




IMPROVEMENT THROUGH BIOTECHNOLOGY
-SINCE 1963-

Tannins & Polysaccharides

Tannins

TANNIN	PRODUCT	CHARACTERISTICS
 NEW VARIETAL FERMENTATION TANNINS	FERMOTAN CB	PROANTHOCYANIDINIC TANNINS (GRAPE SKIN AND SEED) AND QUEBRACHO SPECIFIC FOR CABERNET, MERLOT, TOROLDEGO, MONTEPULCIANO, BARBERA.
	FERMOTAN AG	WOOD AND SKIN HYDROLIZABLE TANNINS AND ELLAGIC TANNINS FOR AGLIANICO, NERO D'AVOLA, PRIMITIVO, ZINFANDEL, MALBEC, TEMPRANILLO, SYRAH.
	FERMOTAN SG	MIX OF ELLAGIC AND WOOD PROANTHOCYANIDIN TANNINS FOR PINOT NOIR AND SANGIOVESE
FERMENTATION TANNINS	FERMOTAN	FERMENTATION TANNIN WITH 60% PROANTHOCYANIDINS AND 40% ELLAGIC TANNINS. FOR COLOR STABILIZATION & STRUCTURE
	FERMOTAN BLANC	ELLAGIC TANNIN FOR STRUCTURE AND OXYGEN PROTECTION
	FERMOTAN LIQUID	LIQUID VERSION OF FERMOTAN
	GALLOVIN	TANNIN FROM GALLNUTS TO PROTECT FROM OXYGEN AND TO NEUTRALIZE LACCASE FROM BOTRYTIS
	GALLOVIN LIQUID	LIQUID VERSION OF GALLOVIN
	TANETHYL EFFE	TANETHYL PRODUCT BLENDED WITH ELLAGIC TANNINS
FINISHING TANNINS	EB BERRY MIX	LIQUID OAK TANNIN WITH HIGH VANILLA AND SWEET SENSATIONS FROM THE OAK
	EB FRUIT RESERVE	LIQUID OAK TANNIN WITH NUANCES OF MAPLE SYRUP, CARAMEL AND VANILLA
	EB GOUD-RON	LIQUID OAK TANNIN WITH HIGH VANILLA AND NUANCES OF "TAR", REMINISCENT OF OLD FASHION RHÔNE-STYLE WINES
	ELLAGITAN BARRIQUE LIQUID	LIQUID OAK TANNIN WITH NUANCES OF VANILLA, WHISKY LACTONE AND COCONUT
	ELLAGITAN BARRIQUE ROUGE	POWDERY OAK TANNIN WITH NUANCES OF VANILLA, WHISKY LACTONE AND COCONUT
	EB XO	LIQUID OAK TANNIN WITH NUANCES OF SYRINGALDHEYDE (SMOKY), SPICES AND VANILLA.

TANNIN	PRODUCT	CHARACTERISTICS
MATURATION TANNINS	ELLAGITAN CHENE	POWDERY OAK TANNIN TO ELEVATE FRUIT EXPRESSION
	ELLAGITAN EXTREME	POWDERY OAK TANNIN TO ELEVATE FRUIT AND SPICES EXPRESSION
	ELLAGITAN REFILL	UN-TOASTED OAK TANNIN TO RE-ESTABLISH THE REDOX POTENTIAL
	PROTAN BIOPEEL	ORGANIC LIQUID GRAPE-SKIN-DERIVED TANNIN
	PROTAN BOIS	QUEBRACHO DERIVED TANNIN FOR AGING STRUCTURE AND COLOR STABILIZATION
	PROTAN MALBEC	NUTTY AND STRUCTURED GRAPE-SEED DERIVED TANNIN
	PROTAN PEEL	LIQUID GRAPE-SKIN DERIVED TANNIN
	PROTAN PEPIN OXILINK	OLD-WORLD STYLE GRAPE-SEED DERIVED TANNIN
	PROTAN RAISIN	"VELVETY" AND STRUCTURED GRAPE-SKIN DERIVED TANNIN
	TANETHYL	FAST POLYMERIZING, GRAPE-SEED-DERIVED TANNIN
	TANIBLANC	STRONG ANTIOXIDANT, HIGHLY REACTIVE, ELLAGIC TANNIN
	TANQUERC	CHOCOLATE-MOCHA STYLE, GRANULATED OAK TANNIN. IDEAL FOR MOX PROCESSING

Commercial tannins are polyphenolic compounds extracted from grapes, Quebracho, Oak, Chestnut, Tara and Galla, which can be divided into condensed tannins, also called proanthocyanidins, and hydrolysable tannins, including gallic and ellagic tannins.

The two groups have very different characteristics and AEB developed a wide range of products to offer the wine industry multiple targeted solutions to:

- Improve mouthfeel sensation and wine aroma/ flavor
- Precipitate proteins
- Scavenge oxygen and help prevent oxidation
- Inhibit laccase activity
- Stabilize red wine color
- Enhancing the aging potential
- Decrease reductive off-flavors

Fermentation Tannins:

It is pretty much agreed in the winemaking community that the addition of tannins to the fermentation brings advantages to color stability and helps to have lower VA and overall a cleaner fermentation without the usage of SO₂. Some of these added tannins will be lost, leaving the natural tannins in solution and in fact, these so called “sacrificial tannins”, will precipitate with proteins in the first stages of fermentation. These are proanthocyanidins derived from grapes or Quebracho, a wood rich in condensed tannins of natural high molecular weight. The balance of the proanthocyanidins left in solution will be the substrate for color stability and the backbone of the finished wine.

Fermotan and Fermotan liquid: it’s a highly reactive tannin developed for quick reaction both with proteins and with colored pigments. It contains 40% ellagic and 60% proanthocyanidinic tannins, and, when added during fermentation, it rapidly acts as “sacrificial tannin”, stabilizing red wine color and optimizing the level of noble tannins. Fermotan works best in presence of alcohol, during the first phase of fermentation, when color is released and needs to be stabilized. This normally happens in the first five days of maceration. Later additions of Fermotan will also benefit color stability and structure. This product is available both in liquid and powdered form.

Utilization: mix in a separate tub 1:10 with warm water (35°C/95 °F) or juice and then add to the fermenting must during pump over.

Dosage (Powder): 12-48 g/hL (1-4 lb./1000 gal) in red must.

Dosage (Liquid): consider this conversion factor to do additions: 10 ppm = 1g/hl = 0.083 lb./1,000 gallons = 0.85 ml/hl or 32 ml/1,000 gallons. Average dosages in red must range 120-960 ppm or 10-80 ml/hL (3.80 L/1,000 gallons or 1-8 lb./1000 gal).

Shelf life and storage: can be kept for three years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Packaging (Powder): 1 kg packets, 15 kg bags.

