

Vintage 2018 – observations from the AWRI helpdesk

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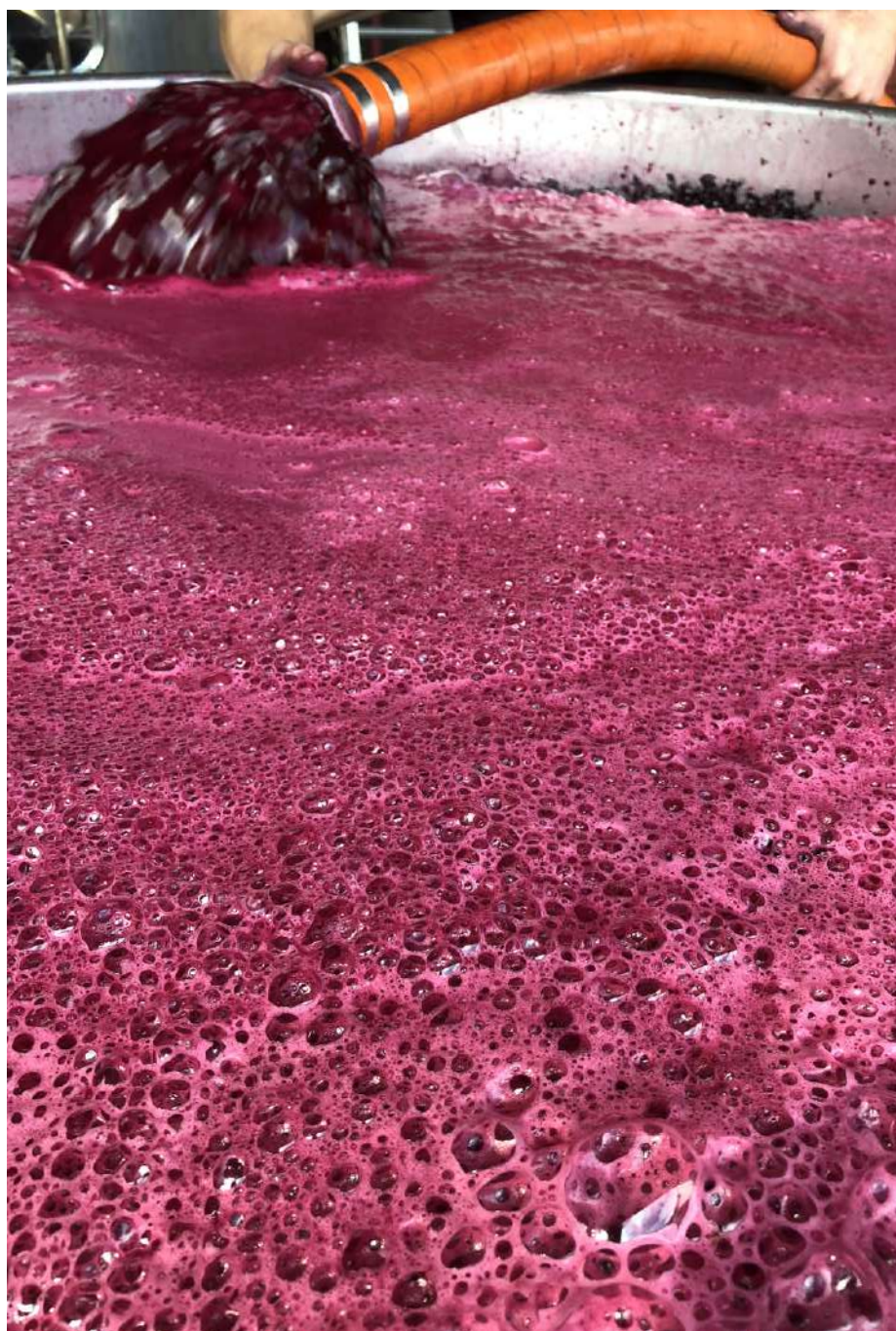
The AWRI helpdesk responds to queries, conducts investigations and monitors technical trends across the nation's wine regions, disseminating information via eBulletins, the AWRI website, webinars and face-to-face extension events. This article examines the conditions experienced by growers and winemakers during vintage 2018 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 understand the technical issues that emerge each vintage. During vintage 2018 (between 1 January and 1 May) the helpdesk received more than 658 enquiries (Figure 1, page 40) and conducted 69 small-scale investigations. Although query numbers were consistent with recent (five year) averages, the number of queries received during the 2018 vintage was more than 30% higher than the previous year, and 30% more investigations were conducted during the same period. The most frequent topics of interest in 2017 were agrochemicals, production requirements and sensory issues, whereas in 2018 they were smoke, agrochemicals and taints and contaminations.

