

ENARTIS NEWS

UTILIZING TANNINS AND POLYSACCHARIDES TO POLISH AND FINISH WINES BEFORE BOTTLING

A wine which has oxidized, reduced, herbaceous, bitter, astringent or burning qualities is generally considered unappealing. For years, fining agents, acidifying or de-acidifying agents have been used to rectify these problems, however these tools can also negatively impact structure, volume, color and aroma of the treated wine. Tannins and polysaccharides are more recent tools which can be used improve balance, all while respecting the wine.

How can finishing tannins and polysaccharides improve wines before bottling?

The first step to produce a good wine is to have good quality, mature grapes. But if nature has not assisted us, during ageing or when it is time to prepare the wine for bottling, we may become aware of some imperfections that need to be fixed. Normally in these situations the enologist resorts to the use of fining agents and/or correcting acidity. Obviously, these practices are effective, but they nearly always involve a loss of quality (table 1).

In some situations, however, it is possible to use alternative tools which do not affect the quality of

the wine: tannins and polysaccharides. After aging a wine for example, it may be lacking in tannin, mid palate, flavors, aromas, or general complexity. The addition of enological tannins can drastically improve these wine parameters, as well as eliminate reductive qualities and green notes. Conversely, a wine which may be too astringent or bitter can be tempered and improved with the addition of some specific tannins, yeast-derived polysaccharides or gum Arabic.

What are the advantages of Enartis finishing tannins and polysaccharides?

One of the major benefits of utilizing enological tannins and polysaccharides is the ability to fine-tune a wine during and after aging. This allows the winemaker the flexibility of waiting to see how tannins resolve over the aging process.

With fining, the product requires time for settling, with a subsequent racking afterwards. This process takes time and can waste wine, while many Enartis tannins and polysaccharides can be added just days prior to bottling with no racking and subsequent wine losses.

Table 1: Use of Traditional Tools to Fix Wine Imperfections

Imperfection	Tools	Unwanted side effects
BITTERNESS	ISINGLASS	Loss of aroma intensity
	PVPP	Loss of volume/structure
	CASEIN	Loss of aroma intensity Loss of color
ASTRINGENCY	GELATIN	Loss of aroma intensity
	EGG ALBUMIN	Loss of aroma intensity
LACKS ACIDITY	TARTARIC ACID	Tartrate instability Taste imperfections
EXCESS ACIDITY	POTASSIUM BICARBONATE	Bad after taste with high dosage
HERBACEOUS	ISINGLASS	Loss of aroma intensity
	FISH GELATIN	Loss of aroma intensity Loss of structure
REDUCTION	COPPER SULFATE	Loss of aroma intensity
OXIDATION	PVPP	Loss of volume/structure
	CASEIN	Loss of aroma intensity Loss of color
	BENTONITE	Loss of aroma intensity Loss of structure/volume Loss of color
	ISINGLASS	Loss of aroma intensity

ENARTIS TANNINS

Tannins can come from many different sources, but generally they will be either wood (oak) or grape derived. The following tables outline the attributes of both types offered by Enartis.

GRAPE DERIVED TANNINS

Enartis grape tannins (table 2) come from white grape skins and/or seeds. These are condensed tannins used to balance mid-palate, build structure, improve wine length and enhance aromas.

Table 2: Enartis Grape Tannins

	Increase aromatic cleanliness	Structure	Astringency	Softness	Aroma	Aroma contribution
Elegance	◆◆◆	◆◆	◆	◆◆◆◆	◆◆◆	Stonefruit, white flower
Fresh Fruit	◆◆	◆◆	◆	◆◆◆◆	◆◆◆◆	Lemon, citrus, mint, fresh fruit
Fruitan	◆◆◆	◆◆◆	◆◆◆	◆◆◆	◆◆◆	Red fruit, spices
Total Fruity	◆◆	◆◆	◆	◆◆◆◆	◆◆◆◆	Strawberry, plum, cherry, berries
Skin	◆◆	◆◆	◆◆	◆◆	◆◆◆◆	Grape, tea, fruit
Uva	◆◆	◆◆◆	◆◆◆◆	◆◆	◆◆◆◆◆	White fruit
Uvaspeed	◆	◆◆	◆	◆◆◆◆◆	◆◆◆◆	Grape, honey

OAK DERIVED TANNIN

Enartis oak tannins (table 3) are produced from the same oak wood used for oak barrels. After seasoning

and toasting, tannins are extracted, concentrated and spray-dried to maintain the aromatic and sensory properties of oak.

Table 3: Enartis Oak Tannins

	Increase aromatic cleanliness	Structure	Astringency	Softness	Aroma	Aroma contribution
Cœur de Chêne	◆◆	◆◆	◆◆	◆◆◆	◆◆◆◆	Vanilla, caramel, spices
Dark Chocolate	◆◆	◆◆◆	◆	◆◆◆◆	◆◆◆◆◆	Cocoa, toasted hazelnut, vanilla
Elevage	◆◆◆	◆◆◆	◆◆◆	◆◆	◆◆◆	Caramel, licorice, vanilla
Extra	◆◆	◆◆	◆	◆◆◆◆	◆◆◆◆◆	Vanilla, caramel, cocoa, coffee
Napa	◆◆	◆◆◆	◆	◆◆◆◆	◆◆◆◆◆	Coconut, caramel, coffee, cocoa
Rich	◆◆◆	◆◆	◆◆	◆	◆◆	Toasted wood, coffee, spices
SLI	◆◆◆◆	◆◆	◆	◆◆◆◆	◆◆◆◆	Wood, coconut, vanilla
Superoak	◆◆◆	◆◆	◆	◆◆	◆◆	Vanilla, caramel, hay
Toffee	◆◆◆	◆◆◆◆	◆◆	◆◆◆	◆◆◆◆	Coffee, caramel, toasted
Vanilla	◆◆◆	◆◆◆◆	◆◆	◆◆◆	◆◆◆◆	Vanilla, coconut, cream

UNICO LINE

Unico tannins (table 4) are a unique line of tannins that were developed solely by Enartis. The unique production process makes it possible to obtain tannins with enhanced characteristics beyond those

of typical enological tannins: intense and distinct aromas, high content of tannin and high content of polysaccharides making them softer and sweeter on the palate.

