

# Viticulture and Enology Extension News

Washington State University



Viticulture & Enology

FALL 2020

## CONTENTS

### VITICULTURE

Pesticide Credits! .....	Page 2
Leafminers .....	Page 3
AWNfarm .....	Page 4

### ENOLOGY

No articles submitted for this issue.

### INDUSTRY

Smoke Task Force .....	Page 6
Sabbatical and Scholarships .....	Page 7
Winter Meetings .....	Page 8

### EDITOR

Michelle M. Moyer, Ph.D.

*WSU Extension programs and employment are available to all without discrimination. Evidence of noncompliance may be reported through your local WSU Extension office.*

## NOTE FROM THE EDITOR

It's still 2020? It's still 2020. What a year it has been. For many of us, our personal and professional lives look nothing like they did a year ago. We've experienced working and living in and through a pandemic. We've watched education and communication change, and have watched as the west coast was, or what felt like, being consumed with smoke and wildfires. We've made vineyard and winery changes and policies we never thought we would have to make. We've explored a whole new world of digital marketing, and have reached consumers and advocates we never reached before. We have postponed traditions, and have learned new ways to connect. While it is hard to focus on the positive when so much is changing, the fact that there is some positive in 2020 highlights our, and our industry's, resilience. (But it's also nice to know that 2021 is only a few short months away!).

With this Fall 2020 edition of VEEN, we present some opportunities for online pesticide credits, and educational resources on smoke exposure; we have some interesting information on a new (but maybe non-pest?) insect in Washington vineyards, as well as sneak peak at an updated AgWeatherNet. We also have a few teasers for upcoming winter meetings.

Stay safe and healthy -- until we ZOOM again!

Michelle M. Moyer  
Viticulture Extension Specialist  
WSU Prosser IAREC

## FIND US ON THE WEB: <http://wine.wsu.edu/extension>

Information when you need it. That is the power of the internet! Visit the WSU Viticulture and Enology Research and Extension website for valuable information regarding research programs at WSU, timely news releases on topics that are important to your business, as well as information regarding upcoming workshops and meetings.

It is also a valuable site for downloading our most recent Extension publications, in addition to archived articles and newsletters you can print on demand. Find quick links to AgWeatherNet, the Viticulture and Enology Degree and Certificate programs, as well as to other Viticulture and Enology related resources.

Find us on Facebook

Go to: [www.facebook.com/WSU.Vit.Enol.Ext](http://www.facebook.com/WSU.Vit.Enol.Ext) and "Like" the page!

## Pesticide Recertification Credits and Licensing

By Carol Black, WSU Pesticide Education Specialist

Due to COVID-19, there are several changes to obtaining recertification credits and taking pesticide license exams. Washington State Dept. of Agriculture (WSDA) is the regulatory agency that administers the pesticide program.

### RECERTIFICATION CREDITS

**There are no extensions for the 2020 recertification cycle.** If your five-year cycle ends in 2020, the last day to obtain credits is Dec. 31, 2020.

Currently, there are no in-person courses scheduled because of social distancing and disinfection requirements. However, there are ample webinars and self-paced Internet courses. WSDA posts all approved courses to their website.

WSU's Pesticide Education Program is offering five 3-hour webinars in 2020 and again in 2021. The topics are weed management, pest management, environmental issues, pesticide laws/compliance, and invasive species.

WSU has many 1-hour, self-paced Internet courses for credit. Links to these resources are below:

- [WSDA Pesticide Licensing](#)
- [WSU Pesticide Education](#) - click on "Recertification" and then either "Webinars" or "Internet Courses".

**NEED WSDA PESTICIDE RECERTIFICATION CREDITS?**

**Online options are available!**

To find out what your recertification cycle is and your number of current credits, visit [WSDA's License Search](#) website.

Private Applicators need 20 credits within five years, with no more than 10 credits allowed per year.

### OBTAINING A LICENSE

WSDA offers testing on its regular schedule, except Everett. However, fewer people can test at a time due to social distancing requirements. Please contact your nearest WSDA testing facility prior to arriving for a test to ensure they can accommodate you.

