The Role of Enzymes in Winemaking

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ABSTRACT

Enzymes play an important role in the conversion of grapes into a stable bottle of wine. Some occur naturally in grape material while others are commercially manufactured for use in various stages of the winemaking process. Pectinases and Cellulases accelerate juice extraction and the release of color and flavor compounds. They also can aid in settling and filtration of juice and/or wine. Enzyme-linked immunosorbent assay (ELISA) techniques give winemakers accurate and efficient means of measuring critical wine quality parameters i.e. D-Glucose, D-Fructose, and L-Malic Acid. These parameters help determine completion of fermentation and have implications for wine quality, style and bottle stability. Understanding of enzymatic processes and taking advantage of modern biotechnology have given us more tools to control the biological process that is winemaking.

BIOGRAPHY

Andrew Rockwell is a member of the winemaking team at Premium Wine Group, a custom crush winery on the North Fork of Long Island, where he has served as Laboratory Director since 2009. Andrew completed his M.S. in Biomedical Engineering from Stony Brook University and his B.S. in Materials Science Engineering from Johns Hopkins University. Andrew's time is primarily occupied monitoring fermentation and performing QC checks on the ~500 separate lots of wine at Premium Wine Group. Research interests are focused on wine quality parameters as they relate to vineyard practices and fermentation protocols. In Andrew's spare time he is the winemaker and sole proprietor for his own wine brand Rockwell Wines.