

VOLATILE ACID TEST VS. ACETIC ACID

VOLATILE ACIDITY IS GENERALLY used as an indicator of spoilage in wine. The major component of volatile acidity is acetic acid. Therefore, the terms acetic acid and volatile acidity are frequently used interchangeably. When measured analytically; however, there will be differences between the two. According to Amerine and Ough (1980), “volatile acidity consists of the fatty acids found in wine (formic, acetic, butyric, etc.). It should not include the steam-distillable lactic, succinic, or sorbic acids, nor carbon dioxide or sulfurous acid.” Based on this definition, it is clear that volatile acidity will measure more than acetic acid.

Acetic acid is routinely measured by either enzymatic or HPLC methods. All analytical methods have inherent uncertainty in their results. This level of uncertainty (frequently described as plus or minus a certain value) varies from analysis to analysis and depends on numerous factors including equipment, calculation of standard curves, elimination of interferences, and human variability. An HPLC measurement of acetic acid should, theoretically, be the same as an enzymatic measurement of acetic acid. However, there may be slight differences due to levels of uncertainty inherent in each method.

Volatile acidity is generally measured by steam distillation using a Cash still. Proper preparation of the sample is critical to achieving an accurate measurement. In particular, the carbon dioxide must be removed—usually by agitating the wine sample in a flask under vacuum or by bubbling nitrogen through the sample for a short period of time. Sulfurous acid also must be eliminated from the final calculation of volatile acidity. This is usually accomplished by either adding an amount of hydrogen peroxide, or by back titrating the sample with iodine after the initial acid titration has been accomplished.

The amount of SO_2 is determined and subtracted from the overall volatile acidity. Most premium wines do not contain sorbate, however, according to Amerine and Ough (1980), if the level of sorbic acid is 0.02 g/100 mL (200 ppm), as much as 0.011% may appear in the distillate (calculated as acetic). Segmented flow analyzers remove the interferences of carbon dioxide and sulfurous acid, but measure the overall volatile acidity, and hence, are in line with results from Cash stills.

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Because small amounts of other volatile fatty acids may be distilled during steam distillation, and therefore calculated as acetic, the volatile acidity number is most often slightly higher than a direct measurement of acetic acid. Whether one chooses to measure acetic acid directly, or use volatile acidity numbers, it stands to reason that one should either be consistent — use one or the other mode of measurement, or accept the slight differences that may arise when comparing acetic numbers vs. volatile acidity numbers.

THE STATE OF PRICING

While preparing harvest budgets, most winemakers have become aware of how global economic factors are having a major impact on the costs of many wine industry products. Vinquiry has also been affected by these factors and you will notice price increases for fermentation products and imported products in the upcoming Vinquiry catalog. We will do our best to restrain those increases, but we have little control over manufacturers decisions, the continued impact from the devaluation of the dollar, and the cost of shipping and fuel charges. On the bright side, Vinquiry's high level of service and commitment to our customers will remain the same. We are all in this together!

WINE IMPROVEMENT PANEL

VINQUIRY HAS DESIGNED the Wine Improvement Panel as a tool to help winemakers enhance the quality of their wines. Frequently, winemakers want an experienced second opinion on a wine with unusual aroma or taste characteristics that they perceive as having a negative impact. They also might be looking for suggestions that could improve an already good wine. This panel combines the sensory and production experience of Vinquiry consultants and enologists with the Vinquiry arsenal of specialty winemaking products to provide our clients with a cost-effective way to receive valuable advice.

The Wine Improvement Panel combines three main components: Wine Improvement Assessment, Winemaking Consulting and a Wine Enhancement Series. First a Wine Improvement Assessment is conducted to identify the potential issues present in the wine. In collaboration with the client, Vinquiry's winemaking consultant or enologist will develop a suggested set of improvement possibilities consistent with the stylistic goals of the winemaker. This may include common wine additives (copper, tartaric acid,

potassium carbonate, milk, egg whites, etc.) and products (tannins, gelatins, caseins, etc.) from Vinquiry's array of specialty winemaking products. A Wine Enhancement Series is then set up to explore several of these options. After an appropriate reaction period, the trial is evaluated and the results reported back to the client. If further trials are needed to optimize the addition rates, or to evaluate combination effects, these can be done by the client or by Vinquiry for an additional charge.

The primary benefit of the Wine Improvement Panel is the involvement of an experienced Vinquiry consultant. Years of winemaking experience and exposure to the Vinquiry set of specialty winemaking tools allow for a cost effective approach to custom wine enhancement. This built in, value added service helps to answer the question of, "what next?" when receiving the results of the Trial Addition Series.