Table 4: Enartis Unico Line

	Increase aromatic cleanliness	Structure	Astringency	Softness	Aroma	Aroma contribution
Unico #1	◆◆	◆◆◆◆	◆	◆◆◆◆	◆◆◆◆◆◆	Vanilla, cocoa, toasted wood, spices
Unico #2	◆◆	◆◆◆◆	◆	◆◆◆◆	◆◆◆◆◆◆	Red fruit, wild berries, cherry
Unico #3	◆◆◆◆◆	◆◆	◆	◆◆◆◆	◆◆◆◆◆◆	Flower, lemon, mint

ENARTIS POLYSACCHARIDES

YEAST MANNOPROTEINS

The Enartis Surli range (table 5) supplies yeast mannoproteins and natural antioxidants to increase the volume and roundness of wine. Surli range products are used to balance mouthfeel, extend shelf life, and improve stability and sensory qualities.

GUM ARABIC

Depending the origin and hydrolysis level of the gum Arabic, the organoleptic impact on wine will vary. Arabic gum is used to improve the volume, viscosity and weight of wine, balance astringency and increase aromatic persistence.

Table 5: Enartis Surli and Gum Arabic Range

	Aroma enhancement	Structure	Softness	Volume/sweetness
Aromagum	◆◆◆	◆	◆◆◆◆	◆◆◆
Citrogum	◆◆	◆	◆◆◆◆	◆◆◆
Citrogum Plus	◆	◆	◆	◆◆◆◆ (sweetness)
Maxigum	◆	◆	◆◆◆◆	◆◆◆◆
Surli Elevage	◆	◆◆	◆◆◆◆	◆◆◆◆
Surli Velvet	◆	◆◆	◆◆◆◆	◆◆◆◆
Surli Velvet Plus	◆◆	◆◆	◆◆◆	◆◆◆◆
Surli Vitis	◆◆	◆◆◆	◆◆◆	◆◆◆

HOW TO CONDUCT PRELIMINARY TANNIN AND POLYSACCHARIDE TRIALS:

Bench trials are essential to determine proper dosing and efficiency of a treatment (addition of fining agents, tannins or polysaccharides). To set up bench trials, follow these steps:

- Prepare a 1% (1 g in 100 mL) solution of the product to be tested. For tannins and polysaccharides, use neutral alcohol-water solution (~ 13% v/v). For liquid products, use solution as is.
- Label each sample. Include one untreated sample as a control.
- Fill samples with wine up to 80% of final volume, leaving space for the addition.
- Add the treatment solution. Refer to table 6 below for the volume of a 1% solution to add to wine.
- Tasting can be done immediately after addition.

Table 6: Enartis Surli and Gum Arabic Range

Wine sample volume	30 mL	50 mL	100 mL	125 mL	375 mL	750 mL
Addition rate						
5 g/hL	0.15	0.25	0.50	0.62	1.87	3.75
7 g/hL	0.21	0.35	0.70	0.87	0.62	5.25
10 g/hL	0.30	0.50	1.00	1.25	3.75	7.50
15 g/hL	0.45	0.75	1.50	1.87	5.62	11.25
20 g/hL	0.60	1.00	2.00	2.50	7.50	15.00
25 g/hL	0.75	1.25	2.50	3.12	9.37	18.75

WITH SO MANY OPTIONS, WHICH TANNIN AND/OR POLYSACCHARIDE SHOULD I TRY?

The table below lists a few examples of how Enartis finishing tannins and polysaccharides can help winemakers modify or improve a wine just before bottling:

Finishing Objective	Product Recommendation
Increase fruitiness	Unico #2, Fruitan, Tan Total Fruity, Tan Fresh Fruit, Tan Skin, Tan Uvaspeed, Surli Vitis
Increase oak aromas	Unico #1, Tan Napa, Tan Coeur de Chene, Tan Dark Chocolate, Tan Toffee, Tan Vanilla
Increase acidity/freshness	Unico #3, Tan Fresh Fruit
Increase soft tannin	Tan Uvaspeed, Tan Elegance, Tan Max Nature, Surli Vitis
Increase perceived sweetness	Tan Extra, Tan Toffee, Unico #1, Tan Superoak, Tan Vanilla, Citro gum Plus
Increase mid palate	Surli Velvet, Surli Velvet Plus, Tan Skin, Tan Uvaspeed, Tan Dark Chocolate
Increase structure	Tan Fruitan, Tan Coeur de Chene, Tan Skin, Tan Rich, Tan Napa
Decrease bitterness	Tan Uvaspeed, Unico #1, Citro gum, Aromagum, Surli Vitis
Decrease burning sensation	Surli Velvet, Tan SLI, Tan Uvaspeed, Tan Skin
Decrease astringency	Surli Velvet, Surli Velvet Plus, Surli Vitis, Citro gum, Aromagum, Maxigum, Tan Uvaspeed; Tan Elegance
Decrease reduced notes	Tan SLI, Tan Elevage, Tan Max Nature
Decrease green notes	Tan Max Nature, Unico #1, Tan Fruitan, Tan Elegance, Tan Dark Chocolate