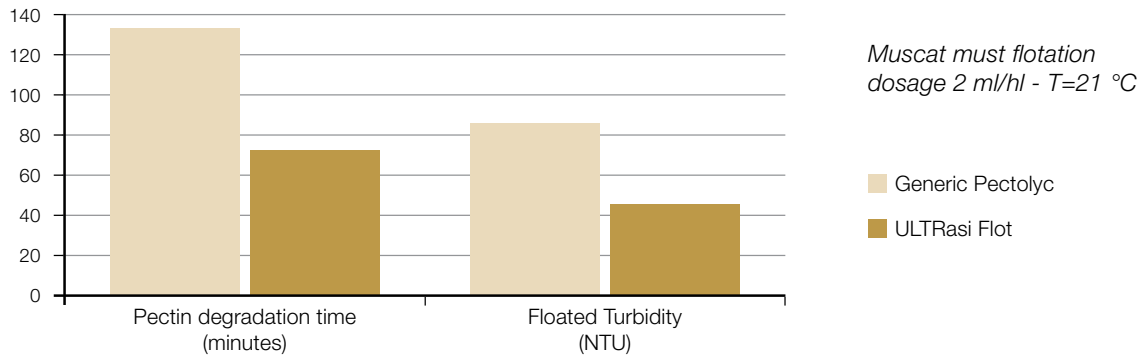
Packaging
50 g jars and 500 g bags.

ULTRasi Flot

Specific for preparing the must for the flotation process: it causes a very rapid decrease in must viscosity, thereby facilitating the particle agglomeration process. Ideal to use in continuous and discontinuous (tank flotation) flotation.

Dosage
1-4 ml/q.

Packaging
1 kg bottles and 25 kg jerrycans.



ULTRasi 4Skin

To obtain well-distinguished varietal white wines. ULTRasi 4Skin used during grape skin maceration enhances the extraction of varietal aromatic precursors and free aromas, giving the finished wines an intense and complex sensory profile. Already active at 8 °C.

Dosage
1-4 ml/q.

Packaging
1 kg bottles and 25 kg jerrycans.

RED WINEMAKING

ULTRasi Redberry

Specific enzymatic preparation for obtaining young red and rosé wines. Its maceration activity mainly extracts the soft tannins of the skin and increases the concentration of primary aromatic compounds and their precursors. It can also be used in thermovinification, thanks to its resistance to high temperatures.

Dosage
1-4 ml/q. Dissolve in water or must (1:10) and add to the volume.

Packaging
1 kg bottles.

ULTRasi Darkberry

Pectolytic and secondary activities rapidly extract anthocyanins and non-astringent tannins from the skins during maceration. The specific action extracts tannins partially condensed with polysaccharides, making it ideal for ensuring colour stability and balanced mouthfeel. Provides excellent results in terms of colour and aromas even when used during cold pre-fermentation maceration.

Dosage
2-4 g/q. Dissolve in water or must (1:10) and add to the volume.

Packaging
100 g jars and 500 g bags.

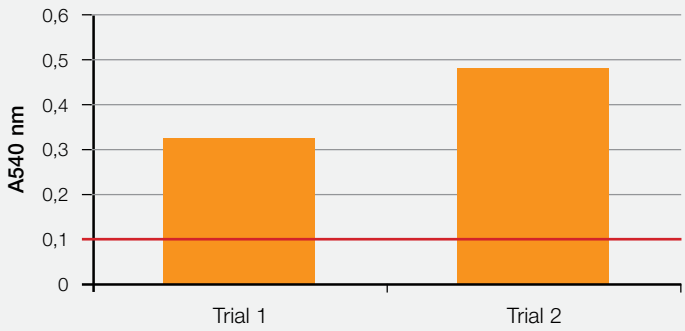
	ULTRasi					
	G y L	Flot	Select	4Skin	Redberry	Darkberry
WHITE PRESSING AND FINING	****	***	***	***		
FINING OF DIFFICULT VARIETIES	**	***	****	***		
FLOTATION	**	****	***	***		
WHITE MACERATION				****	*	
AROMA EXTRACTION					***	***
YOUNG RED MACERATION					****	***
MACERATION OF REDS FOR AGEING					***	****
THERMOVINIFICATION					****	**
INCREASED FILTERABILITY	**	**	****	***	***	***

BENTONITE USED ON MUST = STABILITY + AROMAS

Treatment with bentonite on must instead of wine proves to be the most suitable way to obtain stable wines and at the same time wines with intense and elegant aromas.

Below are the results obtained in micro-vinification tests on must and wine deriving from the aromatic Moscato di Chambave cultivar. In trial 1 the must was clarified with 100 g/hl of Topgran+. In trial 2 it did not undergo any clarification. Colloidal stability is given by the absorbance a 540 nm after heating at 80 °C for 30 minutes (the must is stable for **A540 nm<0.100**).

MUST COLLOIDAL STABILITY



The trials not treated with bentonite reach instability values on average 30% higher than those of the trials treated.

WINE COLLOIDAL STABILITY

After fermentation, the trials were analysed to evaluate the dosage of bentonite necessary to obtain colloidal stability. The wine is stable for **A540 nm<0,03**.

	TRIAL 1 (treated on must)	**TRIAL 2** (not treated on must)
Not treated wine	**0,0405**	**0,0802**
+ 20 g/hl (Topgran+)	**0,0267**	**0,0572**
+ 50 g/hl (Topgran+)	**0,0109**	**0,0362**
+ 100 g/hl (Topgran+)	**0,0078**	**0,0104**

A540 nm after heating at 80 °C for 30 minutes

To achieve colloidal stability, the wine from the tests already treated musts requires a dose of bentonite equal to approx. 1/5 compared to that required for the wine from untreated musts.

IMPACT ON AROMAS (µg/l)

	LINALOOL	**ALPHA-TERPINEOL**	**CITRONELLOL**	**NEROL**	**GERANIOL**
No treatment (unstable wine)	160	114	36	25	14
Trial 1 (100 g/hl on must +20 g/hl on wine)	128	101	14	19	14
Trial 2 (100 g/hl on wine)	89	50	18	22	8

Lambri, Dordoni, Silva, De Faveri, Manara. 2009.VQ.6:31-35

5

FINING AGENTS

BUILDING STABILITY AND LONGEVITY

Getting a head start by preparing the musts for optimal fermentation, preserving the integrity of the colour and the fullness of the aromas and laying the foundations for stable and long-lasting wines.

BENTONITES

Bentoflot

Powder bentonite, specific for the flotation of musts in particular when the maximum containment of the lees volume is required alongside deproteinisation.

Dosage
40-100 g/hl. Allow to swell in water (5-10%) for at least 30'-60', then stir vigorously to form a uniform suspension.

Packaging
25 kg bags.

Topgran+

A bentonite that satisfies quality winemaking needs of protein stability and fining without waste and without sacrificing the sensory profile sought. Topgran+ makes it possible to achieve protein stabilisation and brilliance, as well as to remove those molecules responsible for organoleptic defects.

Dosage
30-150 g/hl. Slowly pour into water at a ratio of 1:10 while stirring, let rest for 30', mix all together to form a uniform suspension.
Add to the must, stirring well.

Packaging
1 kg and 25 kg bags.

Superbenton

Multipurpose powder bentonite with excellent deproteinising action. The best value for money.

Dosage
40-100 g/hl. Allow to swell in water (5-10%) for at least 30'-60', then stir vigorously to form a uniform suspension.

Packaging
1 kg bags and 25 kg bag.

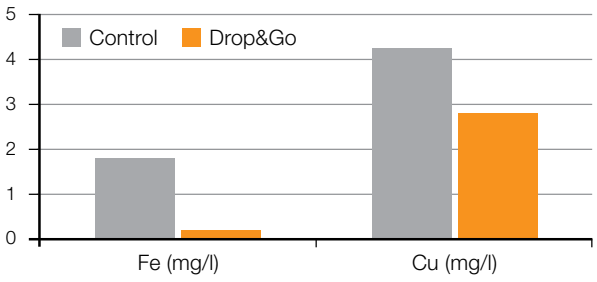
SPECIFIC TREATMENTS

Drop&Go

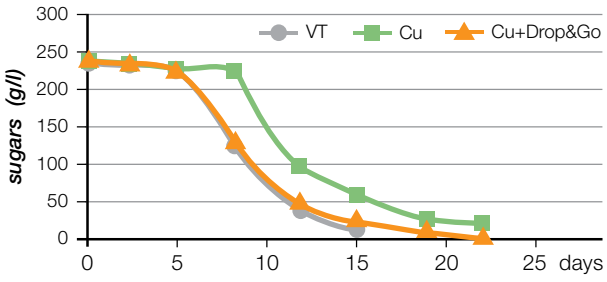
Thanks to the chelating power of the PVI/PVP co-polymer, when used in musts Drop&Go reduces the metal content, in particular iron and copper. Protects aromas, colour and stimulates alcoholic fermentation. miniTubes™ technology.

Dosage
50-80 g/hl Dissolve in water (1:10), wait 10 minutes and add to the must after removing the lees.

Packaging
2 kg and 10 kg bags.



Removal of copper and iron from must treated with Drop&Go (50 g/hl) after 48 hours of contact.



Influence of the addition of copper (8 mg/l) and Drop&Go (50 g/hl) on the fermentation kinetics.

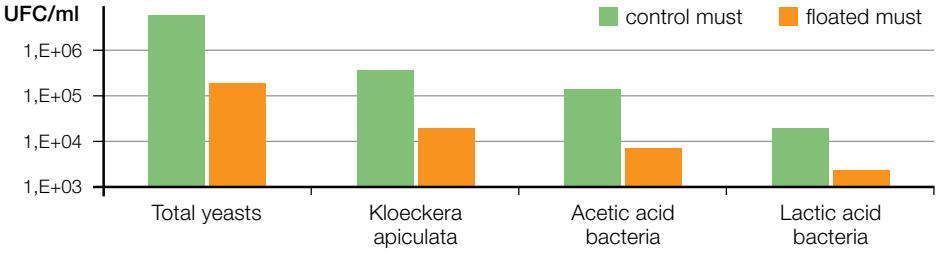
PLANT-BASED FINING AGENTS

KitoClear

Liquid fining agent based on pre-activated chitosan for the rapid clarification and significant reduction of indigenous microflora in white and rosé musts. Particularly suitable for flotation.

Dosage
40-300 g/hl.

Packaging
5 kg and 25 kg jerrycans, 220 kg drums.



Variation of microbiological load in Glera must floated with KitoClear (100 g/hl).

Phytokoll™ K

Pre-activated chitosan and plant protein based fining agent. When fining white and rosé musts, it aids the clarification and removal of colour. It is used both in static settling and in flotation.

Dosage
5-20 g/hl.

Packaging
500 g and 15 kg bags.

Phytokoll™ App

AF *solo en formato polvo*

The perfect mix of potato and pea protein. It lets you achieve clarification and the removal of the oxidised colour fractions. It is effective in the flotation of difficult musts, where the individual raw materials fail to form a sufficiently compact cap. Also available in liquid form.

Dosage
Phytokoll App: 10-30 g/hl.
Phytokoll App-L:50-150 g/hl.

Packaging
Phytokoll App: 500 g and 15 kg bags.
Phytokoll App-L: 20 kg buckets and 175 kg drums.

Phytokoll™ Vip

AF *only the powder form*

Allergen-free plant protein. In musts and wines, it avoids and tackles early oxidative phenomena, and maintains the freshness of aroma and taste even over time. Also available in liquid form.

Dosage
Phytokoll Vip: 5-30 g/hl.
Phytokoll Vip-L: 25-150 g/hl.

Packaging
Phytokoll Vip: 500 g and 15 kg bags.
Phytokoll Vip-L: 20 kg buckets and 175 kg drums.

