Choosing the right carbon product for remediating smoke-affected juice and wine

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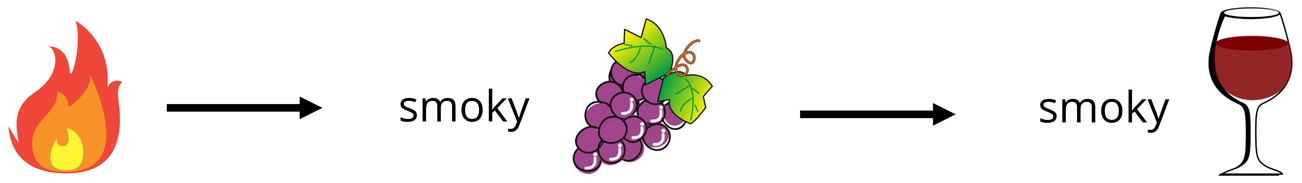
Background and industry challenge



- Volatile phenols and phenolic glycosides are the major marker compounds for smoke taint in grapes and wine
- Fining with activated carbon is one mitigation strategy to reduce their concentrations

With a myriad of carbon products on the market, how do you choose the right one for smoke taint remediation?

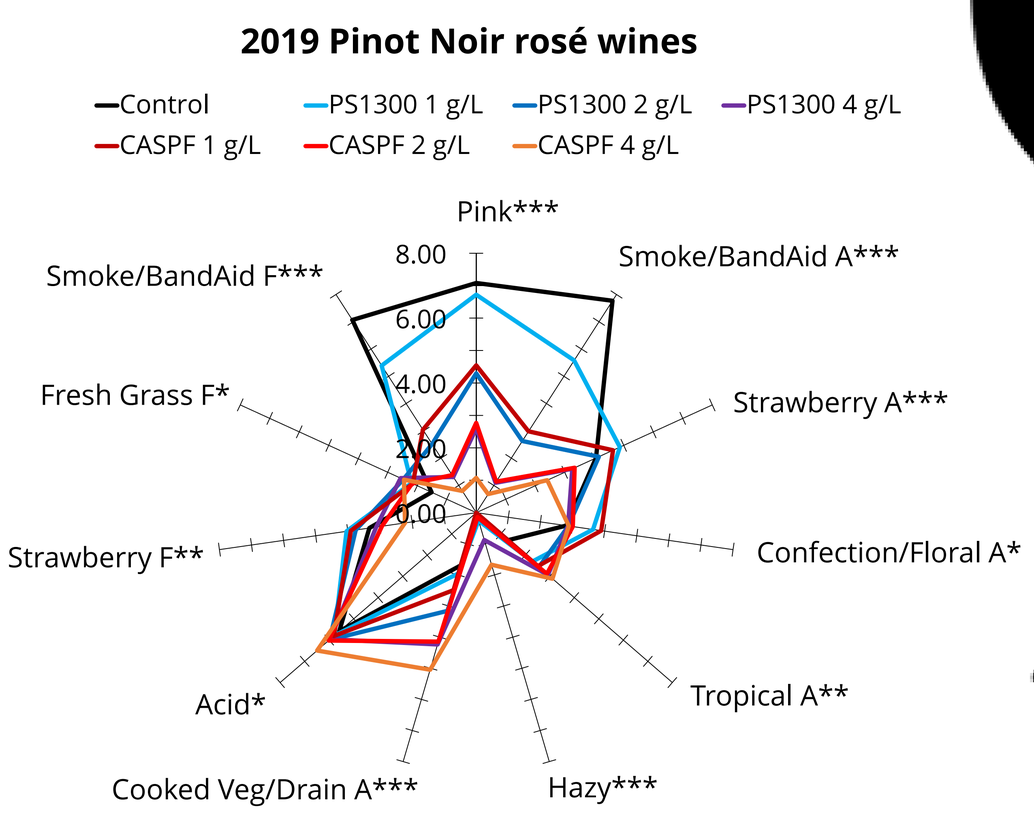
Considerations before commencing remediation with carbon

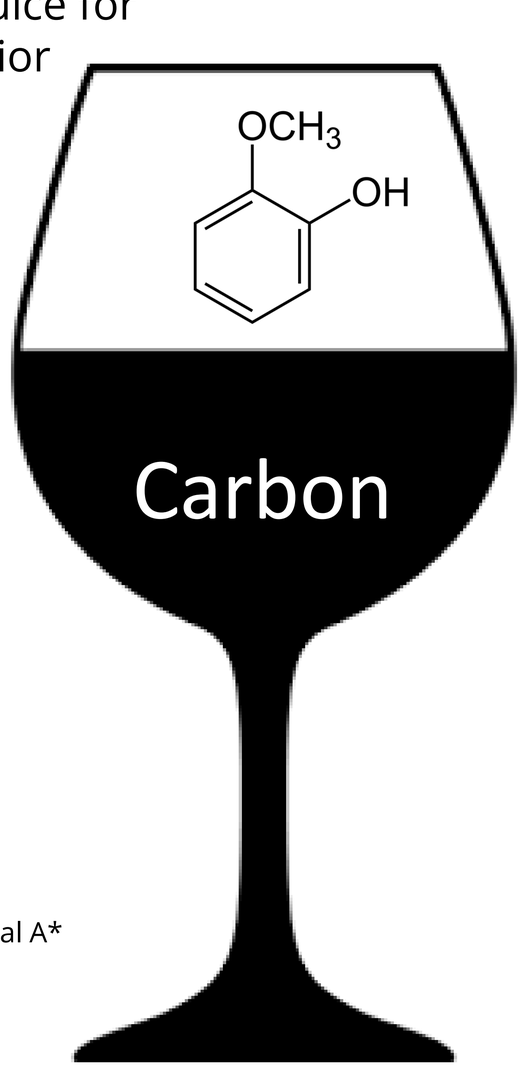
1. What are the concentrations of smoke taint compounds present? Is it worth attempting remediation?
2. Are you remediating juice or wine?

Most successful strategy: target removal of glycosides from juice and/or removal of volatile phenols from wine

Fining juice

- CASPF and PS1300 exhibited good removal of glycosides in screening trials and were shortlisted for winemaking trials
- They were evaluated at three rates, added to juice for 24 hours, settled with bentonite and racked prior to inoculation
- Lower dose rates may reduce 'smoky' characters while enhancing desirable aromas and flavours; higher dose rates (>1 g/L) may remove excessive colour and flavour





Fining wine

- A range of carbons and dose rates were screened on small volumes of wine; those offering the best sensory outcomes were then used to treat larger volumes
- FPS, Fenol Free, and Black PF were the most popular carbons among winemakers to reduce 'smoky' characters when treating wine, while minimising loss of desirable characters. Fining rates used were from 0.25 to 0.75 g/L
- 'Smoky' flavour was generally still present after treatment
- Dose rate for optimal outcomes varied depending on variety and level of taint

More information

The AWRI's smoke taint webpage contains links to fact sheets on remediating smoke-affected juice and wine using activated carbon

Conclusions

- Activated carbons can reduce smoke characters in wine, either through treatment of juice (especially white and rosé styles) or wine
- Carbon selection is important as different products can differ in their selectivity for volatile phenols or glycosides and in their removal of desirable aromas/flavours
- Carbon treatment will not remove all 'smoky' character without stripping the wine of desirable aroma/flavours; dilution with a non-smoke-affected wine may be required before the wine is fit for market

Wine Australia

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