A few WSU County Extension offices currently accommodate private applicators, but many counties still do not allow public visitors. Please call your local office to confirm testing capabilities and rules.

The WSU Pesticide Education

Program offers monthly webinars to review for the Private Applicator exam (6-hour webinar) and live webinars for the Laws & Safety, Weed Management, and Insect & Plant Disease Management Exams (3 hours each). The Program also offers self-paced Internet exam-review courses that can be completed and repeatedly reviewed. The WSU Publications office is staffed for making sales of pesticide study materials.

Additional information on Licensing Education, where to purchase course materials, and where to test are found at the websites linked below:

- [WSU Pesticide Education Program: click Pre-license and either Webinars or Internet Courses](#)
- [WSU Pesticide Study Materials](#)
- [WSDA Testing Information and Locations](#)

## NOT RECEIVING WSU V&E EXTENSION EMAILS?

Go to our website: <http://irrigatedag.wsu.edu/>

This service allows you to customize the information you receive. Choose from topic areas, including: Tree Fruit (apple, cherry, stone fruit, nursery, automation/mechanization), Grapes (juice, wine, table, winery), Other Small Fruit (blueberry, raspberry), Vegetables (potato, onion, sweet corn, peas, carrots, other vegetables), Cereals/Row Crops (wheat/small grains, corn [grain and silage], dry edible beans, alternative crops), Forages (alfalfa, timothy, other grasses/legumes, mint), Livestock (cattle, swine, sheep, goats, pasture management), Ag Systems (high residue farming, soil quality / health, organic ag, direct marketing, small farms), Water and Irrigation (center pivot irrigation, drip irrigation, surface irrigation, water availability / rights).

## Leafminers: A New Insect in Washington Vineyards

By David James, WSU Prosser

Some insects suck the sap out of grape leaves. Some simply chew them. Others will fold leaves and skeletonize them. Now we have a new insect that mines a tunnel between the upper and lower surface of the grape leaf, consuming plant material from the inside as it were.

Leafminers are common on many plants but they are rarely found on grapes. However, in September we became aware of grapevines in two or three locations in the Tri-Cities area of eastern Washington, that had tell-tale signs of leafminer presence. Mining inside a leaf leaves a very characteristic sign, a kind of serpentine 'scribble' on the upper leaf surface (Figs. 1 and 2). The miner is the larva or caterpillar of a tiny moth. It lives its entire life eating and growing inside the mine wandering about in the leaf, leaving a characteristic trail. When full-fed it pupates inside the leaf at the end of the trail before emerging as a 3 mm long moth! (Fig. 3).

Our early investigations indicated that our grape leafminer species is in the genus *Phyllocnistis* and initially I thought it was either *P. vitifoliella* or *P. vitigenella*. As you can tell by these names, both species have a preference for grape, although neither have been recorded in Washington. *Phyllocnistis vitigenella*, known as the American Grape Leafminer has recently established in some European viticultural areas and is causing some concern.

I contacted the North American expert on leafminers, Charley Eiseman, and he believes our species is a new and undescribed species. Different species of leafminers produce unique trails and the leaf mines can therefore be used to identify species in many cases. The mines on our grapes are different from the mines produced by the two species mentioned



**Figure 1** - Characteristic mine on grape leaf in Richland, WA produced by mining larvae of a new and undescribed species of leafminer moth. Photo by David James.



**Figure 2** - Additional "mine" symptoms on grape leaves. Photo by David James.



**Figure 3** - A new and undescribed species of leafmining moth reared from infested leaves in a Richland, WA vineyard. Photo by David James.

above. I have sent him some of our leafminers and he will arrange for DNA barcoding to see whether he is correct in thinking that our species in Washington vineyards is a new species.

While this leafminer may not become a serious issue for Washington grape growers, we need to keep an eye on it and to understand its role in the ecology of IPM in Washington vineyards. We also need to identify it and understand its biology and ecology. Being an unknown species means we have no information on its damage potential.

