



Red Wine Flavor, Texture and Mouthfeel: The Effects of Structuring From Bottle to Glass

Introduction.

The flavor and texture of a wine is determined by a number of factors. Differences between the proportions of each influencing factor will result in one wine having a slight, or significantly different texture from another. This explains why there is variety in the texture of wine, from silky and velvety, to luscious, and full-bodied.

Flavor and texture of red wines is due to tannins. They are derived from polyphenols released from the skins, seeds and stems of the fruit, and from the oak barrel that aged the wine. Red grape varieties have different levels and quality of tannin, which depend on the thickness of the skin, harvest conditions and ripeness. The astringency and structure of the wine is also due to tannins.

Flavor and texture of white wines is also derived from acid. Different varieties have different textural effects from acid. A Chardonnay may have a rounded mouthfeel as apposed to the sharp mouth feel of a Sauvignon Blanc. Warmer temperatures during growing seasons, reduces acidity in the grapes. Early harvest helps to retain acidity.

Winemakers can use tannins, maceration times, and solids leftover from crush, like grape skins, stems and seeds, to build mouthfeel. White wines fermented and aged on the skins, allows the winemaker to shape the tannin texture, as well as color and flavor. The use of oak, clay or stainless steel to age, and the options to fine or filter have an impact on texture. Allowing a wine to remain on its yeast, or lees, during aging, shapes the texture profile adding a creamy richness to the wine.

This sensory analysis explores the changes in the integrating factors of four familiar national brands of wines, when a method of structuring is applied. The wine is analyzed first from bottle to glass, from the winery as a control. The second part of the analysis includes pouring the wine from the bottle through a handheld funnel comprised of a bio-organizing, tuned resonant flow form with a double vortex action, into a glass.

The unit being used in this sensory analysis is the Natural Action Technologies Portable Unit PU-GY.

The wines are poured from the bottle, through the portable unit, into a beaker, and again from the beaker into the bottle. The third pass is from the bottle through the unit into a tasting glass.

The first analysis of each sample is an eight point, 13 level flavor profile for fruit, dry/chalk, tannin, wood, earthy, toffee/cacao/brown spice, yeasty/bready for red wines, and fruit, dry/chalk, wood, tannin, floral, buttery, earthy, yeast/bready, for white wines.

The second is a 13 point analysis of the texture/mouthfeel of each sample determining harshness to smoothness.

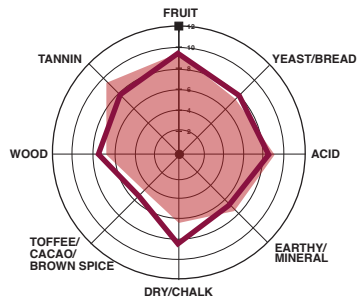


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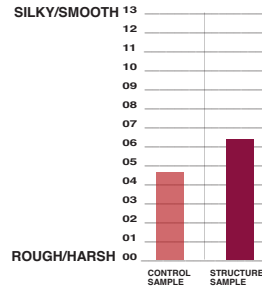
Red Wine Tasting.



FLAVOR PROFILE



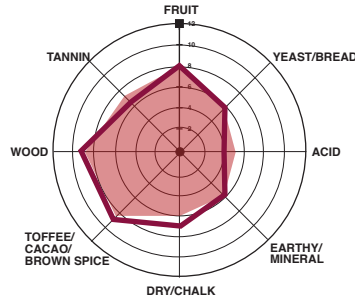
TEXTURE/MOUTHFEEL PROFILE



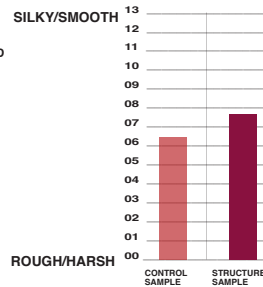
A.
California Red Wine Blend 2019.



FLAVOR PROFILE



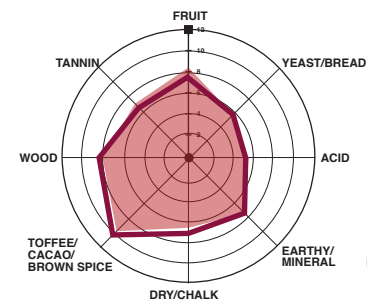
TEXTURE/MOUTHFEEL PROFILE



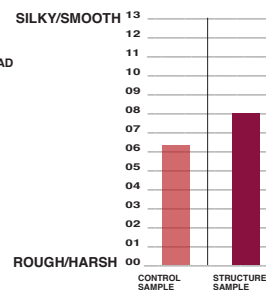
B.
California Red Wine Blend 2018.



FLAVOR PROFILE



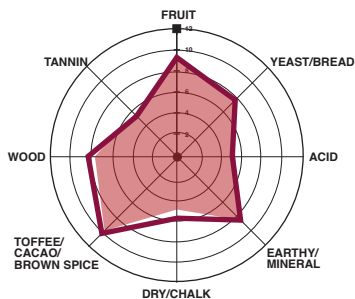
TEXTURE/MOUTHFEEL PROFILE



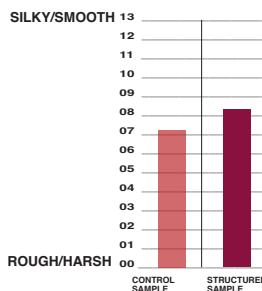
C.
California Red Wine Blend 2018.



FLAVOR PROFILE



TEXTURE/MOUTHFEEL PROFILE



D.
California Red Wine Blend 2019.



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Conclusion.

Throughout the sensory analysis of the four red wines, it had become clear that the method of passing the red wine through the device decidedly improved the texture and mouthfeel of the red wines. Each of the structured samples texture/mouthfeel profile was Improved by an average of 25.3%.

- A. California Red Wine Blend texture/mouthfeel profile improvement. 34.7%
- B. California Red Wine Blend texture/mouthfeel profile improvement. 22.2%
- C. California Red Wine Blend texture/mouthfeel profile improvement. 29.0%.
- D. California Red Wine Blend texture/mouthfeel profile improvement. 15.5%.

The flavor profiles of the four samples were slightly altered also through the integration and organizing action of the device. It is believed that the integration of the water with the alcohol and flavor compounds that improved the texture/mouthfeel profiles, created more balance, rounding out tannins and acidity, possibly accentuating the terroir of the grapes by creating a drier, mineral forward flavor profile. Creating a more enjoyable tasting experience.