



Vine to Wine

Oregon Wine Research Institute

January 2017

Welcome to the *Vine to Wine*. This monthly e-newsletter is designed to inform you of news, information, and events from the **Oregon Wine Research Institute**, highlighting our research programs and providing relevant information about the OWRI and our researchers. We continue to provide research-based viticulture and enology information for the Oregon wine industry. As always, we welcome industry input, so please ask **OWRI team members** questions from the vineyard or the cellar.

Recent Changes at OWRI



In January OWRI bid farewell to Danielle Gabriel and is now seeking a replacement in the vital outreach and communications role. During this interim period, we will continue to deliver the monthly *Vine to Wine* newsletter, keep the website current and relevant, offer winter webinars, and our traditional **Grape Day** research meeting on April 6th (see registration below). The people who keep OWRI operating extend far beyond the dedicated administrative staff, and include members of

the horticulture and food science departments, as well as the Agricultural Sciences and Marine Sciences Business Center (AMBC). It's a pleasure to introduce Lauren Achenbach, our AMBC accountant who keeps our financial house in order, and assists with budgets and planning. The OSU bookkeeping system is vast and complex, and Lauren has mastered it in record time. Diane Franck handles the day to day bookkeeping for OWRI, and is the experienced source of knowledge about all of our bookkeeping needs. Finally, in October OWRI hired Denise Dewey as a part-time office assistant to help manage daily business operations. After Danielle left, Denise has been indispensable in keeping OWRI outreach products, such as this *Vine to Wine* newsletter on schedule. It takes a village to run any business, and we appreciate everyone who contributes to OWRI including faculty, staff, partners, colleagues, stakeholders and friends.

Mark Chien
OWRI Program Coordinator

A Year in Review- An OWRI Recap of 2016

The faculty of the OWRI were busy with research and outreach in 2016. Sit back and enjoy a video recap of the activities and major findings from the Institute [here](#).

Strategies to manage Red Blotch virus spread in vineyards

Robert Martin, Jay Pscheidt, Clive Kaiser, Rick Hilton, Patty Skinkis, Achala KC, Alexander Levin, and Vaughn Walton

Grapevine Red Blotch Disease (GRBD) has been found in Oregon vineyards, and local research indicates that it may spread between vines. Since research on this virus is relatively new, it remains a complex problem with many unknowns that are currently being addressed through research and extension. Our best recommendations to date for sampling and management that may help growers limit the spread of this disease are based on current knowledge. Additional resources that provide current information about GRBD and its potential vectors are provided at the end of this document.

Sampling and testing

GRBD is caused by a DNA virus that can be found in all parts of the grapevine and can be positively identified using lab analyses known as PCR to amplify the viral DNA that may exist within the plant tissue for identification. The analysis may be done on dormant canes collected in winter (inner bark tissues are analyzed) or petioles from the oldest leaves (basal leaves) collected throughout the growing season.

Minimizing spread of virus

There are basic principles that can be followed to minimize the risk of spreading virus between vines. Virus spreads when there are two factors, including infected plant material and the presence of organisms that can move the virus to other plants (vectors). By eliminating one of these factors, spread can be limited. Vectors that may move the virus include 1) humans by way of planting or grafting with infected plant material and 2) certain treehoppers (insects in the family Membracidae). The management principles below are based on management of the human vector---using infected plant materials, as research is still being done to determine how to identify and manage insect vectors.