Consequently, I would like to ask that everyone keep their eyes

open for this pest. If you see symptomatic leaves, please notify WSU at: david\_james@wsu.edu. Over the next year, we will evaluate the occurrence of leafminers in Washington vineyards to determine their distribution, abundance and damage potential.

In the first samples of leafminer-damaged leaves we examined, we found small wasps from the family *Eulophidae* parasitizing leafminer larvae and pupae, so some degree of natural biological control is already occurring, which is great news!

## AWNfarm: A New Site - and Crop - Specific AgWeatherNet App

By David Brown (Director), Sean Hill (programmer), Joe Zagrodnik (post-doctoral researcher), WSU AgWeatherNet

Big AgWeatherNet changes are underway with a focus on delivering better weather data, forecasts and decision-support tools for agricultural stakeholders. The AWN team now includes five staff members with expertise in meteorology and atmospheric science. With this expertise we are pursuing a number initiatives that will benefit the wine industry. We are also systematically improving station siting, installing towers for inversion monitoring, adding new stations to our network, and ingesting data from approved private weather stations. Using state-of-the-art physical weather models and data science techniques, we are in the process of automating quality assurance and data imputation processes, deploying station-specific forecasts, and developing interpolation models to estimate site-specific weather conditions.

### AWNFARM APP

Over the past year, the AWN team has been developing an integrated web- and mobile-app platform. While many features are still in development, the basic platform is available (at no cost) to the public at <https://awnfarm.org/> as well as iOS and Android app stores. This cloud-based platform should be a fast and intuitive way to access AWN tools (Fig. 1).

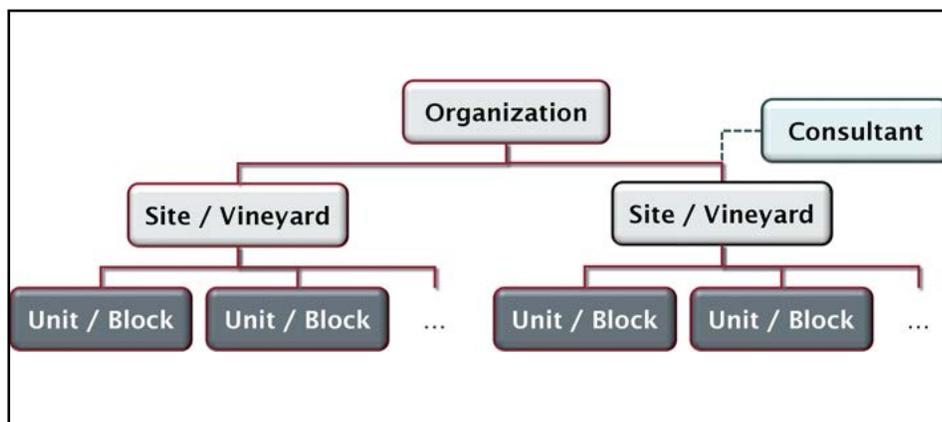


Figure 2 - AWNfarm in-app organization of site information.

### BLOCK - LEVEL DECISION SUPPORT

Different varieties, trellis systems, or microclimates within a vineyard? No problem. The AWNfarm platform features block-level decision support (Fig. 2). Viticulturists provide one-time block-level information on variety, trellis system and temperature offset. Current and future AWNfarm modules use this information to automatically tailor guidance at the block level. Additional features include organizational administrator control over user and consultant access, as well as the ability for all users to filter by site/vineyard.

### CROP -, SEASON - AND USER - SPECIFIC DECISION-SUPPORT

A weather-related decision support platform designed to meet the needs of diverse Washington agricultural stakeholders can quickly become cluttered with an overabundance of tools. Some organizations only grow grapes while other organizations produce diverse crops including wine grapes. And different users have different needs.

To simplify user experience, for wine grape management units the AWNfarm platform only displays grape-related decision support tools. By default, tools are displayed on a seasonal basis (e.g., no grape cold hardiness in July.) Users can add or remove tools from view (including cold hardiness in July!) To add additional flexibility, a “snap view” under development gives users the ability to customize a summary module with key weather data, decision-support metrics, and alerts for each block.

