

Quick, Economical, Precise Tests for Wine, Juice, and Must

Malic Acid

Malolactic fermentation, the secondary fermentation of winemaking, is a method for reducing total titratable acidity by adjusting the relative concentrations of L-malic and L-lactic acids, softening the wine and allowing it to develop mellowness and full-bodiedness. This process also results in enhanced microbial stability since one of the key nutrients of spoilage bacteria is removed. The Malic Acid Kit has a range of 30 - 500 mg/L.

L-Lactic Acid

The L-Lactic Acid Kit is intended for measuring the L-lactic acid in wines to ensure that malolactic fermentation has begun. It is not always easy to determine if the appearance of bubbles following primary fermentation is the onset of actual MLF or merely a wine "outgassing" as it warms. The product, with a test range of 10 - 400 mg/L, can also be used to screen for high levels of contamination by lactic acid bacteria.

Residual Sugar

The Residual Sugar Kit tests only for fructose and glucose sugars, the sugars reduced in primary fermentation. Reducing sugars in wine consist of hexoses (mainly glucose and fructose) and pentoses (mainly arabinose and xylose). The pentoses are not fermentable by wine yeasts. Since pentoses alone can vary from 0.4 - 2.0 g/L, the best measure of primary fermentation is the determination of glucose and fructose. The test range is 100 - 2,000 mg/L.

pH

pH, one of the key parameters of interest to the winemaker, is an important factor in selecting the optimum time to harvest grapes. It is measured to see if adjustments need to be made prior to primary fermentation. It is measured when adding sulfur dioxide as a preservative since the effectiveness of this chemical varies dramatically as pH changes. And pH is controlled to optimize conditions for fining, for improving a wine's resistance to microbial instability, and in defining a wine's balance. The pH test kit is optimized for enology use with a pH range from 3.0 - 4.0, and a sensitivity to 0.1 pH unit.

Free SO₂

The sulfur dioxide present in must and wine is not all useful as a preservative. Some is bound to other chemical components, reducing its effectiveness as a preservative by 30-70%. Also, the degree of binding can change over time, affecting the ability of an adequate dose to continue providing its preservative properties. The effectiveness of sulfur dioxide as a preservative is also pH dependent, with low pH wines requiring lower levels and high pH wines requiring significantly greater concentrations to achieve the same effectiveness as in a typical wine with a pH of 3.3 - 3.4. The Free SO₂ Kit is divided into a Low Range (0 - 40 ppm) and a High Range (40 - 130 ppm).

TA

Titrateable Acidity is important in optimizing extraction of flavor components prior to fermentation. During processing, controlling TA improves fermentation. Post fermentation, monitoring of acidity levels leads to correct balance, and improves the efficacy of aging. Post fermentation monitoring of TA levels can also be used to follow undesirable changes caused by yeasts or bacteria. The TA Kit has a range of 4.0 - 11.0 g/L as tartaric acid.

D-Lactic Acid

The D-Lactic Acid kit is designed to measure D-Lactic Acid concentration, an important indicator of excess or unwanted growth of lactic acid bacteria. When winemaking is well controlled, these bacteria play an important role in improving wine quality, but when growth occurs at the wrong time or of the wrong species, wine quality and acceptability are greatly decreased. Regular monitoring can help prevent the development of lactic taint, biogenic amines, and bitter, "mousy," or "ropy" wines. The D-Lactic Acid kit has a range of 30 - 500 mg/L, equivalent to a range of 120 - 2000 mg/L with diluted samples.