Claracel Vip

Fining agent with regulation activity of fermentation. It quickly breaks down colloids and polyphenolic load with the production of compact sediments. Polysaccharide fibres favour a good fermentation process.

Dosage
40-100 g/hl.

Packaging
25 kg bags.

FLOTATION IN WHITE AND ROSÉ WINEMAKING

Despite being used in must clarification for many decades, flotation needs to be adapted every year to conditions of the must, the variety of grapes to be processed and the final product to be obtained.

CONDITIONS FOR GOOD FLOTATION:

- **complete depectinisation**. Good flotation is not possible in the presence of undigested pectins. Aromatic varieties and unripe grapes can have more difficult pectins to hydrolyse. The temperature of the must is also important (pectolytic enzymes work faster at temperatures > 12 °C), as well as the time of contact with the enzyme and its concentration of activity.
- **suspended solids**. The ideal content is between 5 and 10%. Too low levels do not guarantee the necessary support to the fine turbidity and the excess of solids prevents the optimal rise of the cap or causes a rapid fall.
- **adequate dosage of bentonite** to facilitate the rise of the cap, lower the turbidity and guarantee an initial protein stabilisation.

THE FOLLOWING OBJECTIVES ARE FUNDAMENTAL:

- **certainty**, of a good rise of the cap to achieve juice clarity.
- **efficacy**, of the clarification not only in terms of turbidity but also of microflora and polyphenols.
- **speed**, of clarification to prevent fermentation starting.

There are a number of products that can be used for flotation, the choice depends on the technical objective set but above all on the characteristics of the must, which changes from year to year.

	PRACTICALITY	SPEED OF ACTION	CLEANLINESS	CAP COMPACTNESS	COLOUR REMOVAL	CATECHINS REMOVAL	M.O. REMOVAL	METAL REMOVAL	
KitoClear	****	****	****	*	**		***	*	
Phytokoll K		**	*		**	**	*		
Phytokoll App				****	**	**			
Phytokoll App-L	***			****	**	**			
Phytokoll Vip					****	***			
Phytokoll Vip-L	***				****	***			
Sologel	****	**	**						
Easyflot		***	***	***		**			

GELATINE

Easyflot

Gelatine with high bloom grade and high load density that is also soluble at cold temperatures. For the clarification of musts in flotation.

Dosage
10-40 g/hl.
Dissolve in water at 1% and add to the must.

Packaging
1 kg and 25 kg bags.

Sologel

High hydrolysis degree gelatine in stabilised solution at high concentration (> 50%). Ideal for must flotation.

Dosage
10-15 ml/h for free-run juice or musts coming from light pressing. Up to 80-120 ml/hl in flotation.

Packaging
25 kg jerrycans and 1200 kg IBC.

Gelatina 25 and Gelatina 40

High hydrolysis degree gelatine in a stabilised solution at 25% or 40%.

Dosage
2.5-20 g/hl of dry matter or more, depending on wine tannin content.

Packaging
1 kg bottles, 25 kg jerrycans and 1100 kg IBC.

Gelatina Nebulizzata

Very fine powder, soluble in cold water.

Dosage
10-50 g/hl.

Packaging
500 g and 10 kg bags.

Gelatina Oro Fogli

Low hydrolysis degree gelatine, soluble in lukewarm water.

Dosage
5-20 g/hl for static settling;
40-60 g/hl or more in flotation.

Packaging
500 g boxes.

Gelatina Oro Macinata

Low hydrolysis degree gelatine, soluble in lukewarm water.

Dosage
5-20 g/hl for static settling;
40-60 g/hl or more in flotation.

Packaging
1 kg and 25 kg bags.

CASEINATE

Proten-100

Potassium caseinate for the clarification of musts; with high adsorbing and inhibiting action towards oxidases.

Dosage	Packaging
20-50 g/hl.	1 kg and 10 kg bags.

Claracel DC

Caseinate-based fining agent containing particular plant fibres for improved and more regular must fermentation.

Dosage	Packaging
40-100 g/hl.	25 kg bags.

MINITUBES TECHNOLOGY

DC-POL G

AF

Used in white and rosé musts, it eliminates oxidised and oxidisable polyphenols. The reduction of catechins helps prevent wines that have too much colour and susceptible to browning. The product's strengths are no dust formation and immediate wettability.

Dosage	Packaging
10-40 g/hl.	1 kg and 10 kg bags.

Grandecó

AF

Activated carbon with high adsorption capacity of the colour matter in wines. miniTubes™ technology has made it possible to obtain a powder-free carbon with exceptional wettability, thereby reducing the time needed in the preparation phase.

Dosage	Packaging
Up to 100 g/hl (maximum dosage).	2 kg and 10 kg bags.

Carb-Off

AF

Deodorising carbon for correcting the organoleptic defects in the must as a result of Botrytis or other spoilage microorganisms. Its use during alcoholic fermentation optimises efficacy.

Dosage	Packaging
Up to 100 g/hl (maximum dosage).	2 kg and 10 kg bags.

Kolirex™ CP

AF

During alcoholic fermentation it eliminates oxidised polyphenols and increases protein stability. PVPP helps to obtain aromatic cleanliness and freshness. The processed cellulose fibres regulate the fermentation kinetics.

Dosage	Packaging
30-50 g/hl.	10 kg bags.

Kolirex™ Go Fresh

AF

Specific fining agent capable of drastically reducing the riboflavin content already during fermentation. It also removes oxidised and oxidisable polyphenols helping to prevent pinking phenomena.

Dosage	Packaging
2-30 g/hl.	2 kg and 10 kg bags.

INORGANIC FINING AGENTS

PVPP

DC-POL P

AF

Powder PVPP, removes oxidized and oxidizable polyphenols. Prevents browning.

Dosage	**Packaging**
Up to 80 g/hl (maximum dosage).	1 kg and 20 kg bags.

DC-POL T

AF

For the treatment of musts to reduce the polyphenolic load.

Dosage	**Packaging**
Up to 80 g/hl (maximum dosage).	1 kg and 20 kg bags.

Carbon

Carbodec Plus

AF

Very fine activated carbon that controls the hue in the finished wine.

Dosage	**Packaging**
Up to 100 g/hl (maximum dosage).	15 kg bags.

Carbodec DC

AF

Highly effective activated carbon.

Dosage	**Packaging**
Up to 100 g/hl (maximum dosage).	10 kg bags.

Clean-UP

AF

Deodorising carbon for eliminating odour defects in the must as a result of spoilage microorganisms.

Dosage	**Packaging**
Up to 100 g/hl (maximum dosage).	20 kg bags.

Miscellaneous

SIL-30

AF

Stabilised alkaline solution of silica sol at 30%. Ideal for flotation.

Dosage	**Packaging**
50-100 g/hl.	25 kg jerrycans and 1000 kg IBC.

YEAST NUTRITION

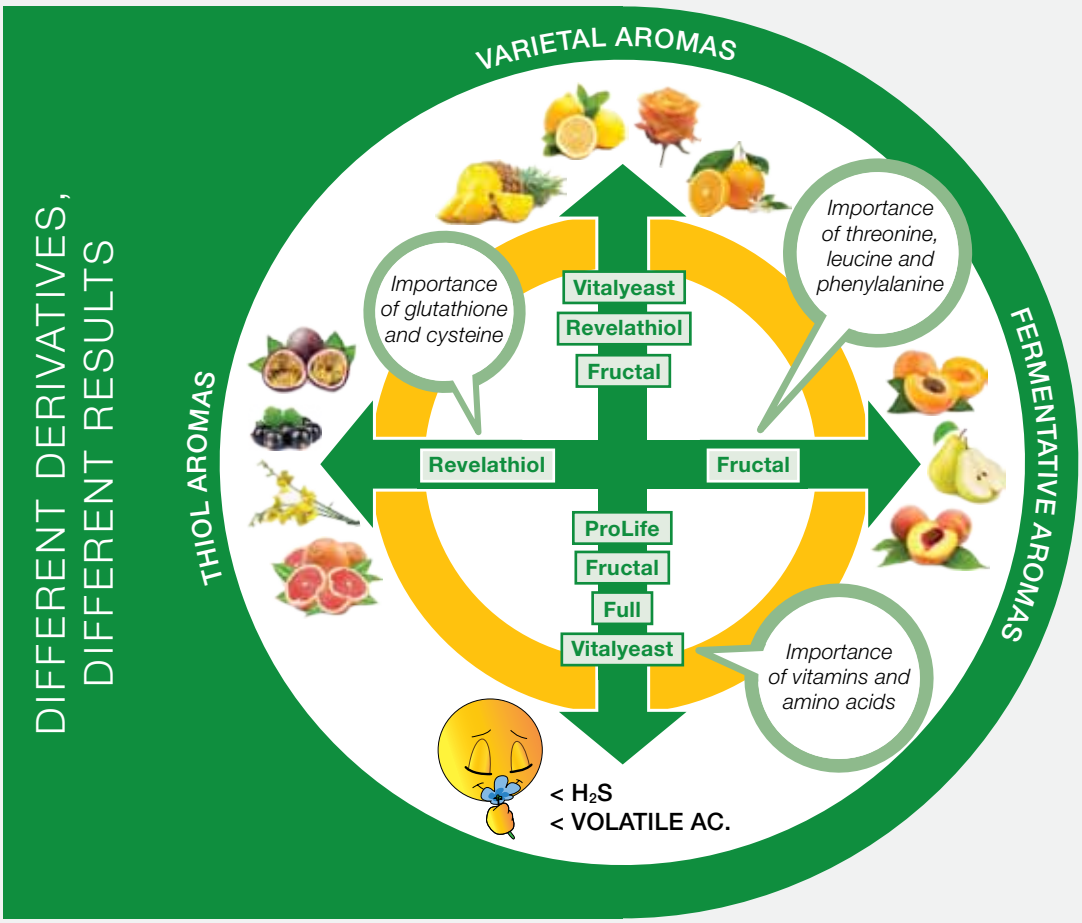
CHOOSE THE RIGHT NUTRITION, REMEMBERING THAT:

TO PREVENT DEFECTS

- the nitrogen demand depends on the yeast but, above all, on the potential alcohol content. An assimilable nitrogen content of at least 150 mg/l at the beginning of fermentation for a must with a potential alcohol content of 12% is considered acceptable. Starting from this basis, some authors (Granes et al.2008) propose to increase N by 25-30 mg/l for each additional alcohol content percent;
- thiamine especially at the beginning of fermentation is essential for cell multiplication;
- an excess of ammonia salts at the beginning of fermentation is often the cause of very rapid starts with subsequent stuck, in addition to the production of H_2S;

TO INCREASE THE QUALITY

- strictly organic nutrition in rehydration represents a supply of survival factors (e.g. sterols and unsaturated fatty acids) that the yeast will use in the advanced stages of fermentation (wynTube Prepara);
- some vitamins, such as pantothenic ac., prevent the development of defects such as volatile acidity and reductive hints (Vitalyeast); other vitamins such as biotin favour the formation of esters;
- to increase the release of thiol aromas, exclusively organic nutrition is mandatory throughout the first phase of fermentation (wynTube Revelathiol);
- some amino acids present in specific organic nutrients are direct or indirect precursors of aromatic esters (wynTube Fructal);
- detoxifying the must/wine from endogenous inhibitors allows the yeast to close fermentations well even with high alcohol content, containing the volatile acid and avoiding H_2S production (wynTube ProLife and Polimersei).



6

NUTRIENTS

FROM THE YEAST FOR THE YEAST

By choosing the right nutrition in each phase and for each objective, it is possible to get the maximum from the yeast used. Goodbye to slow or stuck fermentation, goodbye to off-flavours and hello to aromas, freshness, complexity, softness....

