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Vintage 2019 – observations from the AWRI helpdesk

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The AWRI helpdesk responds to technical issues encountered by Australian grapegrowers and winemakers, identifies the root causes of problems and provides research-based, practical, up-to-date solutions. Monitoring the technical trends encountered across the nation's wine regions over the growing season is a useful way to identify when information or assistance is required, at either a regional or national level. Support is then provided via eBulletins, the AWRI website, webinars or face-to-face extension events. This article examines some of the conditions experienced across the nation during vintage 2019 and the growing season leading up to it, and some of the technical challenges encountered.

IDENTIFYING KEY TECHNICAL ISSUES

The AWRI helpdesk provides confidential advice and support to Australian grapegrowers and winemakers and is in a unique position to track the technical issues that emerge each vintage. During vintage 2019 (between 1 January and 1 May) the helpdesk received more than 600 enquiries (Figure 1, see page 28) and conducted 72 small-scale investigations to identify root cause of technical issues.

PRE-VINTAGE

Climate and sustainability queries were received about the dry winter and drought conditions that occurred during the growing season, particularly across the eastern states. The general trend experienced by most growing areas was a dry winter followed by a hot summer. Clear spring nights

resulted in some regions experiencing severe frosts, with yield being further reduced in some cases by strong wind and hail. Information prepared following the 2017 harvest frosts was distributed to growers affected by frost. Tropical thunderstorms in October and November across the eastern states increased agrochemical queries about disease, particularly downy mildew, and efforts to shore up chemical controls were put in place. A webinar was held in November to address disease concerns. The predominantly hot and dry summer conditions then removed most of the disease threat and reduced canopy vigour. The storms experienced were not sufficient to alleviate drought conditions and replenish water supplies. Some vineyards reported yield loss and rapid fruit maturity due to extreme hot weather events after veraison.

BIOSECURITY RISKS AND ENFORCED TREATMENT OF IMPORTED BARRELS AND GLASS

Biosecurity queries about the possible importation of Brown Marmorated Stink Bug (BMSB) were received from growers throughout the season. Additional queries came from wineries and organic regulators concerned about the implications of fumigation and heat treatments imposed on shipments of oak barrels and glass bottles as one of the biosecurity measures to prevent a BMSB incursion. The AWRI prepared and disseminated information on alleviating any potential risks from treated winemaking products. Discussions were also held with the Organic Industry Standards and Certification Council regarding labelling of organic wines made using barrels, corks or bottles that had been fumigated. ▶