Packaging (Liquid): 5 kg bottles, 25 kg drum (about 4.16-20.8 liters).

Fermotan Blanc: it adds “oaky” structure to white musts and protects wines from oxygen and free radicals. It contains ellagic tannins from oak that have the capability to build a

smooth structure and gallic tannins to protect the wine from oxygen. It produces wines with better structure, reduces roughness and preserves the aromatic freshness for a longer period. Fermotan Blanc acts in synergy with sulfur dioxide, retaining a higher percentage of free SO₂, both at the beginning and at the end of fermentation. In this way SO₂ additions can be significantly reduced.

Utilization: Dissolve 1:10 in must or warm water (35°C/95°F) and add as early as possible to the grapes. The best application is to add it directly in the bins or gondola, or at the grape conveyer.

Dosage: 5 to 40g/hL (1/2-3 lbs./1000 gal) in white musts.

Shelf life and storage: can be kept for three years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Packaging: 1 kg packets



Tanéthyl Effe: tannin for color stabilization in cold soak and for rosé wines. It's a blend of ellagic tannins from oak and proanthocyanidinic tannins from grapes. The condensed tannin fraction is extracted from grape seeds by means of a patented system, which locks an active ethanal bridge into the tannin. Ethanal bridges have been shown to be greatly responsible for color stabilization and tannin polymerization. The utilization of Tanéthyl Effe is highly recommended for stabilizing color during cold soak of red wines (and the first stage of fermentation). It provides the juice (or fermenting wine) with the ethanal bridges that would otherwise not be present due to low ethanol concentration. Tanéthyl Effe also contains simple ellagic tannins that give smoothness and promote color stabilization when fermentation begins.

Utilization: Mix 1:10 in a separate tub with warm water (35°C/95°F) and then add to the grapes or to fermenting must during pump over.

Dosage: rosé wines: 4 to 12 g/hL (1/3–1 lb./1000 Gal).

Red wines: 12 to 36 g/hL (–3 lb./1000 Gal).

Shelf life and storage: can be kept for three years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Highlights: because of the already active ethanal bridge, Tanéthyl Effe is the best tannin to stabilize color during cold soak when ethanol is completely absent.

Packaging: 1 kg packets

AEB introduces a new concept of fermentation tannins:

Varietal Specific Tannins

Color, or better anthocyanins, are polyphenolic compounds present in red grapes located in the vacuoles of the skin cells and, in tannier varieties, also in the pulp. Five forms of anthocyanins have been identified with different stability in wine: disubstituted forms (cyanidin and peonidin) characterized by low stability, trisubstituted forms (delphinidin, petunidin, malvidin) medium stability and acylated forms, which is the most stable. AEB R&D labs, in collaboration with the University of Turin, conducted a detailed analysis, to characterize the typical profile of anthocyanins of a good and variate selection of grapes, and then carried out a study on which tannin addition maximizes the color stability for each varietal. The outcomes of the experiment showed how different anthocyanins profiles request different compounds to prevent color loss, resulting in a significant stronger color intensity and more lively color hues.

Based on genetic maps that cluster varieties with similar anthocyanins profiles, AEB has formulated different tannins blends to target color stability for varieties with similar characteristics.

Fermotan CB: is a mix of proanthocyanidinic tannins obtained from grape skins, grape seed and quebracho. It helps to stabilize anthocyanins and consequently fix the color in varieties with an anthocyanin profile like that of Cabernet, Merlot, Toroldego, Montepulciano, Barbera. It is recommended to use from the earliest stages of vinification.

Fermotan AG: is a balanced blend of wood and skin proanthocyanidins and ellagic tannin extracted from oak, with a slightly astringent flavor with boisé notes. It brings the correct amount of reactive proanthocyanidins to stabilize the color from the early vinification stages. Its utilization is suggested from the first vinification stages for Aglianico, Nero d'Avola, Primitivo, Zinfandel, Malbec, Tempranillo, Syrah.

Fermotan SG: is a balanced mix of ellagic and wood proanthocyanidinic tannins, with a soft taste. It helps preserving and stably evolving the color from the early vinification stages. Its utilization is suggested from the first vinification stages for Sangiovese and Pinot Noir.

Dosage: From 5 to 40 g/hL (0.5 – 3 lbs./1000 gal).

Shelf life and storage: can be kept for three years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Packaging: 1 kg net/ 5 kg net bags.

Hydrolysable tannins

(ellagic tannins from oak or gallic tannins from gallnuts)



Ellagitan Extreme: is an ellagic tannin extracted from toasted American oak staves. It is sweet with hints of licorice, cloves, pepper and chocolate, along with very high vanillin content. It is often used in red wines to hide vegetal characters and to open them up, helping to release a bouquet richer in cherries and red fruits in general.

Both in red and white wines it adds a round and complex structure that is never bitter or astringent, even at high dosages. When used in complex and fruity red wines like Shiraz, Cabernet Sauvignon and Merlot, expect the fruit to be enhanced and integrated with sweet nuances of chocolate and licorice. When used in big whites like Chardonnay and Viognier, it gives a longer finish and keeps the wine fresh and fruity.

Utilization: rehydrate in warm water (35°C/95°F) or wine, for 1\2 h before mixing. Then make a 1:10 slurry and add directly to circulating tank or barrel. Wait at least a week before filtering.

Dosage: 12-50 g/hL (1-4 lbs./1000 gal)

Shelf life and storage: can be kept for three years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Packaging: 500g packets

Ellagitan Refill: un-toasted oak derived ellagic tannin that, along with oxygen, promotes ethanal production for phenolics polymerization. This is a crucial step in aging red wines and in building a smoother structure. In fact, un-toasted ellagic tannins catalyze the aging process, where tannins from seeds and skins lose roughness and become more elegant and “chewy”. At the same time, color is stabilized. Ellagitan Refill is an ellagic tannin in an aqueous solution, originally studied by AEB to reintegrate the ellagic fraction lost in used barrels, enabling them to be re-used for a longer time without losing their ability to promote optimal wine aging. The same tannin may be used to increase structure or in tanks to optimize micro-oxygenation. Its hydrolysable nature also helps to cure the presence of reductive odors.

Directions for use: Dilute in ten parts of wine and add to mass by pumping over or mixer. Allow at least a week before filtering.

Dosage: consider this conversion factor to do additions: 10 ppm = 1g/hl = 0.083 lb./1,000 gallons = 0.85 ml/hl or 32 ml/1,000 gallons. Average dosages range 120-720 ppm or 10-60 ml/hL (380-2,280 ml/1,000 gallons or 1-6 lbs./1000 gal).

Shelf life and storage: can be kept for three years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Packaging: 1 kg bottles and 25 kg pales.