A list of AWNfarm modules (current, under development and planned) relevant to the wine industry is provided in Table 1 (next page). AWN farm researchers are also actively seeking funding for the

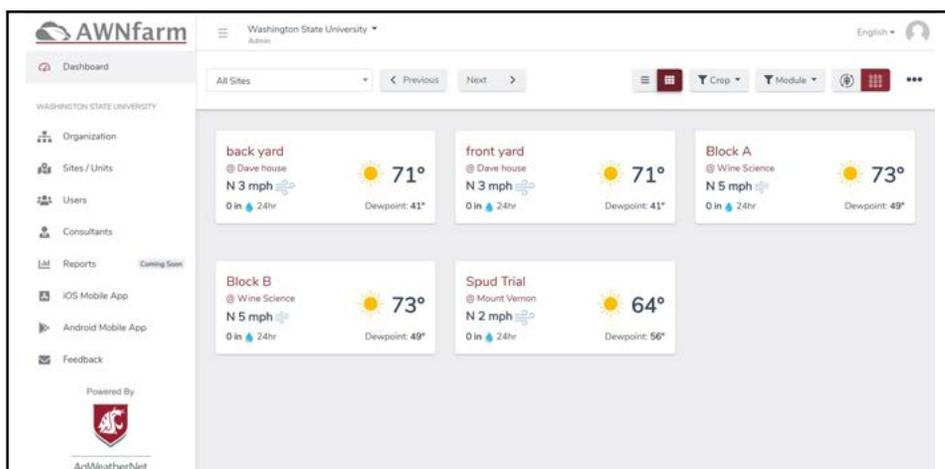


Figure 1 - AWNfarm web dashboard.

continued on page 5

## AWNfarm, continued

continued from page 4

development of weather forecasting and nowcasting models to inform frost mitigation and pesticide spray guidance modules.

### HYPERLOCAL WEATHER

The AWNfarm platform is designed to use hyperlocal weather information to guide block - level decision-making (Fig. 3). Site - specific interpolation and forecast models are currently in development. Currently, users can generate block-level weather data via two approaches:

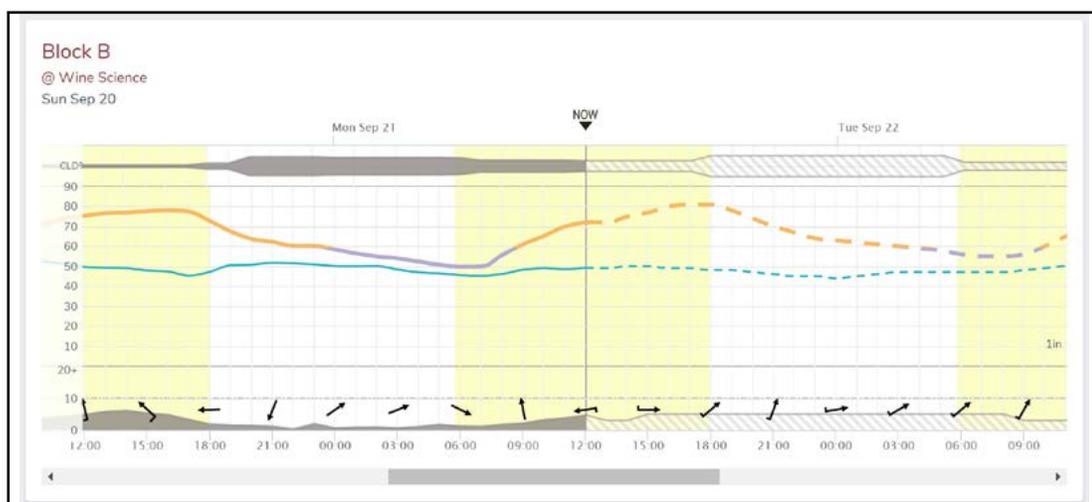
1. The AWNfarm platform allows users estimate block-specific weather conditions through a weighted average of 1 to 3 nearby AgWeatherNet and / or Agrimet stations. Users can also input a fixed air temperature offset for individual blocks.
2. AgWeatherNet also uses data from approved private weather stations. If your vineyard is not represented by current AgWeatherNet stations, you can install your own station and feed site-specific weather data into AWN. Details on approved stations and siting guidelines will be released in Oct. 2020.