REHYDRATION

wynTube Prepara

Added to the rehydration water, it supplies the yeast with the essential substances to perform alcoholic fermentation in an optimal way even in conditions of high potential alcohol content, highly reductive conditions, excessively clarified must, and pied de cuve preparation.

Dosage	**Packaging**
10-30 g/hl.	2 kg and 10 kg bags.

COMPLETE NUTRITION

wynTube Full

It is used in every phase of fermentation starting from inoculation. It provides complex nitrogen, B vitamins, including biotin which promotes the formation of esters and pantothenic acid which prevents the formation of hydrogen sulphide. Trace elements include magnesium, which is important for increasing the yeast's resistance to the alcohol content.

Dosage	**Packaging**
20-60 g/hl.	2 kg and 10 kg bags.

Bio S-Free

It is used in every phase of fermentation starting from inoculation. It provides complex nitrogen and DAP, B vitamins, including biotin which promotes the formation of esters and pantothenic acid which prevents the formation of hydrogen sulphide.

Dosage	**Packaging**
20-60 g/hl.	25 kg bags.

Bioattivante

It is used in every phase of fermentation starting from inoculation. It provides complex nitrogen and ammonia, B vitamins, including biotin which promotes the formation of esters and pantothenic acid which prevents the formation of hydrogen sulphide.

Dosage	**Packaging**
20-60 g/hl.	1 kg and 25 kg bags.

MICROFLORA CONTROL

wynTube Alert

Complex nutrient with antimicrobial activity. Indicated to avoid the growth of lactic acid bacteria during alcoholic fermentation. It makes it possible to reduce the dosages of SO_2 favouring the dominance of *S. cerevisiae*.

Dosage	**Packaging**
20-50 g/hl.	2 kg and 10 kg bags.

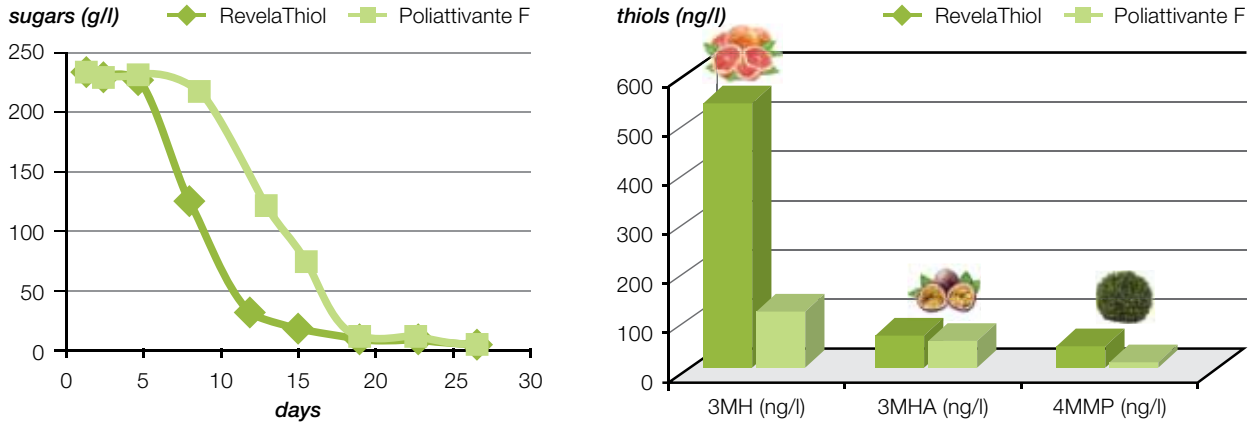
AROMAS

wynTube Revelathiol

A completely organic nutrient, characterised by the excellent supply of glutathione. In the fermentation of musts with thiol varietal potential, the presence of only organic nitrogen favours the entry of aromatic precursors into the yeast cell and their transformation into their aromatic form. Ideal pairing: Fervens Emothion.

Dosage
20-60 g/hl.

Packaging
2 kg and 10 kg bags.



Influence of nutrition on fermentation kinetics and on the release of thiol aromas, with the same YAN addition (12 mg/l). Sauvignon Blanc must, Trentino Alto Adige, with initial YAN of 182 mg/l.

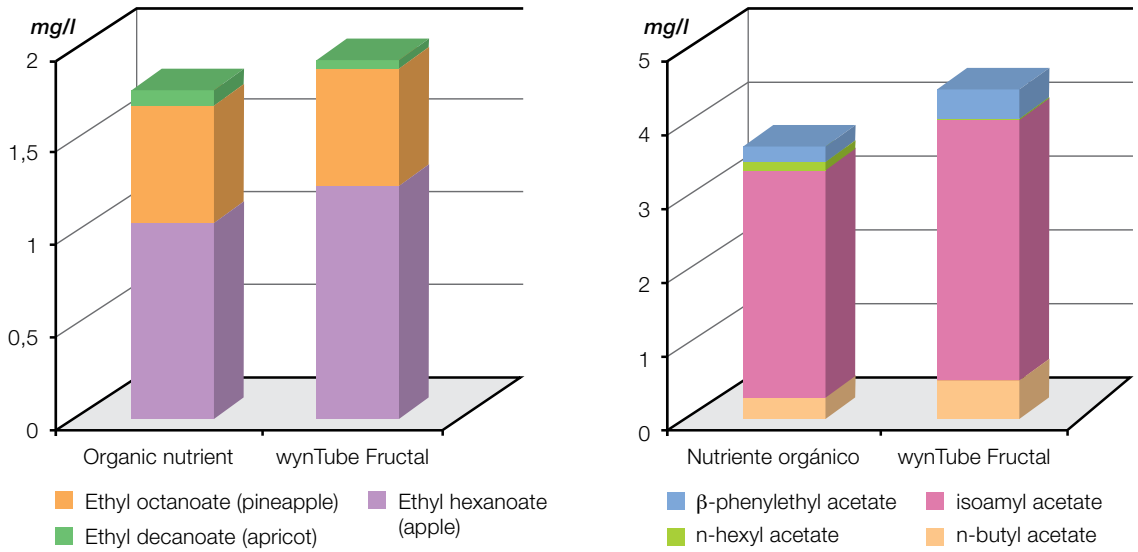
wynTube Fructal

100% organic nutrient. The supply of amino acids encourages the production of fruity and tropical notes. When combined with Fervens Fragrance, in addition to giving complex and interesting aromas, it makes it possible to control the supply of riboflavin and therefore limits the increase in precursor compounds of the light-struck taste.

Dosage
15-40 g/hl.

Packaging
2 kg and 10 kg bags.

Production of ethyl esters and acetates (fruity and tropical fruit).
wynTube Fructal (30 g/hl) stimulates the synthesis of both aroma families.



Vitalyest

An exclusively organic nutrient which, thanks to amino acids and vitamins, in particular biotin and pantothenate, guarantees a regular fermentation and counteracts the appearance of reduced odours, the increase in volatile acidity and the slowdown in kinetics. Promotes the release of aromas and gives richness to the wine. Vitalyeast can be assimilated by yeasts even after half of alcoholic fermentation, therefore effective for emergency nutrition.

Dosage
10-30 g/hl.

Packaging
500 g and 10 kg bags.

DETOXIFICATION

wynTube Prolife

It provides unsaturated fatty acids and sterols to the yeast, it also adsorbs endogenous inhibitors, such as medium chain fatty acids for excellent fermentation kinetics and better aromatic expression. Frees mannoproteins that accentuate the complexity of the wine and reduce the herbaceous notes. In stuck fermentation and in the refermentation, it detoxifies the wine before the new inoculation.

Dosage
15-25 g/hl.

Packaging
2 kg and 10 kg bags.

Polimersei

Plant-based fibre with very high surface to favour: restoration of the optimal turbidity of the must, regulation of fermentation avoiding excessive turbulence, reduced production of acetaldehyde and pyruvic acid, transport of oxygen in the fermenting volume, dispersion of yeast cells in the volume, adsorption of yeast inhibitors.

Dosage
In fermentation: 30-80 g/hl in white wines and 50-100 g/hl in red wines.
Stuck fermentation treatment: 80-100 g/hl keeping the volume stirred moderately for 18-24 hours.

Packaging
5 kg bags.

INORGANIC NITROGEN

Poliattivante F

DAP and cellulose-based nutrient complex to be added to the must at the beginning of fermentation to compensate for nutritional deficiencies and carry out an effective action of creating turbidity. It helps the dispersion of yeasts in the medium and performs a detoxifying action, thanks to the adsorption of medium-chain-length fatty acids (C6-C8-C10).

Dosage
20-60 g/hl.

Packaging
1 kg and 25 kg bags.

SuperDAP - Superattivante

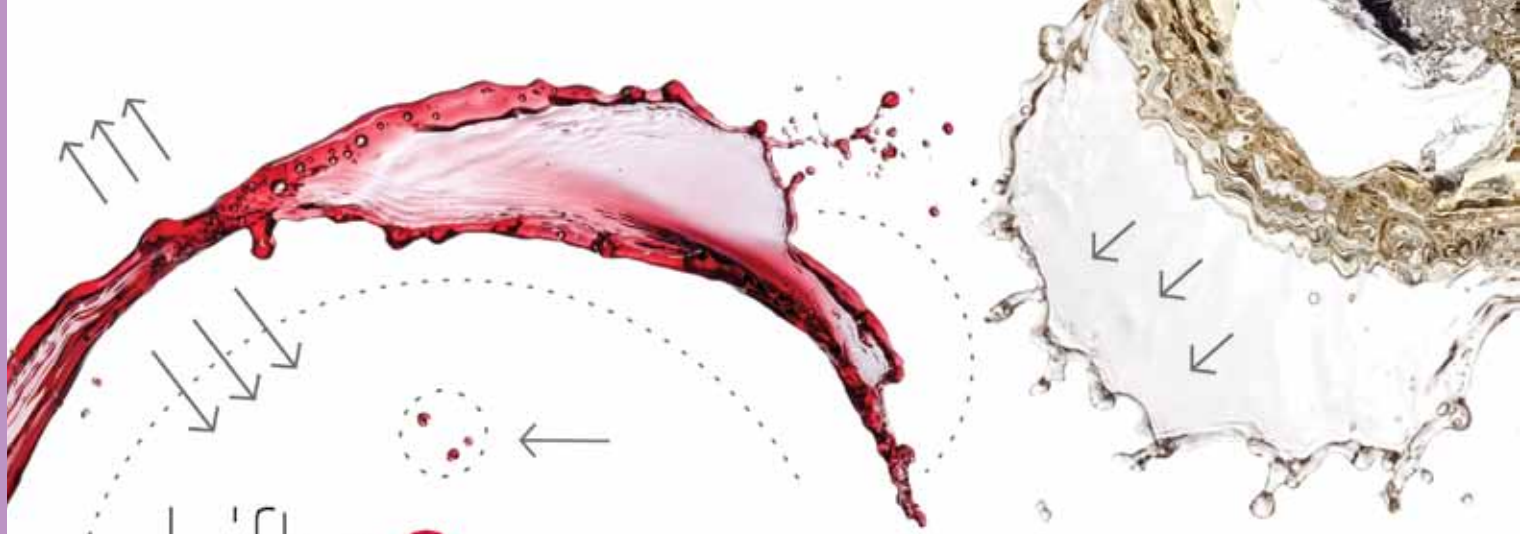
Ammonium phosphate and thiamine for the nutrition of yeasts and the regular course of alcoholic fermentation. In the case of musts with severe deficiencies in nitrogen, it is recommended to distribute the dose in two stages. This is to avoid an excessive turbulent start to fermentation, with a rapid increase in alcohol and temperature, both of which are a source of stress for the yeast. Superattivante also contains ammonium sulphate.

Dosage
Up to 60 g/hl.

Packaging
1 kg and 25 kg bags.

