GOOD FRUIT GROWER

New WSU faculty member puts emphasis on weed management in Washington vineyards.

Hansen: Filling void in weed research at WSU

Melissa Hansen // Jul 6, 2017 // Grapes // Research // Weeds

Weed management is an important topic for nearly every wine grape grower in Washington, yet there has been a major void in new research.

That ends this summer with a brand new weed management research project, funded by the state's wine industry through the Washington State Wine Commission.

Vineyard weed control is critical at pre-planting, planting and replanting stages. That's the optimum time to control perennial and annual weeds and set up the young vines for a strong start.

Weeds not only compete with young and established vines for crop water, nutrients and sunlight, they also can support populations of insects, rodents and pathogenic pests detrimental to vineyard productivity and fruit quality.

For more than a decade, there has been a lack of weed scientists dedicated to research for Washington vineyards.

During this research hiatus, several issues have developed that are now ripe for study, such as growing species and locations of glyphosate (Round-up) herbicide resistance, proper timing of pre- and post-emergent herbicides and evaluation of new products under Washington vineyard conditions.

Now, there's a new weed sheriff in town. Lynn Sosnoskie, Ph.D., joined Washington State University as an assistant researcher in January.

Lynn Sosnoskie

She moved to North Central Washington for her husband's work in controlled atmosphere storage and is based at WSU's Tree Fruit Research and Extension Center in Wenatchee.

Her move to Washington is fortuitous for the wine industry.

Sosnoskie spent five years at the University of California, Davis, where she studied the biology, ecology and management of weeds, including difficult to control perennial species and herbicide resistant weeds in vegetables, tree fruits, nuts and grapes.

Before that, she had a similar role for five years as a research scientist at the University of Georgia. In California, she was part of a program that surveyed the Central Valley to determine the distribution of herbicide resistance in multiple weed species.

Results from this work helped describe the evolution and spread of herbicide resistance in California's perennial cropping systems and identify threats to specialty crop sustainability.

"My wine grape research project is about filling the void in weed research that has been present in the Washington wine industry for so long," Sosnoskie said. "I want to start building a research and education program that will benefit the wine industry."

Survey industry practices

The first step of Sosnoskie's project is to understand the weed mindset of Washington wine grape growers.

"This is a learning year for me so I can understand the weed needs of the Washington wine industry," she said. She would also like to develop weed research and educational programs for perennial crops like tree fruit, grapes, mint and hops.

She will survey wine grape growers this summer to learn what products and practices vineyardists rely on, if management strategies vary across different wine regions and what potential problems are lurking, such as an overreliance on glyphosate that can lead to herbicide resistance.

The online survey will generate baseline data and create a snapshot of industry practices that will help define the specifics of later research trials. She also wants to use the survey to connect directly with growers and personally learn about their weed management strategies. Growers can indicate on the survey if they want to talk with her in more detail.

Education

An important part of Sosnoskie's work will be education. The need for updated, continuing education tools was identified as a critical priority in a pest management strategic plan for wine grape production in Washington.

The plan, revised in 2014, was developed by growers, industry leaders and university scientists to identify research, regulatory and educational needs critical to sustaining the Washington wine grape industry.

The need for weed education was echoed recently by a Washington viticulturist who shared with Sosnoskie that Washington wine grape growers need education to understand a host of issues:

—Why weeds are a problem.
—The best time to apply different herbicides.
—The most effective herbicides for new vineyard plantings.
—Weeds developing resistance and more.

Information collected from the survey will help her revise educational materials critical for the short term, and she will also work with Marcelo Moretti and Ed Peachey of Oregon State University to update the Pacific Northwest Herbicide Handbook.

In addition, she will focus on expanding continuing education bulletins and materials on a variety of topics:

describing basic weed biology; the spread of herbicide resistance; herbicide modes of action available in vineyard systems; herbicide stewardship; and the best management practices (chemical, physical, cultural) to reduce herbicide resistance development.

Field trials

Sosnoskie will include on-farm and controlled environment research trials to evaluate the type and timing of management practices for weed control success. For example, what is the influence of pre- and post-emergent herbicide timings — fall vs. spring — on weed management in Washington vineyard systems?

Past research in California has shown that the response of some weeds to herbicide susceptibility can fluctuate depending on the time of the year. Other California studies suggest that the environment and its effect on physiological processes may have more influence on control than the size of the weed or growth stage.

Data from Sosnoskie's trials will provide Washington growers with results developed and validated under regional climatic conditions.

Because most of the available wine grape herbicide research has been developed and conducted in California — where there are dramatic differences in temperature, rainfall patterns and weed species from Washington — she wants to evaluate how pre-emergent herbicide efficacy is influenced by local environments to improve product effectiveness and sustainability.

Welcome to Washington's wine grape industry, Dr. Sosnoskie! •

– by Melissa Hansen, research program manager for the Washington State Wine Commission. Wine grape growers interested in receiving the weed survey and connecting with Lynn Sosnoskie can email her at lynn.weed.science@gmail.com.

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ABOUT THE AUTHOR: MELISSA HANSEN

Melissa Hansen is the research program manager for the Washington Wine Commission. Hansen previously was an Good Fruit Grower associate editor from 1996 through 2015. **Read her stories:** Author Index

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