Taniblanc: enhances fruit expression and oxidation resistance in white and rosé wines. It's a soft ellagic tannin derived from prized oak, and highly purified for use in musts, red, white and rosé wines. Its antioxidant activity protects the wines during the entire period of bottle maturation and reduces the needs of chemical preservatives like sulfur and ascorbate. The use of Taniblanc, even from the early

stages of white must processing, produces straw-yellow wines with youthful and intense varietal characterization. It balances wine structure, eliminating the coarseness caused by an excessive content of proanthocyanidinic tannins. It is also recommended to lower reduction problems.

Directions for use: Re-hydrate in warm water (35°C/95°F) or wine, for 1/2 h before mixing. Then make a slurry 1:10 in wine and add directly to circulating tank or barrel.

Dosage: red wines: 12-50 g/hL (1-4 lbs./1000 gal); rosé wines 12–25 g/hL (1-2 lbs./1000 gal); white wines 6-12 g/hL (1/2–1 lb./1000 gal).

Shelf life and storage: can be kept for three years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Packaging: 1 kg packets.

Taniquerc: derived from toasted French oak, is an ellagic tannin that promotes tannins polymerization during micro-oxygenation and that highlights the structure of red wines in general. It is also very efficient in removing reduction. The tannic infusion has been extracted by means of prolonged maceration in cold water. This technique promotes the precipitation of the bitter substances present in toasted woods. If used with micro-oxygenation, Taniquerc promotes the violet color, fragrance and taste, typical of barrel-matured wines. It also prolongs the aromatic persistency and the aftertaste of wines and increases the efficiency of used barrels. Utilization: rehydrate in warm water (35°C/95°F) or wine, for 1/2 h before mixing. Then make a slurry 1:10 in wine and add it directly to circulating tank or barrel

Dosage: 12-50 g/hL (1-4 lbs./1000 gal).

Shelf life and storage: can be kept for three years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Packaging: 1 kg packets and 5 kg bags



Gallovin and Gallovin Liquid: a gallic tannin which could be used as a structuring additive but is mostly geared for protecting from all risks of oxidation, including botrytis infection. Gallovin is also very reactive with proteins. This favors protein stability in white and rosé wines. In reds

it becomes a sacrificial tannin and minimizes the loss of phenolic compounds from the grapes; preserving the noble tannins that would normally precipitate with proteins. The main innovation that AEB brought with this product is the pure and neutral nature of the gallic tannin. Only the core of the gallnuts is used as raw material, making Gallovin a colorless and odorless product that will not affect wine flavors, but will reduce the needs for antioxidants such as SO₂ and ascorbic acid.

Utilization: Dilute in ten parts of wine and add directly on top of the grapes, must or to the wine by pumping over or mixer.

Dosages for powder: on rotten grapes about 150-200 grams per ton (or 1 pound every 2-3 tons of grapes). During oxygen exposure of wine and musts (racking, blending, bottling) about 50 ppm.

For the Gallovin Liquid, consider this conversion factor to do additions: 10 ppm = 1g/hl = 0.083 lb./1,000 gallons = 0.85 ml/hl or 32 ml/1,000 gallons. Average dosages range in musts is 120-360 ppm or 10-30 ml/hL (380-2,280 ml/1,000 gallons or 1-6 lbs./1000 gal). Add about 200 ml per ton of grapes.

Shelf life and storage: can be kept for three years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Packaging powder: 500 g and 5 kg bags

Packaging liquid: 25 kg pales

The Ellagitan Barrique Line:

American and French Oak derived tannins, in liquid and powdery forms, for fermentation, aging and fine tuning.

- The different Ellagitan Barrique liquid products vary their aromatic profile depending both on the source of wood but also on the toasting levels. Air seasoning initiates the polymer's breakdown into simple sugars in the raw material. As oak climbs through 300°F during toasting, more simple sugars are formed. Caramelized sugars and sweet-associated aromas then develop. Toasty characters develop as the oak temperature exceeds 420°F.

- Structural differences in American oak's hemicellulose and lignin result in more intense wood sugars, and "toastiness".
 - More toasting in general decreases the Whiskey/Lactone compounds making the profile richer in toffee and toasted-wood aromas.
 - In general, when using oak extracts, oak derivatives or barrels, French products contribute with more vanilla and more structure, resulting in a balanced extraction. American oak products contribute with more volatile phenols, like eugenol and guaiacol (spices/smoky) or aldehydes like furfural (almonds). Because these aromatic profiles are usually not supported by a good structuring tannin extraction, all Ellagitan Barrique line tannins are adjusted for a balanced structural content.



Ellagitan Barrique Liquid: the most "French" of the five; with the most vanilla. Opens the fruit of the wine, enhancing the red and black berries. Also, it brings a peppercorn note to the spices in the bouquet. Great to hide defects in certain wines.

Utilization: dilute in 10 parts of wine and add to fermentation or at any other stage. It is better to avoid additions 2 weeks before micro-filtration.

Dosage: consider this conversion factor to do additions: 10 ppm = 1g/hl = 0.083 lb./1,000 gallons = 0.85 ml/hl or 32 ml/1,000 gallons. According to our experience this tannin can be used on red wines up to 8.5 lbs./1,000 gallons (about 1,000 ppm). Average dosages range 120-720 ppm or 10-60 ml/hL (380-2,280 ml/1,000 gallons or 1-6 lbs/1000 gal). Minimum dosage for light nuances in reds is 120 ppm

(1lb/1,000 gallons). Higher dosage will increase the impact. In whites it may be dosed at 30-120 ppm (1/4-1 lb./1,000 gallons).

Shelf life and storage: can be kept for three years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Packaging: 1 kg bottles, 10 kg pales. A sediment will accumulate in the bottle, that's normal and it could be partially dissolved in wine or hot water.



EB Berry Mix: released in 2019, this ellagic tannin is coming from a new technology of production that retains more of the original oak flavors. It helps stabilizing the color but also introduces a soft note that brings structure and smoothness. In the nose, it enhances the sweet notes of the fruit and brings along a pleasant bouquet of spices and toasted oak.

Utilization: dilute in 10 parts of wine and add to fermentation or at any other stage. It is better to avoid additions 2 weeks before micro-filtration.

Dosage: consider this conversion factor to do additions: 10 ppm = 1g/hl = 0.083 lb./1,000 gallons = 0.85 ml/hl or 32 ml/1,000 gallons. Average dosages range 120-720 ppm or 10-60 ml/hL (380-2,280



ml/1,000 gallons or 1-6 lbs/1000 gal). Minimum dosage for light nuances in reds is 120 ppm (1lb/1,000 gallons). Higher dosage will increase the impact. In whites it may be dosed at 30-120 ppm (1/4-1 lb./1,000 gallons).

