

BERRY VARIABILITY: TOOLS TO IMPROVE PICKING DECISIONS

This year we have experienced cooler than usual temperatures during bloom that extended berry set and impacted this vintage's yields. The poor conditions during fruit set caused shatter and partial flower pollination. At the same time, the drought aggravated this variability, which is worrying winemakers trying to make picking decisions.

The optimal ripeness is difficult to determine and achieve when a vineyard has large berry maturity variation, and even more, when the variation is within the same cluster. Monitoring phenolic ripeness has proven to be a valuable tool to assess vineyard quality and optimize viticultural and winemaking processes.

The **Grape Phenolic Fingerprint** quantifies extractable tannin, extractable anthocyanins, and extractable phenolics by measuring compounds extracted in a wine-like solution to simulate winemaking processes. Provided with this knowledge, vintners are able to make better decisions when it comes to extraction in order to fit their wine style.



Measure Berry Variability of your Vineyard
 The **Berry Variability Panel** gives information on the uniformity of the vineyard. It is a tool that provides a quantitative look at the uniformity of ripening and helps to make informed decisions.
 Includes: Berry weight average, Brix readings for 300 individual berries, composite titratable acidity, composite pH, composite Brix, and composite malic acid.

2015 VINTAGE

Grape clusters are containing both normal and small berries (chicks and hens). The small berries have few undeveloped seeds or no seeds at all; they are not ripening at the same speed as their properly pollinized counterpart and show a high ratio of skin to pulp. Phenolic maturity might not be reached at the moment of harvest, which can cause color stability issues, lack of structure and low ageing potential. It is important to look at the phenolic composition to understand color stability and adapt winemaking processes. Free anthocyanins, mainly responsible for wine color, are the least stable form of color. Stabilization of wine pigments occurs via co-pigmentation or condensation of anthocyanins. The **Wine Phenolic Fingerprint** identifies total tannin, total phenolics, total pigment, free anthocyanins, and pigmented tannins.



Grapes are having high sugar levels coupled with high acidity due to elevated malic acid content and high pH. It is essential to make early, judicious acid adjustments to the must. The **Predictive Acid Panel for Juice** and the **Predictive Acid and Tartrate Stability Panel for Wine** predict pH and TA after alcoholic fermentation, acidification, malolactic fermentation (MLF), and tartaric precipitation by using models that take into consideration the composition and buffer capacity of the juice or wine.

With high malic acid content in wine, an uncontrolled MLF can have a strong impact on wine quality. Spoilage microbes, such as Lactobacillus and Pediococcus can metabolize malic acid and generate negative aromas such as rancid yogurt, sweaty, burnt matches, rotten fruit and a loss of balance and complexity. Using a selected bacteria strain reduces the potential for spoilage and ensures better control of aromatic compounds and mouthfeel. The **Quick ML Activity Test** rates wines based on fermentation conditions, recommends the appropriate bacteria strain and proposes, if needed, adjustments in order to avoid a stuck fermentation.



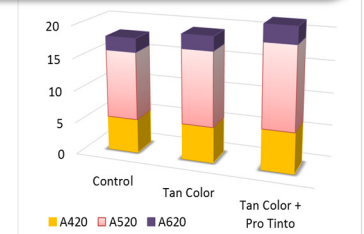
HOW TO MONITOR MLF?

- **Paper Chromatography:** An easy and economical way to test for conversion of malic and lactic acid. Using solvent, this analysis indicates the presence of malic acid and lactic acid (lower limit of detection = 100 mg/100mL). Alla France produces kits for Enartis Vinquiry with all the supplies needed to run 100 tests.
- **Enzymatic Analysis:** Using a spectrophotometer and reagents, enzymatic analysis is a valuable, precise and accurate method to determine concentrations of specific compounds including malic and lactic acids. It is a helpful tool to track the progression and completion of MLF. Vintessential Laboratories provides a full range of products for enzymatic testing, including spectrophotometers and enzymatic kits for both manual and discrete analyzers.
- **BioLan BioWine 700** uses the variation in electric current due to redox reactions to quickly determine malic acid levels in under 60 seconds. Extremely simple to use and portable, this tool is for use in the lab or cellar.

When is MLF complete?

We consider MLF complete when malic acid <30 mg/100 mL **MLF Assessment Panel** helps to determine the degree of completion as well as reasons for a stuck or sluggish MLF.

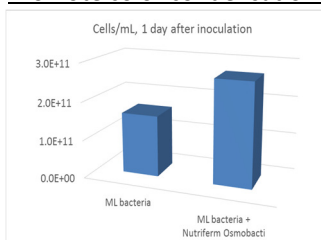
Includes: Glucose/fructose, malic acid, microscopic scan, VA, total SO₂, pH, and alcohol



Color Density (A420+ A520+A620) of the wines post MLF

ENARTIS RECOMMENDATIONS:

- Improve polyphenol extraction and color stability with **Enartis Zym Color Plus**. Used at crusher, the pectolytic and protease activities of this enzyme increase polyphenol extraction, improve protein stability and limit loss of polyphenols.
- Protect grape polyphenols with **Enartis Tan Rouge**. The use of 'sacrificial' tannins at crusher, protects grape polyphenols from oxidation and participates in stabilizing color. It works in synergy with SO₂.
- Promote the formation of stable color pigments with **Enartis Tan Color** for condensation and **Enartis Pro Tinto** for co-pigmentation. Using condensed tannins in combination with polysaccharides improves color stability and participates in building structure and mouthfeel.
- Promote color condensation via acetaldehyde bridges with the use of **Enartis Micro-Ox** combined with highly reactive tannins contained in **Enartis Tan Microfruit**.



- Manage spoilage microbes with **Enartis Stab Micro**, a pre-activated chitosan that interacts with microorganisms and reduces their populations by degradation of cell walls or **Enartis Zym Lyso** that interacts specifically with lactic acid bacteria.

- Control MLF by inoculating with selected and adapted bacteria strains.
- Ensure a good and complete MLF, with **Enartis Nutriferm Osmobacti** to increase survival rate of bacteria during rehydration and **Enartis Nutriferm ML** which provides nutrients specific for bacteria and improves the completion rate of MLF.

Preparation of freeze-dried ML bacteria

1. Dilute in 20 x volume of chlorine-free warm water (68-75°F)
2. *Wait 15-20 min*
3. Add NUTRIFERM OSMOBACTI (2 g/hL of wine to inoculate) and mix gently
4. *Wait 3-4 hours*
5. Pump the bacteria starter into wine
6. Add NUTRIFERM ML (20 g/hL) to wine

If you have any questions, please give us a call at (707) 838-6312.