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**69th ASEV
National
Conference**

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**Portola Hotel
& Monterey
Conference Center**

Monterey, California USA

TECHNICAL ABSTRACTS



AMERICAN SOCIETY FOR ENOLOGY AND VITICULTURE

2018 National Conference Technical Abstracts

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Enology and Viticulture – CONTINUED

plete International Commission on Illumination (CIE) tristimulus analyses and the absorbance information needed for the hue, intensity, and various other parameters considered to be conventional in the wine industry. Importantly, the study demonstrates the effective and unique synergistic capacity of simultaneously analyzing the complete multi-dimensional ATEEM data set. Results are presented using unsupervised multivariate component analyses and calibrated least squares regression methods for precise sample classification and phenolic quantification, respectively. The new application examples are evaluated with respect to characterizing and classifying juice and wine samples as a function of ripening varietal and process related parameters, including possible screening for adulteration and storage issues, such as oxidation and microbial spoilage.

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Ultrasound Application in Winemaking

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We examined the effects of cavitation induced by ultrasound on different winemaking phases, in particular, skin maceration, yeast lysis, color evolution, and lees filterability. An experimental design was created to optimize ultrasound conditions like time, amplitude, and frequency, depending on the product treated and enological objective. Tests that gave best results in the laboratory were compared to traditional enological practices. For skin extraction, best results occurred using 90% amplitude for 3 to 5 min at a frequency between 20 and 27 kHz, which significantly increased total phenolic compounds. Ultrasound of crushed grapes before vinification significantly reduced maceration time of red grapes (up to 50%) and white grape maceration for aroma extraction could be avoided. To evaluate the effect on yeast cells after fermentation, some ultrasound trials were performed on fine lees from white wines, leading to a significant rise in yeast soluble cell compounds. This increment implies a reduced aging period on lees compared with conventional techniques. There was also a significant effect of ultrasound treatment on juice and wine clarification lees that increased the tangential filtration performance in liquid recovery and treatment cost. The effect of ultrasound on tannins and anthocyanin evolution was tested on young red wines, in order to investigate the changes during the aging process. Good results were reached in each test and the use of ultrasound improved tannin polymerization and color stability. An industrial plant was made for winery application. Pilot scale application in different viticulture regions around the world confirmed the benefits of different applications using a few minutes of treatment. Technological factors (time and amplitude) must be calibrated depending on the specific enological application.

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POSTER
ABSTRACTS

*indicates corresponding author