Shelf life and storage: can be kept for three years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Packaging: 1 kg bottles, 10 kg pales. A sediment will accumulate in the bottle, that's normal and it could be partially dissolved in wine or hot water.



EB Fruit Reserve: it has the least impact on the aromatics of the wine among the five liquid Ellagitan Barrique products, meaning that it marks less and should not be used to cover defects.

It helps the wine to “take-off” with what the wine already has, enhancing the fruit and opening the bouquet. It also brings notes of almonds and caramel.

Utilization: dilute in 10 parts of wine and add to fermentation or at any other stage. It is better to avoid additions 2 weeks before micro-filtration.

Dosage: consider this conversion factor to do additions: 10 ppm = 1g/hl = 0.083 lb./1,000 gallons = 0.85 ml/hl or 32 ml/1,000 gallons. Average dosages range 120-720 ppm or 10-60 ml/hL (380-2,280 ml/1,000 gallons or 1-6 lbs/1000 gal). Minimum dosage for light nuances in reds is 120 ppm (1lb/1,000 gallons). Higher dosage will increase the impact. In whites it may be dosed at 30-120 ppm (1/4-1 lb./1,000 gallons).

Shelf life and storage: can be kept for three years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Packaging: 1 kg bottles, 10 kg pales. A sediment will accumulate in the bottle, that’s normal and it could be partially dissolved in wine or hot water.



EB Goud-Ron: released in 2019, this ellagic tannin is coming from a new technology of production that retains more of the original oak flavors. It helps stabilizing the color, but also introduces a soft note that brings along structure and smoothness. In the nose, it shows notes of “goud-ron” (tar), a typical descriptor of old world wines, reminiscent of the ones found in the great reds from Rhône and Piedmont.

Utilization: dilute in 10 parts of wine and add to fermentation or at any other stage. It is better to avoid additions 2 weeks before micro-filtration.

Dosage: consider this conversion factor to do additions: 10 ppm = 1g/hl = 0.083 lb./1,000 gallons = 0.85 ml/hl or 32 ml/1,000 gallons. Average dosages range 120-720 ppm or 10-60 ml/hL (380-2,280 ml/1,000 gallons or 1-6 lbs/1000 gal). Minimum dosage for light nuances in reds is 120 ppm (1lb/1,000 gallons). Higher



dosage will increase the impact. In whites it may be dosed at 30-120 ppm (1/4-1 lb./1,000 gallons).

Shelf life and storage: can be kept for three years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Packaging: 1 kg bottles, 10 kg pales. A sediment will accumulate in the bottle, that's normal and it could be partially dissolved in wine or hot water.



EB XO: the most noticeable in the nose among the five liquid Ellagitan Barrique products. It gives a smoky/toasted note that works great for wines where we want to enhance the spices, chocolate, leather and earthy sensations. Not recommended in smoke tainted or Brett-affected wines, it helps hiding most other defects, like burnt rubber or methoxypyrazines.

Utilization: dilute in 10 parts of wine and add to fermentation or at any other stage. It is better to avoid additions 2 weeks before micro-filtration.

Dosage: consider this conversion factor to do additions: 10 ppm = 1g/hl = 0.083 lb./1,000 gallons = 0.85 ml/hl or 32 ml/1,000 gallons. Average dosages range 120-720 ppm or 10-60 ml/hL (380-2,280 ml/1,000 gallons or 1-6 lbs./1000 gal). Minimum dosage for light nuances in reds is 120 ppm (1lb/1,000 gallons). Higher dosage will increase the impact. In whites it may be dosed at 30-120 ppm (1/4-1 lb./1,000 gallons).

Shelf life and storage: can be kept for three years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Packaging: 1 kg bottles, 10 kg pales. A sediment will accumulate in the bottle, that's normal and it could be partially dissolved in wine or hot water.



Ellagitan Barrique Rouge: this granulated tannin is extracted from highly toasted oak wood. The seasoning process exceeds two years and is identical to the technique used when producing the most prized barrels. The innovative physical system used for extracting this ellagic tannins, hydrolyzes and then precipitates the other bitter substances. Added polysaccharidic micro-molecules encapsulate the aromatic properties of toasted oak, preventing their dissipation during spray drying. Ellagitan Barrique Rouge prolongs the aromatic persistency, improves the mellowness of wines and integrates their aromatic complexity with delicate nuances reminiscent of chocolate and vanilla. Ellagitan Barrique Rouge can also be used to extend the life of used barrels. It offers numerous advantages over other oak alternatives: it is immediately soluble, does not release undesirable substances, such as resins or bitter compounds, and inhibits bacteria or mold contamination reducing the need for SO₂. Furthermore, there is no color or wine loss due to wood absorption.

Directions for use: Re-hydrate in warm water (35°C/95°F) or wine, for at least ½ h before mixing. Then make a slurry 1:10 in wine and add directly to circulating tank or barrel. Allow at least a week before filtering.

Dosage: Minimum dosage for light nuances in reds is 100 ppm (0.8 lb./1,000 gallons). Higher dosage will increase the impact. In whites it may be dosed at 30-120 ppm (1/4-1 lb./1,000 gallons).

Shelf life and storage: can be kept for three years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Packaging: 500 grams and 10 kg bags

Ellagitan Barrique Blanc: colorless version of the powdery oak tannin described above. Extracted from French oak staves. Will have minor effects on the color. Ellagitan Barrique Blanc is used to highlight the varietal aromas of white and rosé wines. It is also used successfully on Craft Ciders. It has a soft velvety taste and carries antioxidant properties, which preserve varietal aromas, and develop bouquet complexity by regulating the redox potential during the fermentation and post-fermentation stages. It inhibits bacteria or mold contamination reducing the need for SO₂. It is recommended for those wines that have had a prolonged cold skin-contact maceration, which are often rich in polyphenols and tend to brown. Wines treated with Ellagitan Barrique Blanc are intense and complex to the nose, due to

the synergy of the tannin with primary fermentation aromas. Wines will result fresher and lively to the palate, free of unpleasant bitterness and rich in body, like after oak barrel-aging.

Directions for use: re-hydrate in warm water (35°C/95°F) or wine, for at least ½ h before mixing. Then make a slurry 1:10 in wine and add it directly to circulating tank or barrel. Allow at least a week before filtering.

Dosage in white wines: 6- 50 g/hL – 1/2-4 lbs./1000 gal.

Shelf life and storage: can be kept for three years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Packaging: 500 grams packets

Condensed tannins (grape or Quebracho derived):

Protan Bois: proanthocyanidinic tannin extracted from Quebracho wood. Mostly utilized in red wines that need a stronger “structure-boost” on a budget. The nature of this flavanol is very different from the ones from grapes, and it needs a little more time to integrate (about 30-60 days depending on dosage). It strengthens and amplifies the tannin structure, stabilizes the color and reverses the oxidation process adsorbing aldehydes and port-like odors. In our trials it has shown its best effect on color stability, when added in the final part of the fermentation.