1. Growers should use only healthy stock when planting or having vines grafted (new plants or grafting over in-field). Virus-free clones of rootstocks and cultivars are available through commercial nurseries. When establishing a new vineyard or selecting bud-wood for custom grafting, ensure that plant materials are certified (which involves virus testing and confirmation that materials are free of listed viruses). Growers may consider collecting a random sample and virus testing the vines they receive from nurseries before planting (see Oregon Department of Agriculture contact below).
2. Be sure to ask for virus test results from the supplier of nursery stock before ordering plant material.
3. If you are considering grafting vines over in-field, be sure to have clean bud wood sourced for the scion (test the source if you are not buying from a nursery) and test the current vines for virus. Grafting over vines that are already infected will lead to additional infections since the virus is graft-transmitted very efficiently.
4. Avoid planting or replanting vines in close proximity to vineyards that are positive for Grapevine Red Blotch Associated Virus (GBRaV) and that have insect vectors.
5. Employ regular monitoring of vine symptoms throughout the year and virus testing as needed. Symptoms are visible in red cultivars (**Figure 1**). The only way to confirm virus is to have plants tested by a virus testing lab. Visual symptoms are not diagnostic. If vines test positive for the virus, remove if there is a risk of spread (vector present or economic damage severe enough two warrant).
6. If your blocks test positive for the virus, do not use the bud-wood for propagation nor provide it to other nurseries or vineyards for propagation.

7. Monitor for symptoms of insect vector presence. Certain treehoppers have been found to move GBRaV between vines in recent studies in the western U.S. They cause girdling of leaves and canes of shoots while feeding and in red cultivars the leaf blade terminal to the feeding site often turns red (**Figure 2**). In white cultivars, these symptoms are much more difficult to see. Red Blotch may spread rapidly with the presence of insect vectors, but this work is still on-going. No insect management methods are currently recommended as researchers are in the process of identifying vectors and understanding the insect's biology, which is necessary to determine how to best manage the pest through insecticides, cultural practices or biocontrol.

While the points above address some basic strategies to minimize disease spread, more research is needed to determine appropriate vineyard management strategies to enhance vine health and prevent spread. However, based on observations from some Oregon vineyards, where the disease has been found, it appears that vines may be able to perform well. In these situations, there are minimized symptoms possibly because there are reduced environmental and physical stresses on vines. This may be accomplished by ensuring proper irrigation, nutrition and crop levels. As researchers find out more about this disease, its vectors, and management, we will have updates and will begin research on management that will eventually lead to pest and disease management recommendations.



Figure 1. Disease symptoms in red fruited cultivars are found on basal leaves and are described as variable reddening of leaf blades, red veins and petioles, and delayed fruit ripening. Leaf symptoms (top), and canes on a grapevine showing symptoms of Red Blotch virus (bottom). Visual symptoms may vary considerably from vineyard to vineyard and not all symptoms may be found. Photos courtesy of Achala KC.

