

THE POWER OF SENSORY DESCRIPTIVE ANALYSIS

WINEMAKERS, THROUGH YEARS OF EXPERIENCE, are expert wine tasters each having established tasting skills and standards for their wines. Why would a winemaker need Sensory Descriptive Analysis? Because wine descriptive analysis provides the most quantifiable information defining the intricacies of wine.

WHAT IS IT? Descriptive analysis is a sensory method by which the attributes of a wine or product are identified and quantified, using panelists specifically trained for this purpose. The analysis can include all parameters of the wine, or it can be limited to certain aspects, for example, aroma, taste, texture and aftertaste. Many descriptive analysis methods are currently employed by sensory professionals. Let's examine what these methods have in common and how this powerful technique can be used in the wine industry.

HOW IS DESCRIPTIVE ANALYSIS DONE?

Every wine has a unique sensory "fingerprint." A sensory fingerprint is a detailed analytical data set that precisely identifies and measures all of the perceived sensory attributes of a product. All descriptive analysis methods involve the detection and description of both the qualitative and quantitative sensory aspects by a trained panel of judges. Qualitative aspects of a wine combine to define the wine and include all of the appearance, aroma, flavor and texture properties of a wine which differentiate it from others. In addition, panelists differentiate and rate the quantitative or intensity aspects of a sample and define to what degree each characteristic or qualitative note is present in that sample. Two wines may contain the same qualitative descriptors, but they may differ markedly in the intensity of each, thus resulting in quite different and easily distinctive sensory profiles or "fingerprints" of each product.

WHAT ARE THE APPLICATIONS OF SENSORY DESCRIPTIVE ANALYSIS?

Descriptive analysis is used when detailed information is required on individual characteristics of a wine. Some examples of applications of descriptive analysis would be:

- Determine distinctiveness compared to competitor or icon wines
- Document product sensory changes during ageing
- Identify and quantify sensory characteristics related to vineyard or winemaking treatment
- Track vintage to vintage consistency
- Identify attributes common to specific geographic areas

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In many cases this powerful method provides information that cannot be obtained by other analytical means. For example, analysis of salt content or pH does not indicate how salty or how sour a product may taste to a consumer. Nor is it usually possible to monitor subtle changes in shelf life or packaging stability using analytical instruments. The only effective way to monitor complex changes in oxidation or flavor intensity is by using descriptive analysis methods.

CAN I DO DESCRIPTIVE ANALYSIS MYSELF?

Establishing a trained panel to perform descriptive analysis is important to the end result. Without individuals trained specifically in the recognition of certain characteristics, descriptive analysis cannot be used as an analytical tool. It is up to each individual winery to make the decision whether the training and time investment is worth the expense. The advantages of possessing the knowledge descriptive analysis imparts far out-weighs the disadvantages of cost, however, many wineries feel that it is better to out-source the analysis to a professional sensory lab.

EXAMPLE OF A WINERY WITH A SENSORY EVALUATION PROGRAM

As discussed on October 13, 2004 at the ASTM Committee E18 Seminar on Sensory Evaluation, Foster's Wine Estates (then Beringer Vineyards) initiated a sensory program to evaluate all research experiments using sensory evaluation techniques. Over time, the number of trained panelists increased from 25 to over 300. Routine sensory descriptive analysis of wines developed into strategic sensory research which included input from many departments such as marketing, winemaking, quality assurance, vineyard and new product development. Sensory evaluation is an important tool at Foster's Wine Estates because:

- They recognize that a full service sensory and consumer program is more valuable than a department that merely fulfills test requests.



- They have shown that they can offer the company a competitive edge in the new product phase and in the development of existing product line extensions
- They understand that sensory evaluation is one of the components that can contribute to innovation and it has become a valued component of the marketing and business strategy.

EXPERIENCE THE POWER OF SENSORY DESCRIPTIVE ANALYSIS

Vinquiry maintains a panel of trained professionals and a controlled environment suitable for sensory testing. Our sensory scientist will help to design a program to meet your needs. We'll conduct the test, analyze and interpret the data, and make recommendations so that you can make the best winemaking and business decisions. Vinquiry also offers a standard descriptive analysis test which costs \$150 per wine that will get you started on the right foot.

To get a general idea of how sensory descriptive analysis works, Vinquiry periodically offers complimentary sessions at our Windsor location. Participants will evaluate wines with pre-selected terms using computer generated scorecards. The data will be analyzed and presented in a short time. Please check our website periodically for dates and times of these sessions. They have been extremely popular and tend to fill up rapidly so sign-up early!