Utilization: mix 1:10 in warm water (35°C/95°F) or wine and add directly to circulating tank or barrel.

Dosage: 5-50 g/hL (1/2 -4 lbs. per 1000 gallons). Because of the powerful structure of this tannin it is recommended to allow 15 days of integration before judging the results. After the addition, wait at least one week before filtering the wine.

Shelf life and storage: can be kept for three years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Packaging: 1kg and 5kg packets

Protan Malbec: throughout history, the wines from Bordeaux have enjoyed the soft and important structure brought by the proanthocyanidins derived from Malbec grapes. It was only after the frost of 1956 that many French vintners abandoned Malbec as a favorite blending component. AEB is now able to provide wineries with the same component that has been the base of the Bordeaux blends for many years. Protan Malbec is a powdered proanthocyanidinic tannin extracted from Malbec seeds, that brings to red wines a sweet but strong backbone structure and color stability.

In white wines, a small addition goes a long way in protecting from oxygen, building volume and especially enhancing crispness. For this is also recommended to fix “flat” and “doughnut” white and rosé wines.

Utilization: mix 1:10 in warm water (35°C/95°F) or wine and add directly to circulating tank or barrel. After the addition, wait at least one week before filtering the wine.

Dosage: Whites: 3 to 12 g/hL (1/4-1 lb./1000Gallons). **Reds:** 12-40 g/hL (1-3 lbs./1000 gallons in reds).

Shelf life and storage: can be kept for three years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Packaging: 500 grams packets



Protan Peel: tannin obtained from unfermented and pressed grape skins, elaborated by a special extraction system for proanthocyanidins that does not alter them and keeps them reactive. This reactivity results in high astringency in the moment when the addition is performed, but also in a quick softening during the first 3-4 weeks of maturation. In a trial performed on a Pinot Noir, an addition at bottling of 2.5 lbs./1,000 of different tannins was compared to oak tannins. Protan Peel addition resulted in a longer shelf life of the wine. It kept expressing fresh fruit for a longer time compared to the untreated control and to wines treated with toasted-oak-extracts. Other experiments, have showed the good results that this tannin brings in terms of reactivity with color and the consequent color stability. For the most common scenarios like for Malbec, Zinfandel, Cabernet, Merlot and even for delicate varieties like Nebbiolo and Sangiovese and Pinot Noir, Protan Peel seemed to have an improving effect on color stability, more so

when added in the first 6 hours of fermentation. For varieties where Malvidin is very prevalent, like in Syrah and Touriga Nacional, the timing that gave the best results was the addition of Protan Peel after 72 hours of fermentation.

Utilization: Mix in warm water (35 °C/95 °F) or wine and add directly to circulating tank or barrel.

Dosage: consider this conversion factor to do additions: 10 ppm = 1g/hl = 0.083

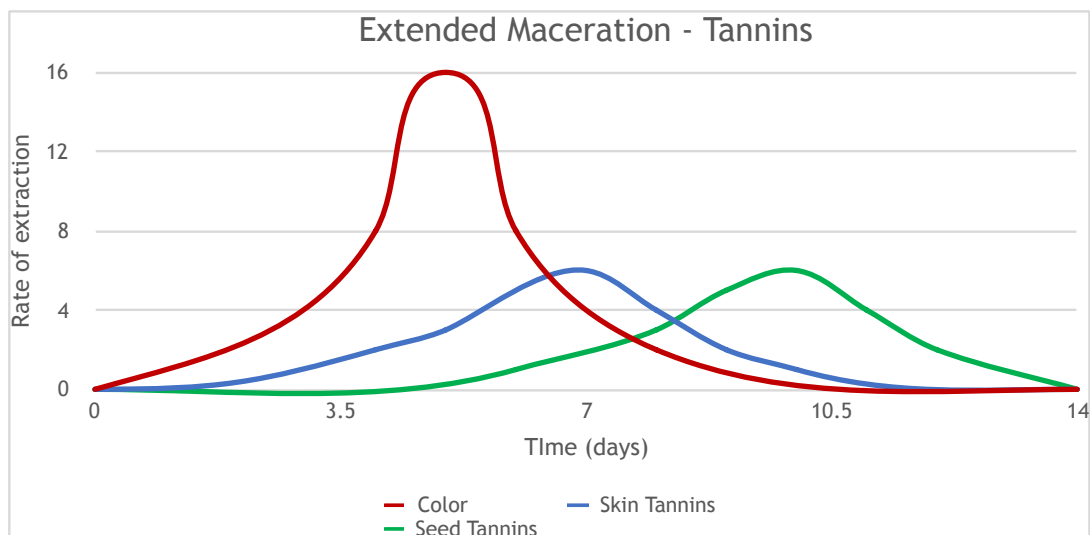
lb./1,000 gallons = 0.85 ml/hl or 32 ml/1,000 gallons. For whites 30 ppm are a good starting point for light varieties like Sauvignon Blanc, Chenin or even French Colombard. In Reds start with 10-50 g/hL (1-5 lbs./1000 gallons). The higher dosages are recommended in fermentation.

Shelf life and storage: can be kept for two years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Packaging: 1 kg bottle and 10 kg pales

Highlights: skin tannins mimic extended maceration effects to create richer, more supple wines with greater aging ability and less bitter tannin.

	COLOR	SKIN TANNINS	SEED TANNINS
0	0	0	0
1	1	0	0
2	2	0	0
3	4	1	0
4	8	2	0
5	16	3	0
6	8	5	1
7	4	6	2
8	2	4	3
9	1	2	5
10	0	1	6
11	0	0	4
12	0	0	2
14	0	0	0



Phenolics extracted over time during maceration on red skins.

Protan Pepin Oxilink: seed tannin obtained from over-ripe, “crunchy” and “nutty” seeds from the Burgundy area of France. It improves the structure and color stability of red wines. In white wines, a small addition goes a long way in protecting from oxygen, building volume and enhancing crispness. Protan Pepin naturally integrates the polyphenolic structure of wines and reverses the oxidation process. Aldehydes and port-like odors are adsorbed to be used as ethanal bridges for the polymerization of the complex molecule, that ultimately leads to softer tannins and color stability.

Utilization: Mix in warm water (35 °C/95 °F) or wine and add directly to circulating tank or barrel.

Dosage: whites: 3 to 12 g/hL (1/4-1 lb./1000 gallons). **Reds:** 10-50 g/hL (1-5 lbs./1000 gallons).

