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# Technical notes

## Wine technical quality sensory assessment at the AWRI

The AWRI exists to support the Australian wine industry. One important aspect of the AWRI's work is to assist producers to increase their wine quality and avoid faults or taints. The AWRI's sensory panels can contribute to this by providing useful data on the sensory properties of wines. Different panels are suited for different sensory tasks. While sometimes it is appropriate to produce detailed sensory profiles of wines using descriptive analysis, or to conduct rigorous difference testing to determine if two wines are distinguishable, there is also a place for more rapid and somewhat less formal sensory assessments.

That's where the AWRI's technical quality sensory panel steps in. Made up of experienced judges from AWRI staff, this panel conducts regular assessments of wines under controlled conditions. Panellists are asked to provide detailed tasting notes on appearance, aroma and palate, a quality score using the standard 20-point scale, and a rating of intensity of any off-aroma or flavour, if present, on a scale of 0 to 9. They can also be asked to rate the degree of any off-flavour alone, without a quality score or any comments, for example when assessing variations in multiple bottles of the same wine caused by closures or other conditions.

### The judges

Currently, the panel is made up of 14 AWRI staff. Panel members are selected on the basis of having participated successfully in numerous previous sensory studies; performance in the Advanced Wine Assessment Course; and demonstrated wide technical knowledge of wine styles and of faults. Many have wine production experience, wine show judging experience and/or oenology qualifications. The selection criteria are as spelled out in the International Standard ISO 8586-2. All have been trained in identification and recognition of key wine characteristics, especially off-flavours and taints, and have a good understanding of appropriate sensory descriptors. Long-term sensory memory and good consistency of judgements both within a session and between sessions are also important in the selection of judges for the panel. Some of the judges are in the provisional stage of their involvement, with their performance being reviewed until they become full members of the panel.

The panel is used for several types of investigations:

- research studies – often conducting preliminary screens of wines before more formal sensory analysis is conducted by another panel
- investigations conducted by the AWRI's helpdesk team, solving problems for industry
- commercial investigations.

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Many of the samples presented to the panel are wines with suspected off-flavours.

The judges always taste under blind conditions, with the glasses coded and only the vintage and variety/style of the wine provided. Samples are presented in random order with a general maximum of eight wines presented per session to reduce fatigue and sensory adaptation; although on occasions up to ten may be presented. Assessments are carried out in the AWRI sensory booths under controlled lighting, positive air pressure and constant temperature, with no communication between judges during the session. Judges are asked to refrain from eating or drinking anything except water for half an hour before panel sessions, and to avoid using perfume, aftershave, and fragranced soaps or hand lotions.

### **Scoring**

To ensure the reliability of the panel, judge performance is continually monitored to check consistency and to compare assessments with the other judges. In addition to the test wines, commercially available wines of different varieties, styles and quality levels are presented blind on a repeated basis both within a session and across different sessions, together with wines with known faults or with additions of taint compounds. The regular inclusion of control wines helps alleviate any possibility of judges assuming that off-flavours are likely to be present in any given wine.

Feedback is given to the judges so they can reflect on how their comments and scores agree with other panellists' judgements and can work to adjust responses where possible in the future. Variation is, of course, expected across the panel, as some individuals are relatively insensitive to some specific taint compounds, for example 'mousy' flavour, chlorophenols ('plastic', 'chlorine-like') or the 'earthy' fungal-related compound geosmin. Every taster will have some strengths and some weaknesses with regard to sensitivity to specific taints and faults. As with other sensory tests, it is the panel response that is important, not an individual on a given day.

There are regular meetings of the panel to discuss issues with scoring or particular styles and varieties. Over time, the panel has developed a well-aligned concept of quality and a standard approach to scoring. Because members of the panel are involved in the Advanced Wine Assessment Course, as well as in wine shows and wine magazine tastings, there is a good connection between the views of the panel and that of the wider industry.

It should be noted that the panel will not provide a statement that a wine might be of suitable quality for a specific purpose or price point, as is sometimes requested as part of a dispute.

The panel uses a set of guidelines for scoring which is shown in Table 1. The designations and definitions were adapted, in consultation with panellists, from those in a recently published textbook (Leske et al. 2013).

The panel members have agreed that the following faults or taints are unacceptable at any level: trichloroanisole, chlorophenol, indole, 'mousy', and fungal must, while oxidation, 'Brett', sulfide, and volatile acidity can be tolerable at low levels, depending on wine style. A score of 12 is the lowest score given to an unacceptable wine. Excessive tannins, acidity, oak, levels of carbon dioxide, astringency, bitterness or hotness are noted in comments on the wine, and will affect the wine's overall score, but are not rated as taints or faults. Their presence could still potentially result in a score of 12 if at high enough levels to make a wine unacceptable. Only full and half point scores between 12 and 20 points are given.

### A useful resource

An expert panel providing quality scores and free choice comments provides an inexpensive and rapid way of generating practical information on wines that can be used to make decisions. It is particularly useful for clients of the AWRI's helpdesk service, where sensory assessment is often the key first step in determining the nature of a problem.

**Table 1.** The 20-point quality system as applied by the AWRI technical quality panel. Note the points are as given by an individual rather than an average of the panel. Adapted from Leske et al. (2013).

Points awarded	Medal	Quality designation	Comments
20.0 19.5 19.0 18.5	Gold	Outstanding, exceptional	Meeting all requirements and expectations of a wine of the particular style: clear varietal or style definition, complexity, intensity, balance and persistence. Free from taints and faults.
18.0 17.5 17.0	Silver	Excellent	A very good wine, that doesn't quite meet the standard required for a gold medal, but with more distinctiveness, complexity, intensity and balance than a bronze medal wine. Free from taints and faults.
16.5 16.0 15.5	Bronze	Good	A wine with a degree of distinctiveness, complexity, intensity and balance, free from major taints or faults.
15.0 14.5 14.0	None	Sound	A sound wine, free of major faults or defects, but lacking a degree of distinctiveness. Simple and not to be 'rewarded'.
13.5 13.0 12.5	None	Marginal	Simple or low intensity flavours; minor to more pronounced defects. Lacking balance, freshness or varietal characteristics.
12.0	None	Not commercially acceptable	Obvious, dominating defects or having a specific unacceptable taint at <u>any</u> level.

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With the protocols in place at the AWRI, the quality panel gives an independent, impartial judgement of the characteristics of a wine, contributing in many situations to help producers continue to increase the quality of Australian wine.

### **Reference**

Leske, P., Francis, I.L., Hunt, D. 2013. Sensory evaluation. Bulleid, N., Jiranek, V. (eds.) *Australian winemaking*. Tanunda, SA: Trivinum Press (<http://trivinum.com.au/awm/sen>).

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