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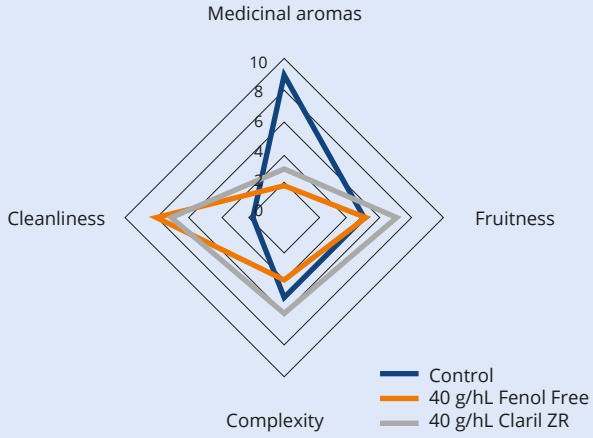
ENARTIS NEWS
HOW TO IMPROVE YOUR WINE POST-FERMENTATION

The beginning of maturation is the ideal time to correct wine imperfections. The principle is "the sooner the better." With a young wine, it is possible to use "mild/gentle" corrective treatments and observe their impact over time. If they are not effective, there is still time to repeat the treatment or try a different strategy.

There are two strategies to improve a wine:

- **Subtractive techniques** are the most common approaches to improve organoleptic profile, adjustment color and remove undesirable elements or flavors in the wine. But using fining agents requires time for settling, racking and/or filtration and almost always implies a loss of quality.
- **Additive techniques** using tannins, yeast-derived polysaccharides, or Arabic gums are beneficial to correct or minimize defects such as herbaceous aromas, lack of structure, excess astringency, burning sensations, reduction, etc. They can be added just days prior to bottling without racking and/or filtration and subsequent wine losses.

Depending on the wine ageing stage and type of sensory defect, one or another action must be carried out.



Fining trial to reduce and mask volatile phenols (4-ethylphenol and 4-ethylguaiacol) in wine contaminated with Brettanomyces. Overall, Claril ZR masks the medicinal aromas, enhances varietal fruit aromas and consequently increases cleanliness and complexity. It can be a good alternative to using carbon.

TREAT UNDESIRABLE AROMAS

Aromatic deviations can be caused by many factors, the most common are due to microbiological contamination such as *Brettanomyces*, oxidation reactions, reductive environments, etc. Enartis offers a series of products that help mask aromatic defects and enhance wine quality:

	ENARTIS PRODUCT	DOSAGE g/hL	PRODUCT DESCRIPTION
FINING AGENT	CLARIL ZR	20-40	Vegan fining agent made from plant protein boosted with chitosan and bentonite. It is designed for the clarification of red wines to improve clarity, remove unstable substances and undesirable aromas that can have a negative impact on the final wine.
	FENOL FREE	20-40	Carbon that is extremely effective in removing off-aromas such as volatile phenols produced by *Brettanomyces*, smoke taint, microbiological origin, etc.
	ENARTISSTAB MICRO M	10-20	Activated chitosan that, not only protects and controls microorganism development, but also has clarifying and olfactory cleaning effects.
TANNINS	ENARTISTAN MAX NATURE	0.5-10	Condensed tannin extracted from exotic wood species. It increases cleanliness and aroma complexity, reducing herbaceous and reductive notes.
	ENARTISTAN SLI	0.5-5	Tannin extracted from untoasted American oak. Provides antioxidant protection, prolonged wine freshness, enhances varietal aromas and masks aromatic defects.

Please note the tannin dosage in white wines is lower than in red wines. Bench trials are required to determine optimum dosages.

OXIDATION

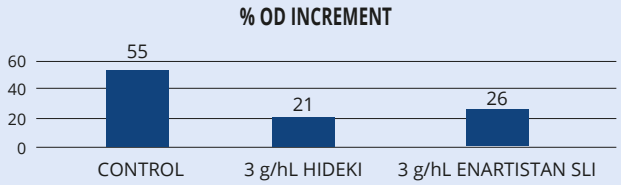
During ageing, it is essential to protect wine from oxidation and to balance the redox potential to avoid color and aroma changes.

Stabilizing wine redox potential will preserve the vibrant and fresh characteristics of youthful wines. Fine lees, ascorbic acid, SO_2 and specific tannins, such as EnartisTan SLI and Hideki, can lower or stabilize wine redox potential and prolong its shelf-life.