Shelf life and storage: can be kept for three years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Packaging: 500gram packets



Protan Raisin: granulated grape skin tannin from Burgundy. It brings its best when used to integrate the oak and the fruit of the wine, building a soft structure around it. In white wines, a small addition goes a long way in protecting from oxygen, building volume and to enhance crispness. Proanthocyanidinic tannins from grape skins add a velvety smooth structure and reverse the oxidation process, absorbing aldehydes and port-like odors. Protan Raisin is a pure proanthocyanin tannin extracted from grape skins. Like all proanthocyanin tannins, skin tannins are naturally present in grapes. Protan Raisin boosts the body and mid-palate of the wine simulating extended maceration, without the downside of bitter compounds. Proanthocyanidinic tannins are also the final receptor for color pigments and polymerizing tannins, ensuring the correct development of wine during the aging process. The presence of Protan Raisin stimulates polymerization making a wine mellow and harmonious. On the most prestigious Pinot Noirs and all organic wines, it can be used in fermentation to stabilize color and to protect from oxygen. This way minimizing the usage of other antioxidant chemicals.

Utilization: Mix in warm water (35 °C/95 °F) or wine and add directly to circulating tank or barrel. When adding Protan Raisin in a bench trial, wait for at least 3 days

to evaluate. The strong flavor deriving from the dry tannin gives a note that is not completely pleasant until the tannin is fully integrated into the wine. Also, give the tannin a week to integrate before filtering the wine.

Dosage: whites: 3 to 12 g/hL (1/4-1 lb./1000Gallons). **Reds:** 10-50 g/hL (1-5 lbs./1000 gallons).

Shelf life and storage: can be kept for three years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Packaging: 500gram packets



Tanéthyl: tannin extracted from grape seeds by means of a patented system, which locks an active ethanal bridge to the tannin. Ethanal bridges have been shown to be greatly responsible for color stabilization and tannin polymerization. Tanéthyl is a great tool for achieving the big, soft structure provided by micro oxygenation, without using oxygen. It can be used both in reds and whites to increase volume and to balance a rough polyphenolic profile. In wines with high pH's where micro-oxygenation is not recommended, Tanéthyl can continue the polymerization process of polyphenols even in a reductive environment.

Utilization: Mix in a separate tub with warm water (35 °C/95 °F) and then add to the grapes or to the fermenting must during pump over. If used in a finished wine, after addition, wait at least one week before filtering the wine.

Dosage: rosé wines: 5 to 15 g/hL (1/3 – 1 lb./1000 Gal), **red wines:** 12 to 36 g/hL (1–3 lbs./1000 Gal).

Shelf life and storage: can be kept for three years in the original sealed packaging away from light, and in a cool, dry, odor-free place.

Packaging: 500 g packets

Highlights: because of its ability to form the activated ethanal bridge without oxygen, Tanéthyl is the best tannin to stabilize color during aging, when MOX is not a suitable alternative.

Polysaccharides

PRODUCT	CHARACTERISTICS
ARABINOL AROME	LIQUID GUM ARABIC BASED PRODUCT TO STABILIZE AROMAS AND SOFTEN THE MID-PALATE
ARABINOL	LIQUID GUM ARABIC. IT SMOOTHS OUT THE MID-PALATE, HELPS WITH TARTRATE STABILITY AND PRESERVES FREE SO ₂
ARABINOL HC	
NEW! ARABINOL SUPER ROUGE	LIQUID GUM ARABIC WITH HIGH ARABINOSE AND RHAMNOSE CONTENT, RESULTING IN INCREASED SWEET PERCEPTION. ITS COMPOSITION ALSO STABILIZES THE RED PIGMENTS
BATONNAGE PLUS ELEVAGE	YEAST DERIVED MANNOPROTEIN, TO ADD ROUNDNESS AND TO PROTECT FROM OXIDATION
BATONNAGE PLUS TEXTURE	
BATONNAGE PLUS STRUCTURE	YEAST DERIVED MANNOPROTEINS WITH ELLAGIC TANNINS TO ADD ROUNDNESS AND STRUCTURE
ELEVAGE GLU	HIGH GLUTATHIONE, YEAST-DERIVED PEPTIDE. PROVIDES VOLUME & PROTECTION FROM OXYGEN
SUPER-MANN	PURE MANNOPROTEIN FOR TARTARIC STABILIZATION AND WINE SMOOTHENING

Polysaccharides are the main macromolecules of colloidal nature in wines and play a fundamental role in the technological properties and organoleptic characteristics of the wines. Wine polysaccharides are widely known for their effect on the physicochemical stabilization of wine; thus, they can interact with the colloidal particles present in wines, reducing their reactivity and limiting their aggregation and flocculation. These macromolecules could interact and aggregate with tannins, prevent the formation of protein haze in white wines, and delay or even arrest the outgrowth of the crystals of potassium bitartrate. Wine polysaccharides have also been associated to the mouthfeel perceptions because they are able to modify the sensory properties of wines, modulating the astringency perception, increasing the sweetness sensation and body.

When & why

- In red wines fermentation, aging and cold stabilization
- Between primary and malolactic fermentation or to extend shelf-life in general
- Before bottling, to improve mouthfeel
- To improve cold stability

Gum Arabic

Gum Arabic is a natural gummy exudation from the branches of the Acacia Seyal tree. One tree will yield about 200 grams to 2 kg of gum (about 0.5-4 pounds) per year. Even though the structure of Gum Arabic is not completely known, it is basically composed of a high molecular weight polysaccharide that contains residues of neutral sugars and acids. This mixture of polysaccharides and glycoproteins gives it the properties of a glue and binder that is edible by humans. Acacia gum has long been used in traditional medicine and in everyday applications. The Egyptians used the material as a glue and as a pain-reliever base. Arabic physicians treated a wide variety of ailments with the gum, resulting in its current name. It is even used as a lickable adhesive, for example on postage stamps, envelopes, and cigarette papers. Here, it really does help that Arabic Gum is not toxic. Generally, it gives body and texture to food products. It is also used in soft drink syrups. It binds the sugar to the drink and avoids it from crystallizing on the bottom. Because Gum Arabic also reduces the surface tension of liquids, it is usually responsible for increased foaming in carbonated beverages. All these technological characteristics of gum Arabic can be used in winemaking, where it has been introduced first as a crystal stabilizer and later became a tool to increase viscosity and ameliorate the perlage of sparkling wines.



Arabinol Arôme: The market is constantly looking for fresh and fruity wines, where the aromatic component is fundamental. To create wines high in aromatics, winemakers use techniques such as cold macerations, fermentation at low temperatures, aromatic yeasts, treatment of the lees, etc. To protect these wine aromas, AEB has enhanced a technology used in the perfume industry: the utilization of gum Arabic as an aroma protecting substrate. Not all Arabic gums provide aroma protection because the property is lost when placed in a hydro alcoholic solution. Arabinol Arôme is formulated to retain

these characteristics in wine and to preserve all the aromatics naturally present in the bouquet. Add to red, white and rosé wines, even when stored in partially filled vessels.

