

Oregon Wine Advisory Board Research Progress Report

1995 - 1996

Enology Extension and Laboratory Analysis

Barney Watson
Department of Food Science and Technology

Enology Extension at OSU with support from the Oregon Wine Advisory Board provides technical assistance to winery personnel including wine analysis, consultation on production problems, and training through workshops and winery site visits. The Oregon wine industry has grown rapidly in recent years to over 100 wineries. There is a strong need for enology technical assistance and technology transfer of relevant research for commercial application. The primary focus of the OSU Enology Extension program is to increase commercial wine producer ability to recognize, avoid, and correct for physical, chemical, and microbial problems in Oregon wines. The goal of the Enology Laboratory is to provide assistance in quality control management and training for Oregon wineries. Commercial problems frequently encountered are often the basis of the development of new research directions.

OSU Enology Laboratory Wine Analysis

During 1995-1996 to date over 300 wines have been submitted to our laboratory from 35 wineries primarily for evaluation of physical, chemical, and microbial stability of wines prior to bottling. Numerous wines are screened for the presence of potential spoilage microorganisms. Consultation is provided to evaluate laboratory results and to advise on processing to correct and avoid spoilage problems. Potential problem wines are monitored during processing to insure that the wines are sound and stable at bottling.

Microbial screening: Necroscopic evaluation of wines during fermentation, processing, aging, and prior to bottling is done by concentrating cells using a microcentrifuge and making wet mounts for microscopic observation. Any significant populations of yeast and bacteria including potential spoilage microorganisms can be detected.

Plating for yeast and bacteria: Differential plating techniques are used for the detection and enumeration of *Brettanomyces sp.* spoilage yeasts and spoilage bacteria including *Lactobacillus sp.* and *Pediococcus sp.* Wines which are sterile filtered and bottled are checked for bottle sterility and the presence of yeast and bacteria.

Wine analysis: New wines, wines during processing and wines prior to bottling are analyzed with a battery of assays which allow for effective and knowledgeable processing decisions to be made. The focus is on detecting and avoiding potential spoilage problems before they occur. Analysis generally includes microbial evaluation and plating, free and total sulfur dioxide levels, titratable acidity and pH, residual sugar, volatile acidity, alcohol content, and malic acid content. Consultation is also available on chemical stabilization, additions and fining trials, and sensory evaluation.

