



LAFFORT® Harvest news flash: Dealing with smoke taint

Practical Tips for Winemaking with Fruit Exposed to Smoke

Forest fires and exposure of grapes to smoke has become a major winemaking issue. Wines that are 'smoke tainted' receive negative comments from both winemakers and consumers, such as smoky, burnt, campfire, and ashtray. The key compounds responsible for the aromas are volatile phenols, guaiacol, 4-methyl-guaiacol, and many others, and are found on the outer (cuticle) layer of the grape.

The smoke taint compounds exist in juice and grapes in the glycosylated form. Winemaking practices can release the odorous free volatile phenols, as can time and subsequent acid hydrolysis. Juice may taste acceptable, but during fermentation and over time may develop more serious smoke taint issues.

There are a number of winemaking techniques that can be used to mitigate the effects of taint in wines, and these are more valuable when used in combination. The following recommendations are based on current knowledge of how to reduce the effects of smoke taint, however, there are no known processes to completely remove this issue.

General Recommendations

Early fermentative evaluation of fruit in small scale (5-gallon buckets) before actual harvest can aid in the detection of smoke taint intensity. Ferment a representative sample of the individual block a week before harvesting the block. Monitor daily to see if smoke taint is developing. This procedure can help determine the degree of smoke taint and can give information to base the harvest decision on.

Hand harvest fruit and keep fruit cool. Sort out MOG to reduce leaf material that can contribute smoke compounds. Smoke compounds reside in the grape skins, so it is important to reduce maceration.

Use activated carbon as a fining treatment if smoke taint is detected post fermentation.



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LAFFORT® Smoke Taint Protocol

Tips for minimizing extraction in white wine grapes

- Mechanically harvested fruit may have extensive skin to juice contact during transport; in this case, separate the first juice that comes out of the press.
- Press fractions should be kept separate as they may have considerably higher concentrations of smoke compounds. Press cuts can be made at 100 gallons per ton.
- Whole cluster press and use a press cycle with few rotations.
- Use a settling enzyme such as **LAFAZYM® CL** or **LAFAZYM® 600 XL ICE** to rapidly remove solids from juice.
- Use **TURBICEL®** for increasing turbidity for fermentation when juice is highly clarified.
- Use activated carbon (**GEOSORB®** or **CHARBON ACTIF SUPRA 4 GR**) at juice settling.
- Use a yeast strain that produces high amounts of fermentation esters, such as **ZYMAFLORE® X16**.
- Consider using **NOBILE®** oak chips during fermentation, **NOBILE® SPICE** (light toast) or **SWEET** (medium toast) can increase wine complexity and help to mask smoke taint.

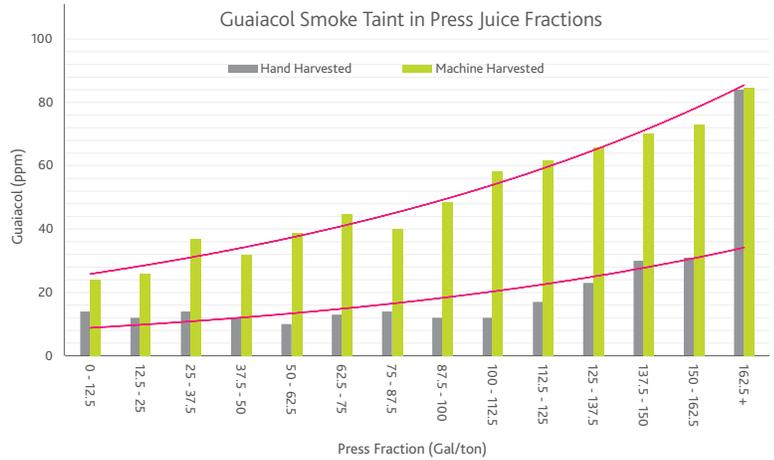


Figure 1: Smoke Taint in Press Fractions
(Reference: Simos, Australian Viticulture, Jan/Feb 2008)

Tips for minimizing extraction in red wine grapes

- Use **TANIN VR SUPRA®** and **TANIN VR COLOR®** during fermentation to build structure and stabilize color.
- Use a high quality purified pectinase enzyme such as **LAFASE® FRUIT**, which is low in cellulase side activity and will extract color easily without excess maceration.
- Limit maceration programs and shorten time on skins to decrease smoke taint compound extraction.
- Keep fermentation temperatures cool, 70-75°F.
- Use a yeast strain that produces high amounts of fermentation esters, such as **ZYMAFLORE® RX60** or **ZYMAFLORE® XPURE**.
- Drain and press as early as 8 – 5 brix to reduce time on grape skins.
- Toasted oak chips such as **NOBILE® SWEET** and **NOBILE® SPICE** can reduce the intensity of smoke characteristics through increased wine complexity, as well as increasing polymerized anthocyanins.
- Conduct fining trials with activated carbon, either **GEOSORB®** OR **CHARBON ACTIF SUPRA 4 GR** on finished wine.

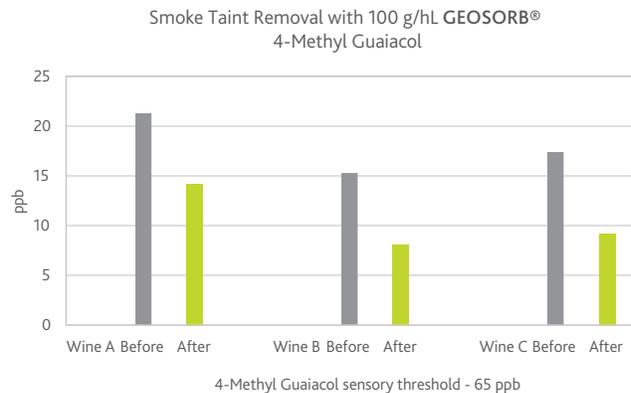
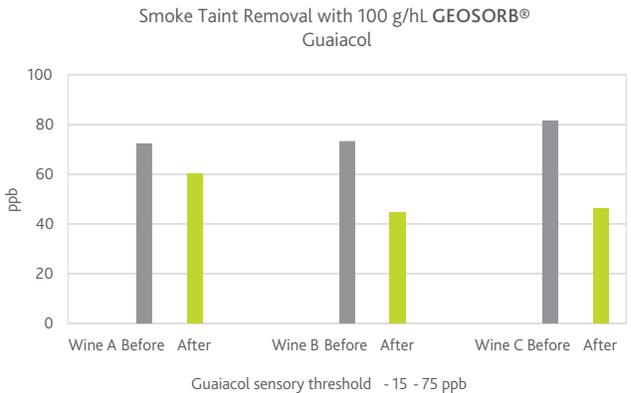


Figure 2: **GEOSORB®** Effect on Smoke Taint
(Reference: Laffort South Africa, 2016)