

Aroma, Color, Mouthfeel, and Taste Chemistry in Grapes and Wine

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Traditionally, the chemical analyses of grapes and wine have been limited to the determination of sugar, alcohol, and acidity. While important, these measures are unable to fully describe the complexities of grape and wine chemistry. A more comprehensive chemical definition of grape and wine quality centers on four areas: aroma, color, mouthfeel, and taste. A wide variety of compound classes are important to one or more of these categories such as alcohols, esters, ketones, and polyphenols. Modern analytical techniques such as HPLC, GC, and FT-IR have been utilized in the measurement of these species in grapes and wine. These results can be applied in a number of different ways. Analysis of chemical and sensory data provides insight into the underlying chemistry that drives organoleptic impressions. Grape and wine quality metrics can be developed via the identification and tracking of key chemical markers during grape maturation and wine fermentation/aging.