PRE-VINTAGE - IN THE VINEYARD

The 2017-18 vintage was generally trouble-free in the vineyard; however, some localised challenges resulted in queries to the AWRI helpdesk. The first was a major frost which hit in the south-east of South Australia and the west of Victoria in late spring. The timing of the frost was particularly damaging because it occurred when the shoots on vines were long and inflorescences were well developed. A frost at this phenological stage can cause major yield reductions, without the opportunity for secondary buds to burst and replace the lost fruit. Affected growers needed to manage a variable canopy throughout the season, and even if some of the crop survived the frost there was a risk it could be contaminated with unripe secondary bunches. Hail affected some vineyards around Canberra in January 2018. ▶



The AWRI helpdesk took a number of queries this vintage about pH and acid additions, with some winemakers reporting that pHs did not shift to the degree they expected (or even the direction they expected) post-fermentation. Photo courtesy Forest Hill Wines

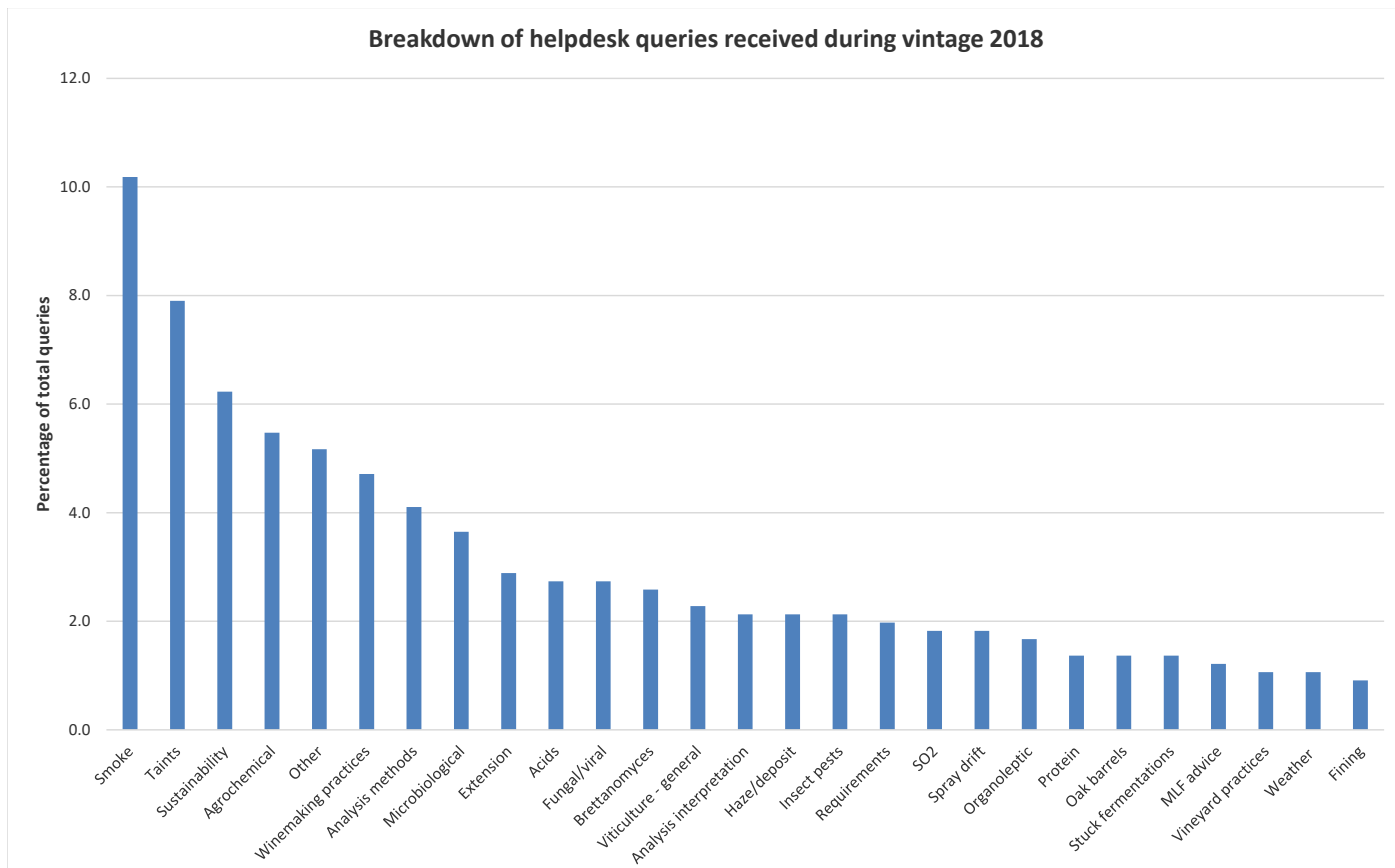


Figure 1. Queries received by the AWRI helpdesk during vintage 2018 (1 January to 1 May 2018), broken down by frequently used keywords. Query numbers are represented as a percentage of total national queries.

Advice was provided on how to assess the hail damage so that more informed decisions could be made on managing the fruit through to harvest.

While the conditions in most regions were not favourable to disease, parts of the Yarra Valley experienced very high downy mildew pressure through to December. Persistent rainfall made it difficult to apply sprays and for the sprays to stay on vines long enough to be effective. Disease symptoms were found on leaves in these areas and yields were affected where inflorescences were infected at a few sites. Fortunately, dryer conditions in the New Year meant that fruit ripened well in most places without further issues.