**Table 1.** Modules relevant to wine grape growers.

Module Description	Expected availability
Current weather conditions	current
Meteogram (visualize recent & forecast weather)	current
Occupational heat stress	current
Snap summary view (user customizable)	11/2020
Grape cold hardiness	11/2020
Powdery Mildew (revised)	3/2021
Root-knot Nematode (new)	3/2021
Irrigation	TBD

Questions / feedback?

Contact AWN Director  
Dave Brown via email  
at: [weather@wsu.edu](mailto:weather@wsu.edu).



**Figure 3 -** Meteogram showing air temperature, dewpoint, wind speed and direction, precipitation, and cloud cover for 7 or 3 days (web- or mobile- display, respectively) before and after the current time.

Follow WSU Viticulture Extension and  
the WSU V&E Program at:

**VITICULTURE EXTENSION**

[www.facebook.com/WSU\\_Vit\\_Enol\\_Ext](https://www.facebook.com/WSU_Vit_Enol_Ext)

Twitter: [@WSU\\_Vit\\_Ext](https://twitter.com/WSU_Vit_Ext)

**WSU V&E PROGRAM**

[www.facebook.com/wine.wsu.edu](https://www.facebook.com/wine.wsu.edu)

Twitter: [@WSUWineScience](https://twitter.com/WSUWineScience)

## WA Researchers Lead Way on Smoke Exposure in Vineyards

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

Smoke exposure in vineyards is an urgent issue, and Washington State University (WSU) researchers are leading the charge to address it. Four years ago, the Washington State Wine Commission's (WSWC) board of directors approved the Wine Research Advisory Committee's recommendation to support a WSU-led smoke exposure research project, though at the time many saw smoke events as rare, isolated and regional, and not a high priority. In Australia, researchers began studying smoke exposure on grapes in the early 2000s, but in 2016, WSU was among the first in the United States to commit funding to better understand its impact.

To date, the Washington wine industry has directed over \$365,000 toward WSU's smoke exposure research program led by Dr. Tom Collins. He has shared research findings at several WAVE (Washington Advancements in Viticulture and Enology) seminars and webinars and industry meetings, including a webinar on September 16 titled **Smoke Status in Washington**. His most recent report is archived on the Wine Commission's website.

Smoke exposure research has proved quite complicated. The first step of Dr. Collins' work was to develop portable hoop houses that could simulate smoke events and be replicated. He has begun to address some of the many issues involved with smoke exposure, from looking at differences in fuel source (important to eastern Washington vineyards because we have experienced smoke events from both mountain forest fires and

grassland and sagebrush fires) to mitigation of wines impacted by smoke. But more work is needed.

Fortunately, smoke exposure research has become a high priority for wine industries of the west coast and research has ramped up at Oregon State University, University of California, and University of British Columbia.

### WEST COAST TASK FORCE

In early 2020, the West Coast Task Force was created to combine efforts on smoke exposure research. The Washington, Oregon and California wine industries are collectively addressing three areas: contracts, crop insurance, and research. Washington Winegrowers, WSU, WSWC, and Ste. Michelle Wine Estates are representing Washington on the task force.

The task force developed protocols that deal with grape sampling for growers and micro-fermentation for wineries and a video showing how to conduct micro-fermentations. More task force tools are coming, including guidance on the claims process of crop insurance, a risk management tool for smoke damage, and a roadmap to guide growers and vintners on how and when to address issues from smoke events. The task force plans to host a conference next spring in Sacramento, CA to bring growers and vintners together to discuss shared problems and solutions.

### LEVERAGED RESEARCH

Dr. Collins' initial smoke simulation trials with hoop houses at WSU's

Prosser research vineyard helped leverage additional research funds. In 2019, he received an award of more than \$243,000 from the Washington State Department of Agriculture's Specialty Crop Block Grant Program. Also, in 2019, a collaborative research team of WSU, OSU and UC was awarded a \$50,000 planning grant from the U.S. Department of Agriculture's Specialty Crop Research Initiative.

