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TANIN VR SUPRA® & TANIN VR COLOR®: THE WINNING TEAM

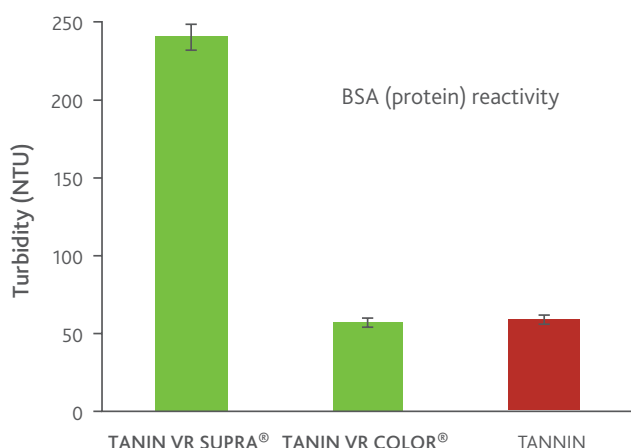
TANNINS IN WINEMAKING HAVE 4 POINTS OF INTEREST:

- ✓ The "sacrificial" effect.
- ✓ The anti-oxidant effect.
- ✓ The co-pigmentation effect in the presence of colour components.
- ✓ The effect of stabilisation in the presence of acetaldehyde.

PRECIPITATION OF PROTEINS OR "SACRIFICIAL" EFFECT

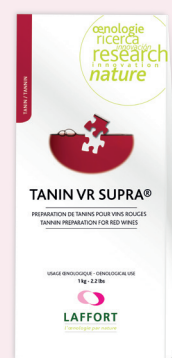
Grape proteins combine and precipitate with phenolic compounds. This precipitation reduces the natural amount of grape tannins and can be limited due to the "sacrificial" effect: by using extra tannins that will combine specifically to the proteins. This "sacrificial" effect can be evaluated in the laboratory by measuring the tannins reactivity with a reference protein such as BSA.

TANIN VR SUPRA® provides a **strong protective effect** for natural grape phenolic compounds. Its **reactivity is 5 times superior** than other vinification tannins.



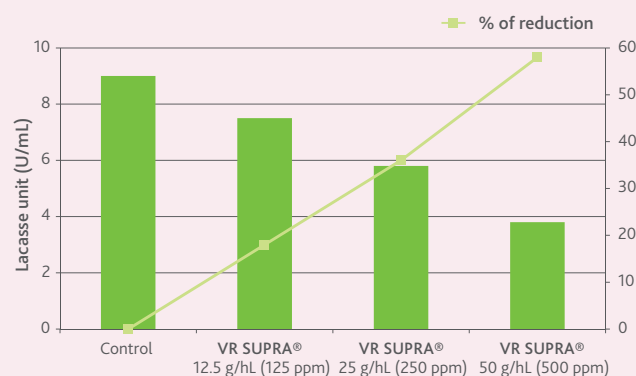
THE ANTIOXIDANT EFFECT

The use of tannins has always been linked to their ability to moderate the effects of oxygen. They have antioxidant properties and protect the oxidisable compounds. It has been proven that 30 g/hL (300 ppm) of **TANIN VR SUPRA®** added in increments during fermentation reduces the amount of dissolved O₂ three-fold in must at the beginning of the fermentation which limits the oxidation risk of easily oxidisable compounds.



THE INHIBITION OF LACCASE ACTIVITY

The presence of *Botrytis* is most often accompanied by a polyphenol oxidase (laccase), which is highly damaging. Due to the precipitation of proteins (the sacrificial effect) and the rapid consumption of O₂ by the tannins (antioxidant effect), **TANIN VR SUPRA®** ensures an effective reduction of these harmful oxidase activities.





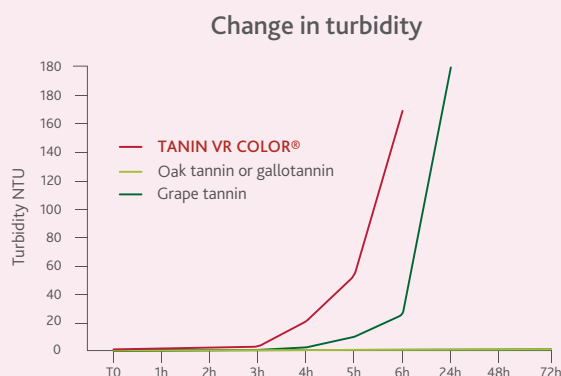
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THE CO-PIGMENTATION EFFECT

The phenomenon of co-pigmentation results from the molecular association of coloured pigments such as anthocyanins with other more or less coloured pigments (tannins, phenolic acids...) leading to complexes (co-pigments) having a colour intensity greater than that of the coloured pigment alone. Co-pigmentation seems to play an important role in the colour of young wines. Red wines that are the richest in co-pigments present a more intense colour from the earliest stages of winemaking and it also seems more durable over time. **TANIN VR SUPRA®** and **TANIN VR COLOR®** are two tannins with good co-pigmentation ability.

CONDENSATION EFFECT (STABILISATION OF COLOUR)

Acetaldehyde molecules are involved in stabilising simple coloured phenolic structures through reactions leading to more complex molecules. The efficiency of the tannin/anthocyanin bond via an acetaldehyde bridge can be simply demonstrated by saturating a tannin solution with acetaldehyde and then observing the evolution of turbidity over time. A benchmarking study has been done with many tannins available on the market using this method: **TANIN VR COLOR®** was more than 100 times more reactive than the closest competitor product.



Results of ethanal test with tannins of different origins. **TANIN VR COLOR®** is the most reactive with acetaldehyde (ethanal), a key step in the colour stabilisation and formation of tannin-anthocyanin complexes."

SPECIFIC CASE: LACK OF PHENOLIC MATURITY

When harvest is not at optimal phenolic ripeness, the qualities of **TANIN VR SUPRA®** and **TANIN VR COLOR®** are complementary.

Thanks to its remarkable "sacrificial" effect, **TANIN VR SUPRA®** helps protect the natural extractable grape tannins from precipitating with naturally occurring proteins, while **TANIN VR COLOR®** brings balance to the tannin/anthocyanin ratio and promotes the production of stable coloured compounds.

Whenever the vintage looks like a difficult one with challenges for grapes with optimal phenolic ripeness, the use of proper tannins, for example, **TANIN VR SUPRA®** and **TANIN VR COLOR®**, will be a key point to successful vinifications.

	TANIN VR SUPRA®	TANIN VR COLOR®
"Sacrificial" effect	*****	*
Anti-laccase reaction	*****	**
Antioxidant effect	****	***
Co-pigmentation effect	***	****
Condensation effect (Colour stabilisation)	*	*****

TANIN VR SUPRA® is added to the must after the crusher or during the first pump over (if no evidence of *Botrytis*) (20 - 80 g/hL / 200 - 800 ppm according to the sanitary state of the harvest). **TANIN VR COLOR®** is added during the first third of the alcoholic fermentation during the colour extraction phase at 10 to 30 g/hL (100 - 300 ppm).