Utilization: dilute 1:10 in wine to improve homogenization. Best timing for addition is after ML and before bottling. It is suitable for wines that undergo membrane filtration. Do not add Arabinol Arôme right before clarification because treating wines with polysaccharides before bentonite and fining agents additions can slow down their settling.

Dosage: 50-200mL/hL (0.5-3.6 gallons of product per 1,000 Gallons of wine), equal to 550-2200 ppm or 4.5-18 lb./1,000 gallons.

Shelf life and storage: once opened Arabinol Arôme should be used within 30 days. If a container is left open for a longer time, add 1000 ppm of SO₂ to extend life span.

Packaging: 10 and 25 kg pails



Arabinol: gum Arabic was introduced in the wine industry to help improve tartrate stability. The long polysaccharides contained

in this product act as colloid protectors and prevent or slow down the reactivity of different molecules. When added to wines, Arabinol slows down aggrega-

tion of crystals of tartrates. It also diminishes the perception of astringent and bitter tannins. It can be used on whites and reds when there is a need to improve viscosity. Because Arabinol has one of the biggest polysaccharide molecules in the market, it is exceptionally viscous and "sweet". It is very important to run bench trials against other products in order to calibrate dosage and flavor. When added to sparkling wines, Arabinol improves the finesse of the perlage. In young red wines and rosé, it also improves color stability.

Utilization: Add to finished red and white wines that are stable and ready to be filtered. Addition should be done after diluting 1:20 in wine in order to improve homogenization of the product. It is suitable for wines that undergo membrane filtration. Do not add Arabinol right before clarification; addition of polysaccharides before bentonite and fining agent additions can slow down settling.



Dosage: 50-200mL/hL (0.5-3.6 gallons of product per 1,000 Gallons of wine), equal to 550-2200 ppm or 4.5-18 lbs./1,000 gallons. Shelf life and storage: once opened Arabinol should be used within 30 days. If a container is left open for a longer time, add 1000 ppm of SO₂ to extend life span.

Packaging: 10 or 25 kg pails and 230 kg drums.



Arabinol HC: is a solution of about 33.5% gum Arabic, mostly composed of polysaccharides with high molecular weight. After their hydrolysis they release non-fermentable sugars, contributing to the softness and sweetness of the mid-palate in the wines treated. From a chemical point of view, Arabinol HC, is a chain of D-galactose, a non-fermentable monosaccharide sugar that is about as sweet as glucose, and about 30% as sweet as sucrose. These D-galactose units are ramified with D-glucuronic acid (monosaccharide), with l-rhamnose (pentose) or l-arabinose (pentose) final units. The characteristics of this premium gum Arabic are derived from the unique composition of the soil where the Acacia grows. In fact, Arabinol HC is derived from trees that grow in presence of Rhizobium Leguminosarum on their roots, able to fix the atmospheric N. The combination of these characteristics, with the application of other farming techniques, results in an increase of N and Mg. The presence of such compounds modifies the soil pH, increasing the concentration and solubility of salts near the plant and consequently the pH of its lymph. This will ultimately yield a gum with higher softening and stabilizing power.

Utilization: Add to finished red and white wines that are stable and ready to be filtered. Addition should be done after diluting 1:20 in wine in order to improve homogenization of the product. At lower dosages (200-300 ppm) it is suitable for wines that undergo membrane filtration. Do not add Arabinol HC right before crossflow filtration or clarification: addition of polysaccharides before bentonite and fining agent additions can slow down settling.

Dosage: 30-150mL/hL (0.3-2.7 gallons of product per 1,000 Gallons of wine), equal to 350-1700 ppm or 3-14 lbs./1,000 gallons.

Shelf life and storage: once opened Arabinol HC should be used within 30 days. If a container is left open for a longer time, add 1000 ppm of SO₂ to extend life span.

Packaging: 1 kg bottles and 25 kg pails.

NEW!

Arabinol Super Rouge: is a solution of gum Arabic Senegal with a high content of L-Arabinose (above 45%) and L-Rhamnose (above 18%): these are monosaccharides with a noticeable sweetening and softening power, making it ideal for red wines, even with a high tannin content, where it gives a pleasant sensation of body and volume. The action of Arabinol Super Rouge is highlighted not only at the palate, but also in the color, as its addition enables the stabilization of that chromatic component that in young wines or in some specific varieties would tend to precipitate over time.

Utilization: Arabinol Super Rouge should be added to already perfectly clear wines before or after the last filtration. No clarification must be carried out after its addition. It is suggested to carry out a filterability test before submitting the wine to a membrane filtration.

Dosage: From 20 to 150 g/hL. 1.5-12 lbs/1,000 gallons.

1000 ppm will bring 4 ppm of SO₂ to the wine.

Shelf life and storage: once opened Arabinol Super Rouge should be used within 30 days. If a container is left open for a longer time, add 1000 ppm of SO₂ to extend life span.

Packaging: 25 kg net drums

Arabinol Multinstant: is a micro-granulated gum Arabic, extracted from Acacia Senegal and refined. It does not contain SO₂ or other preservatives and is able to enhance in the best way the potentialities of white and red wines. It displays a protective action towards the molecules responsible for the color, that are kept stable during time, facilitating the processes of natural evolution and preventing the formation of proteic, copper and ferric colloids. Arabinol Multinstant reacts in combination with metatartaric acid and strengthens its action, prolonging the length of the effect, as it wraps up tartaric crystals and keeps them soluble. Thanks to its complex polysaccharidic nature, it gives fullness and harmony to wines and softens tannic roughness.

Dosage: 12 - 36 mL/hL (1-3 lbs./1000 gal)

Shelf life and storage: Store in a cool dry place for maximum 2 years.

Packaging: 20 kg net bags

Polysaccharides:

peptides and yeast derived mannoproteins

The refinement is a fundamental stage in the wine evolution, as it allows winemakers to highlight the qualities of wines and to increase their stability over time. One of the most common practices for the obtainment of full-bodied and harmonious wines with an intense and varietal aroma, is the *bâtonnage*, an oenological technique with a long tradition in Burgundy, consisting in keeping the wine in contact with the lees for several months and periodically re-suspending them by means of a gentle stirring. Its utilization at the end of the alcoholic fermentation allows to prolong the anti-oxidizing action carried out by SO₂.



