ACCUVIN, LLC

AV – TA

Cat. no. 217

Intended Use

AV-TA is intended for measuring the Titratable Acidity of grape juice, must and wine.

Methodology

AV-TA is based on the titration of grape acids by a strong base, sodium hydroxide.

Sample

Samples of grape juice, must and wine may be used as is. The ACCUVIN AV-TA test minimizes the usual interferences from colored and turbid samples. Samples do not have to be pre-filtered or treated with color removing substances such as activated carbon or polyamide powder. Sample temperature may be from 0°C - 35°C (32°F - 95°F).

Procedure

1. Squeeze upper sampler bulb. Dip sampler tip into grape juice, must or wine sample, then release to aspirate sample. ***Wipe sampler tip to remove excess droplets***. (If you prefer to use an air displacement pipette, set sample volume at 91 µL.)
2. Open sample tube. Transfer sample to test tube by placing sampler tip into the test reagent and squeezing sample bulb only once. Withdraw sampler prior to releasing sampler bulb. Note that only sample present in the sampler tip will be dispensed. Replace sample tube cap. Shake. Wait 30 sec. for color development.
3. Determine sample TA in g/L by comparing the developed color to the color chart on the test container. Read tube color by holding tube about 1 inch (2.5 cm.) above a white background. If test tube color falls between two color chips select an intermediate value for the sample TA.

See **Interpretation** on reverse side.

Storage

Store away from direct sunlight at temperatures below 80ºF. Product is satisfactory until the date printed on the test tube container label.

ACCUVIN, LLC
P.O. Box 5328
Napa, CA 94581
Phone, fax: (707) 255-2029

www.ACCUVIN.com

for technical inquiries: email: techinfo@accuvin.com

Interpretation

Titratable acidity in grapes is based primarily on two compounds, tartaric acid and malic acid. Both of these acids increase during berry development until veraision, then start to decline. While levels vary by variety and growing conditions, tartaric acid declines slowly as optimum harvest is approached, but malic acid declines rapidly, especially in warmer growing regions. Monitoring TA as grapes approach optimum ripeness helps ensure optimum varietal character at harvest.[1,2] Wines produced from grapes where the overall acid levels have become too low are often bland, flat tasting and devoid of fruit character. A ratio of sugar to titratable acidity has been recommended as one method of judging optimum ripeness.[2,3]

Knowledge and control of Titratable Acidity (TA) are important in the production of premium wine. Adjustment of TA is important to optimize extraction of flavor components prior to fermentation. During processing, controlling TA improves fermentation. Post fermentation, management of acidity levels leads to correct balance, and improves the efficacy of aging.[4] Post fermentation monitoring of TA levels can also be used to follow undesirable changes caused by yeasts or bacteria.[5]

In quality wine, the optimum TA value for red table wines is considered 6 – 8 g/L as tartaric acid (3.9 – 5.2 g/L as H_2SO_4), and for white table wines, 7 –9 g/L as tartaric acid (3.9 – 5.2 g/L as H_2SO_4). Dessert wines usually have a slightly lower TA range.[5]

Summary Interpretation for Most Wines

(Because of varietal & stylistic differences, growers & winemakers should make final interpretations.)

TA (g/L as Tartaric)	TA (g/L as H_2SO_4)	Harvest	Must and Wine
• 4.0	• 2.6	Monitor earlier next year!	Consider acid addition
5.0	3.3	Monitor earlier next year!	Consider acid addition
6.0	3.9	O.K. to pick for dessert wines	Low end of acceptable range for red wine, consider acid addition for white wine
6.5	4.2	O.K. to pick for dessert wine, pick for red still wine	Acidity O.K. for red wine, consider acid addition for white wine.
7.0	4.6	O.K. to pick for dessert and red wines, pick for white wine	Acidity O.K. for whites and reds
7.5	4.9	O.K. to pick for all wines	Acidity O.K. for whites and reds
8.0	5.2	OK to pick for all whites	Acidity O.K. for whites and reds
8.5	5.5	OK to pick for all whites	Acidity O.K. for whites, consider acidity reduction for reds
9.0	5.9	O.K. to pick for sparkling whites	Upper end of acidity for whites, consider acidity reduction for reds
10.0	6.5	O.K. to pick for sparkling whites	Consider acidity reduction for still white and red wines; acidity O.K. for sparkling wine
• 11.0	• 7.2	O.K. to pick for sparkling whites	Consider acidity reduction for still white and red wines; acidity O.K. for sparkling wine

References

1. Beelman, R. B. and J. F. Gallander, "Wine Deacidification," in **Advances in Food Research**, Academic Press, New York. **1979**
2. Amerine, M. A. and M. A. Joslyn, **Table Wines – The Technology of Their Production**, U. of California Press, Los Angeles. **1970**
3. Zoecklein, B, "A Review of Methode Champenoise Production" Virginia Polytechnic Institute. **2001**
4. Sowalsky, R. A., and A. C. Noble, Comparison of the effects of concentration, pH, and anion species on astringency and sourness of organic acids, *Chem. Senses,* **23**, 343-349 **1998**
5. Van de Water, L., **1984**. Personal communication

217C, December 2003