GRAPE HETEROGENEITY - GREEN CHARACTERS

Challenges of dealing with heterogeneous maturity within grapes and green characters.

- Limited extractability from skins - Under-ripe grapes often have thicker skins, which have a limited extractability. Anthocyanins, tannins and aroma precursors will be harder to release from the inside of the grape cell. The use of an enzyme helps loosen the cell wall structure and promote the release of the anthocyanins, aroma precursors, and tannins from the skin cells.
- Underripe and green seed tannins - When phenolic maturity is delayed, we often have unripe seeds with harsh and astringent tannins. To prevent the extraction of seeds tannins, we recommend limiting maceration in alcoholic phase and pressing early. To compensate, we recommend focusing on extraction regime early in fermentation in aqueous phase and using fermentation tannins to build structure, stabilize color and help reduce green characters perception in the wine.
- Green Character in the wine - Fruit with under ripe characters impart green aromas into the finished wine. It is possible to reduce, mask and change the perception of green characters in wine with different winemaking techniques and tools such as the use of toasted oak, yeast producing a lot of fermentation esters, ...

PRODUCT INFO

Pro Tanin R – Pro-anthocyanidin tannin, use as sacrificial tannin. Developed for application on red grapes, to scavenge oxygen radicals, inhibit oxidative enzymes such as laccase and PPO and eliminates reactive proteins, thus protecting grape polyphenols. Pro tanin R is instantaneously soluble, simply sprinkle it on the top of the grapes at picking.

Excellence B-Nature – non-Saccharomyces yeast, pure *Metschnikovia pulcherrima*, non fermentative. It inhibits the development of spoilage microbes such as other non-Saccharomyces, and bacteria on grapes and juice. Excellence® B-Nature® is an organic anti-microbial solution, used as an alternative to SO_2 on grapes. It protects grapes/juice from microbial contamination during transport and processing, does not inhibit *Saccharomyces cerevisiae*, and reduces SO_2 combining compounds production, thus increasing SO_2 efficiency. Excellence B-nature can be added directly to grapes, without rehydration. Simply sprinkle the yeast on the top of the grapes at picking.

Oenozym Crush – maceration enzyme, pectinase, purified in cinnamyl esterase and anthocyanase. Added on grapes, it will improve extraction of skin compounds, such as anthocyanins, condensed tannins, polysaccharides and aromas and improve free run yield. It accelerates extraction of positive compounds of grape skins, compensating the short skin contact.

Softan Vinification – catechins tannins bounded to plant polysaccharides. Added during fermentation, Softan Vinification has a strong ability to stabilize color and protect it from loss during fermentation. It is a gentle tannin that contributes to mouthfeel and builds up mid-palate.

Natur'Soft - preparation of specific yeasts hulls, selected for their high content of polysaccharides. It is strongly effective in color stabilization, and it increases wine complexity, reduces tannins perception, and enhances fruity characters. NaturSoft also reduce green characters and 'smoke' notes.

Oenofresh Granular – blend of French toasted oak granular. They can be used in fermentation and ageing to build up the mid palate, bring 'sweetness', roundness and smoothness to wine. It highlights wine's fruitiness, ripens aromas and reduces the perception of green characters.

Aroma Protect - inactivated yeasts, naturally rich in glutathione, a natural antioxidant, sulfurous tripeptide with great reductive power. When used during ageing, Aroma Protect® gives immediate protection against the oxidative mechanisms, releasing glutathione (GSH) into the wine, significantly slowing down oxidation phenomena.

KillBrett – pure chitosan, wide spectrum anti-microbial agent. KillBrett eliminates and inhibits Brettanomyces, Lactic Acid Bacteria and Acetic Acid Bacteria. It can be used during the entire process of winemaking, we recommend using it as preventive, post MLF, at 4 g/hL.

Tan&Sense Volume – pure untoasted oak tannins, with high capacity to scavenge oxygen radicals, buffer redox potential and maintain wine freshness. Tan&Sense Volume, is a gentle tannin, increasing sweetness and roundness perception. We recommend using 0.5 – 1 g/hL every transfer, racking or movement of the wine to protect from oxidation.

Solutions for winemaking
LAMOTHE-ABIET

WINEMAKING GUIDELINES

HETEROGENEITY AND GREEN CHARACTERS – WINEMAKING GUIDELINES

HARVEST AND GRAPE TRANSPORT	Limit SO_2 addition on grapes to limit the extraction of undesirable compounds from grapes and prevent color bleaching. **Pro Tanin R, 150 g/ton**, at picking or during fruit processing to protect from oxidation and inhibit oxidative enzymes. **Excellence B-Nature at 50 g/ton**, sprinkle directly on grapes, as soon as possible after picking to prevent any microbial contamination and spoilage.
MACERATION / EXTRACTION	**30 mL/ton of Oenozym Crush .** Maceration enzyme, purified from cinnamyl esterase and anthocyanase to improve grape skin compounds extraction such as skin tannins, anthocyanins, polysaccharides and aromatic precursors. It will also increase free-run yield and improve clarification and wine filterability.
ALCOHOLIC FERMENTATION	Fermentation temperature: 90-95°F – hot fermentations help 'stripping' some green aromas. **Excellence DS at 20 g/hL** to produce fresh, fruity, spicy and elegant aromatic profile with smooth structure. This yeast produces lots of fermentation esters, express varietal aromas nor-isoprenoids and high levels of mannoproteins. Rehydrate yeast with **OenoStim at 25 g/hL** to reinforce yeast activity, increase aromatic production and optimize grape expression. **OptiEsters at 25 g/hL** to promote the production of ethylesters and enhance fresh, fruity and floral characters.
	AT 1 DAY AFTER INOCULATION Ensure good yeast nutrition and limit off-flavors production with **Optiflore O® at 40 g/hL** (complete organic nutrient based on inactivated yeast). **180 g/ton of Softan Vinification** to encourage the stabilization of anthocyanins via co-pigmentation and condensation, protect anthocyanins and fill mid palate. Oak granular addition during fermentation. **Oenofresh Granular** at 1.5 kg/ton to highlight fruitiness, ripen fruits aromas and, 'mask' green characters. It will also bring roundness, structure and mouthfeel weight.
	AT 2 DAYS AFTER INOCULATION Co-inoculation: add **Oeno1 at 1 g/hL,** 1 day after AF starts to keep fresh, fruity profile.
	AT 18 BRIX If low initial YAN (<150), add **20-30 g/hL of OptiFerm** (ammonium salts and vitamin B1) at 1/3 of fermentation. **150 g/ton of Natur'Soft** to stabilize color, fill mid palate and increase wine length and volume.
PRESSING	**10 g/hL Vinitan Advance** to free run to reinforce wine structure, compensate low phenolic compounds from skin and improve color stabilization.
AGEING	Once AF and MLF completed: rack off gross lees after fermentation. Use inert gas during transfer. **Aroma Protect at 10 g/hL** to reduce redox potential and increase natural wine resistance to oxidation. **Tan&Sense Volume at 1 g/hL** every racking to protect from oxidation and scavenge oxygen radicals. **KillBrett at 4 g/hL** to prevent any microbial development and protect wine from spoilage.