Taking the Temperature of a Lemberger

When it comes to pinpointing the perfect serving temperature for wine, Washington State University scientists are getting warmer.

Showcase your wines by serving them at temperatures that optimize mouthfeel, flavors, and aromas.

While it's often been said white wines are best served chilled and red wines near room temperature, sensory analyst Carolyn Ross is de-mystifying such anecdotes using a relatively new technique called napping. Napping, which comes from the French word for tablecloth (*nappe*), allows panelists to group their wines by similar traits on a placemat and then write down the attributes they used to choose the groups directly on their "nappes."

"Panelists use their own language to cluster the wines and then we decode it," Ross said. "The method requires some interpretation and is complicated for data analysis, but it can really help us understand how attributes change with temperature…while allowing panelists to use their own sensory language."

In the study, twelve panelists tasted six different Washington State Lemberger wines at three temperatures: 50°F, 60.8°F, and 71.6°F. Physical chemistry predicts that the release of volatile components from a sample increase as temperature rises. This helps explain why, overall, panelists used flavor and aroma terms more frequently with higher serving temperatures than with lower serving temperatures.

"Researchers have shown that many products, when served cold, give off fewer aromas than warm ones," Ross said. "That's true of wine and other foods."

Decoding the nappes

According to the study, Lemberger served at 50°F and 60.8°F left panelists with impressions of a wine that, compared to the wine served at the higher temperature, was sour, bitter, highly astringent, and low in aroma. The cooler wine samples were also described as smooth and thin in comparison to warmer wine samples, which is consistent with research on viscosity, Ross said.

Wines served at 60.8°F and 71.6°F were more frequently described as having spicy and berry notes than the 50-degree sample and panelists were more likely to use "sweet" to describe wines served at those higher temperatures, Ross said.

Sensing a difference in astringent mouthfeel

Ross found it interesting that panelists also grouped their wines by low and high astringency, actually discerning a difference in the tannin level and the intensity of the dry mouth feel that lingered after sipping a sample.

"Even though we didn't require panelists to use intensities, we kept them qualified in our results because people tended to consistently distinguish between high and low," she said. "That was something we hadn't seen in the previous study."

Ross said this could be a function of the type of wine--in the past they used a Pinot Noir with lower tannin levels to bring out certain flavors. Each wine has its own qualities that can be influenced by temperature, she said.

"This is useful for those in the wine and hospitality industries who have thought this to be the case, but have lacked formal sensory science studies," she said. "These industries can use this information to better showcase their red wines."

Voice of the Vine is a monthly electronic newsletter for the friends and stakeholders of the Washington State University College of Agricultural, Human, and Natural Resource Sciences (CAHNRS), WSU Extension, and the Agricultural Research Center.
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Thanks for reading Voice of the Vine.

-Rachel Webber