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1-STEP A NEW MALOLACTIC BACTERIA PREPARATION

A NEW PROCESS for malolactic bacteria preparation has been developed to make some of the most popular bacteria strains more economical to purchase. The new 1-step process adds an activation step during rehydration to “wake-up” the bacteria before adding it to wine. The benefits of this new process also include better viability in challenging wine conditions (high SO₂, low pH, high alcohol) because the bacteria acclimate to your specific wine before addition to a tank or barrel.

The new package of bacteria includes an activator sachet. The activator is a nutrient blend which stimulates the malolactic bacteria’s metabolism during the rehydration process. The dormant bacteria are added to the activator rich water and, after 20 minutes, become physiologically active. After activation, the bacteria slurry is added to a water/wine mixture and allowed to acclimate for 24 hours, after which the bacteria are now adapted to hold up against challenging wine conditions. The Lallemmand website (www.lallemmand.com) has a great animation to demonstrate this process.

There are many benefits to the 1-step process besides the fact that it is more economically priced and has better viability than the same strains with traditional freeze-dried preparations. 1-step ensures a rapid start to your malolactic fermentation. It avoids a sharp rise in volatile acidity and limits the production of biogenic amines.

The new 1-step process is now available in the popular Enoferm Alpha strain of bacteria along with the Viti-lactic H+ strain for low pH wines.

infowine Internet Journal of
Viticulture and Enology

Infowine.com is an internet journal with a diverse collection of viticulture and enology technical papers. It is an excellent source of research that is being performed around the world. Below is a short description of just one of the many articles that can be found at Infowine.com. To read the entire article go to the Infowine.com website. It is easy and free to register!

The Role of Glutathione on the Aromatic Evolution of Dry White Wine

Denis DUBOURDIEU, Faculté d’Oenologie de Bordeaux
Valérie LAVIGNE-CRUEGE, Seguin-Moreau and
Faculté d’Oenologie de Bordeaux

THE GLUTATHIONE content of Sauvignon Blanc must varies from 0 to 30mg/L and is affected by the vine’s nutrition in terms of nitrogen. Musts with the lowest nitrogen content also contain the least glutathione. At the beginning of alcoholic fermentation, while the yeast cells are multiplying, glutathione disappears almost completely from the must, then increases again at the end of fermentation and during the first few months of ageing on the lees. The presence of reducing lees during barrel-ageing limits the decrease of glutathione and varietal volatile thiols in Sauvignon Blanc wines, while at the same time preventing aroma defects (sotolon and 2-aminoacetophenone) from developing during the ageing of dry white wines. Adding 10mg/L glutathione to Sauvignon Blanc wine during bottling prevents the color from yellowing, dissipation of the varietal aroma, and the wine’s tendency towards developing ageing defects.

AN OVERVIEW OF SO₂

SO₂

IT IS IMPORTANT to monitor Sulfur Dioxide (SO₂) levels in wine throughout the winemaking process. SO₂ is added to must, juice and wine to aid in the prevention of oxidation and microbial spoilage. Due to binding reactions, it is necessary to determine the actual concentration of free and bound SO₂ present in juice or wine after additions.

Both free and bound SO₂ are present in wine. Bound SO₂ occurs when free SO₂ binds to compounds present in juice or wine, such as aldehydes, pyruvic acid, and sugars. Total SO₂ is the sum of free and bound SO₂. The molecular component (the pH dependent portion of free SO₂) is active against microorganisms, however, if you have too much free and bound SO₂, it will inhibit malolactic bacteria during ML fermentation. High concentrations of SO₂ can also cause adverse sensory effects and the bleaching of certain red wine pigments.

There are optimal times in which to sample for SO₂ analysis. The first is after SO₂ additions. It is inaccurate

to determine the actual concentration of free and bound SO₂ present by just calculating the amount of sulfur added. Analysis must be performed because it is difficult to predict how much of the added sulfur will be free and how much will be bound. The second time is after the completion of malolactic fermentation and microbial activity is no longer desired. SO₂ must be tested to discover how much SO₂ is present, so sulfur addition decisions can be made to prevent any remaining microorganisms from flourishing. Lastly, testing before bottling is essential since SO₂ acts as an antioxidant. With good knowledge and management of SO₂, prevention of oxidation and microbial spoilage will be more successful and will help improve the quality of wine.

For more information on SO₂ analysis visit the Analytical portion of www.vinquiry.com. Step-by-step instructions on how to perform analysis are also available by contacting info@vinquiry.com.

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