

Specialty Tannins and Polysaccharides

In our quest to make better and better wines, there are several different ways to approach that goal:

1. Generally the most cost effective inputs for increased quality can be done in the vineyard.
 - a. Limiting crop size by cluster thinning or limiting plant size to produce riper, more intensely flavored fruit.
 - b. Leaf plucking to produce riper tannins and reduce the risk of fungal infections.
 - c. Canopy management to expose virtually every leaf to the sun's rays.
 - d. Breeding to promote positive aspects of current varieties or to produce entirely new cultivars.
2. Understanding the *terroir* of the vineyard and altering viticultural practices to express aspects of quality. This includes selecting the right variety or varieties for the site.
3. Utilizing enological practices that bring out the best expression of quality from the grapes. These include, but are not limited to:
 - a. Choose higher or lower temperature of fermentation.
 - b. Alter length of skin contact before or during fermentation.
 - c. Remove all or only a portion of stems from a red fermentation.
 - d. Use blending as a tool.
 - e. Use different strains of yeast and or M-L bacteria.
 - f. Use different barrel variations or no oak at all.
 - g. Differential separation or removal of portions of the wine to achieve a variety of flavor or wine balance goals.
4. And finally, the subject of this program, an examination of the effects of some of the newer tannin and gelatin products to fulfill different objectives.
5. Tannins naturally present in grapes may impart astringent or bitter flavor components to a wine. Tannins and anthocyanins (red pigments) are found primarily in grape skins. In addition to flavor, these compounds may help in clarification, and they're crucial in stabilizing the color and promote the longevity of red and white wines. Commercially available Tannins are derived from oak or ripe grape material therefore their astringency does not impart bitterness.
6. Two major categories of tannins may be found in wines.
 - a. Hydrolysable Tannins (ellagic, derived from oak and chestnut trees; gallic, derived from gall nuts). Other than being good antioxidants, they have chemical

characteristics that make them really important during wine aging or micro-ox. In fact, they promote color stability and the polymerization and softening of grape tannins.

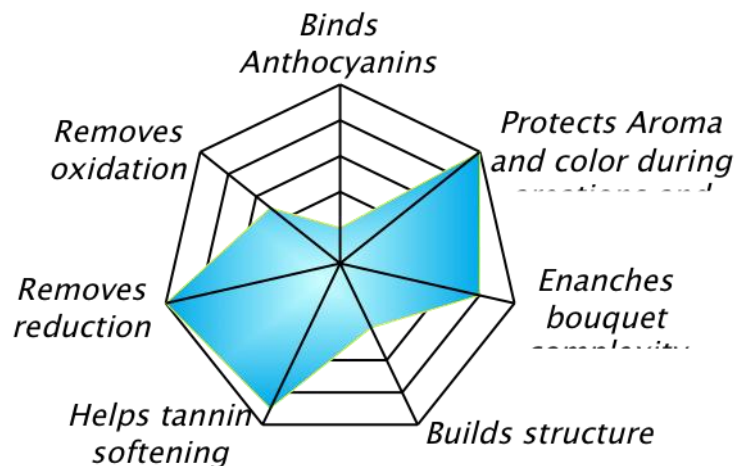
b. Condensed Tannins - or proanthocyanidines. These are mostly derived from grape skins or seeds and offer a variety of effects.

7. AEB Group, an Italian Company, produces enological tannins for use during or following fermentations. American Tartaric Products is their US distributor.

FERMOTAN - Fermentation tannin for red and rose' wines. It consists of both ellagic and proanthocyanidin tannins extracted from white grape skins and European oak. When added during fermentation it rapidly stabilizes color and over time will reduce astringency and coarseness. Use 1 to 4 lbs/1000 gallons (0.5 to 2 grams per gallon) after dissolving in hot water or wine. Add at first pump over and integrate at 4th-5th day of fermentation.

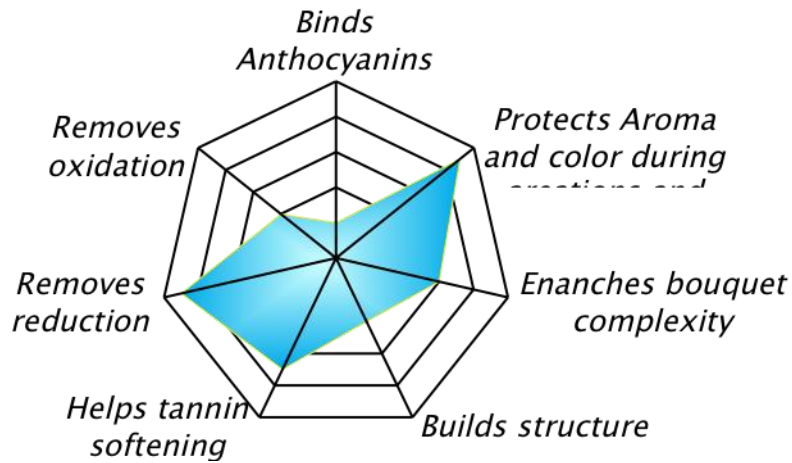
FERMOTAN BLANC - A fermentation tannin combination designed to add middle palate and structure and to retain aromatic freshness in white wines. Also used as antioxidant in reductive winemaking practices. Use 0.5 to 3.0 lbs per 1000 gallons (0.25 to 1.25 grams per gallon) after dissolving in hot water or wine.