	OENOLOGICAL CONDITIONS	PRODUCT	ADVANTAGES
REHYDRAT.	High potential alcohol content; reductive winemaking; enhancing the organoleptic impact.	**wynTube PREPARA** (Assimilable nitrogen = 7 mg/l)	Sterols and unsaturated fatty acids for resistance to alcohol and anaerobiosis. Vitamins and organic nitrogen for clean aromas.
INOCULATION	Ensuring balanced and complete nutrition with a single operation.	**wynTube FULL BIO S-Free / BIOATTIVANTE** (Assimilable nitrogen = 11 mg/l)	Nitrogen for aromatic production and growth factors for alcohol resisance. wynTube Full and Bio S-Free are sulphate-free.
	Musts rich in thiol varietal precursors.	**wynTube REVELATHIOL** (Assimilable nitrogen = 10 mg/l)	Organic nitrogen and antioxidants to release and preserve thiol aromas.
	Must from unhealthy grapes.	**wynTube ALERT** (Assimilable nitrogen = 8 mg/l)	Organic nitrogen and DAP for nutrition; chitosan for the control of the indigenous microflora.
	Very clear must; presence of yeast inhibitors; risk of initial "boost".	**POLIMERSEI** (Assimilable nitrogen = 0)	Adsorption of abnormal odours off aromas (e.g. mould) and inhibitors for regular fermentation kinetics and cleaner aromas.
	Must with medium-low YAN and normal alcohol content; very clear must; presence of yeast inhibitors.	**POLIATTIVANTE F** (Assimilable nitrogen = 14 mg/l)	Nitrogen and fibre regulatory regulation action to improve the expression of the yeast. Sulphate-free.
	Must with medium-low YAN and normal alcohol content.	**SUPER DAP SUPERATTIVANTE** (Assimilable nitrogen = 20 mg/l)	YAN and thiamine for a good fermentation lag phase start. Super DAP is sulphate-free.
1/3 FERMENTATION	High alcohol content; strongly anaerobic environment.	**wynTube PROLIFE** (Assimilable nitrogen = 5 mg/l)	Lipid supply and removal of inhibitors for safe end to of fermentation.
	Normal YAN conditions and alcohol content; reductive winemaking.	**wynTube FULL BIO S-FREE**	Complete nutrition and absence of sulphates for excellent organoleptic results even in "stressful" situations.
	Normal YAN conditions and alcohol content.	**BIOATTIVANTE**	Complete nutrition to improve both the fermentation kinetics and the organoleptic aspects.
	High alcohol content; conditions that could favour the appearance of unwelcome secondary products.	**VITALYEAST** (Assimilable nitrogen = 11 mg/l)	Amino acid nitrogen and growth factors to reduce volatile acidity and sulphur compounds. It stimulates the synthesis of aromas.
	Maximising the fruity expression of yeasts.	**wynTube FRUCTAL** (Assimilable nitrogen = 10 mg/l)	Let's you obtain the maximum aromatic production from the yeasts used. Limits the risks of volatile acidity and sulphur compounds.
STUCK FERMENTATION	Must-wine rich in inhibitory catabolites.	**POLIMERSEI**	Removes the saturated fatty acids from the base wine to ensure the success of the second inoculation.
	Must-wine rich in inhibitory catabolites.	**wynTube PROLIFE**	Removes the saturated fatty acids from the base wine to ensure the success of the second inoculation. Enriches nutritional factors.
SECOND FERMENTATION	Acclimatisation of the yeast.	**wynTube FULL BIO S-FREE BIOATTIVANTE**	Provides complex nutrition. wynTube Full and Bio S-Free are sulphate-free.
	Refermentation.	**wynTube SPUMA** (Assimilable nitrogen = 11 mg/l)	Ensures good kinetics, aromatic development and longevity of colour and aromas.

Assimilable nitrogen: *mg/l supplied by 10 g/hl of nutrient.*



Lifty Sense

FLAVOUR AL TOP!

WHAT IS IT?

An innovative enhancer, to be used right from the beginning of alcoholic fermentation in order to optimise the fermentation environment and release antioxidant and characteristic components. The insoluble “frame” of vegetable polysaccharides (Polimersei) conveys yeast polysaccharides and tannins, allowing their gradual release throughout the course of fermentation.

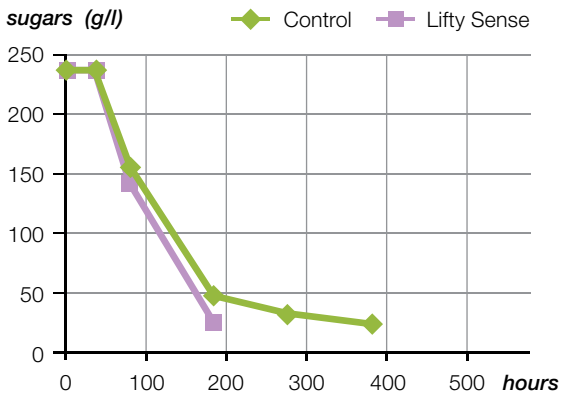
The components of **Lifty Sense** perform three different actions:

1. support for yeasts during all phases, from multiplication to actual fermentation;
2. detoxification of the fermentation environment thanks to the combined action of specific polysaccharides;
3. supply of yeast polyphenols and polysaccharides with specific sensory action.

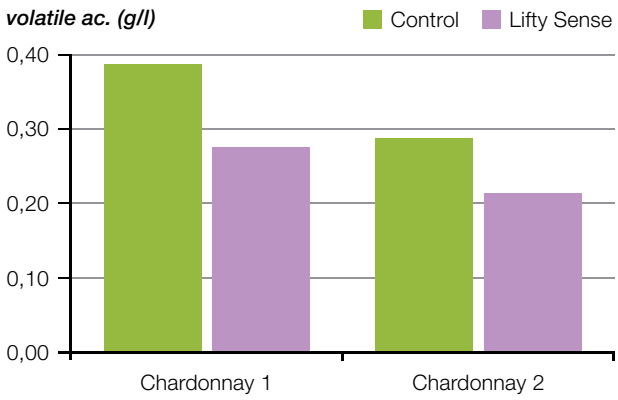
RESULTS

Wines fermented with **Lifty Sense** are characterised by the taste, full-body, structure and richness.
On the nose, the results depend on the dosage; lower dosages ensure maximum cleanliness of the aroma, with a clear reduction in herbaceous notes.
Medium/high dosages are recommended when elegant wood notes are desired.

In any case, regular alcoholic fermentation is guaranteed, with quick starts and very fast finishes; yeast metabolism is optimised and this helps to reduce the synthesis of unwanted by-products, such as volatile acidity.



Fermentation curve in Chardonnay must fermented with and without Lifty Sense (100 g/hl).



Production of volatile ac. in fermented musts with and without Lifty Sense (Chardonnay 1, 100 g/hl; Chardonnay 2, 30 g/hl).

7

FERMENTATION ENHANCERS

THE MANY FORMS OF YEAST DERIVATIVES

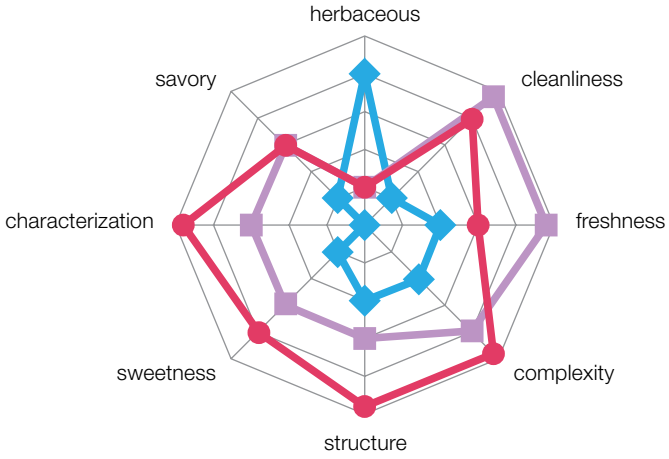
An aid in the search for stability, balance, complexity, longevity... right from fermentation!

Lifty Sense

Used right since the beginning of alcoholic fermentation, it optimises the fermentation environment and releases antioxidant and characterising compounds. Wines fermented with Lifty Sense stand out for their taste, full-body, structure and flavour. On the nose, depending on the dosage used, the results range from maximum cleanliness of the aroma with drastic lowering of herbaceous notes to a characterisation with elegant wood notes.

Dosage
White and Rosè winemaking:
10-20 g/hl to give freshness.
30-60 g/hl to give complexity.
60-100 g/hl to characterize
Red winemaking:
30-50 g/hl to obtain clean aromas.
60-100 g/hl to give complexity.
> 100 g/hl to characterize.

Packaging
500g, 5 kg and 10 kg bags.



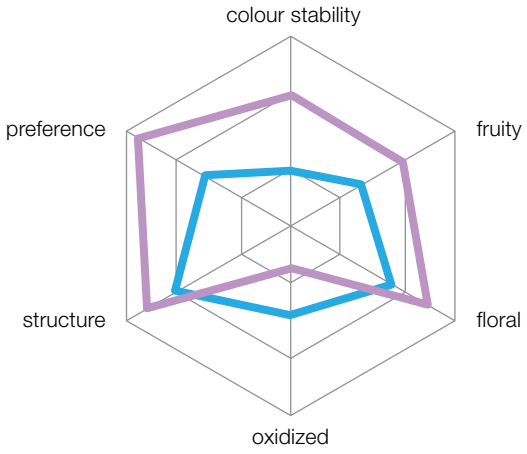
Sensory profiles of wine fermented with and without Lifty Sense.

Lisem Glu

It ensures the longevity of wines thanks to the high content of reduced glutathione and peptides with antioxidant activity: used during alcoholic fermentation, it has a protective action against oxidative phenomena. It extends aroma freshness, retains colour and delays oxidative spoilage.

Dosage
10-30 g/hl.

Packaging
500 g and 10 kg bags.



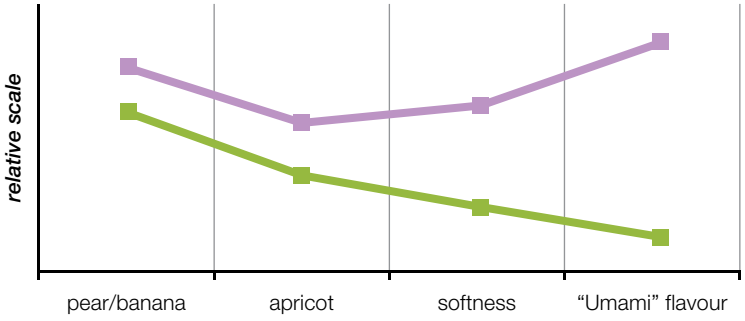
Effect of the use of Lisem Glu (15 g/hl) on the sensory profile of white wine, tasted 6 months after the end of AF.

Lisem Enne

Used during or at the end of alcoholic fermentation to enrich the wine with flavour and structure. The particular yeast derivative is rich in amino acids and nucleotides responsible for the minerality (the “sucrosité” in French). This greater taste complexity is associated with a softer mouthfeel.

Dosage
5-15 g/hl.

Packaging
500 g bags.



Effect of the use of 10 g/hl of Lisem Enne, in fermentation on the increase of some sensory descriptors.

Control Lisem Enne

Harmony Color

For the treatment of red and rosé wines already during vinification. Thanks to the presence of phenolic fractions, the reactions leading to the polymerisation and stabilisation of the anthocyanic fraction of red wines are favoured and accelerated, specifically promoting interaction with the oxygen molecules. Harmony Color also has a significant adsorbent action that produces pleasant and extremely clean wines from an organoleptic point of view.

Dosage
10-30 g/hl.

