

Washington State Wine Allocates \$1M for Research Projects

By Melissa Hansen, Research Program Director, Washington State Wine Commission

The Washington State Grape and Wine Research Program will award approximately \$1 million in research grants this fiscal year (July 2019 - June 2020). This is the third year in a row the program has hit the million-dollar milestone, thanks to strong financial support from the Auction of Washington Wines and the Washington State Wine Commission.

The Washington State Wine Commission approved the funding recommendations of its subcommittee, the Wine Research Advisory Committee, to award 18 grants through the Washington State Grape and Wine Research Program.

The research program's funding has grown about 20 percent in the last five years, covering a diverse range of vineyard and winery issues. Vineyard projects deal with a new leafroller moth that can defoliate Washington grapevines, powdery mildew fungicide resistance, grapevine diseases and insects that transmit the diseases, nematodes, crown gall, irrigation management and vine heat stress. Winery research projects include controlling wine spoilage, impact of pH on wine microbial ecology, tannin management, potential impacts on grapes and wine from smoke exposure, and sensory characteristics of wine.

MECHANIZATION PROJECTS

Mechanization to address labor shortages is also a top research concern. Work to develop a precise mechanical solution for shoot thinning is on track and the two-year project will be completed by June 2020. A one-year mechanization economics project, funded last year by the Wine Commission and Oregon's Erath Foundation, is nearly complete. Information on the costs and payback of mechanizing,

INDUSTRY INPUT DRIVES RESEARCH

The annual 2019 Washington Wine Research Survey is drawing to a close and your voice matters!

Feedback from grape growers and wineries help shape the research priority list that drives the Washington grape and wine research program and guides research funding recommendations of the Wine Research Advisory Committee, a subcommittee of the Washington State Wine Commission. The Committee annually reviews the priority list to ensure it stays current with industry issues, challenges and research needs.

The survey will close April 22. Take the survey here: <https://www.surveymonkey.com/r/WAwine2019>

developed for the Oregon and Washington wine industries, will be shared during a webinar in June.

A new mechanization project will be launched this year to develop a smartphone application to help growers estimate crop load. This project received seed money last year to learn if the app was feasible.

NEW RESEARCH PROJECTS

Soil sustainability. Optimize the impact of mycorrhizal fungi inoculations on wine grape production in Washington and learn if commercially-available mycorrhizal inoculants are effective in Washington vineyards. Arbuscular mycorrhizal fungi are soil borne microorganisms that could help reduce vineyard inputs by improving nutrient and water uptake by roots.

Smoke exposure. First three years of study completed; focus now is to develop analytical methods for smoke-exposed fruit and mitigate smoke taint in wine.

Fruit freeze exposure. Identify the causal agents for atypical aromas in Cabernet Sauvignon wines made from grapes exposed to freezing temperatures before harvest and investigate strategies to mitigate potential problems.

Grapevines under heat stress and deficit irrigation. Help growers optimize canopy management and irrigation practices for different varieties to mitigate decrease of acidity in wines from heat waves

Insecticide resistance - Grape mealybug. Learn if grape mealybug (insect that transmits grapevine leafroll disease) is developing resistance to insecticide imidacloprid; also learn if buffalo treehopper (possible vector of grapevine red blotch disease) is susceptible to imidacloprid.

The state research program, a competitive grant program administered by Washington State University, has a unique funding partnership unlike any in the nation. The program combines public, private and industry monies to support viticulture and enology research at WSU. The four entities that fund the statewide program are: the Wine Commission; State wine liter tax (1/4 cent per liter of all wine sold); WSU's Agriculture Research Center; and the Auction of Washington Wines, an annual event held to raise awareness about Washington wine.

The Wine Commission dedicates about 25 percent of its \$5 million budget to fund research projects

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and pay its WSU Wine Science Center construction pledge. The statewide research is industry driven and guided, with the research results accessible to all involved in the Washington wine industry—from large to small growers and wineries. Past research outcomes have benefited all in the industry, from reduced pesticide applications and conserved irrigation water to control of wine spoilage and improved overall wine quality.

To learn more about the Washington wine industry's research program and access previous research reports, visit:

www.washingtonwine.org/research/reports .

Contact me if you have any questions about the survey or research program at:

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2019-2020 Washington State Grape and Wine Research Program Funded Projects	
WSU Researcher	Project Title Bold denotes new project.
Cheeke, Tanya	Effect of Mycorrhizal Inoculants on Grapevine Growth and Nutrient Uptake
Collins, Tom	Assessment of Smoke Exposure Grape Risk and Mitigation of Smoke-Affected Wines
Edwards, Charles	Microbiology and Chemistry of WA Wines
Harbertson, Jim	Management of Phenolic Compounds in Vineyard and Winery, Mechanical Pruning, and Grape Maturity
Harbertson, Jim	Evaluation of Cabernet Sauvignon Grapes Exposed to Freeze and Potential Wine Impact
Harbertson, Jim	Research Winemaking
James, David	Leaf-folders: Identifying the Threat and Solutions
Karkee, Manoj	Smartphone-based Crop Estimation Tool
Keller, Markus	Influence of Cultivar, Environment and Management on Grape Yield Components and Quality
Keller, Markus	Grape Ripening Under a Double Whammy of Heat Stress and Water Deficit
Moyer, Michelle	Impact and Management of Plant-Parasitic Nematodes in Washington Wine Grape Vineyards
Moyer, Michelle	Monitoring and Mapping Grape Powdery Mildew Fungicide Resistance and Crown Gall Incidence
Piao, Hailan	Impact of pH on Wine Microbial Ecology and Wine Quality
Rayapati, Naidu	Epidemiology and Management of Viral Diseases in WA Vineyards
Ross, Carolyn	Sensory Characteristics and Consumer Acceptance of WA Wines
Salazar, Melba	Influence of Climate Variability on Grapevine Phenology
Walsh, Doug	Monitoring Mealybugs for Potential Imidicloprid Resistance and Buffalo Treehoppers for Imidicloprid Susceptibility
Zhang, Qin	Precise Mechanical Solution for Vineyard Shoot Thinning

Sour Rot

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collaboration with growers in two different parts of Missouri showed that there was no significant difference between two sprays and five sprays applied after symptom development. In other words, if sour rot symptoms were present, more sprays did not necessarily equal better control. We do know that applying an antimicrobial alone does not offer much (if any) control of sour rot, so if you are spraying for sour rot, please be sure to alternate insecticides from different IRAC groups. The same thing can be

said for treating Botrytis bunch rot on grapes, as there are a number of labeled fungicides with different modes of action, and it is crucial to alternate within the season.

We know a lot more about sour rot now than we did six years ago, when I started this research, but we have a lot more work to do. Our new research is focused on IPM strategies and understanding more about the environmental conditions that lead to sour rot, so that we can better target the Drosophila fruit

flies. We know now that they are the key to controlling this disease. For anyone who has sour rot in their vineyard, catching the symptoms early appears to be very important, as spread can occur rapidly. As with research previously conducted on Botrytis, we are exploring opening up the canopy and encouraging airflow within the fruit zone. For all their differences, we continue to look to Botrytis management for ideas on how to manage sour rot, in the hopes that we can reduce the incidence of both simultaneously.