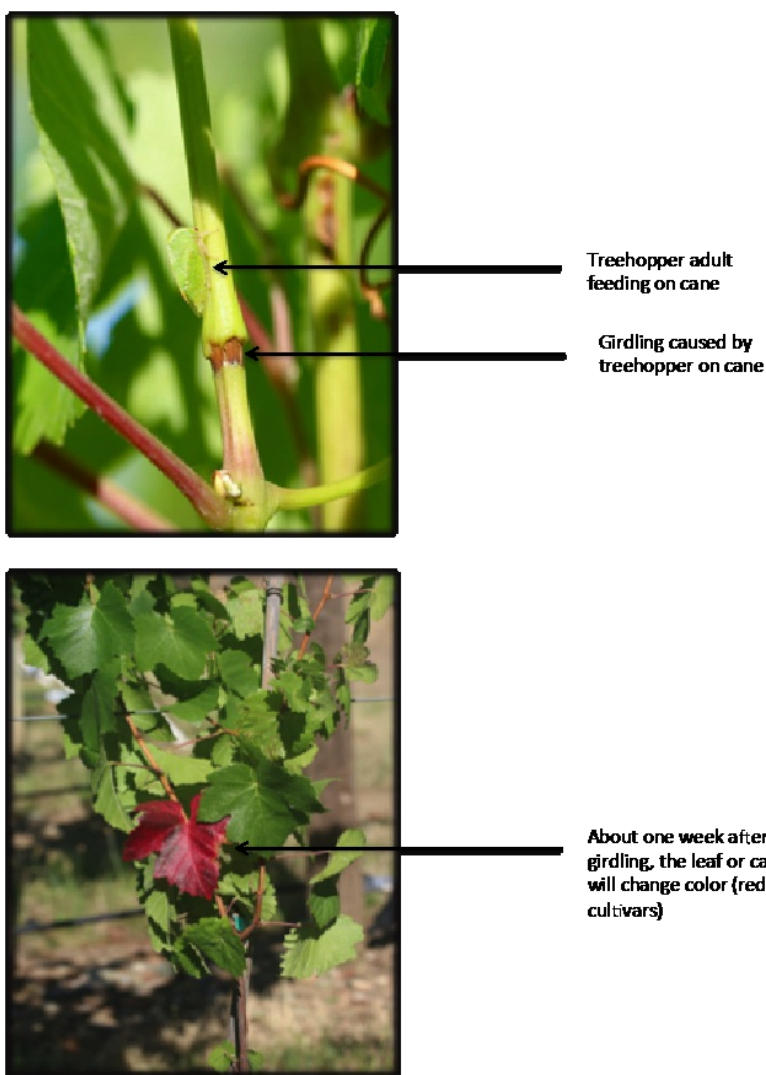


Figure 2. Treehopper species may feed on grapevines, and feeding symptoms are shown, including girdling of petioles or canes that can cause reddening of leaves in red-fruited cultivars.

Additional resources for virus and vectors of Red Blotch Disease:

- [Grapevine Red Blotch Vector Data](#), Brian Bahder, Postdoc, UC Davis Department of Entomology & Nematology
- [Field Guide to Clean Plants and Quarantines for Grapes in WA](#)
- Grapevine Red Blotch Webinar YouTube: [Grapevine Red Blotch - What You Need to Know](#), Presentations on the history, detection, transmission of Grapevine red blotch virus and clean plant sources
- [Pacific Northwest Pest Management Handbook](#) (Martin and Pscheidt)
- [Pest Management Strategic Plan for Wine Grapes in Oregon](#) (2016), Katie Murray and Joe DeFrancesco, et al., OSU Integrated Pest Protection Center
- [Red Blotch disease](#) (ODA), [Acquiring Healthy Grape Plants](#) (ODA)
- [Sonoma county viticulture work on Red blotch](#) (Rhonda Smith et al.)
- [UC Davis Integrated Viticulture - Red Blotch Resources](#)
- [UC-Davis Research Team working on Three Cornered Alfalfa Hopper](#)

Vines suspected to have Red Blotch could be sent for PCR analysis at ODA: Dipak Poudyal, Ph.D., Plant Pathologist, [Plant Health Program](#), Oregon Department of Agriculture 635 Capitol Street NE, Salem, OR 97301-2532. Tel: 503-986-4664, Fax: 503-986-4737, E-mail: dpoudyal@oda.state.or.us

2017 Grape Day- Register Now!

Management of Trunk Disease, Grapevine Viruses and Fungicide Resistance

The LaSells Stewart Center, OSU Campus, Thursday, April 6

For maps and parking information, click [here](#).

Registration is \$65 and includes lunch and a research abstract booklet.

To register, click [here](#).

Join us on campus at Oregon State University for our annual event highlighting research relevant to the Oregon Wine Industry. The Oregon Wine Research Institute is pleased to announce our speaker lineup for Grape Day, on Thursday, April 6. Dr. José Ramón Úrbez-Torres, Research Scientist, Agriculture and Agri-Food Canada will present his world-renowned research on trunk disease, and Dr. Anita Oberholster, Cooperative Extension Specialist in Enology, UC Davis, will talk about her current Red Blotch research. In addition to our two guest speakers, OWRI scientists will be presenting. Dr. Vaughn Walton, OSU Extension Entomologist, will discuss his current research on Red Blotch insect vectors. Dr. Laurent Deluc, OSU Associate Professor, will be discussing genetic markers for Grapevine Leafroll Associated Virus, and Brent Warneke, OSU Department of Botany and Plant Pathology Grad Student, will talk about powdery mildew fungicide resistance research.

Agenda will be available soon!

