

## Serving temperature



Dr. Carien Coetzee

[Basic Wine](#)

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Convention typically dictates that wines be served at a specific temperature in order to experience the wine at its best. Theoretically, **temperature affects the volatility of flavour compounds** (thus a higher serving temperature would enhance the release of aroma compounds from the wine) with the exact effects depending on the chemical nature of the compound. This increased (or decreased) volatility would then have an **impact in the intensity of the attributes perceived by the taster**.

White wines are typically served at cooler temperatures (8-12°C), while red wines are presented at room temperature or slightly cooler. While the effect of temperature has been accepted by the wine world, very little scientific research has been conducted to back this up.

This blog post will look at the main results reported from a study<sup>1</sup> where wines were

- 1) chemically adjusted to investigate taste interactions
- 2) **served at different temperatures** to investigate the perception of certain attributes

## Materials and methods

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A Californian white wine was subjected to various treatments before being presented to a trained sensory panel for evaluation.

### 1) Taste interactions

This part of the study assessed a wine that was manipulated for the basic tastes and/or mouth sensations; the scientists added known concentrations of tastants (sucrose and/or citric acid) to emulate the targeted sensory attributes (**sweetness and acidity**):

	sucrose	citric acid
control		
wine + acid		2 g/L
wine + sucrose	25 g/L	
wine + acid + sucrose	25 g/L	2 g/L

### 2) Serving temperature

The manipulated wines were presented to a trained sensory panel at three different serving temperatures:

- 4°C
- 10°C
- 18°C

3) The **sensory panel** was instructed to rate the wines on a 15 point line scale according to

- **aroma intensity**
- **sweetness**
- **acidity**

Panellists were instructed to hold the glasses at the stem to not impact the wine's temperature and to prevent bias.

## Results

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### 1) Taste interactions

- **Aroma perception - No significant differences** were reported between the chemically adjusted wines in terms of aroma intensity.
- **Sweetness** – The chemically adjusted wines **differed significantly according to the perceived sweetness**. This corresponded with the sugar added. There was no significant difference between the two samples to which sucrose was added (irrespective of the addition of citric acid).

wine + acid	<	control	<	wine + sucrose	wine + acid + sucrose
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- **Acidity** - The chemically adjusted wines **differed significantly according to the perceived acidity**. In this case, the addition of citric acid alone resulted in a higher acidity rating, however, the addition of citric acid as well as sucrose resulted in a lower acidity rating compared to the control (which did not receive any acid additions). It seems that the perceived **sweetness suppressed the perceived acidity**. Interestingly, the same phenomenon was not observed with perceived sweetness.

wine + sucrose	<	wine + acid + sucrose	<	control	<	wine + acid
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### 2) Serving temperature

- **Aroma perception** – **The temperature at which the wines were served affected the perceived aromatic intensity**. The aroma intensity was reported as being significantly different at all three serving temperatures for the wines. The coldest wine (4°C) was reported

as having the lowest perceived aroma rating, while the wine served at 18°C had the highest perceived aroma rating.



- **Sweetness** – The serving temperature of the wine **did not significantly impact the perceived sweetness.**
- **Acidity** – The serving temperature of the wine **did not significantly impact the perceived acidity.**

The results from this study showed that the effect of **temperature was noticeable only on the perceived aroma intensity**: the warmer the sample, the more intense the aroma was perceived. Again, the **perception of sweetness and acidity were not affected by the serving temperature**. The same effects were seen when similar experiments were done on red wines<sup>1</sup>. The serving temperature of a red wine had a significant effect on the aroma intensity with a lower intensity perceived at 4°C compared to 23 °C. No differences in perceived astringency or bitterness were observed at the different serving temperatures. Based on the results from the study it seems that the serving temperature had a larger effect on the white wine when compared to the red wine.

## Conclusion

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Serving temperature is one of the critical elements in appreciating a wine, and just as fine wines can be totally ruined by use of the wrong glasses serving wine at the wrong temperature can influence the experience. Bad wines can become almost palatable when served ice cold, while if you serve a fine Sauvignon Blanc too cold, you might miss what the wine has to offer.

## Recommendations

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The ideal temperature at which to serve Sauvignon Blanc will depend on the **exact wine style**. As a rough guide, [Jancis Robinson](#)<sup>2</sup> recommends the following serving temperatures according to the wine style to be served:

Wine style	Ideal serving temperature °C
Light, sweet, whites	5-10
Sparkling whites	6-10
Light (aromatic) dry whites	8-12
Sparkling reds	10-12
Medium bodied, dry whites	10-12
Full sweet whites	8-12
Light reds	10-12
Full dry whites	12-16
Medium reds	14-17
Full or tannic reds	15-18

<https://www.jancisrobinson.com/learn/drinking-wine/how-to-serve-wine>

The idea is to serve the wine at the most “flattering” temperature. According to the above table, serving a Sauvignon Blanc at 10°C might be the safest option to encompass all styles. While you do not have to get the temperature accurate within a fraction of a degree, **it is worth paying attention to**. In general, it is easier to warm a wine up in the glass than it is to cool it down again, so err on the side of too cool. But ultimately the wine temperature should be based on the **personal preference** of the consumer.

## References

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- (1) ROSS, C. F.; WELLER, K. EFFECT OF SERVING TEMPERATURE ON THE SENSORY ATTRIBUTES OF RED AND WHITE WINES. *Journal of Sensory Studies* **2008**, 23 (3), 398–416. <https://doi.org/10.1111/j.1745-459X.2008.00162.x>.
- (2) Robinson, J. How to serve wine <https://www.jancisrobinson.com/learn/drinking-wine/how-to-serve-wine>.