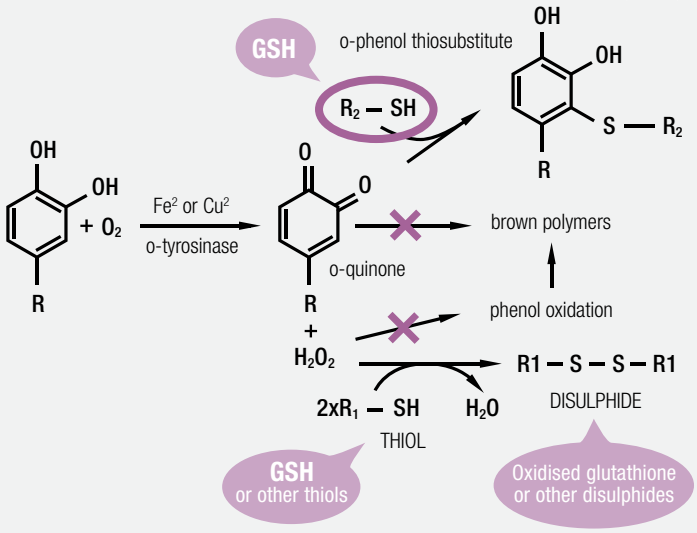
Packaging
500g bags.

FOCUS ON

YEAST DERIVATIVES TO PREVENT BROWNING

Specific inactive yeasts, such as Lisem GLU, obtained with production techniques that respect their functional integrity, play a fundamental role during alcoholic fermentation to prevent oxidative reactions on the colour and aromas.

Their reduced glutathione (**GSH**) and cysteine peptides content, thanks to the functional group -SH, limits the development of oxidative phenomena in the must phenols, and therefore the formation of quinones and subsequent **browning and maderisation** phenomena.



All the thiol groups present in the must react in a similar way towards these oxidative phenomena. The presence of GSH, in addition to limiting the appearance of brown polymers, prevents thiol molecules such as 4-MMP and 3-MH from entering the process, and the subsequent degradation and loss of the distinct aromas.

(Modified by Tirelli, VQ 5-2010)

ACETALDEHYDE:
MANAGING OF FERMENTATION TO REDUCE ITS ACCUMULATION

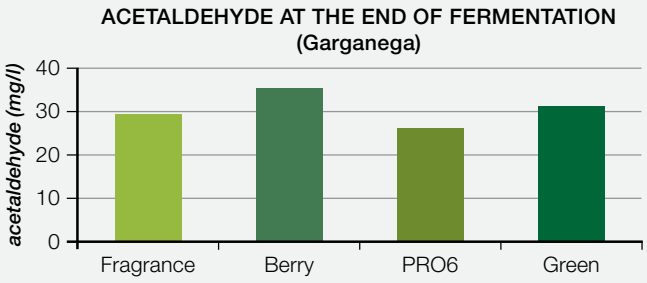
Acetaldehyde in wine can originate biologically (it is involved in countless metabolic processes, including alcoholic fermentation) or chemically (by oxidation of ethanol in the presence of oxygen). In AF it accumulates in the must during the yeast multiplication phase (early stages of fermentation) and is then at least partially reabsorbed in the second phase.
Taking into consideration what has just been said, it is impossible to think about avoiding the production of acetaldehyde; what must be done is to try to prevent its accumulation at the end of fermentation.

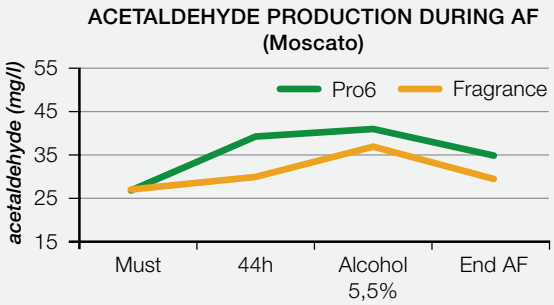
THE FACTORS TO FOCUS ON TO ACHIEVE THIS ARE:

CHOICE OF YEAST STRAIN

Strains that multiply faster in the initial phase and characterised by faster kinetics give wines with a lower acetaldehyde content at the end of alcoholic fermentation. The composition of the must affects the kinetics of the yeast and therefore the production of acetaldehyde.

Recommendations: Fervens Pro6, Fervens Fragrance.

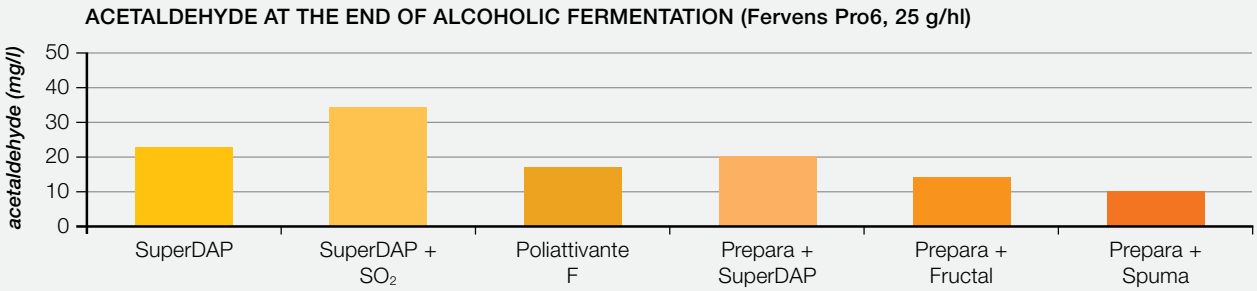




CHOOSING SUITABLE NUTRITION

Inorganic nutrition allows the rapid development of yeasts and a quick start of the acetaldehyde reabsorption phase. However, the lowest levels of acetaldehyde at the end of AF are always found in the case of **organic or complex nutrition**; this is down to the effectiveness of organic nitrogen that ensures cell vitality even in the final stages of fermentation.

Recommendations: Prepara, Full, Fructal (Spuma in refermentation).



CHOICE OF COADJUVANTS

Cellulose has a positive influence because it absorbs the inhibitors and guarantees more vitality to the yeast cells until the end of AF.

Recommendations: Polimersei, Lifty Sense, Kolirex CP.

Sulphur dioxide stimulates the production of acetaldehyde so it is important to lower the dosages as much as possible.

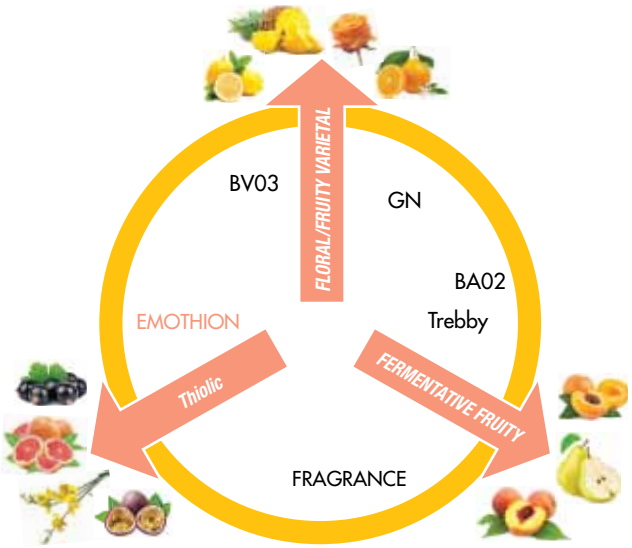
Recommendations: wynTube Alert, BattKill XXL, Battkill.

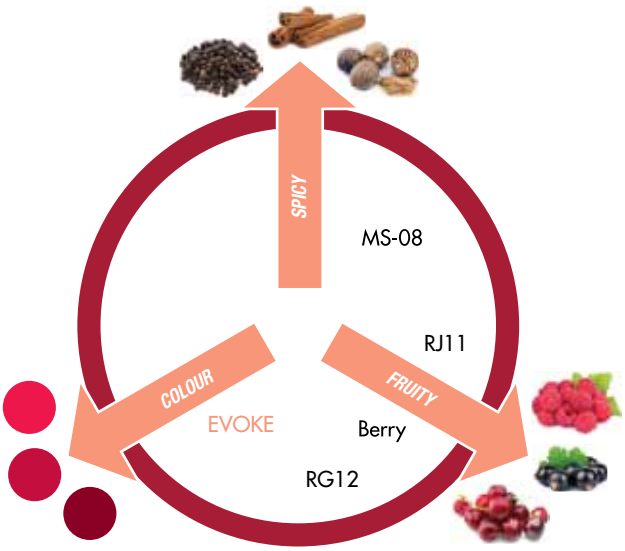
8

YEASTS

NATURE AT THE SERVICE OF WINE

Choosing and using the yeast according to the characteristics of the must, the technology available in the winery and the final objective allows you to make the most of all the potential of a natural and valuable tool.



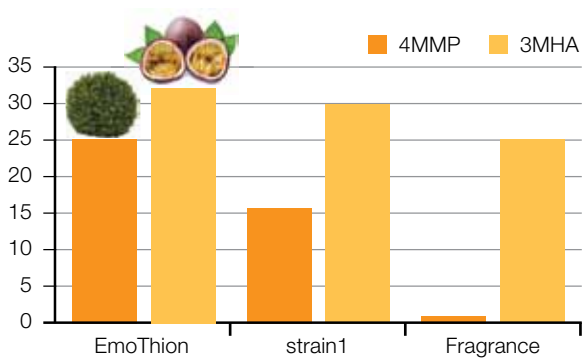


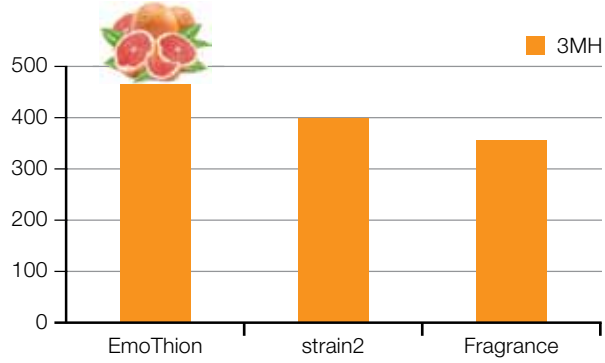
WHITE WINES

EmoThion

AF

The yeast that expresses the aromatic potential of thiol-rich grapes. Fervens EmoThion releases aromatic thiols even during low temperature fermentations (14°C).It guarantees a greater presence of 3MH (grapefruit), 3MHA (passion fruit) and 4MMP (currant, boxwood) in the finished wine, giving it a fruity and tropical profile.



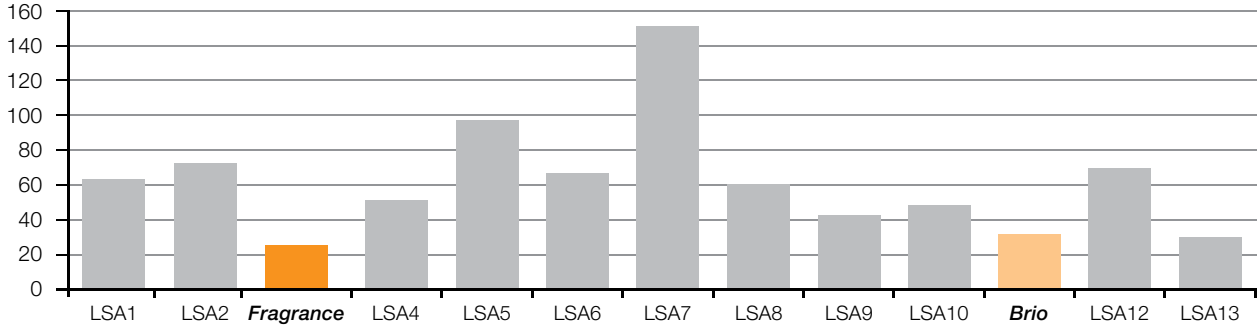


Aromatic production (ng/l) in Sauvignon Blanc must (South Tyrol). Fermentation temperature: 17 °C.

