Smoke taint

With the constant threat of wildfires in our environment, having an effective winemaking strategy when disaster strikes is of utmost importance.

Volatile phenols (predominantly guaiacol and 4-methylguaiacol) are released into the atmosphere when the lignin of wood is burning. These volatile phenols enter the waxy cuticles of the grape berry as free compounds, react rapidly with the grape sugars resulting in the glycoside bound forms of these phenols. These volatile and glycosylated phenols present in grape berries may result in a wine with undesirable sensory characteristics. Smoky, burnt, bacon, medicinal and ash are just some of the attributes used to describe smoke taint affected wines.

Various factors determine how greatly exposure to smoke will affect the level of volatile phenol precursors present in the grape berry and, thus, the resulting wine, namely; the stage of grapevine growth and development, smoke concentration, length of time in which grapes were exposed to smoke, and the composition of the smoke. Winemaking practises following this exposure will heavily impact smoke taint levels in finished wines.

How to handle my smoke taint effected grapes?

- As smoke taint compounds are present in the largest concentrations in grape skins and vine leaves, **hand harvesting** and **sorting out the leaf material** will limit the release of smoke taint related compounds.
- **Reduced extraction** of these compounds can also be achieved by **limiting skin contact**; i.e. process fruit cold, avoid destemming, crushing, cold soaking, extended maceration, whole brunch press, press early, keep pressed and free run juice separate.
- Incorporate **carbon fining** in the case of hard pressings
- Select a **fast fermenting yeast** strain that is both aromatic and has good phenolic extraction abilities.
- Eliminate off-aromas bound to lees by **racking early**
- Addition of **untoasted oak chips** or **tannins with aromatic precursors** may aid in masking smoke related aromas
- Addition of **mannoproteins** and **fermentation tannins** may aid in balancing wine mouthfeel