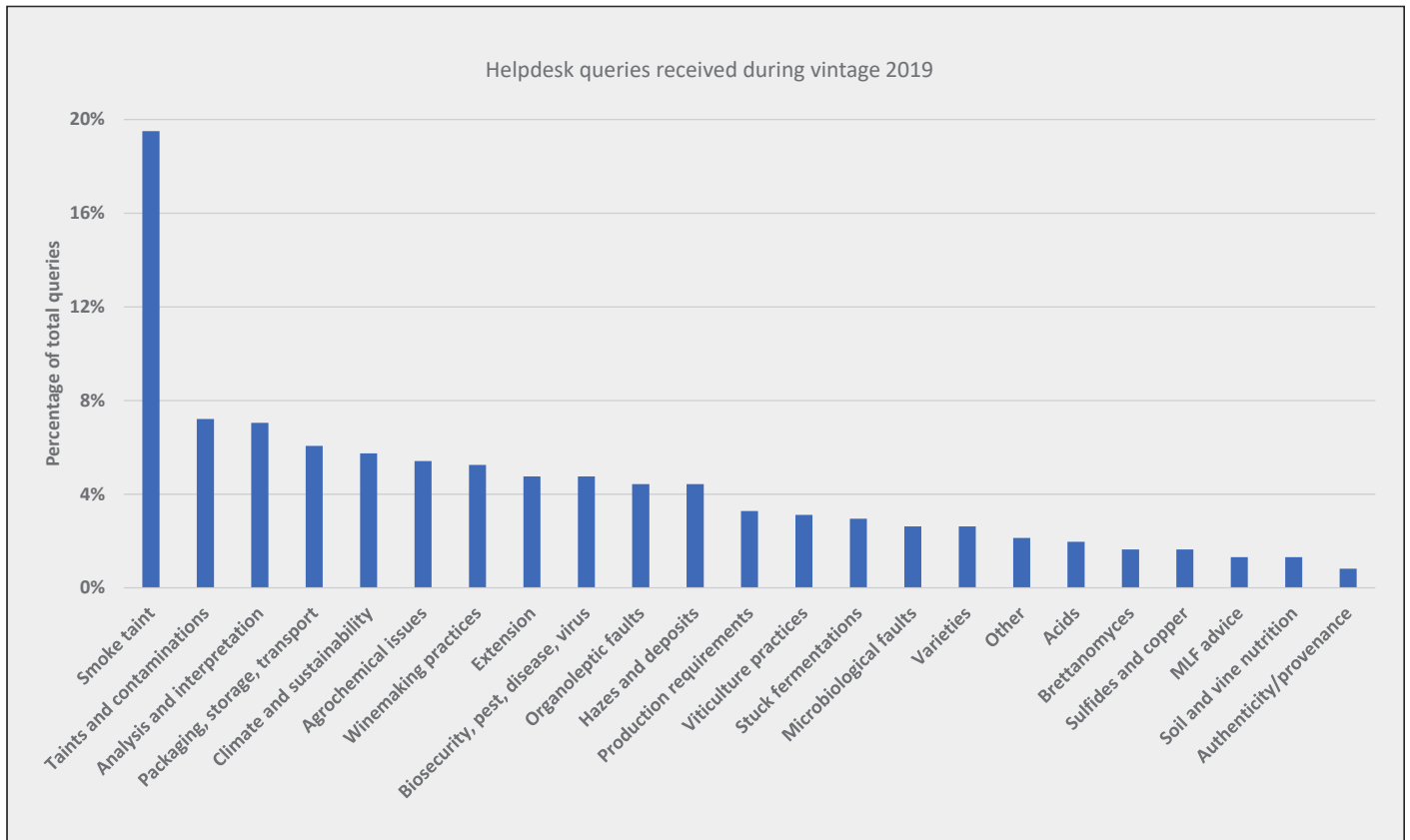


Figure 1. Queries received by the AWRI helpdesk during vintage 2019 (1 January to 1 May 2019), classified by frequently used keywords. Query numbers are represented as a percentage of total national queries.

INCREASED AWARENESS OF VINEYARD VIRUSES

A number of vineyards indicated that they had encountered grapevine viruses, particularly leafroll virus, in young vineyards during the season. A panel-style webinar on viruses was presented to more than 70 growers. In February 2019, the AWRI hosted an industry reference group discussion about an apparent increase in the incidence of scale and mealybug in conjunction with virus symptoms being observed in vineyards around Australia.

BUSHFIRES

The largest number of queries received this season were on smoke taint. Bushfire events occurred across four states from January to March. The helpdesk team worked with regional associations in affected areas, coordinating smoke taint Q&A events and setting up a centralised submission process that allowed producers to easily submit samples for smoke taint analysis. Updated smoke taint fact sheets were provided to all affected regions. The helpdesk received more than 100 queries relating to smoke taint

and interpreted around 200 smoke taint analytical results for stakeholders.

HEATWAVES AND VINTAGE COMPRESSION IN THE EAST, COOLER CONDITIONS IN THE WEST

Following the warmest December and January on record, including several heatwaves throughout January and February in South Eastern Australia, there was initially a delay in ripening, followed by rapid fruit maturation, high Baumé fruit and a compressed harvest. In many regions it was possible to mitigate the effects of heat and dryness through good canopy management and irrigation, and the dry conditions also reduced disease pressure. Lower yields were also offset by excellent wine colour and flavour in many cases.