TANIQUERC - It is extracted from the heartwood of toasted French Oak. It adds the taste and volume typical of barrel matured wines, and prolongs aromatic persistency and aftertaste. It increases the efficiency of used barrels. It is the tannin of choice to simulate barrel aging during micro-ox because it promotes the softening of harsh gape tannins as well as color stability. Use 1 to 4 lbs per 1000 gallons (0.5 to 2.0 grams per gallon) after dissolving in hot water or wine.

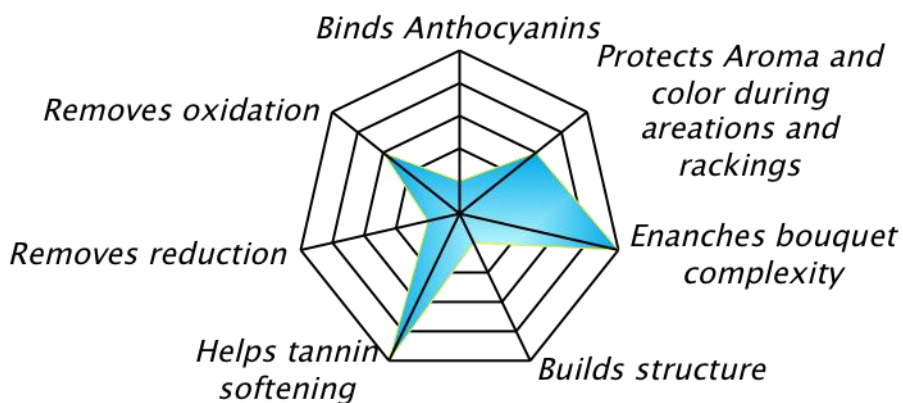


TANI BLANC – Very soft ellagic tannin derived from South American white oak. It provides anti-oxidant activities, promotes varietal expression and balances wine

structure. Another tannin that can be used to simulate barrel aging during micro-ox, because it promotes the softening of harsh gape tannins as well as color stability. Use 0.2 to 0.75 grams per gallon with whites and 0.5 to 1.0 grams per gallon with reds after dissolving in hot water or wine.



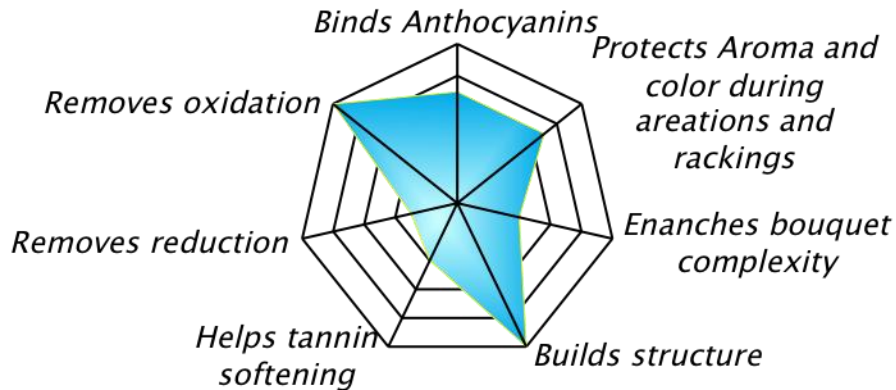
ELLAGITAN BARRIQUE ROUGE - Ellagic tannin extracted from premium highly toasted French oak. It prolongs aromatic persistency, improves mellowness and increases aromatic complexity with notes of chocolate and vanillin. It may be used in lieu of oak chips. Optimum results are obtained when this treatment is combined with Protan Raisin (50:50). Use 0.5 to 2.0 grams per gallon after dissolving in hot water or wine.