AEB mannoproteins contained in the *Bâtonnage* line are immediately soluble and therefore eliminate the time, labor and barrels needed in traditional aging on lees. The peptide Glutathione is naturally contained in these products and provides protection against oxygen since the early stages of winemaking and also extends the shelf-life of the finished wines.

	APPLICATIONS	SUGGESTED WINES	SWEETNESS	UMAMI
ELEVAGE GLU	STRONGEST PROTECTION AGAINST OXIDATION, ADDS SWEETNESS AND MID-PALATE.	AROMATIC WINES IN NEED OF PROTECTION FROM COLOR AND AROMAS OXIDATION	++	0
BATONNAGE PLUS TEXTURE	AROMATIC PROTECTION, COLLOIDAL STABILITY, REDOX STABILITY, STRUCTURE.	FERMENTATION OF REDS AND WHITES IN ORDER TO STABILIZE COLOR AND AROMAS AND TO BUILD VOLUME	++	+
BATONNAGE PLUS STRUCTURE	IT BRINGS A MODERN NOTE OF CHOCOLATE, SOFTNESS AND STRUCTURE.	WINE WITH VEGETAL AROMAS AND IN GENERAL TO AGE REDS THAT DON'T HAVE THE RIGHT "KICK" (LENGTH, BODY)	+++	+
BATONNAGE PLUS ELEVAGE	HIGHLIGHTS FLAVORS, SOFTNESS AND STRUCTURE, CLEANS AROMA.	WHITES AND REDS IN NEED OF ROUNDNESS AND STRUCTURE	++++	+

Characteristics of yeast-derived polysaccharides



Elevation Glu: is a yeast derivative with a high percentage of the antioxidant tripeptide glutathione. It can be used to improve mid-palate, but this product is especially geared for protecting from oxidation and to reduce the need for SO₂. This technology is based on yeast extracts from a specific yeast strain from our collection (Glutaferm 1), rich in smooth polysaccharides and active antioxidant properties. In fact, the molecules extracted are extremely rich in reduced glutathione. Glutathione has been introduced in winemaking by OIV in 2015 and as confirmed in the literature, it protects red rosé and white wines from oxidation; extending the life of aromas and color alike. In Principles and Practices of Winemaking it is observed how “the extent to which oxygen uptake results in browning depends on the formation of a colorless reaction between oxidized caftaric acid and the peptide glutathione. Glutathione couples with oxidized caftaric acid and regenerates hydroquinones, which are uncolored, preventing browning (Singleton et al., 1984)”. Other research from Denis Dubourdieu, professor of oenology at the university in Bordeaux, already claimed that: “higher levels of glutathione in Sauvignon Blanc wine at bottling prevent the color from yellowing, dissipation of the varietal aroma, and the wine tendency towards developing aging defects”. For best results, to give time to the GSH to be dissolved, add Elevation Glu 24 hours before the antioxidant effect is desired.

Dosage: 12-30 g/hL; 1-2.5 lbs/1000 Gal.

Shelf life and storage: Elevation Glu can be stored at room temperature and low humidity for two years.

Packaging: 500 grams packets and 5Kg bags

Highlights:

- As aroma, especially thiols, oxidize easily, we suggest an addition of Elevation Glu 2-3 days before the end of fermentation in order to reduce redox potential and to protect from possible oxidation.



Batonnage Plus Elevation: is made from yeast cells that are rich in peptides, mannoproteins and antioxidant amino-acids. It increases the positive effect of the sur-lie, making wines more viscous and harmonious. Its utilization at the end of the alcoholic fermentation allows to prolong the

antioxidizing action carried out by SO₂. At the same time, the activity of Batonnage Plus Élevage prevents the formation of mercaptans and enhances the bouquet of the varietal. In wines treated with Batonnage Plus Élevage, color appears to be more stable and less subject to browning and pinking.

Dosage: 10-30 g/hL 1-2.5 lbs/1000 Gal.

Shelf life and storage: Batonnage Plus Elevage can be stored at room temperature, low humidity for two years.

Packaging: 5 Kg bags



Batonnage Plus Structure: It's an yeast auto lysate blended with "mocha" ellagic tannins. After years of experience we can claim that this product fixes most aromatic faults in red wines and especially the green notes attributed to methoxypyrazines. It is a yeast preparation combined with highly toasted ellagic tannins that mask the vegetal notes and promotes fruity and chocolate-like aromas.

Utilization: Re-hydrate in warm water (35°C/95°F) or wine, for 1/2 h before mixing. Then dilute 1:10 in wine and add directly to the tank or barrel. Once homogenized it doesn't need further stirring. Some particles derived from the yeast cells are not completely soluble, so a good racking or filtration are needed before bottling. Wait at least two weeks before sterile filtration.

Dosage: 10-30 g/hL 1-2.5 lbs/1000 Gal.

Shelf life and storage: Batonnage Plus Structure can be stored at room temperature, low humidity for two years.

Packaging: 5 Kg bags



Batonnage Plus Texture: polysaccharide based, autolyzed yeast product, rich in mannoproteins. It gives a sweet and viscous texture to red, white and rose' wines. It brings a sweet texture due to the large size of the molecules that it releases, that exceed 100 Kilo Dalton. When added to fermenting musts it improves the structure and in red wines helps color stabilization. It also has strong antioxidant proprieties.

Utilization: Re-hydrate in warm water (35 °C/95°F) or wine, for 1/2 h before mixing. Then dilute 1:10 in wine or must and add directly to the tank or barrel. Once homog-

enized it doesn't need further stirring. Some particles derived from the yeast cells are not completely soluble, so a good racking or filtration is needed before bottling. Wait at least two weeks before sterile filtration.

Dosage: 10-40 g/hL (1-3 lbs./1000 Gal.)

Shelf life and storage: Batonnage Plus Texture can be stored at room temperature and low humidity for two years.

Packaging: 20 Kg bags



Super-mann: is a pure mannoprotein that, thanks to its high colloidal power, improves tartaric stabilization. Thanks to its specific tactile sensation, Super-mann also very much contributes to softening the wine, smoothing the roughness deriving from an excess of acidity or tannins. In red wines, thanks to the high colloidal power, it interacts with polyphenols making the color more stable.

Usage: Re-hydrate in warm water (35°C/95°F) or wine, for 1/2 h before mixing. Then add directly to the tank or barrel. Once homogenized it doesn't need further stirring. Some particles derived from the yeast cells are not completely soluble, so a good racking or filtration are needed before bottling. Wait at least two weeks before sterile filtration.

Dosage: White wines: 10 - 25 g/hL. 1-2lbs/1,000 Gallons

Red wines: 10 - 40 g/hL 1-3lbs/1000 Gallons. TTB allows 400 ppm max to be used pre bottling

Shelf life and storage: Super-mann can be stored at room temperature and low humidity for two years

Packaging: 1 kg packets