

# **ENARTIS NEWS** DEALING WITH BOTRYTIS: ANALYSIS AND TOOLS TO IMPROVE QUALITY

Due to rain and high humidity levels in parts of North America over the past weeks, some vineyards are showing signs of Botrytis infection. **Early, fast and accurate** determination of infection levels can be used for effective screening of vineyards, grape lots or juice and enables winemakers to adjust the winemaking process and minimize negative effects on final wine quality.

## **IMPACT OF BOTRYTIS CINEREA CONTAMINATION ON GRAPE AND WINE QUALITY**

An infection with *Botrytis cinerea* negatively affects grape quality and the resulting wine. *Botrytis* affected grapes have a very high risk for enzymatic oxidation due to laccase activity. This fruit can also have reduced sugar, acid and polyphenol levels. It can also increase the risk of problematic alcoholic fermentations and increases levels of spoilage microbes. In addition to "moldy" off-flavor development and high SO<sub>2</sub> binding, resulting wines have color, clarification, filtration and stability issues.

### A FAST AND ACCURATE DETERMINATION OF INFECTION LEVELS: GLUCONIC ACID

Gluconic acid, one of the most important metabolites of *Botrytis cinerea*, is the best marker to estimate the level of infection and adapt the winemaking process. Vinquiry Laboratories by Enartis USA provides **same day Gluconic Acid** test results, as well as **Gluconic Acid Test Kits** from Vintessential Laboratories for **in-house testing**. Grapes considered healthy can have gluconic acid levels between 0.2-0.3 g/L. Levels up to 1.0 g/L indicate an initial fungus infection (O.I.V reference).

Gluconic Acid Analysis: \$31.00 (Sample volume: 50 mL) Vintessential Gluconic Acid Test Kit (30 tests): \$200.75 Botrytis Panel (PCR for *Botrytis*, gluconic acid): \$75 (Sample volume: 50 mL or 5 clusters)

#### **TOOLS TO REDUCE BOTRYTIS IMPACT ON QUALITY**

Laccase enzyme produced by *Botrytis cinerea* has been shown to have very detrimental effects on color and several other grape phenolics (Dubernet 1977). Sulfite has been shown to have a limited effect on laccase activity at reasonable levels (<200 mg/L) (Dubernet 1973)). However tannin has been shown to limit laccase activity (Dumeau 2004). **EnartisTan Antibotrytis** and **EnartisTan Blanc** have both been shown to significantly reduce laccase activity. One of the best tools to utilize for machine harvested fruit with potential *Botrytis* infection is the antioxidant blend **AST**. This blend has a synergistic combination of ascorbic acid, potassium metabisulfite and gallic tannin. When added to grapes, the synergistic action of **AST** limits laccase activity and prevents microbial spoilage. The activity of laccase has also been shown to persist after fermentation late into the ageing process (Somers 1989). Utilizing **EnartisStab Micro M** or **EnartisStab Micro**, has been shown to reduce laccase activity in juice and wine, respectively.



# HOW TO ADJUST THE WINEMAKING PROCESS: KEYS STEPS

- Hand harvest and sort contaminated grapes in the vineyard
- Utilize enological tannins such as **EnartisTan Blanc** or **EnartisTan Antibotrytis** to limit laccase activity in machine harvested and crushed fruit or use blends such as **AST**
- Limit skin contact to reduce extraction of offflavors
- Remove any spoilage microbes as soon as possible with EnartisStab Micro M

## **PROTOCOLS AND RESOURCES**

- In white and rosé wines, promote fast clarification to reduce off-flavors and toxins that can alter fermentation
- We recommend the use of EnartisZym Elevage, an enzyme with β-glucanase activity, to break down glucans and improve clarification and filterability, ideally in juice/must

*Botrytis* winemaking protocols for white, rosé and red wines can be found in the link below along with a more indepth webinar on the topic.

Compromised Fruit: Botrytis Bunch Rot and Powdery Mildew

For more information call Enartis Wine Services at (707) 836-2451 or contact your technical sales rep.

Stay in touch through our newsletter **SUBSCRIBE** www.enartis.com/en-us/newsletter/