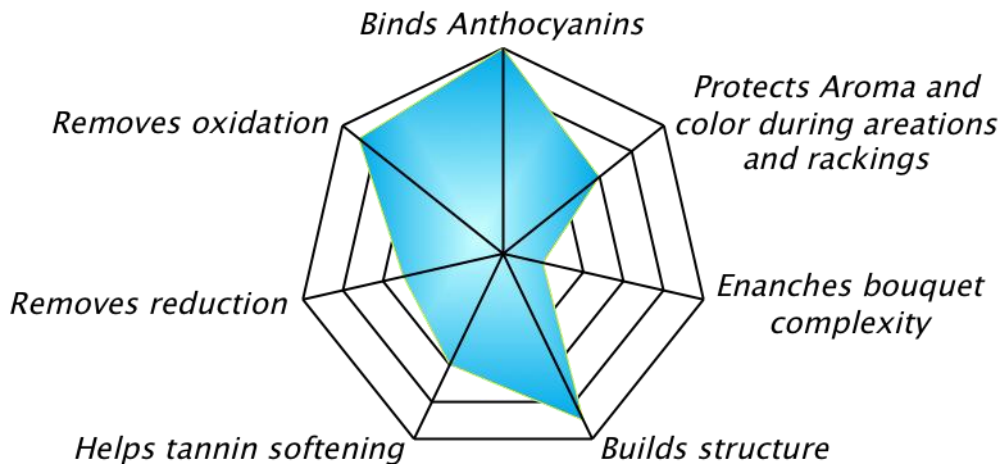
ELLAGITAN BARRIQUE BLANC - A “bleached” version of the Ellagitan Barrique tannin with a soft velvety taste that imparts good volume but limited color to wines. Used with whites and rose’ to preserve varietal aromas and complexity

of bouquet. Use 0.25 to 2.0 grams per gallon after dissolving in hot water or wine.

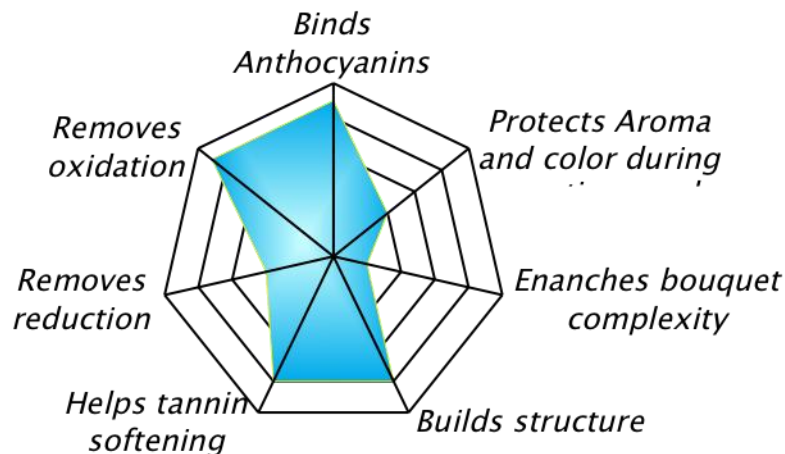
PROTAN BOIS - It is added to increase and promote tannin structure. It has a strong impact in the polyphenolic profile. Because of that, it is recommended to add it early in the aging process. It takes about a month for this tannin to completely evolve and integrate in the polyphenolic profile of the wine. It can also be used at crush in conjunction with untoasted oak or ellagic tannins in order to promote color stability. Add 0.25 to 2.0 grams per gallon. Mix in water or wine.



PROTAN PEPIN - It is a proanthocyanidin derived from nutty, ripe, grape pips. It will impart a big structure to wines with an “Italian style” edge to it. While Stabilizing color, it will clean the wines from aldehydes resulting from oxidation. Use 0.5 to 2 grams per gallon in reds and 0.1 to 0.3 grams per gallon in whites.



PROTAN RAISIN - It is a proanthocyanidin derived from grape skins that will impart a round and mellow structure to red and white wines. It will bind and stabilize red pigments forming purple complex that are stable over time. Also, it will clean the wines from aldehydes resulting from oxidation. Use 0.5 to 2 grams per gallon in reds and 0.1 to 0.3 grams per gallon in whites. Dissolve in water or wine.



LIQUID GUM ARABIC (Gum Arabic) – It is a complex polysaccharide derived from Acacia trees which helps stabilize wines and increases viscosity. For this characteristic it can be used in reds to soften harsh tannins or bitterness, and in whites to mellow sharp acidity. In all cases it can be used to fill the mid palate and to increase sweetness without having to add sugar. It is added in the bottling tank at rates from 2 to 4 ml/gallon

BATONNAGE PLUS STRUCTURE (Yeast walls preparation rich in mannoproteins 70%, Ellagic Tannins 25% and E414 Gum Arabic 5%) - It is used in red wines to add mid-palate and, at the same time, to promote polyphenolic complexity. Typical usage is 2 grams per gallon. It is often used in conjunction with Ellagitan Barrique Rouge.

8. Caveats and protocols:

- a. While one can make estimates of what may or may not improve a wine based on perceived excesses or deficiencies of that wine, there is no good substitute for doing bench tests.
- b. The flavor and mouthfeel changes that these products achieve are, for the most part, very subtle. Nor are they positive in every case, but they do have potential when the conditions are right.

- c. These aren't magic elixirs that will transform a sloppily made wine into a prize winner, but they have their place. You are the one who will have to decide what part they will play in your winemaking practices.

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Data on the above materials can be downloaded from the internet at:

www.aeb-group.com

www.scottlab.com

www.thewinelab.com

www.gusmerwine.com

www.piwine.com