

Smoke taint analysis



What analysis is available?

Research at the AWRI has demonstrated that some phenolic compounds such as guaiacol, 4-methylguaiacol, cresol and syringol are responsible for off-flavours and aromas caused by exposure to smoke.

AWRI Commercial Services is able to analyse grape, juice and wine samples for a range of volatile phenols and non-volatile smoke precursor compounds which may impact on 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 smoke precursors and at the same time a small-scale ferment of potentially affected grapes should be conducted. This will allow wineries to sensorially assess the wines and further determine potential risks of smoke taint. 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 + non-volatile precursors	wine	\$259.35
Volatile phenols + non-volatile precursors	grapes	\$309.75
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 but further research at the AWRI has shown that other volatile phenols can also play a role in the impact of bushfire 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 non-volatile precursor compounds will provide further detailed information on the potential development of smoke effects.

How do I send grape sample for analysis?

The AWRI holds an Import Verification Compliance Agreement (IVCA) with Biosecurity SA to enable clients to more easily send diagnostic samples to our facility. All samples of grape material require a completed [AWRI Plant Material Movement Declaration Form](#). Samples sourced from Phylloxera Infested or Phylloxera Risk Zones (PIZ or PRZ) will require a Plant Health Certificate (PHC) issued by your local government authority.

All samples should be frozen (those from PIZ/PRZ will require a deinfestation protocol applied) prior to transport to the AWRI and be accompanied by any necessary documentation.

How do I pay for my analysis?

If you are an existing client of AWRI Commercial Services, you will be invoiced as normal. If you are not an existing client, please contact Customer Services on 08 8313 6600 to arrange your client application and payment.

How long will it take to get my results?

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



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How will I receive my results?

Results are sent via email; therefore, it is important 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

http://www.awri.com.au/industry_support/winemaking_resources/smoke-taint/.

For assistance in interpreting results of volatile phenol and non-volatile precursor data, 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 precursors collected from grape and wine samples that have not been exposed to smoke. This background data can be compared statistically to the results of potentially exposed fruit to determine the likelihood of the fruit or wine being smoke-tainted.

Reference and 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 winemaking practices)

Email helpdesk@awri.com.au

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

Address Wine Innovation Central Building, Corner of Hartley Grove & Paratoo Rd, Urrbrae (Adelaide), SA 5064