Fragrance

AF

To obtain the full aromatic fermentative expression in white and rosé wines. The ability to ferment at low temperatures allows you to obtain aromas ranging from tropical fruits to citrus notes. Indispensable for increasing the longevity of bottled wines, it actually stands out for its very low production of riboflavin, precursor of the “light-struck” taste defect. Appreciated for the rapid start of fermentation, speed of kinetics and high alcohol tolerance.



Riboflavin production (in ppb), during alcoholic fermentation, by different yeasts.
Fervens Fragrance stands out for its low production.

Trebby

AF

Saccharomyces cerevisiae for the primary fermentation of white grapes with faint aromatic patrimony. Trebby is distinguished by the high production of fermentation esters and acetates, that is higher if nitrogen nutrition is well managed. Trebby is successfully used in musts which, due to the imperfect ripening of the grapes, have an aromatic content lower than expected.

BA-02

AF

It ensures a regular fermentation cycle and makes it possible to obtain balanced white and rosé wines, with intense fruity aromas and, thanks to the high production of glycerol, a pleasant softness on the palate. BA-02 ensures the complete consumption of sugars even under difficult fermentation conditions.

BV-03

AF

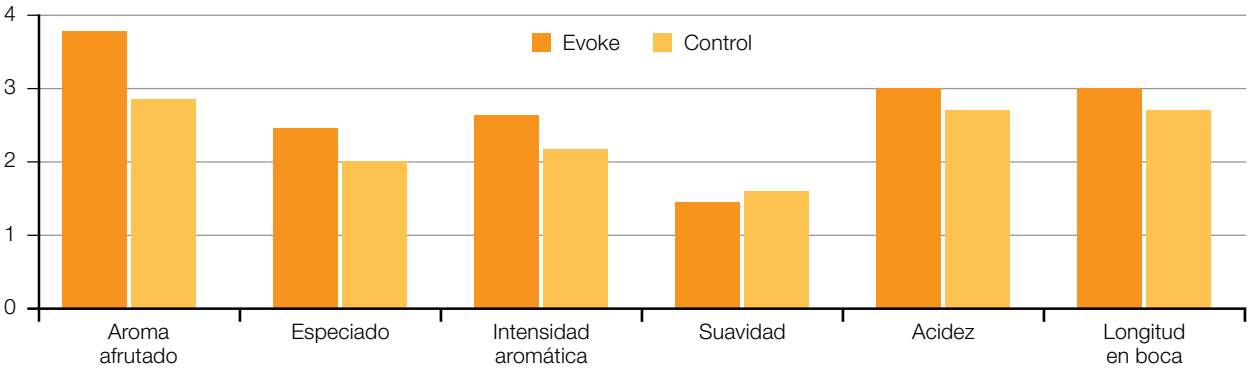
A strain recommended for white or rosé winemaking of grapes with varietal aromas (Muscat, Pinot, Chardonnay, Riesling, etc.), especially from musts coming from skin maceration or cold settling. BV-03 has a high resistance to alcohol content, so much so that it can also be used successfully to prevent or treat stuck fermentation.

RED WINES

Evoke

AF

A yeast particularly suitable for the production of full-bodied red wines. It brings out the aromas of red and black fruit. During alcoholic fermentation it releases a high quantity of polysaccharides and contributes to increase the softness and stability of the colour. The wines obtained are fresh, intense and well balanced with an excellent long finish. Suitable for fermentations in difficult conditions and at high alcohol contents (up to 17% v/v).



Descripción organoléptica del vino Shiraz (sur de Francia) fermentado con Fervens Evoke.

MS-08

AF

Yeast with a high resistance to alcohol content (15,5% v/v), it adapts to different fermentation conditions, for example at high temperatures, and has a good varietal expression. Depending on the fermentation conditions, it slightly degrades malic acid, a feature that could favour a faster start of malolactic fermentation. The wines have a soft, structured and complex sensory mouthfeel.

Berry

AF

S. cerevisiae particularly suitable for obtaining rosé wines, young and medium-aged red wines. The aromatic expression is mainly fermentative and is favoured by a non turbulent kinetic; the best results are obtained with temperature control especially in the initial stages of fermentation. The good release of polysaccharides and the negligible absorbent effect of the cell wall favour the intensity and stability of the colour.

RJ-11

Selected in France for the production of medium or short ageing red wines. The wines obtained are characterised by fruity aromas on the nose and soft tannins on the palate. Thanks to the release of polysaccharides, it improves colour stability over time.

RG-12

A strain selected to obtain long-ageing red wines. The good resistance to high temperatures and the regular kinetics make RG-12 suitable for long macerations. It develops intense notes of ripe fruit, jam and a spicy complexity. Thanks to the release of polysaccharides, on the palate it provides volume and fullness with soft tannins.

MULTI-PURPOSE STRAINS

GN

It is interesting for the ability to “release” primary aromas; it lets you increase the characteristic scents of some varietal grapes. The bringing to the fore of those characteristics is also expressed through a remarkably long finish, thereby creating wines with a good balance between smell and taste. It is suitable for white, rosé, red and nouveau wines, where a strong varietal aromatic exaltation is required.

SLC

A strain recommended for large-scale winemaking with problems such as availability of tanks, cooling systems, workers or the time necessary for following strict protocols. SLC is aimed at “technological” fermentation that requires speed and a reduction of controls on the must and in the winery.

FA-01

Selected for its ability to ferment even in conditions of low YAN, high SO2 and the presence of spoiling microflora. It is suitable for both white and red winemaking, making it possible to obtain balanced wines with good structure and respecting the varietal aromatic characteristics.

NON SACCHAROMYCES

TD3

Selected strain of *Torulaspora delbrueckii*, a yeast that is part of the indigenous flora always present on the grapes. It characterises white wines for their intensity and olfactory complexity, as well as giving great softness and persistence on the palate. The organoleptic complexity and the good fermentation cycle are supported and guaranteed by the subsequent inoculation of *Saccharomyces*.

THIOL ENHANCEMENT

GRAPE RECEIVAL

- **REDOX AROM** (15 g/100kg)
- **TANNEX** (5 g/hl)

SKIN MACERATION

- **ULTRASI 4SKIN** (2 ml/q)

Fining:
as per winery procedure

ALCOHOLIC FERMENTATION

AF conditions: T°: 14-20 °C - NTU>80 - YAN>150 mg/l

- **FERVENS EMOTHION** (25 g/hl) + **wynTube PREPARA** (15 g/hl)

AT INOCULATION

- **wynTube REVELATHIOL** (40 g/hl)

1/3 OF THE AF

- **VITALYEAST** (20 g/hl) — NUTRITION

- **KOLIREX CP** (30 g/hl) — FINING AND COLOUR STABILISATION
- **LISEM GLU** (15 g/hl) — ANTIOXIDANT PROTECTION

STOP AND RACKING

AVOID MLF

- **BATTKILL XXL** (160-350 ml/hl)

PROTECT AGAINST OXIDATION

- **LISEM GLU** (10 g/hl)
- **INFINITY REDOX** (1-2 g/hl)

	Applications	Killer character	Alcohol content	Fermentation kinetics	Nutritional requirements	
Trebby		K+	<14% V/V	regular	moderate	
Fragrance		K+	<14% V/V	moderate	high	
Emothion		K+	<14,5% V/V	regular	low /moderate	
GN		K+	<14% V/V	regular	low	
SLC		neutral	<14% V/V	regular	medium/low	
Pro6	Sparkling base Stuck AF	K+	<15% V/V	fast	low	
SLB	Sparkling base Stuck AF	neutral	≤14 % V/V	regular	low	
Berry		K+	<14,5% V/V	moderate	moderate	
Evoke		K-	<17% V/V	regular	low	
MS-08		K+	<15,5% V/V	regular	high	
BA-02		K+	<15% V/V	regular	medium/low	
BV-03		neutral	<16% V/V	fast	low	
BM-04	Sparkling base Stuck AF	K+	<16% V/V	fast	low	
FA-01		K+	<15% V/V	fast	low	
RJ-11		neutral	<15% V/V	fast	medium/low	
RG-12		K-	<15% V/V	regular	high	

	Fermentation T°	Interaction with MLF	Sensitivity to copper	Production of				
				Glycerol	H_2S	SO_2	Volatile acidity	Acetaldehyde
	>14°C		medium	medium	low	medium	low	medium/low
	>12°C		low	medium	low	low	low	low
	>14°C	-	medium	medium	low	low	low	medium/low
	>14°C	-	low	medium	low	medium	low	medium/low
	>14°C		medium/low	medium	low	low	low	medium/low
	>10°C		low	medium	low	low	low	low
	>14°C		medium/low	low	low	low	low	medium/low
	>14°C	+	medium	medium	low	low	low	medium/low
	>15-30°C	+		high	low	low	low	media
	>14°C	+	medium	high	low	low	low	media
	>15°C	+	low	medium	very low	low	low	medium/low
	>12°C	-		medium/low	low	medium	low	medium/low
	>10°C	-		low	low	low	low	medium/low
	>15°C	+		medium	low	low	low	medium/low
	>15°C	-		medium	low	low	low	medium/low
	15-35°C	+		high	low	low	low	medium/low

ORGANIC-CONTROL
BACTERIA SELECTED TO TACKLE *BRETTANOMYCES* GROWTH

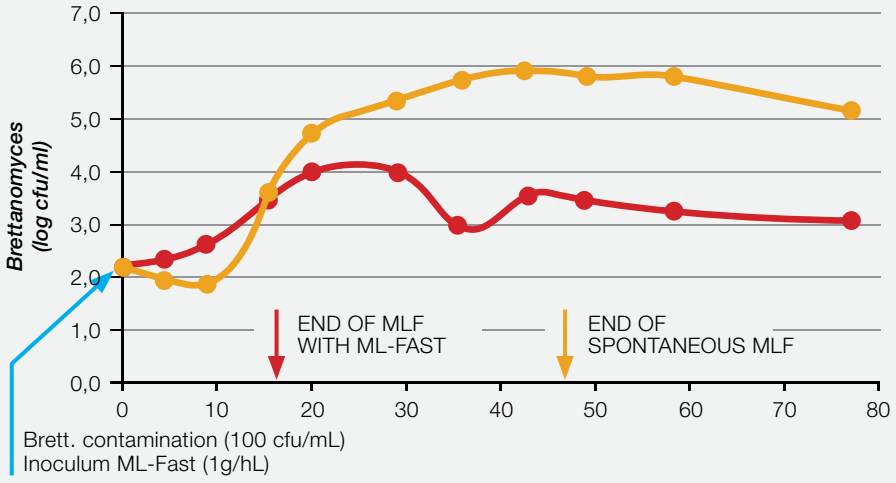
Once AF is complete, conditions favour not only lactic bacteria but also Brettanomyces, although their proliferation is slow.

Waiting for the time of spontaneous MLF, perhaps for several months, involves risks.
Using starter cultures of malolactic bacteria is a good way to counteract the growth of *Brettanomyces*. Some studies have shown that coinoculation or early sequential inoculation prevents *Brettanomyces* contamination, reducing the latency phase between AF and MLF.

Production of volatile phenols in a Burgundy Pinot Noir inoculated with selected bacteria in post alcoholic fermentation compared to spontaneous malolactic fermentation.