Reminder

Don't Forget to Measure Your Vineyard Productivity Through Pruning Weights

Dr. Patty Skinkis, OSU Viticulture Extension Specialist & Associate Professor

Pruning weights are the best way to monitor vine growth and vine size changes caused by vineyard management practices. It is easy to gather these data during annual winter pruning. Much like yield, this measure gives you an idea of vine vigor and can be used with yield data or lag estimates to understand productivity and vine balance block by block. The OSU Extension publication, [How to Measure Dormant Pruning Weights of Grapevines](#), was developed to help you understand the importance of measuring dormant pruning wood and provides stepwise instructions on how to collect the data.

Worker Protection Standards Regulation Changes Take Effect in January 2017

Dr. Patty Skinkis, Viticulture Extension Specialist & Associate Professor



Effective January 2, 2017, all farms, including vineyards, will require that their agricultural workers receive annual training, have easy access to information about all pesticides used on the farm, and receive necessary safety information while working around pesticides. The **Worker Protection Standard (WPS)**, which is administered by the Environmental Protection Agency (EPA), was revised in 2015 to enhance the protections of farm workers and pesticide applicators from the risks associated with pesticides. It now requires more frequent training of agricultural workers and makes pesticide use recordkeeping a federal directive. See the employer **checklist** for the requirements.

The revised regulations require that all farms, where agricultural plants are produced, must provide annual training of employees who work in and around pesticide application areas. This includes full, part-time or temporary employees, and it applies to areas even after pesticides are applied. Specifically, these rules apply to areas where products with "Agricultural Use Requirement" on the label are applied, which includes nearly all pesticides whether organic or not, see an example **here**. To determine the need and type of training to provide, see this **decision guide**.

It is important that you are aware of these changes, especially since it enables you as an employer to take steps in protecting workers from physical harm associated with pesticide use. If you want to do your own training of workers in-house, this will require that you have a qualified trainer which is defined as **one** of the following: 1) the trainer is an employee with a current ODA pesticide applicator license, 2) the employee completed an 8-hour **Train the Trainer Course**, or 3) the trainer is a third party certified trainer. Because any paid worker coming onto the farm needs to have this training **BEFORE** they begin work, being trained in-house may be a more convenient option for some. A number of Train the Trainer Courses are being offered by Oregon State University and may be a quicker route to being certified to train if none of your employees are ODA licensed pesticide applicators. Also, training must be done with approved WPS training materials, which are available for free in English and Spanish **online**.

All resources for the WPS regulations and training are available online through the **Pesticide Educational Resource Collaborative**, including the full "**How to Comply**" guide. Also refer to the **National Pesticide Information Center** for more information about WPS and to access further resources on pesticides, their use, and training. Please share these important updates with your colleagues and neighbors in the winegrape community.

Continuing Education/Educational Opportunities

Webinar: Management of Spotted Wing Drosophila using Organic Strategies

Join eOrganic for a webinar on organic management of Spotted Wing Drosophila on February 1, 2017, at 2PM Eastern Time, 1PM Central, 12PM Mountain, 11AM Pacific Time. The webinar is free and open to the public, and advance registration is required **here**.

Vineyard Management, Wine Production and Wine Business Workshops Available

Winter/Spring 2017

Chemeketa Community College's Wine Studies Program has a series of workshops scheduled on topics ranging from developing an organic spray program to wine business. Some workshops are offered more for the beginner while others cover more advanced topics. To learn more about the workshops and register, click [here](#).

Growing Farms: Successful Whole Farm Management

This is an online self-paced course for those interested in starting their own small farm business or are within the first five years of establishing a farm business. It also has components that are helpful to those who are interested in changing their farm business plan. Although content is not specific to vineyard establishment, it covers the basic information needed in establishing a vineyard business. The winter program will begin in February and registration is required. To learn more about the program and to register, see the *OSU Professional and Continuing Education (PACE)* website [here](#).

