AWRI Australian Wine Research Institute

Fact Sheet
ANALYSIS

Grape sampling, processing and transport following vineyard smoke exposure

Introduction

If grapevines are exposed to a smoke event at any stage after E-L 26 (cap-fall complete), AWRI recommends that potentially affected grapes be submitted to an analytical laboratory for analysis of smoke marker compounds (volatile phenols and glycosides).

AWRI advises sampling grapes for analysis three weeks prior to harvest to allow time for transport of samples, analysis and receipt of results before making harvest decisions.

This fact sheet provides detailed instructions on how to collect grape samples, package them and transport them to Affinity Labs for smoke analysis. In some cases, regional associations may play a role in coordinating sample submissions.

Collecting grape samples

Previous research has indicated that the vine-to-vine variability of free volatile phenol compounds across an individual vineyard is high. It is therefore important to ensure that representative samples are collected from across the entire vineyard. A random 30-bunch sample is recommended to be collected from each vineyard block or area to be tested, with only one bunch per vine to be taken. Where there are multiple blocks of the same variety on a single property, producers may wish to select a sub-set of blocks for testing.

Figure 1. A diagrammatic representation of randomly selecting 30 positions across an individual vineyard block from which to collect one bunch per vine

Once all 30 bunches have been collected, strip approximately half the berries off each bunch and place them in a large container. Mix the berries thoroughly, and from this container collect, bag and label a sample of berries weighing approximately 500 grams. Avoid leaves and matter other than grapes (MOG). Zip-lock bags are ideal for this purpose.

Figure 2. Plucking berries from bunches into a typical 'kitty litter' tray prior to mixing and sub-sampling 500 grams into a zip-lock plastic bag

Required treatment and documentation

Quarantine requirements in terms of treatment and documentation required to send grapevine diagnostic samples into South Australia to Affinity Labs as an accredited laboratory for smoke taint analysis, depend on the Phylloxera Management Zone of the sending vineyard and the origin state's quarantine requirements for grapevine material leaving a Phylloxera Control Areas.

Determine your Phylloxera Management Zone: for Victoria here, for New South Wales here, or for Queensland here.

a) If sending berry samples from a vineyard located **in South Australia**:

- *Treatment*: freezing of grape berries prior to sending is suggested if time between sample collection and arrival is likely to be more than three days; else keep samples cool.
- *Packaging and labelling*: Securely package berry samples. Label each sample bag clearly with adhesive labels, stating business name, business address, variety and block details. Label outer package with an adhesive labels stating business name and address.
- *Documentation*:
  - Affinity Labs Chain of custody form is NOT required.
  - If the sending vineyard is located inside a Fruit Fly Affected Area, place a copy of the fruit fly biosecurity certificate inside an addressed envelope and securely tape to the outside of the package.
- *Sending*: if not transporting in person, send via an overnight courier on a Monday or Tuesday.

b) If sending berry samples from a vineyard located in a **Phylloxera Exclusion Zone (PEZ)** outside South Australia:

- *Treatment*: freezing of grape berries prior to sending is preferred, but not a quarantine requirement.
- *Packaging and labelling*: Samples must be 'triple bagged'. Securely package berry samples from a vineyard block or area in a double ziploc or sealed bag. Label each sample bag clearly with adhesive labels, stating business name, business address, variety and block details. Place all sample bags from the vineyard inside a cooler box (or similar hard structure) with an ice pack, and securely seal. Label outer package with an adhesive label stating business name and address.
- *Documentation*: Complete the Affinity Labs Plant Material Movement and Declaration Form (for PEZ samples). Place inside an addressed envelope and securely tape to the outside of the package.
- *Sending*: send package via an overnight courier on a Monday or Tuesday.

c) If sending berry samples from a vineyard located in a **Phylloxera Infested Zone (PIZ), Phylloxera Risk Zone (PRZ) or Phylloxera Interim Buffer Zone (PIBZ)** outside South Australia:

- *Quarantine treatment*: berries must be frozen at -18°C or lower for a minimum of 24 hours prior to transport.
- *Packaging and labelling*: Samples must be 'triple bagged'. Securely package berry samples from a vineyard block or area in a double ziploc or sealed bag. Label each sample bag clearly with adhesive labels, stating business name, business address, variety and block details. Place all sample bags from the vineyard inside a cooler box (or similar hard structure) with an ice pack, and securely seal. Label outer package with an adhesive label stating business name and address.
- *Documentation*:
  - As Affinity labs is CA-12 accredited, you will only need to complete the Affinity Labs Plant Material Movement and Declaration Form (for PRZ, PIZ, PIBZ).
  - Place the completed Plant Material Movement and Declaration Form inside an addressed envelope and securely tape to the outside of the package.
- *Sending*: send package via an overnight courier on a Monday or Tuesday.

Note: Quarantine requirements vary between states. The sender is responsible for ensuring all biosecurity requirements are met when sending grapevine diagnostic samples out of a Phylloxera Control Area in their state. This may include needing to advise the sending state of the movement.

Interpretation

It is very important to identify the grape variety in the sample submission, because interpretation of the analytical results will vary based on variety.

Sample log

It is recommended that senders retain a list of samples dispatched, and a copy of documentation supplied, until all samples are accounted for and diagnostic testing has been completed.

Sample coordination

In the case of a major regional smoke event, it is often more efficient to have a coordinated drop-off point for a region's samples to consolidate transport. Contact Affinity Labs on (08) 8313 0444 to discuss options for coordinated sample collection.

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Contact

For further information, please contact the AWRI helpdesk team.

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

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

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