DRIVING CHARDONNAY STYLE: INCREASING MINERALITY

<table>
<thead>
<tr>
<th>VARIETY</th>
<th>TYPE OF WINE</th>
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<tbody>
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<td>Chardonnay</td>
<td>Premium Chardonnay</td>
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**CHALLENGES (S)**
- Diacetyl
- Over ripe fruit
- Lacking acidity, freshness
- Premature aging

**OBJECTIVE**
Utilize specific nutrients, yeast and shelf life improvement strategies to produce a high quality, mineral-driven Chablis style chardonnay.

**BACKGROUND**

Chablis is one of the most iconic wines in the world. It hails from the cooler growing regions of Burgundy, France, and is known for being a firm, aromatically powerful wine with aromas of flint, citrus, white flower, fruit, and wet stones. Traditional white Burgundy is barrel fermented and aged on lees, developing a positive reductive bouquet with aging. These wines are dominated by the sensory descriptor of minerality. Although many would argue that minerality is a source of “terroir,” research has shown that this sensory characteristic is derived from fermentation products such as succinic acid, ethyl esters, and a complex of substances generated under conditions of amino nitrogen nutritional stress (proline catabolism).

There is supporting evidence that the transport of vineyard-specific minerals from the roots and stems into grapes is irrelevant in the perception of minerality in finished wines (Baroň et al., 2012; Maltman et al., 2013). Reductive compounds such as methanethiol (MeSH) have been positively correlated and confirmed as a sensory and chemical driver of wine minerality aroma (Rodrigues et al., 2017).

This protocol is designed to increase the perception of minerality, balancing and managing the potential risk for sulfur off aromas is critical, and constant monitoring of this protocol is advised.

Winemaking practices for increasing succinic acid:
- Higher solids
- Moderate SO₂ addition
- Fermentation temperature < 68°F (20°C)
- Target nitrogen supplementation to at least 300 mg/L YAN (limit amino nitrogen)
- Aeration during fermentation

The above is achieved to the best of our knowledge and experience. The industrial application of the advice provided does not imply any responsibility on the part of our company.
PROTOCOLD

WINEMAKING STAGE | OBJECTIVE | ENARTIS RECOMMENDATIONS | DOSAGE
--- | --- | --- | ---
**GRAPE PROCESSING** | Antimicrobial, Antioxidant | **WINY:** Pure high quality potassium metabisulfite (KMBS). | 35 g/ton
**SETTLING** | Clarification | **ENARTISZYM RS** Pectolytic enzyme with cellulase and hemicellulase side activity, formulated for difficult to clarify white juice. | 2 mL/hL
**MUST** | Yeast Nutrient Supplementation | **NUTRIFERM SPECIAL** Complex nutrient containing inorganic nitrogen (DAP), inactivated yeast and thiamine. 10 g/hL of NUTRIFERM SPECIAL supplies 16 mg/L of YAN and 0.10 mg/L of thiamine. *Adjust dosage depending on initial juice YAN to target 300 mg/L YAN | 30-40 g/hL
**ALCOHOLIC FERMENTATION** | Yeast Rehydration and Inoculation | **ENARTISFERM Q9** Fast fermenter with high nutrient requirements. Low VA, SO2 and H2S production with ß-lyase activity. Produces complex wines with mineral, roasted coffee, flint, and gunpowder notes. or **ENARTISFERM TOP 15** Fast fermenter with low nutrient requirements. It expresses clean, varietal driven wines and can ferment at low temperatures. *FERMENT BELOW 63°F (17°C) | 20 g/hL
 | Mouthfeel Antioxidant Growth factors | **ENARTISPRO BLANCO** Yeast hulls with soluble mannoproteins and amino acids with strong antioxidant properties. | 20 g/hL
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**1/3 THROUGH ALCOHOLIC FERMENTATION** | Nutrient Supplementation | **NUTRIFERM ADVANCE** Complex additive containing DAP, inactivated yeast and cellulose. | 20 g/hL
**MALOLACTIC FERMENTATION** | Balance Acidity Microbial Stabilization | **ENARTISML SILVER** Oenococcus oeni with fast and complete kinetics even under difficult conditions such as high alcohol and high polyphenol content. * Partial malolactic fermentation depending stylistic preference | Volume dependent
**AFTER DESIRED MLF** | Antioxidant, antimicrobial | **WINY:** Pure high quality potassium metabisulfite (KMBS) | 0.5 ppm molecular SO₂

For more information call our Technical Winemaking Specialist at (707) 838-6312

CITATIONS


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