REGULATORY CHANGES FOR AGROCHEMICAL USAGE

Questions about the use of iprodione were relatively common as growers and wineries sought clarification on the regulatory changes occurring in the EU. The AWRI issued an agrochemical update about this product, no longer recommending it for use on fruit destined for export wine to the EU and referring growers to consult the 'Dog book' for

alternative control options. The helpdesk also received a higher than average number of calls about leaf damage from suspected herbicide drift. This prompted an *eBulletin* about reporting spray drift, with growers and winemakers also encouraged to contact the helpdesk for advice about residue testing.

BUSHFIRES AND PLANNED BURNS

The dry and hot summer in some regions saw fire ban seasons extended and risks of bushfires (and, therefore, smoke taint) increase. Fires were experienced in parts of New South Wales, Victoria, Tasmania and Western Australia. One bushfire on the edge of one NSW wine region occurred just a few weeks before harvest, when grapes were at high risk of becoming tainted by smoke. Another region in NSW experienced smoke drift from a distant fire during the same period. Rapid technical support was provided in the form of face-to-face Q&A sessions in the affected regions. Both forums were attended by a large number of growers and winemakers, with their questions and concerns addressed

and guidance provided on how to best sample for analysis. These interactions also allowed the AWRI to collect further information on industry experience of smoke events, and to source samples for its current research project on smoke taint, which is investigating ways to remediate smoke-tainted juices and wines. During the weeks following the fires, grape samples were submitted for analysis, with many of the samples analysed having results consistent with background levels. This enabled fruit to be harvested and for vintage to proceed as normal. Three vineyards located close to the fire front had smoke-affected fruit and did not harvest.