WHITE AND ROSÉ WINE	RED WINE
• 2-3 g/hL EnartisTan FF + 0.5 g/hL EnartisTan UNICO #3 • 0.5-3 g/hL Enartis UNICO #3 • 0.5-3 g/hL EnartisTan SLI • 0.5-1 g/hL HIDEKI	• 1-5 g/hL HIDEKI • 0.5-5 g/hL EnartisTan SLI • 0.5-3 g/hL EnartisTan UNICO #3 • 0.5-5 g/hL EnartisTan MAX NATURE

Bench trials are required to determine optimal dosages.

A mechanism to control the oxidation potential of wine, is managing the increase of its optical density (brownish hue) over time.



White wine with high-risk oxidation potential (high content of catechins and metals) and without SO_2 protection. Hideki and EnartisTan SLI help to control the increase optical density at 420 nm of the wine.

REDUCTION

Reduction is one of the most common problems during wine storage. Hydrogen sulfide and other volatile sulfur-containing compounds can present undesirable aromas such as rotten egg, burnt rubber, skunk, burnt matches, asparagus, onion and garlic. In addition, they can impact mouthfeel and intensify some wine attributes such as bitterness and herbaceous characters.

The addition of tannins, especially ellagic and condensed tannins, can bind and react with mercaptans to form odorless complexes. These complexes are very stable over time and do not entail the post-bottling risk of sulfur off-aroma presence.

ENARTISTAN ELEVAGE	Ellagic tannin obtained from lightly toasted French oak. Increases sensory cleanliness, controls and prevents the formation of sulfur compounds.
ENARTISTAN SLI	Ellagic tannin from untoasted American oak that prevents and treats reduction aromas over time.
ENARTISTAN CŒUR DE CHÊNE	Ellagic tannin from toasted French oak. Very effective in scavenging mercaptans and can successfully replace the addition of copper prior to bottling.
ENARTISTAN MAX NATURE	Condensed tannin extracted from exotic wood species. An option particularly recommended for treating easy-to-drink, "light" wines.

The best way to determine the cause of the defect is by conducting a simple sensory trial to find the correct treatment. This trial involves using the wine with sulfur off-aromas, pouring it into 4 glasses and adding the following recommended products to identify the type of sulfur compound present in the wine.

Control	**Copper sulfate** (2 g/hL of copper)	**EnartisTan ELEVAGE** 2 g/hL	**Ascorbic acid** (5 g/hL) **EnartisTan ELEVAGE** (2 g/hL)	Interpretation
Sulfur off-aroma	**Off-odor disappears**	Off-odor is still there	Off-odor is still there	**H_2S**
	Off-odor disappears	**Off-odor disappears**	Off-odor is still there	**Mercaptans**
	Off-odor is still there	Off-odor is still there	**Off-odor disappears**	**Disulfides**

ASTRINGENCY

Often, astringency can be confused with bitterness and vice versa. This perception of dryness is directly related to the polyphenol content of the wine, mainly the tannins present in the skin and seeds of the grape. Certain winemaking practices can trigger a greater sensation of these sensory parameters.

There are different ways to eliminate these aggressive tannins or mask them by providing more volume and sweetness by using polysaccharides and gum Arabic.

0.5-10 g/hL Surlì Velvet	Yeast mannoproteins that enhance sensory characteristics including aromatic intensity and complexity, volume and reduced astringency.
100-200 mL/hL Maxigum Plus	Solution of Gum Arabic Verek and mannoproteins. It stabilizes unstable color without interfering with filterability and can reduce the perception of dryness.

PINKING

Pinking is an oxidative phenomenon in wine characterized by a color change towards a gray/pink hue.
This defect can be prevented by the elimination of metals, oxidizable or easily oxidizable polyphenols and good antioxidant protection with tannins or SO_2, for example.
If preventive measures have not been carried out correctly, it is possible that your white wine could be prone to pinking.

PINKING STAGE	ENARTIS SOLUTION
Pink color already PRESENT	50 – 80 g/hL CLARIL SP
Pink color NOT PRESENT but the pinking test is positive	50 g/hL CITROSTAB rH

Bench trials are required to determine optimal dosages.

50 g/hL Citrostab rH prevents the appearance of pinking even in hyper-oxidative conditions.

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