The cost for this panel is \$150 per wine. Please call 707-838-6312 for more information on the Wine Improvement Panel and our other consulting services.



Guidelines for Storing Lab Chemicals & Winemaking Products

EVEN THE SMALLEST of wineries have lab chemicals and winemaking products on their shelves. Lab chemicals are necessary for wine analysis and products, including yeast, bacteria, and fining agents, are a critical part of the winemaking process. Keeping these items in their best condition is often very simple but overlooked. Lab

chemicals and winemaking products that are not stored properly can result in quick degradation, inaccurate concentrations, reduced viability, and contamination. The following are a few quick guidelines for both lab chemicals and winemaking products that can help keep your purchases lasting longer and safer, thereby saving you money.

LABORATORY CHEMICALS FOR WINE ANALYSIS:

Each chemical comes with its own storage recommendations. Some chemicals can be safely stored in a cool dry area, while others must be refrigerated or kept in the dark. It is also important to realize that some chemicals should not be stored together, such as acids and bases, or should be stored in a plastic bucket or pan to contain spills. Below is a chart with some of the most common chemicals listed for easy reference. Please refer to the Vinquiry catalog or the MSDS's on www.vinquiry.com for information on chemicals not included below.

CHEMICAL	STORAGE RECOMMENDATIONS
Buffers	Cool, Dry Area
Hydrochloric Acid	Cool, Dry Area
Sodium Hydroxide	Cool, Dry Area
Hydrogen Peroxide	Refrigerate
Starch	Refrigerate
Chromatography Solvent	Cool, Dark Area
Iodine	Refrigerate or Cool, Dark Area (Dispose when exposed to light.)

REMEMBER

If you have questions about proper storage of chemicals or products supplied by Vinquiry, please contact your nearest Vinquiry office for assistance.

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!

Finding New Proteins Responsible for "Natural" Protein Instability in White and Rosé Wines

CALEGARI Giaovanni¹, MANTEAU Sébastien², POINSAUT Philippe², SCOTTI Barbara¹

WINE PROTEIN MAY HAVE different origins: the grape, from which the majority is originated, yeast, bacteria, and enological treatments, as in the case of over fining. Although proteins are minor components of wine, protein instability of white and rosé wines is a real problem and is quite diffused.

In this study, more than 70 wines of several origins have been analyzed. After SDS-PAGE it is possible to observe up to 12 different proteins.

Throughout the course of this work, we were able to show that proteins like lysozyme and more than a dozen of other proteins may be involved in a protein casse in bottle.

Further investigations are necessary in order to define the role of protein casse in white and rosé wines of all the detected proteins, in particular, the mannoprotein invertase.

VINQUIRY WINEMAKING PRODUCTS

The most important thing to remember with winemaking products is to keep the product free from contamination or odors. These elements can affect the purity of the product which would result in possible contamination to your wine.

GUIDELINES FOR WINEMAKING PRODUCTS

Dry Yeast	Cool, Dry Area (Avoid exposure to elevated temperatures for long periods of time. Refrigeration is not necessary.)
Live Cultures	Refrigerate
Freeze Dried Bacteria	Cold, Dry Area (freezer)

ALLERGEN LABELING: NEW RULES FOR EXPORT

How does the EU Directive 2007/68 affect you?

ON NOVEMBER 27, 2007 the EU passed directive 2007/68 stating that all products sold in the EU after May 31, 2009 must disclose what, if any, allergens were used during production. Unfortunately, wine is not exempt from this directive. There are 14 allergen categories sited, which classify the actual product and such product derivatives. The allergen groups are: cereals containing gluten; crustaceans; eggs; fish (excluding fish gelatin or isinglass); peanuts; soybeans; milk; nuts; celery; mustard; sesame seeds; lupin; mollusks; sulfur dioxide (>10 ppm). This will directly influence your use of casein, egg whites and lysozyme. Casein is generally used to remove excessive oak and oxidized polyphenolic compounds or to refresh aromatics. Egg whites are used to refine high-quality red wine and lysozyme (derived from egg whites) can be used to control lactic acid bacteria populations.

What are your options? You can continue to use these traditional products, as you are not restricted from using them. However, you must clearly state on the label “contains milk products” or “contains egg products” (in addition to your SO₂ disclosure). This statement must be disclosed in the language of the country in which it is being sold. Alternative fining agents are available that are not included on the allergen list, such as traditional gelatins, fish gelatin, isinglass and bentonites.

Fortunately, Martin Vialatte Oenology has been working on new fining agents that are animal and allergen free. These new fining agents are derived from vegetal proteins and are currently undergoing winery trials. Once approved, vegetal proteins will be available for treating must and wine.

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