### PLANNING GRANT

The planning grant for risk assessment of smoke exposure on grape and wine quality brings together the powerhouse research team of Drs. Elizabeth Tomasino of OSU, Anita Oberholster of UC, Davis and Collins at WSU. The team held a series of industry stakeholder meetings of west coast states last winter to determine gaps in current knowledge and identify industry research priorities.

Industry stakeholders provided a broad list of needs to the research team to help growers and wineries more effectively manage smoke exposure. This list includes: identifying specific smoke exposure marker compounds and their sensory threshold levels in various varieties, removing unwanted compounds without impacting wine quality, developing rapid, reliable tests that could be done in the vineyard or winery, and more.

The planning grant team is developing a robust research proposal to submit to USDA that will include the following high-level objectives:

1. Develop methodologies for grape sampling in the vineyard, small-scale winemaking and analysis of targeted smoke compounds.
2. Determine variety - specific

*continued on page 7*

**WASHINGTON**  
46°N  
**WINE**

## Smoke Exposure, *continued*

*continued from page 6*

- sensory thresholds in wine.
3. Develop environmental sensors for remote smoke exposure risk detection in the vineyard.
  4. Conduct economic modeling of risk in the vineyard.

### ADDITIONAL WORK NEEDED

The long list of research needs identified by stakeholders is more than can be addressed in a single USDA specialty crop grant. Researchers are working to secure funding to address additional priorities outside the scope of the grant proposal. In 2020, USDA allocated \$2 million for smoke exposure research, with some of the funds supporting work at WSU, OSU and UC. Efforts to continue the role of USDA in smoke exposure research are underway.

To access resources for smoke exposure, visit [www.washingtonwine.org/research/smokeexposure](http://www.washingtonwine.org/research/smokeexposure)

## Future WAVE Webinars

Mark your calendars for these upcoming WAVE webinars, the industry's signature research seminars called Washington Advancements in Viticulture and Enology). WAVE is co-sponsored by the Washington State Wine Commission and Washington State University.

### 2020

December 3 – Working with the Phenolic Analysis Model. - Dr. Jim Harbertson, WSU

### 2021

January 20 – Does Mechanization Pencil out for You? - Dr. Clark Seavert, Oregon State University

March 4 – Managing Grape Leafrollers in Washington. - Dr. David James, WSU

April 8 – Crop Estimation with a Smartphone App. - Dr. Manoj Karkee, WSU

July 14 – Working with High pH Wines. - Dr. Thomas Henick-Kling, WSU

August 5 – Tools to Control Brett in the Winery. - Dr. Charles Edwards, WSU

## Powers Sabbatical and WWIF Student Scholarships

*By Washington Wine Industry Foundation*

### 2021 POWERS SABBATICAL

#### Application opens on Oct. 1.

In honor of Bill Powers, his family and associates developed the Bill Powers Sabbatical Fund to enable a professional currently employed in the Washington State grape or wine industry to undertake a sabbatical in an established wine-producing region of the world. The sabbatical is designed to foster learning about grape growing and / or winemaking that will further the individual's professional career and benefit the Washington wine and grape industry.

The sabbatical awards up to \$5,000, and funds may be used for travel, room and board, and other

education-related expenses. The award is open to one individual currently working in the Washington state grape or wine industry with five years of experience in viticulture or enology. Additional information is at: <https://washingtonwinefoundation.org/sabbatical/>

### PAST SABBATICAL WINNERS

Sadie Drury as a 2019 recipient and traveled to Australia. She shared with us her journey through Australia learning about climate and irrigation practices. Marcus Rafanelli was a 2018 recipient and traveled to France taking a deep dive in to barrel making.

