UNIVERSITY OF CALIFORNIA, DAVIS

BERKELEY ! DAVIS ! IRVINE ! LOS ANGELES ! MERCED ! RIVERSIDE ! SAN DIEGO ! SAN FRANCISCO

SANTA BARBARA ! SANTA CRUZ

COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES
AGRICULTURAL EXPERIMENT STATION
COOPERATIVE EXTENSION
TELEPHONE: (530) 752-0380
FAX: (530) 752-0382

DEPARTMENT OF VITICULTURE AND ENOLOGY
ONE SHIELDS AVENUE
DAVIS, CALIFORNIA 95616-8749

For Immediate Release
December 17, 2008

The Adams-Harbertson Assay is a Valuable Tool for California Winemakers

A recently published article in the Journal of AOAC International by Larry Brooks, Leo McCloskey and other consultants claims to show that the Adams-Harbertson tannin assay cannot provide winemakers with useful data due to a lack of precision and reproducibility in some winery laboratories.

The Adams-Harbertson tannin assay, reported in 1999, is a direct adaptation of the Hagerman-Butler method, widely used for over 30 years–and the accepted standard in studies of grain tannin and ecological tannin testing, with over 350 citations in the scientific literature. The Adams-Harbertson assay was developed with funding from the California wine industry and the State of California, and is designed to provide wineries with an inexpensive, reliable, and readily accessible measurement of tannin as well as innovative measures of wine color. The method was extensively tested and improved, with thousands of trials over several years, before it was reported. It has been widely adopted at many wineries as a robust method with remarkably high precision (3-5%) between replicates, even over a period of months. It has also been used as a reference method for other techniques, only feasible with high precision and reproducibility. And finally, the assay has also been adopted by least one highly-respected winery service lab, which offers this procedure to its clients.

Like any analytical procedure, the Adams-Harbertson tannin assay requires time and effort to ensure that a specific lab or analyst can provide reproducible results. Regular comparisons of routine assays between winery labs show large variations – up to 20% in some cases. So Brooks' study would appear to re-substantiate this common occurrence* rather than invalidate the tannin assay. The Department of Viticulture and Enology recommends that the lab or analyst wishing to use this procedure first be provided with training.

Tannins are astringent, bitter plant polyphenols that either bind or precipitate proteins. The Adams-Harbertson assay is based on this principle, as are several other older and newer assays, including one assay based on binding to a synthetic substitute. Most importantly, this binding can be related to the **sensation of astringency**, and a strong correlation has been shown for the Adams-Harbertson assay and astringency in wine. The chromatographic method Brooks mentions as his reference standard cannot measure astringency.

Brooks et al's claim of the failure of the Adams-Harbertson tannin assay, based on the widely accepted Hagerman-Butler method, due to large variation between non-accredited winery labs has demonstrated lab performance fallibility, not method invalidity. Their claim is baseless, and the Department of Viticulture and Enology stands behind Dr. Adams, his research, and the value of this assay.

It is the mission of the Department of Viticulture and Enology to provide the California grape and wine industry with innovation that will improve product quality and sustainability. Discoveries are always made public with full disclosure of procedures and claims, to allow for as wide an adoption as possible. One of the goals is to provide new technology in the form of more informative and less costly analyses, which can in some cases disruptively displace existing technology or services. We are proud that the Adams-Harbertson tannin assay is used today in many wineries to make critical winemaking decisions.

Andrew Waterhouse, Chair
On behalf of
The Faculty of the Department of Viticulture & Enology
University of California, Davis

*http://www.collaborativetesting.com/wine/report_archive.html

If you would like to review the video presentation of the entire RAVE 2007 program on the Adams-Harbertson assay, including the winemakers' panel and discussion, it is available at: http://webcast.ucdavis.edu/VitEn/2007/

For questions, please contact Andrew Waterhouse
phone: 530-752-0381
email: venchair@ucdavis.edu