Growers asked questions about sunscreen use during heatwave events. There were nearly three times the average number of hydraulic oil contaminations during the vintage period, likely due to the compressed vintage putting strain on harvesting equipment, leaving little time for maintenance. Several wineries noted higher than normal acetic acid levels

in white fermentations, but with no impact on fermentation performance or reduction in wine quality. High grape nutrient levels seen early in the season may help to explain why stuck fermentations were not a major problem this season compared to other heatwave-affected years. In addition, lower yields meant winemakers may have had more tank space available than in other compressed seasons, helping to ease logistical pressures. Many producers had queries about analysis interpretation, particularly regarding large disparities between initial Baumé readings and final alcohol concentrations. These were possibly caused by small berry sizes from the dry season causing inaccurate grape sugar readings, with additional sugar residing in the grape skins.

In contrast to the eastern states, Western Australia experienced an unseasonably cool spring that affected flowering, followed by cool, wet, maritime summer conditions, resulting in a delayed harvest. The helpdesk thus received queries about the impacts of botrytis in some WA vineyards.

WATER ADDITIONS

Both vineyards and wineries faced water limitations during the season due to the extended drought conditions across South Eastern Australia. Limited water availability prevented use of irrigation to manage heatwaves in some vineyards and rising salinity levels in some water catchments reportedly increased soil salinity via irrigation. An increase in helpdesk queries categorised under 'winemaking practices' was due to wineries seeking information on the use of alternative water sources such as ground, bore or mains water, or having to ship in rainwater via tankers to refill empty tanks, for water addition to dilute high Baumé musts. Methods on how to add water, and how to remove chlorines from water before addition to musts, were commonly requested during the vintage. The AWRI website water addition calculator was used 1,345 times.

MOST UNUSUAL QUERY

Each year the AWRI helpdesk answers queries on a range of topics and occasionally strange requests do pop up. The strangest one in the past year was from a winery that had a customer complaint sample returned to the winery, where the winemakers believed the wine had been substituted for soy sauce. Analysis was requested to prove that the material was in fact soy sauce and to provide a statement to the effect that wine cannot chemically change into soy sauce. Who would have thought?

LOOKING TOWARDS VINTAGE 2020

A positive Indian Ocean Dipole is likely to form in spring 2019 (BOM Climate Outlook August-October 2019). This typically favours drier conditions throughout Australia and thus a likely continuation of drought conditions in the eastern states. The situation is becoming very serious in some areas, with towns in several wine regions facing the situation of running out of drinking water by spring if sufficient rainfall does not occur. Current stream flows, water restrictions and expected future water allocations were discussed in a webinar in May 2019. Drier and warmer daytime conditions and cloud-free nights may also increase the risk of frost events in the spring for the start of the 2019-20 season. If conditions are similar to those of spring 2018, which had a negative impact on flowering and the formation of the next year's buds, this might forecast a lower yield for vintage 2020.

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AT A GLANCE

- Winter and spring were dry across many regions with some areas affected by frost, hail or windy conditions – all of which had an impact on flowering/fruit set and reduced yield.
- The hottest December and January on record included several heatwaves across South Eastern Australia, initially causing vine shutdown followed by rapid ripening, resulting in high Baumé fruit.
- The hot summer followed a slower start to the growing season which led to a compressed vintage in many regions.
- Drought conditions affected the availability of water needed to manage hot weather for some producers.
- Bushfires occurred across several winegrowing regions.
- In many regions the effects of heat and dryness were mitigated by good canopy management and irrigation, with the dry conditions also reducing disease pressure.
- Lower yields were in many cases offset by exceptional colour and flavour in the resulting wines.
- Notwithstanding the challenges encountered in some regions, overall yields were just one per cent below the ten-year Australian average (Wine Australia 2019).

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