	Winery T° 18-19 °C			Winery T° 14-15 °C		
	Control (a)	**Bacterium 1** (ML-Fast)	**Bacterium 2**	**Control** (a)	**Bacterium 1** (ML-Fast)	**Bacterium 2**
Duration of MLF (days)	58	16	13	124	31	27
Volatile phenols (µg/L)						
4 ethyl-guaiacol	404	8	7	551	20	15
4 ethyl-phenol	870	17	9	1119	46	32

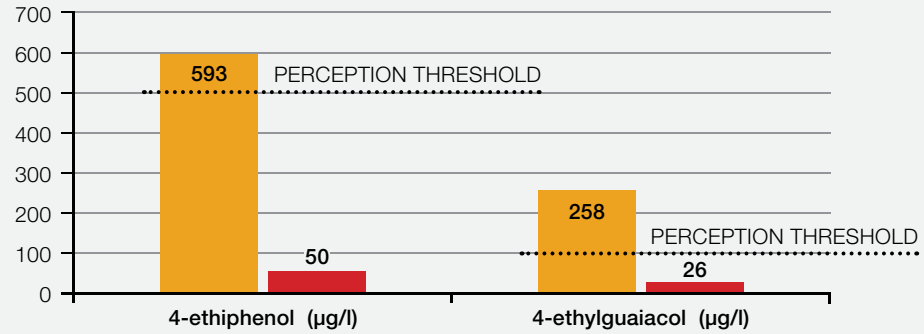
The inoculum with the selected bacteria limits both the growth of Brettanomyces and the synthesis of volatile phenols.



High efficiency of the bio-protection on the growth of Brettanomyces thanks to inoculum with ML-Fast.

Brettanomyces (with ML-Fast)

Brettanomyces (spontaneous MLF)



Impact on the production of volatile phenols (analysis 2 months after the end of MLF).

ML-Fast

Control (spontaneous)

Trials with ML-Fast in Pinot noir. (Alcohol = 13% vol; pH = 3.4; 16 °C. No additions of SO_2 were made and the population of Brettanomyces was monitored for two months).

9

MALOLACTIC FERMENTATION

NOT JUST REDUCING ACIDITY

process that makes the wine more pleasant and more stable and which makes it possible to reduce the number of analytical checks, the consumption of calories, the use of SO_2, and above all to have the wine ready for sale shortly after the end of alcoholic fermentation.

MALOLACTIC BACTERIA

ML-Fast

Strain of *Oenococcus oeni*. It carries out MLF providing aromatic complex wines, with a reduction of herbaceous notes and a low production of diacetyl. It is suitable both for use in co-inoculation and for use at the end of alcoholic fermentation.

Dosage	**Packaging**
1 g/hl.	For 25 hl and for 250 hl.

MALOLACTIC FERMENTATION CONTROL

BattKill XXL

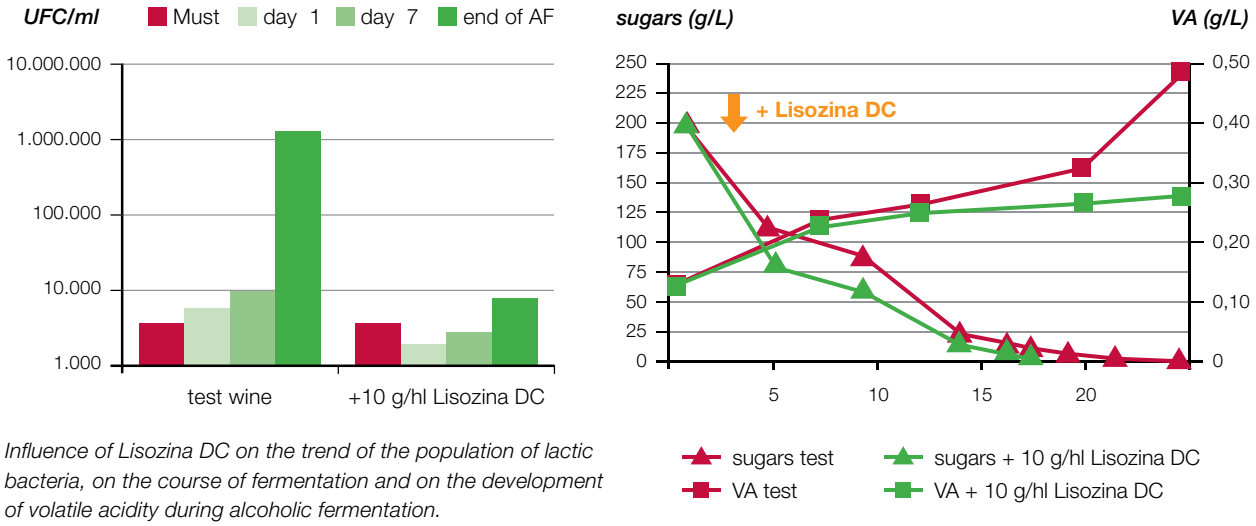
Based on chitosan to inhibit the growth of lactic acid bacteria in musts during cold settling, pre-fermentative maceration and alcoholic fermentation. It forms part of an SO_2 reduction protocol.

Dosage	**Packaging**
160-350 ml/hl.	5 kg and 25 kg jerrycans.

Lisozina DC

The organic way to control lactic acid bacteria, to tackle the problems of stuck fermentation and to contain increases in volatile acidity. It lets you reduce or delay the use of SO_2.

Dosage	**Packaging**
max. 50 g/hl.	500 g jars.



Influence of Lisozina DC on the trend of the population of lactic bacteria, on the course of fermentation and on the development of volatile acidity during alcoholic fermentation.

LATTIvante

Specific nutrition to accelerate and improve malolactic fermentation, minimising the development of volatile acidity and production of diacetyl. In the case of co-inoculation, it is added to the wine at the end of the alcoholic fermentation if the malolactic fermentation has not yet started. Always use in case of sequential inoculation.

Dosage	**Packaging**
20-40 g/hl.	1 kg bags.

CO-INOCULATION IN STANDARD CONDITIONS DURING WINEMAKING IN RED (pH<3,5)

1. Moderate sulphitation:

max. 5 g of SO_2 per quintal (100 kg) of grapes, higher values hinder the development of malolactic fermentation.

2. Rehydration of yeasts in the recommended way.

Recommended yeast strain: Fervens Evoke or Enodoc RG-12.

3. Inoculation and yeast nutrition:

20-25 g/hl + 20 g/hl of wynTube Prepara in rehydration.

With potential alcohol content > 14%: 25-30 g/hl of yeast.

In the inoculation stage guarantee YAN> 150 mg/l with wynTube Full.

4. Inoculation of bacteria ML-Fast:

Dosage 1 g/hl (for red 1 g/100 kg crushed grapes), 24 hours after the inoculation of the yeasts (however, the beginning of alcoholic fermentation must be visible).

Check: malic acid and volatile acidity from mid AF.

The combination of alcohol and high temperatures can reduce the viability of bacteria, the °T in AF must not exceed 28 °C, especially with high alcohol content.

5. Nutrition of yeast during alcoholic fermentation:

30 g/hl of Vitalyeast at 1/3 of fermentation.

6. After the end of the AF:

Check the progress of the MLF (analysis of malic ac. and volatile ac.).
Keep the °T of the wine between 18 and 24 °C. If MLF still has not finished, add LATTIvante (20 g/hl).

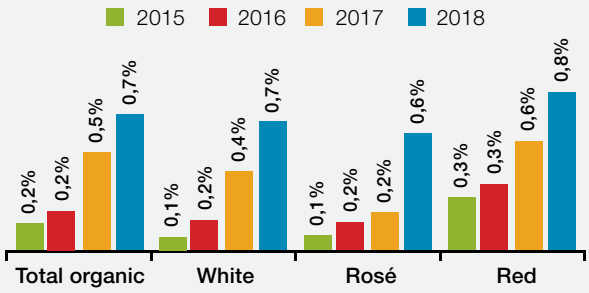
7. At the end of the MLF proceed with:

Racking and sulphiting of the wine. In red wines, if you want to delay sulphitation at the end of malolactic fermentation to carry out micro-oxygenation, it is recommended to use BattKill or BattKill XXL.

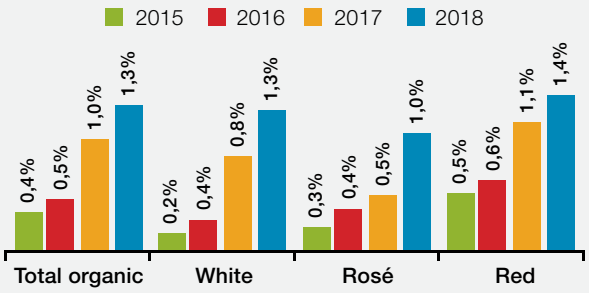
ORGANIC WINE IN NUMBERS

Organic wine is an **ever-growing market** and may be a good commercial alternative to conventional production. Almost 16% of Italian vineyards for wine is organic and Italy, together with Spain, has the largest organic area planted with grapevines (table and wine) in the world. Global organic wine sales have been growing in recent years and expected trend is further growth. Italian organic wine also recorded **increases both in volume and value**.

ORGANIC WINE AS A % OF TOTAL WINE (VOLUME)



ORGANIC WINE AS A % OF TOTAL WINE (VALUE)



Corriere Vinicolo elaborations bases on Ismea-Nielsen data

ORGANIC WINE AND COPPER

One of the best ways to protect vines is by using copper, in its various forms. Unfortunately copper has its own toxicity for the environment and its presence, even a few ppm, in the must has negative repercussions on the fermentation kinetics, on the aromatic production and on the longevity of the wines.

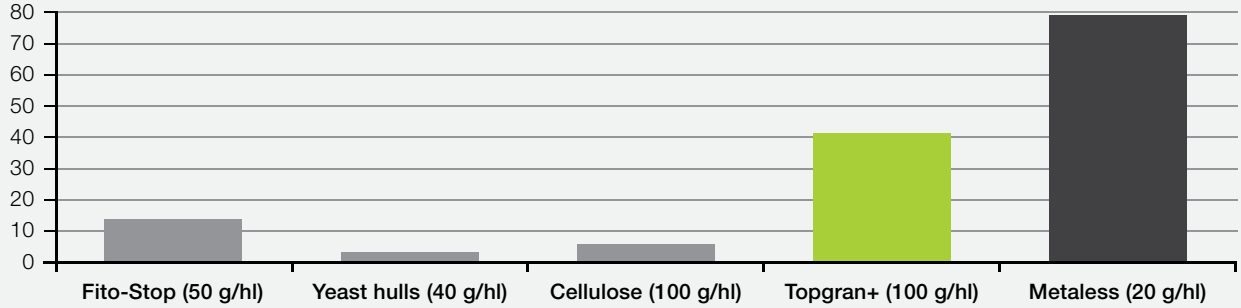
HOWEVER, THERE ARE PRODUCTS TO HELP DECREASE COPPER DOSAGES IN THE VINEYARD

Biobenton: invigorating with drying, dehydrating and healing action, to mitigate the damage of berry's splitting. The reduction of humidity counteracts the development of pathogenic fungi on the bunches during ripening.
Caolino DC: the white patina formed on the leaves reflects the sun's rays preventing burns and thermal shocks. On leaves and fruits it also repels egg-laying insects.
Zeolite DC: suitable for leaf treatments to strengthen the cuticle and protect against environmental stress and parasites. It also promotes the persistence of mixed plant protection products on the leaf.
Chitosano DC: organic polymer from chitin of animal origin. It triggers a series of very intense defensive biochemical reactions on the vegetation ("elicitor effect"), ensuring considerable protection.
Tannino DC: extracted from chestnut wood. Plant treatments stimulate the defence mechanisms against pathogens. Soil treatments stimulate root growth and counter the spread of pathogenic organisms such as soil nematodes.

REMOVING COPPER FROM THE MUST

Among the products permitted in organic winemaking, the most effective tool to remove copper is bentonite with reductions ranging from 20 to 70% depending on the must, the initial content and the contact times. Different Bentonites have different subtractive capacities. Metaless, PVI/PVP based is not allowed in organic winemaking.

