

Oregon Wine Advisory Board Research Progress Report

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Vineyard Nutrition Study

Oregon State University researchers are expanding their study of mineral nutrition in winegrapes as part of a project sponsored by the Wine Advisory Board. Further research is justified because of increasing grower interest in nutritional factors that affect production and quality. Winegrape growers utilize Oregon State University's Plant Analysis Laboratory to an extent far greater than winegrape acreage would suggest. The industry currently ranks third in sample volume behind filberts and sweet cherries. Winegrapes deserve more attention. The goal of the new project is to develop better diagnostic services.

Over the past two years, Dr. John Baham of the Department of Soil Science has been evaluating potassium fertility programs and reviewing historical plant and soil mineral analysis data from records dating back to 1975. His initial observations suggest that improvement in diagnostic services is possible. The value of petiole vs. leaf analysis is not fully resolved. Standards developed for other areas are a valuable starting point, but they could be fine tuned for the specific needs of our winegrape industry. The problem of defining optimum nutrition with regard to both yield and quality needs to be addressed.

Dr. Tim Righetti has recently joined the faculty of the Department of Horticulture. His position deals with mineral nutrition of horticultural crops and includes responsibility for the Plant Analysis Laboratory. He is eager to utilize the sophisticated analytical equipment and microcomputer processing that has been added to his facility over the last few years. With advances in technology, nutritional experiments and diagnostic services that were once logistically and economically unfeasible may become routine in Oregon's winegrape industry.

Both Baham and Righetti feel it is possible to provide growers with more information. They feel growers should have access to long-term values, current year's average values, and mean values for the most profitable vineyards, and their relative position in comparison with these profitable vineyards. Although quality is difficult to define, the mean values for vineyards that differ in quality components such as sugar, pH, acidity, color, etc., could easily be measured and presented as part of tissue analysis reports.

The researchers' nutritional analysis will also examine the problem of seasonal variation in the average mineral content of samples collected from the same location but in different years. Baham and Righetti want to sample the same vines in a large number of vineyards over a several year period. In this way, they hope to help growers identify whether seasonal differences account for changes they observe, or if the variations result from changes in management practices.

In this project, growers will help collect leaf, petiole and fruit samples from up to 70 study sites located in grower vineyards. The Plant Analysis Laboratory will determine the mineral content. Yield, vigor, and quality measurements of the fruit from each site will be recorded. The field sampling team will also evaluate cultural practices, vigor, weed or vegetative cover and occurrence of disease. Individual growers will receive questionnaires on management practices.

As an incentive to encourage cooperation, growers providing vineyard information will be given a substantial analysis discount and will receive additional survey information.

Baham and Righetti communicate an excitement for the potential value of their analysis. They indicate that once plant composition is better understood and relationships between the mineral content of various tissues and quality or yield are defined, it may be possible to develop better diagnostic standards or to include analysis of non-traditional tissues. They are also hopeful that future emphasis can then be placed on altering cultural practices in order to provide the right combination of nutrients, to the appropriate tissues, in the right concentration, at the right time.

Detailed information and complete instructions are being sent to Oregon winegrowers in the major winegrowing areas who responded to the Stanley Miles Acreage Survey. In addition, bearing Chardonnay, Pinot noir or Cabernet vines are a requirement. If you haven't been contacted and wish to be included, phone John Baham, 754-2441, or Tim Righetti, 754-3695.