The AWRI is also continuing to work closely with public land management agencies and regional grape and wine associations on the issue of planned burns and their potential to cause smoke taint. This interaction is helping to ensure that communication lines remain open and that all parties stay aware of the scheduling of prescribed burns. Meetings were held with relevant authorities in Victoria and South Australia

to discuss the timing of planned burns in relation to harvest. The AWRI has also recently developed a fact sheet for grain farmers on the implications of burning stubble, which has the potential to result in smoke taint if conducted while grapes are still on vines.

TAINTS AND CONTAMINATIONS

Each vintage, the AWRI helpdesk provides both technical support and procedural advice to wineries that have experienced a taint or contamination during production. This year, 12 investigations were conducted on taint and contamination issues. Examples included wines affected by 'musty' or 'earthy' characters from barrels, water addition and winery additives; chlorophenol taints; and metal contaminations from winery equipment. In most cases the chance of remediation from taints and contaminations is low, and the loss of product and financial impact high. Nearly a decade ago the AWRI developed a workshop entitled *The avoidance of taints and chemical instabilities* to provide guidance on how to avoid such problems. Although this workshop was some time ago, the material remains relevant today and is available on the AWRI website. Wine companies or regional associations can also request a presentation on this topic if interested.

ACID AND PH

The helpdesk took a number of queries this vintage about pH and acid additions, with some winemakers reporting that pHs did not shift to the degree they expected (or even the direction they expected) post-fermentation. In some cases, both the titratable acidity (TA) and the pH were high post-fermentation, even after acid additions were performed early in the ferment, leaving little room for further additions to reduce the pH. Investigations into these ferments indicated that potassium levels were high and, in some cases, were almost double the 'typical' level of approximately 900mg/L (Godden and Muhlack 2010). Potassium accumulation in grape berries depends on conditions

in the vineyard. In areas where dry conditions were combined with low fruit crops and high vigour, it appears that potassium uptake from soils led to higher than usual concentrations of potassium in fruit. When this occurs, the excess potassium leaches from grape skins during fermentation and reacts with bitartrate to precipitate out potassium hydrogen tartrate (KHT). As acid is added, the bitartrate continues to react with the excess potassium and continues to form KHT, with the resultant pH shift being much less than expected. Advice to winemakers will depend on their exact scenario; however, it is always advisable to add acid at the juice stage to reduce pH as soon as possible and to monitor pH and TA during fermentation, as a pH/acid imbalance after fermentation can be difficult to rectify.

MOST UNUSUAL QUERY FOR VINTAGE 2018

A somewhat unusual query received by the helpdesk this vintage related to fruit fly. Tasmanian growers had to deal with a quarantine issue after Queensland fruit fly was detected in some wine regions. This disrupted the movement of fruit within the state and prompted queries about the capacity of fruit fly larvae to survive the crushing of grapes and the disposal of marc. After consultation with the relevant Department of Primary Industries in Victoria, it was advised that Queensland fruit fly will not survive crushing and fermentation and, therefore, would also not survive in marc. No other major outbreaks of insect pests were reported during vintage 2018.

LOOKING TOWARD VINTAGE 2019

Following vintage 2018, warm weather continued across Australia and post-harvest irrigation has been needed in many regions due to a dry start to the year. Above average temperatures continued through autumn and early winter. As the year progresses, further climate and water outlooks will be posted online by the Bureau of Meteorology and these are recommended viewing to help with planning for the upcoming season.

AT A GLANCE

- The start of the growing season was drier than 2017, but late rain during flowering saw yields affected in some regions. NSW was drier this year whereas Western Australia experienced soaking December rains and then a cooler summer.
- Where there was good soil moisture, strong canopy growth and dense foliage occurred.
- The timing of vintage was around three to four weeks earlier than 2017 in many regions.
- Late spring frosts caused considerable damage in the south-east of South Australia and the west of Victoria.
- High potassium levels and increasing pH during red fermentations were observed by some winemakers.
- A number of states experienced bushfires, but only minor levels of smoke taint were seen.
- In many regions grape and wine quality is considered equal to the best in many years.

As always, if any trends or issues are identified these will be communicated quickly by the helpdesk to Australian growers and winemakers.

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