



# WINEMAKING GUIDELINES

## Aromatic Whites Terpenes/Nor-isoprenoids

Main grape varieties rich in terpenes and nor-isoprenoids precursors: Muscat, Viognier, Riesling, Pinot Gris, Gewurztraminer, Müller-thürgau, Albariño, Muscadelle, Chardonnay, Auxerrois, Chasselas and Chenin Blanc.

Main aromas associated with terpenes: rose, lily-of-the-valley, lemongrass, lavender, pine, linden and lychee.

### How to optimize terpene and nor-isoprenoid expression during winemaking?

- Promote extraction of aromatic compounds located in skin with skin contact and extraction enzymes
- Express aromatic precursors by using a yeast with  $\beta$ -glycosidase activity and  $\beta$ -glycosidase enzymes
- Enhance complexity and aroma production by increasing the aromatic precursor content of must
- Reduce bentonite usage to limit stripping of wine aroma: improve protein stability at early stages of the winemaking process
- Protect aromas from oxidation throughout the entire winemaking process

WINEMAKING STAGE	ENOLOGICAL PRODUCT	ENARTIS RECOMMENDATION	DOSE
Vineyard	Antioxidant	<b>AST:</b> Blend of ascorbic acid, gallic tannins and SO <sub>2</sub> for complete antioxidant protection. 100ppm of AST = 28 ppm SO <sub>2</sub> .	125 mg/L
Crush	Extraction Enzyme	<b>Enartis Zym Arom MP:</b> Pectinase, cellulase, hemicellulase, and protease activity. Improves extraction of aromatic compounds. Increases free run yield. Helps clarification and protein stability.	20 g/ton
<i>Use inert gas, dry ice to limit oxygen contact</i> <i>Skin contact for 4-12 hours if healthy grapes – Gentle press cycle – Limit press rotation – Separate press fractions</i> <i>Recommended analysis: Brix, pH, TA, YAN, Malic Acid, pH and Acid Adjustment Panel</i>			
Settling	Fining Agent	<b>Enartis Claril SP:</b> Blend of bentonite, PVPP, potassium caseinate and silica. Prevents oxidative characters, removes phenols, reduces bitterness and astringency and improves protein stability.	30-50 g/hL
	Settling Enzyme	For difficult-to-settle juice and rapid settling, use <b>Enartis Zym RS:</b> Pectinase and hemicellulase developed for difficult settling.	2 mL/hL
<i>Recommended turbidity ~ 150-200 NTU</i>			
Inoculation	Nutrients	<b>Nutrifer Arom Plus</b> provides essential nutrients for the proper yeast development: amino acids, vitamins and mineral salts and aromatic precursors to enhance fermentation aromas.	30 - 40 g/hL
	Yeast (select one)	<b>Enartis ES Floral:</b> <i>S. bayanus</i> + <i>S. cerevisiae</i> , resistant to low and high temperatures. Intense floral, white roses, hawthorn, citrus blossom, pear, green apple and apricot aromas. <b>Enartis Ferm Q Citrus:</b> <i>S. cerevisiae</i> with $\beta$ -lyase and $\beta$ -glycosidase activities. Increases varietal aroma expression and produces secondary aromas. White fruit, tropical fruit, orange peel and citrus blossom aromas.	20 g/hL
<i>Fermentation temperature: 17-19°C (62-67°)</i>			
1/3 Fermentation	Yeast Nutrients	<b>Nutrifer Advance:</b> Organic and inorganic nitrogen, yeast cell walls rich in sterols and fatty acids and cellulose. Helps yeast with stress resistance, detoxifies wine, ensures complete fermentation and reduces production of H <sub>2</sub> S.	30-50 g/hL
	Oxygen	<b>Enartis MicroOx</b> or pump-over.	10 mg/L
	Tannin	<b>Enartis Tan Citrus:</b> Blend of gallic and condensed tannins with aromatic precursors. Contributes to floral, orange blossom, grapefruit and lemon notes.	3-7 g/hL
	Protein Stability	<b>Bentolit Super:</b> Activated sodium bentonite. If grapes have historically high protein instability, treatment with bentonite at juice settling and during AF is recommended.	20 g/hL
<i>Recommended analysis: Alcohol, Residual Sugar, pH, TA, Malic Acid, Microscan</i>			
After Fermentation	Aroma Expression	<b>Enartis Zym Caractere:</b> Pectolytic, hemicellulose and $\beta$ -glycosidase activities. Helps rapid settling, reduces viscosity, increases free run yield and improves filterability and aroma release.	5 g/hL
	Antioxidant Protection	<b>Enartis Stab SLI</b> (active lees, PVPP and untoasted tannins) to consume dissolved oxygen, extend wine shelf-life and protect against oxidation.	20-30 g/hL
	Antimicrobial	<b>Enartis Stab Micro:</b> Pre-activated chitosan. Removes spoilage microbes such as <i>Brettanomyces</i> , <i>Oenococcus</i> , <i>Lactobacillus</i> , <i>Pediococcus</i> , <i>Acetobacter</i> and <i>Zygosaccharomyces</i> .	3-5 g/hL