

WSU's Voice of the Vine: Water-saving, wine donation, grape sustainability and, wine matrix

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WSU wins national award for water-saving research

Water scarcity – one of the toughest challenges predicted for the 21st century – is being addressed by Washington State University. As part of a multistate research program, WSU is among 19 land-grant universities honored recently for efforts to help farmers irrigate land more efficiently, especially during droughts and water shortages.

“A safe, reliable supply of water is inextricably linked to food security,” said Sonny Ramaswamy, director of the U.S. Department of Agriculture’s National Institute of Food and Agriculture (NIFA).

“The five-fold increase in irrigated acres that took place during the 20th century cannot be repeated in the 21st century – there isn’t the space,” he said. “Instead, we must increase efficiency of the irrigated farmland we have, and that is what this project is doing.”

The national Microirrigation for Sustainable Water Use W-2128 research

program was presented the 2014 Experiment Station Section Excellence in Multistate Research Award by NIFA and the Experiment Station Committee on Organization and Policy at the Association of Public and Land-Grant Universities annual meeting in Orlando, Florida.

The award recognizes outstanding efforts of researchers and extension specialists who have come together to tackle a priority issue that no one institution can address on its own.

More crop per drop

Irrigation systems that apply high volumes of water over wide areas can lose a lot to runoff, wind and evaporation, which results in over- or under-watered plants. In contrast, microirrigation systems reduce water waste and can produce more crop per drop.

These systems use special timers, sensors and a network of narrow tubes to deliver the right amount of water and nutrients to plants at the right time.

Microirrigation decreases contaminants carried to surface water and groundwater and can improve the quality of agricultural crops.

In the last five years, the W-2128 microirrigation research program has led to new equipment and tools that are easier to install, more durable and more precise. Engaging farmers around these advances has encouraged adoption of microirrigation systems and led to significant economic and environmental impacts.

Wine grapes sip water

WSU scientists and extension specialists have assisted farmers with microirrigation for more than two decades.

Pete Jacoby, professor of crop and soil sciences and the project lead, said that as a result, most of the 50,000 acres of wine grapes in Washington are grown under microirrigation. Use of microsprinklers in combination with surface drip systems continues to increase in tree fruit and juice grape production, he said.



Subsurface microirrigation system for 12-year-old grape vines at WSU Roza Research Farm near Prosser, Washington. (Photo by Pete Jacoby, WSU)



Pete Jacoby, WSU professor of crop and soil sciences

New research funded as a continuation of the W-2128 project, referred to as W-3128, is under way to determine the role of new and advanced methods of subsurface drip irrigation in cooperation with Washington wine grape growers. The study will compare plant responses to water applied at subsurface depths of up to four feet and water applied via surface drip irrigation.

This research could help reduce costs associated with pumping water and help conserve resources by curtailing water loss to weeds and evaporation.

“If this new technique of subsurface microirrigation proves effective, I believe wine and juice grapes can be grown with less than half the water required to do so with current surface drip irrigation systems,” Jacoby said.

Other land-grant institutions participating in the national project include: Auburn University; University of Arizona; University of California, Davis; University of California, Division of Agriculture and Natural Resources; Colorado State University; University of Florida; University of Hawaii; University of Idaho; Iowa State University; Kansas State University; Mississippi State University; University of Nebraska; New Mexico State University; Cornell University; Oregon State University; University of Puerto Rico; Texas A&M AgriLife Research; University of the Virgin Islands; and the Natural Resources Conservation Service and Agricultural Research Service.

—Sylvia Kantor

Donation from Washington wine’s past to fund future

Albert Ravenholt’s legacy is growing posthumously with a \$500,000 donation to the Washington State University Wine Science Center, from the Albert Victor Ravenholt Foundation.

“He was always deeply interested in agriculture,” said Albert’s brother, Reimert Ravenholt. “He did his research and realized Washington had great soils and climate for growing grapes.”

Albert Ravenholt was a founding partner in Sagemoor Vineyards in Pasco in the early 1970s.

Kent Waliser, the current general manager of Sagemoor Vineyards, said Albert

and his early partners took a huge risk establishing vineyards where no industry existed. “Those investors put their money on the line, and the entire region is benefiting from that vision,” said Waliser, who knew Ravenholt for several years.

The new Wine Science Center includes a research and teaching vineyard for demonstrations of various grape varieties and various grape training systems. Students will be able to learn about vineyard maintenance and fruit ripening first hand. Research here will support the health and growth of the grape industry into the future. The research and teaching vineyard will be named for Albert Ravenholt.



The research and testing vineyard at the Wine Science Center overlooking the Sagemoor Vineyards in Pasco.

“When you’re standing in the test vineyard, you can look across the river to Sagemoor Vineyards,” Waliser said. “I think Albert would be pretty happy that he helped make that happen.”

Ravenholt, who died in 2010 at the age of 90, was a world traveler and adventurer after leaving his native Wisconsin in the late 1930s. After studying at Grandview College in Iowa, Albert worked at the 1939 New York World’s Fair. He hitchhiked from New York to California before traveling around the world as chief cook on a Swedish steam ship. He wound up in China and served as a war correspondent for United Press International during World War II.



Albert Ravenholt, circa 1960s

He met his wife Marjorie, a native of Sunnyside, Washington, while working in Asia during the war. They married in Shanghai in 1946. They later owned homes in, and split time between, Seattle and the Philippines for over 40 years. Marjorie died in 1992 in Seattle.

“Albert’s wine interest came from visiting his wife’s hometown in the Yakima Valley,” Reimert Ravenholt said.

Reimert said his brother’s talents and business acumen brought him financial success through the

vineyards and other business investments. And Reimert, as president of the foundation, is now working to see that the results of that success support things his brother was passionate about.

The donation from the Albert Victor Ravenholt Foundation will give \$400,000 directly to the center, while \$100,000 will endow a lecture series for the WSU Viticulture and Enology program.

“We’re sure Albert would have been greatly interested in creative ventures like the Wine Science Center,” Reimert said. “He always wanted to improve viticulture in Washington and throughout the Northwest.”

“We are very thankful for engaged wine industry partners like the Ravenholt Foundation and Kent Waliser with Sagemoor,” said Thomas Henick-Kling, director of the Viticulture and Enology program. “Their contributions aid WSU in offering world-class wine education spanning vine to market.”

—Scott Weybright

Report card to measure juice grape growers’ sustainability

Juice grape growers in Washington may not still be in school, but they can now get a report card on their sustainability.

Washington State University has created a Sustainability Report Card designed for growers to self-assess the sustainability of their production. The document covers seven aspects of juice grape production, assessing practices and activities involved in grape growing and vineyard management.

Commercial growers will receive a printed copy of the report card through their processors and the public can find a pdf file of the report card [HERE](#):

“We hope this report card will help Washington state growers reach the next level of excellence by identifying areas for improvement under the definition of sustainable agricultural production,” said Michelle Moyer, an assistant professor and statewide viticulture extension specialist.

Sections of the report card include pest management, irrigation management, and overall vineyard management.

For more information about the document, click [HERE](#):

Wine matrix: anything is possible



The matrix matters. That's what WSU researchers Allison Baker and Carolyn Ross discovered in their study of red wine finish. Wine matrix refers to components of wine such as sugars, acid, ethanol and tannins.

In the article linked below, published in the October issue of *Wines and Vines*, Baker and Ross describe how ethanol and tannins influence floral, bell pepper, and coconut – three flavors that linger in red wine. Their research was published earlier this year in the journal *Food Quality and Preference*. [Read *Impact of wine matrix on red wine finish and consumer acceptance* by Baker and Ross here...](#)

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