% reduction of Cu (initial content 2 ppm)



10

GREEN RANGE

ORGANIC WINEMAKING

The organic approach to winemaking is becoming more and more popular both in Italy and around the world. It is a step towards greater respect for the environment and responds to the increasingly pressing demands consumers in terms of health and sustainability.

MUST CLARIFICATION

ITTIOGREEN

It is used for clarification to focus on, in addition to brightness, the removal of colloids and part of the polyphenols responsible for bitter notes.

Dosage
1-5 g/hl. Dissolve 1-2% in hot water, then gradually add to the volume.

Packaging
500g bags.

GELAGREEN

Gelatine soluble at hot temperatures that can be used both for static settling and flotation. Impressive complete flocculation and rapid clarification of the treated volume.

Dosage
5-20 g/hl for the static settling of musts. Up to 60 g/hl or more in flotation.

Packaging
500 g bags.

ALCOHOLIC FERMENTATION

LISEM GREEN

Organic yeast hulls for yeast nutrition and for alcoholic fermentation management. It can be used starting from the rehydration step to provide the yeast a complete nutritional source.

Dosage
In rehydration:10-20g/hl.
In fermentation:15-25 g/hl.

Packaging
500g bags.

FERVENS GREEN

Versatile organic yeast suitable for different fermentation conditions. It is used in the first fermentation of red, rosé and white wines. It has an excellent dominance over indigenous microflora, adapts to high sugar levels, does not interfere with the typical grape variety aromas.

Dosage
20-30 g/hl.

Packaging
500 g bags.

NUTRIGREEN

Complete supplement, with organic yeast hulls. It can be used at the beginning and at 1/3 of the fermentation, especially when it is necessary to use a single product to meet all the needs of the yeast.

Dosage
20-60 g/hl.

Packaging
1 kg bags.

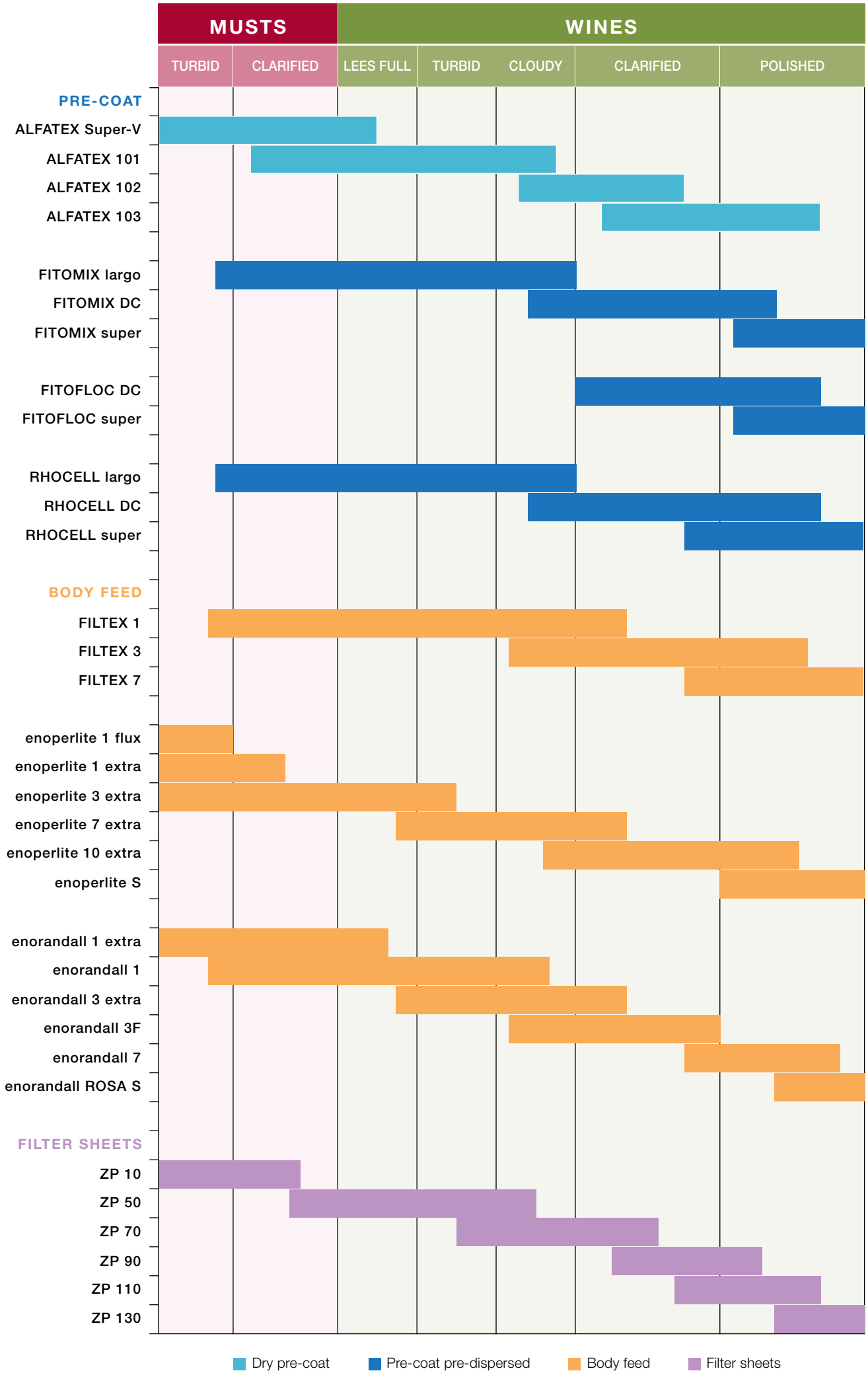
PRODUCTS ALLOWED AND NOT ALLOWED IN ORGANIC WINEMAKING

(annex VIII bis reg. 889/2008 and subsequent am.)

APPLICATION	PRODUCTS	ALLOWED	NOT ALLOWED
Grape protection	Tannins (*)	Tannex, Tanniferm Blanc, Tanniferm Flash, Infinity Blu	
	Antioxidants	Redox, Redox Arom(*), Super Redox	
Must clarification	Chitosan	KitoClear, Phytokoll K	
	Plant proteins (*)	Phytokoll App, Phytokoll Vip	
	Gelatine (*)	All, **Gelagreen**	
	Complex products	Claracell, Claracell Vip	DC-POL G, Drop&Go, Kolirex CP, Kolirex Go Fresh
	Enzymes	Ultrasi Range	Aromazina, Betazina
	Bentonites	All	
	Carbon	All	
AF	Yeasts (*)	**Fervens Green**, Fervens Range, Enodoc Range	
	Activators	**Lisem Green**, **Nutrigreen**, Bio S-Free, Fructal, Full, Prepara, Revelathiol, Spuma, Vitalyeast	Ammonium Sulphate, Superattivante, Bioattivante
	Enhancers	Lifty Sense(*), Lisem Enne, Lisem Glu	
MLF	Bacteria	Enodoc ML-Fast	
	MLF control	BattKill XXL, LATTIvante	Lisozina

(*) obtained from organic raw materials if available.

You will find a product usage guide for Organic, Kosher, Veg, Nop protocols on our website in the DOWNLOAD> TOOLS> APPLICATIONS section


MUSTS
WINES
TURBID
CLARIFIED
LEES FULL
TURBID
CLOUDY
CLARIFIED
POLISHED
PRE-COAT
ALFATEX Super-V
ALFATEX 101
ALFATEX 102
ALFATEX 103
FITOMIX largo
FITOMIX DC
FITOMIX super
FITOFLOC DC
FITOFLOC super
RHOCELL largo
RHOCELL DC
RHOCELL super
BODY FEED
FILTEX 1
FILTEX 3
FILTEX 7
enoperlite 1 flux
enoperlite 1 extra
enoperlite 3 extra
enoperlite 7 extra
enoperlite 10 extra
enoperlite S
enorandall 1 extra
enorandall 1
enorandall 3 extra
enorandall 3F
enorandall 7
enorandall ROSA S
FILTER SHEETS
ZP 10
ZP 50
ZP 70
ZP 90
ZP 110
ZP 130
Dry pre-coat
Pre-coat pre-dispersed
Body feed
Filter sheets

11

FILTRATION

PRESENT IN EVERY WINERY AND AT ALL STAGES OF WINEMAKING

From must to bottling, for each phase you can choose the best product for efficient, safe and cost-effective filtration.

PRE-COAT PRE-DISPERSED FILTERS

Fitofloc™ DC and Fitofloc™ Super

Pre-coat filters predisposed with long fibre cellulose for polishing and fining filtration, respectively. Suitable for unstable colloid retention, they easily work up to 6-7 bar of overpressure.

Dosage
0,5 kg-2 kg per square metre.

Packaging
5 kg bags.
Use immediately after opening.

Fitomix Largo, Fitomix DC and Fitomix Super

Pre-coat filters predisposed for coarse and polishing filtration, respectively, cellulose and perlite based.

Dosage
0,5 kg-2 kg per square metre.

Packaging
5 kg bags.
Use immediately after opening.

Rhocell™ Largo, Rhocell™ DC and Rhocell™ Super

Pre-coat filters predisposed with short chain cellulose for coarse, polishing and fining filtration, respectively. They can be used alone or together with perlite and/or diatomaceous earth.

Dosage
1 kg/m^2 is generally sufficient for good filtration.

Packaging
5 kg bags.
Use immediately after opening.

DRY PRE-COAT FILTERS

Alfatex

Dry pre-coat filter with short chain cellulose fibre, in association with perlites.

Dosage
Alfatex Super V: 10 g/kg of Enoperlite (1/extra or 3/extra), for coarse must filtration.
Alfatex 101: 500-1200 g/m^2 of surface, for coarse filtration.
Alfatex 102: 700-1500 g/m^2 of surface, for polishing filtration.
Alfatex 103: 800-1500 g/m^2 of surface, for fining filtration.

Packaging
20 kg bags.

BODY FEED FILTRATION

Filtex 1, Filtex 3, Filtex 7

Cellulose based body feed filtration aid for the formation of homogeneous coating with constant porosity to be utilised throughout the thickness for optimal deep filtration. From coarse to fine filtering.

Dosage
20-100 g/hl.

Packaging
20 kg bags.

Enorandall

Diatomaceous earth range for coarse to fine filtration before the final cartridge filters.

Dosage
50-200 g/hl in body feed filtration.

Packaging
18, 20 or 25 kg bags depending on the type of diatomaceous earth.

Enoperlite

For filtration on rotary vacuum drum filters and as an alternative to diatomaceous earth as a pre-coat filter for body feed filtration. From coarse filtration of musts to fine filtration of wines.

Dosage
1000-1500 g/m^2 on rotary vacuum drum filters.

Packaging
14, 16, 18 or 25 kg bags depending on the type of perlite.

FILTRATION SHEETS

Strati ZP

Product range with different porosity for treatments that range from the coarse filtration of turbid musts up to the sterile filtration of wines. ZP sheets have controlled porosity, perfect stability during filtration, no sensory effect on the treated must or wine and a high hourly flow rate.

Packaging
Boxes containing 100 filter sheets (40x40 cm).

NOTES

WINE GIVES COURAGE AND MAKES MEN MORE APT FOR PASSION
(Ovidio)

1949...
... His own passion for the science led Gildo Dal Cin to found his lab in Milan.

His own passion for the wine guided him to visit wineries and talk with enologists.

Today we continue his masterwork, listening and answering to a world which never stops: the enology.

organic certified product (EU Reg. 203/2012)

AF allergen free (Annex II, EU Reg. 1169/2011)

no animal origin product

in compliance with EU Reg. 203/2012

1 hl = 100 liters

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