Oregon Wine Advisory Board
Research Progress Report

1993 - 1994

Enology Personnel Development and Extension

Barney Watson
Department of Food Science and Technology

The Oregon wine industry has gown in recent years to over 100 wineries. There is a strong need for enology Extension, technical assistance, and technology transfer of relevant research for commercial application. Enology Extension at OSU provides technical assistance to winery personnel including wine analysis, consultation on production problem, training through workshops, and winery site visits. 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.

OSU ENOLOGY LABORATORY WINE ANALYSIS

During 1993-1994 over 300 wines were submitted to our laboratory by 26 wineries for chemical, microbial, and sensory evaluation. Approximately 10% of wines submitted have tested positive for the presence of potential spoilage microorganisms. Consultation is provided to evaluate the laboratory results and to advise on processing. Potential problem wines are further monitored during processing to insure that the wines are sound and stable.

Microbial Screening: Microscopic evaluation of wines during fermentation, processing, aging, and prior to bottling are 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 spoilage yeasts including Brettanomyces sp. 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 yeasts.

Wine stability analysis of new wines and wines prior to bottling: New wines, wines during processing and wines prior to bottling are analyzed for microbial stability and composition analysis to 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 differential 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.

WORKSHOP AND PRESENTATIONS

Oregon Horticultural Society, Winegrape Section. Review of the 1993 Winegrape Harvest Season,

Barney Watson and Steve Price, Portland, OR, January 26, 1994.

Oregon State University Winegrape Research Day. Progress reports on enology research and Extension. Barney Watson. Corvallis, OR, February 11, 1994.

Willamette Valley Wine Technical Group. Microbial Evaluation of new wines. Barney Watson, Eola Hills Wine Cellars, Rickreall, OR, March 8, 1994.

Southern Oregon Chapter of the Oregon Winegrowers Association. New varietal winegrape trial at the Southern Oregon Experiment Station. Barney Watson. Jacksonville, OR, May 19, 1994.

South Willamette Valley Chapter of the Oregon Winegrowers Association. Recognition of commercial wine defects and microbial evaluation of new wines. Barney Watson, Oregon State University, Corvallis, OR, May 24, 1994.

Southern Oregon Chapter of the Oregon Winegrowers Association. Microbial evaluation of new wines. Barney Watson. Henry Winery, Roseburg, OR, May 26, 1994.

Northwest Chapter of the American Society of Enology and Viticulture. Evaluation of Pinot noir fermentation practices on color and phenolic composition. Barney Watson. Lake Chelan, WA, June 4-6, 1994.

Oregon Wine Advisory Board Seminar Series. To Filter or Not to Filter. Co-organized by Barney Watson and WAB. Eugene Hilton, June 16, 1994.

Enology and Viticulture Extension Newsletter. Barney Watson and Steve Price, January and June,1994.