They recently presented on their trips. View their presentation

here: <https://www.facebook.com/watch/?v=804248657053576>

### STUDENT SCHOLARSHIPS

**Applications for WA Wine Industry Foundation 2021 Scholarships open on Oct. 31.**

WWIF facilitates scholarships on behalf of Washington's wine industry to qualifying students pursuing studies in viticulture, enology, and wine-related studies. These scholarships are made possible through generous gifts from donors who care about the future of Washington's wine industry. Additional information and the application can be found at: <https://washingtonwinefoundation.org/scholarships/>

# Winegrowers' 2021 WineVit™: New Name, Same Great Annual Event

By Washington Winegrowers Association

It's the natural conjunction of two worlds, viticulture and winemaking, united by a common fruit and purpose. WineVit™. It's the new name of the event formerly known as the Washington Winegrowers Convention & Trade Show, which returns to Kennewick's Three Rivers Convention Center next spring. WineVit™ will continue serving as a launchpad for innovation, with more than 140 exhibitors bringing to the Tri-Cities the latest in industry equipment, ideas, and trends. There are registration options for everyone – including students! We invite you to save-the-date:

**Mon. March 15 – Thurs. March 18, 2021**

The name may have changed, but the goals are unchanged: to unify wine and grape industry stakeholders and advocates under one roof, and to offer the opportunity to expand their knowledge on topics in their fields.

This year, WineVit™ will take a closer look at the state of both the wine and grape industries, given how challenging 2020 has proven to be. Oversupply, coupled with a global pandemic and recent wildfires, have created a host of problems, but also a host of opportunities. The speakers at WineVit™ will tackle both, offering a broad overview and a detailed insider's look at issues such as industry trends, global supply-and-demand chains, and the latest research projects and findings.

The focus will not only be on the recent past, but also on the role future generations may play in shaping harvests to come. By learning how farming on rootstock has impacted outcomes of other growing regions, the attendees will leave WineVit™ ready to experiment and tinker with new ways to improve yield. WineVit™

## WineVit 2021 - In-Person



WineVit 2021 is planned to be in-person. As we plan for an in-person event, we will follow recommendations of public health experts and standards set by the CDC and federal, state, and local governments. Stay tuned to our social media pages (Facebook and Twitter). Use our event hashtag to share pictures and more! #WineVit

Visit our brand-new event website to learn more: [www.winevit.org](http://www.winevit.org)

will serve as a forum to discuss the latest advancements in filtration technology. During the session "All Who Filter Are Not Lost," experts on the use of techniques, equipment and processes will share their knowledge and lead a wine tasting with example wines made using some of these techniques.

**Poster Submission Deadline: Fri Jan. 8, 2021**

Are you a V&E student, educator, or

researcher? Be sure to participate in the Winegrowers Poster Session. This session provides a unique and casual opportunity for the grape and wine industry to come together to share and discuss new, relevant information and research. Poster categories include: undergraduate students, graduate students, and professionals. This session provides an opportunity for graduate students to share their research during an oral presentation. [Click here to learn more.](#)

## 2020 Washington State Grape Society Annual Meeting - Virtual

By Kim Brunson, Washington State Grape Society

In true 2020 fashion, the Washington State Grape Society's annual meeting is going virtual!

### NOVEMBER 18, 2020 (VIA ZOOM)

- 2:00 – 2:05 PM – Welcome and Introduction
- 2:05 – 2:25 PM – WSGS Business Meeting and Scholarship Recognition Ceremony
- 2:25 – 3:10 PM – Problem Weeds, Herbicide Resistant Weeds, and How to Treat Them – Speaker TBD
- 3:10 – 4:00 PM – Organic Weed Management – Dr. Lynn Sosnoskie, Cornell University

### NOVEMBER 19, 2020 (VIA ZOOM)

- 2:00 – 2:05 PM – Welcome and Introduction
- 2:05 – 2:25 PM – State of the Grapes – Trent Ball, Yakima Valley College
- 2:25 – 3:10 PM – Thrips, Flea Beetles and Cutworms: Pest Management for Insects We Don't Always Spray For – Dr. Doug Walsh, WSU
- 3:10 – 4:00 PM – Myth Busting – Reducing Smoke Taint in the Vineyard – Dr. Tom Collins, WSU



Registration information coming soon. Please visit [grapesociety.org](http://grapesociety.org) for up to date information!