

Grape growing research must not ignore the research involved in winemaking.

## Hansen: Two sciences must grow together

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Vine to wine. Berry to bottle. Grape to glass. The ultimate goal of research supported by Washington's wine industry is to improve wine quality. To accomplish that, the science of grape growing and the science of winemaking need to come together.

Since its early days, Washington's wine industry has focused on wine quality. Producing premium wine is not just about raising the bar, it's also about economics.

It would be nearly impossible for Washington growers to compete in the global bulk wine market against other wine regions that can grow high volume with cheap labor.

But Washington's climate and well-drained soils are ideal for producing premium wine — and we've proven to do that quite well.



**Melissa Hansen**

*Data published by Wine Spectator has shown that over the past eight years, Washington has the highest average percentage of wines rated 90 points or above compared to other leading wine regions, with the lowest average cost for these wines.*

Our research partners at Washington State University are guided by research priorities set annually by the Washington wine industry.

They work together to develop science-based management strategies that winemakers and wine grape growers can use in the vineyard and winery.

More than \$1 million will be spent in the current fiscal year on a number of vineyard research projects with various goals, including controlling insects, nematodes and fungal and viral diseases, fine-tuning irrigation scheduling, and assessing soil salinity and irrigation water quality.

On the winemaking side, research projects include working to better understand impacts on wine chemical and sensory composition from ripening, tannin management and color stability, developing barriers to control wine spoilage, and assessing smoke-taint risk.

**Collaboration is key**

Improving wine quality requires the marriage of grape growing and winemaking, with scientists from both disciplines working collaboratively.

Though vine to wine research should be intuitive, cultural techniques often are studied as a silo, from only the vineyard perspective — without following the trail through the winery and to the consumer.

Changes made in the vineyard can impact wine quality, for good or bad, thus, several projects supported each year by the Washington State Wine Commission include assessment of wines made from the vineyard treatments under study.

The ongoing vineyard mechanization trial is a prime example. The project studies the impact of mechanized pruning and fruit thinning on grape and wine composition.

Numerous reports have been published on the impacts of mechanical pruning, but rarely was wine produced in such trials or fruit chemistry assessed past basic ripening parameters of total soluble solids, pH and titratable acidity.

With concerns about widespread labor shortages in the near future, there is much interest in mechanization of vineyards, but reluctance to do so because of questions about its impact on vineyard performance and grape and wine composition. Data from this project will be released when the project is completed next year.

The smoke-taint project is another vine to wine project underway, examining the impact of wildfire smoke on grapes and wine.

Growers need to know how much smoke exposure in the vineyard impacts wine quality. Wineries need knowledge and tools to make wine from grapes that have been exposed to smoke.

A recent project studied the timing of hand and mechanical leaf removal and its impact on wine. Key outcomes were that pre-bloom mechanical leaf removal minimized sunburn relative to the other timing of removal treatments and helped improve disease control and spray application.

Leaf removal did appear to impart chemical and sensory differences in the wines made from the treatments, but the differences were subtle and not statistically significant. Look for a full report on this project in *Good Fruit Grower* later this year.

Previous vine to wine research by WSU scientists found that regulated deficit irrigation in red wine varieties, a strategy that withholds irrigation from grapevines early in the growing season to control canopy growth, not only helps conserve water, but more importantly, helps improve wine quality.

The open canopy, a result of the deficit irrigation, improves fruit exposure to sunlight, reduce excessive shading, reduces green, vegetative flavors in the wine, and increases tannins and other phenols.

## Winery elevates research

The importance of vine to wine research and this quest for quality was a major factor in the Washington wine industry's commitment of \$7.4 million to help build the state-of-the-art Wine Science Center at Washington

State University's Richland campus.

The previous research winery at WSU's Prosser research station outgrew the space needed to conduct a growing wine research program. This past harvest, more than 200 lots of research wine were processed at the Wine Science Center in more than 160 specialized 200-liter fermenters.

Most vineyard trials involve at least three years to collect representative vine and fruit data — yields, pruning weights, berry and cluster weights, maturity dates and such.

When the trial includes winemaking, wine chemical composition and sensory attributes are also analyzed, which can add several years to the life of the project.

The vine to wine research also includes sensory analysis, the final piece of the project, by trained volunteers. If red wine is involved, that means additional time to age the wine before sensory analysis can be done.

The research winemaking portion adds significantly to the time and cost of a project, but it's a key collaboration. Because ultimately, it's all about giving wine grape growers the tools to keep vineyards productive, healthy and capable of producing premium grapes that can be crafted into world-class wines. Washington's wine industry and our WSU research partners are unified in this vision to improve wine quality.

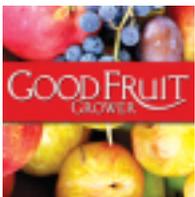
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*– by Melissa Hansen, Washington State Wine Commission*

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## ABOUT THE AUTHOR: GOOD FRUIT GROWER

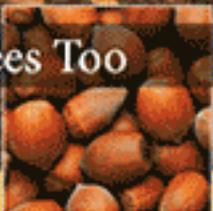


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