

Smoke taint analysis



What analysis is available?

Research at the AWRI and other research organisations has demonstrated that phenolic compounds such as guaiacol, 4-methylguaiacol, cresol and syringol contribute to off-flavours and aromas in wines made from grapes that have been exposed to smoke.

AWRI Commercial Services is able to analyse grape, juice and wine samples for a range of volatile phenols and non-volatile phenolic glycosides which may affect wine quality. Understanding the levels of these marker compounds in fruit and/or wine may assist with making harvesting or winemaking decisions where there is a risk of smoke taint.

How can I assess the risk of producing smoke-affected wine?

The AWRI recommends assessing the risk of smoke taint via a combination of analytical testing of grapes and sensory assessment of a small-scale ferment made from the same grapes. Grape samples should be submitted for analysis of volatile phenols and non-volatile phenolic glycosides and at the same time a small-scale ferment of potentially affected grapes should be conducted. A [protocol for conducting small-scale ferments](#) is available on the AWRI website.



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How much does the analysis cost?

Analysis type	Sample type	Cost (ex GST)
Volatile phenols + phenolic glycosides	wine	\$247.00
Volatile phenols + phenolic glycosides	grapes	\$270.00
Volume required – 500 g berries OR 100 mL wine		

Please contact AWRI Commercial Services for volume pricing.

Guaiacol and 4-methylguaiacol have been emphasised as important compounds contributing to 'smoky' off aromas and flavours in grapes and wines; however, further research at the AWRI has shown that other volatile phenols can also play a role in the impact of smoke.

AWRI Commercial Services is able to accurately measure a group of these volatile phenols, including guaiacol, 4-methylguaiacol, syringol, 4-methylsyringol, *p*-cresol, *o*-cresol and *m*-cresol in grapes, juice and wine, with sensitivity to levels below the sensory threshold. Analysis of important related phenolic glycosides (sometimes referred to as precursors) provides further detailed information on the potential risks of smoke effects.

How do I send grape samples for analysis?

The AWRI holds CA12 accreditation with Biosecurity SA, for the importation of quarantine risk material into South Australia.

For grape and juice samples from states other than South Australia:

- Samples should be accompanied by a completed [AWRI Plant Material Movement Declaration Form](#).
- Samples should be frozen and packed in accordance with the AWRI Declaration form
- Samples sourced from Phylloxera Infested or Phylloxera Risk Zones (PIZ or PRZ) require a Permit for Phylloxera Control Areas issued by the relevant local government authority.

For grape and juice samples from within South Australia:

- Samples should be refrigerated unless they are likely to take more than three days to reach the laboratory, in which case they should be frozen.
- A Plant Material Movement and Declaration Form is not required.

Tips for sampling, packaging and transport of grapes for smoke analysis are available in this fact sheet: [Grape sampling, processing and transport.](#)

How do I pay for my analysis?

If you are an existing client of AWRI Commercial Services, you will be invoiced as normal. New clients should refer to the AWRI Commercial Services [new account page](#) for information on how to set up an account.



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How long will it take to get my results?

AWRI Commercial Services has a 10 working day turnaround time for the analysis **from receipt of samples**. If you have not received your results after the nominated time, please contact Customer Services on 08 8313 6600.

How will I receive my results?

Results are sent via email. Please therefore ensure that AWRI Commercial Services has your correct details.

Who should I contact for results interpretation?

For general information on smoke taint and winemaking and viticultural strategies to limit the impact of smoke taint, visit the [AWRI website smoke taint page](#).

For assistance in interpreting results from smoke analysis, please contact the AWRI helpdesk on 08 8313 6600 or helpdesk@awri.com.au. The AWRI has established a background database of volatile phenols and phenolic glycosides collected from grape and wine samples that have not been exposed to smoke. This background data can be statistically compared to the results from potentially exposed samples to determine the likelihood of the fruit or wine being affected by smoke.

Further reading

Latest information on smoke taint on the AWRI website

- http://www.awri.com.au/industry_support/winemaking_resources/smoke-taint/
Commercial Services smoke taint analysis
- www.awri.com.au/commercial_services/analytical_services/analyses/smoke_taint/

Contact

For further information, please contact:

Commercial Services (for sample analysis)

Phone 08 8313 6600 **Fax** 08 8313 6601 **Email** CommercialServices@awri.com.au

Website www.awri.com.au/commercial_services/analytical_services/analyses/smoke_taint/

AWRI helpdesk (to discuss technical queries)

Phone 08 8313 6600 **Email** helpdesk@awri.com.au

Website www.awri.com.au/industry_support/helpdesk/

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