Pesticide Applicator's Course Series

Winter is a great time to catch up on your pesticide training and recertification credits. Instead of searching for programs to attend to get your credits, consider this online series available through OSU that can be taken at any time. This is an excellent way to get training for yourself or your employees on important topics related to pesticide use and application. Completing the online courses qualify for Oregon Department of Agriculture (ODA) pesticide recertification credits. With new changes to the Worker Protection Standards (WPS), you may want to prepare yourself with some basic pesticide handling and safety information provided in these courses. To learn more about the courses offered, see the *OSU Professional and Continuing Education (PACE)* website [here](#).

Pest & Degree Day Models Seminar Series

In preparation for the new growing season, learn how to use the website, [USPest.org](#), for obtaining pest, disease, and degree day model information that may be helpful in vineyard management. The series is presented by Dr. Len Coop of the Integrated Plant Protection Center at OSU. Each short seminar provides active examples of how to use different components of the website. While the three seminars do not specifically focus only on vineyards, you can find information on the website that is useful for vineyards, including location-based disease models for Botrytis and Grape Powdery Mildew (Gubler Thomas Model), and pest specific models for three cornered alfalfa hopper, Spotted Wing Drosophila (SWD), Brown Marmorated Stink Bug (BMSB), and European Grapevine Moth.

Using the My Pest Page:

https://media.oregonstate.edu/media/t/0_wq0bzkxx

Making Degree Day Maps:

https://media.oregonstate.edu/media/t/0_mw8l60oj

Accessing Pest & Degree Day Models:

https://media.oregonstate.edu/media/t/0_pzlvgs01

Learning the Basics of Viticulture and Enology

Are you or your employees in need of knowledge about grapevine growth, wine microbiology, or the basics of vineyard or winery production? If so, you may want to consider taking some online, self-directed course modules this winter. Washington State University has a number of courses in viticulture and enology that are available on

topics ranging from vineyard design to insect management, wine production, sensory and more! To learn more about the various modules available, click [here](#).

Helpful Resources

Help Reduce Herbicide Drift from Neighbors

Dr. Patty Skinkis, OSU Viticulture Extension Specialist & Associate Professor

With the Oregon grape industry growing rapidly near urban boundaries throughout the state, herbicides used in home gardens and residential and urban landscapes can cause serious damage to local vineyards. The OSU Extension publication, [Are your Weed-control Products Damaging Nearby Vineyards?](#), is a brief informational guide written in layperson's terms for anyone living near a vineyard to understand the damaging effects that common herbicides can have on grapevines. Be sure to share this document with your neighbors!

Upcoming Industry Events

2017 Washington Association of Wine Grape Growers Convention & Trade Show

February 7-9, 2017

Location: Three Rivers Campus in Kennewick, Washington

The WAWGG Convention is the premier educational and networking opportunity for the Washington and Eastern Oregon grape and wine industry with sessions for growers, vintners, viticulturists, enologists, tasting room staff, marketers, and more! This three-day event features a 200-booth trade show, a poster session showcasing the latest industry research, educational sessions, an Honors Reception recognizing industry leaders and legends, and networking opportunities. Register [here](#) for the 2017 WAWGG Convention & Trade Show. To view the Convention Program, click [here](#).

2017 Oregon Wine Symposium

February 21-22, 2017

Location: Oregon Convention Center, Portland, OR

The Symposium comprises two full days of industry thought leaders and experts covering the most relevant topics in viticulture, enology, and wine business plus the Northwest's largest wine industry trade show, with more than 170 exhibitors. The Symposium is a must-attend event for wine industry professionals, delivering cutting-edge technical and business intelligence trends across all aspects of the wine business. All winery and vineyard owners, vineyard managers, winemakers, marketing and sales managers, and winery staff should register today to take advantage of the lowest Symposium ticket rates! Register [here](#) for the 2017 Oregon Wine Symposium.

Become a member of the American Society for Enology and Viticulture (ASEV)

ASEV members are among the most informed and up-to-date professionals in the grape and wine industry. Members have access to the latest science and research with the

peer-reviewed [American Journal of Enology and Viticulture \(AJEV\)](#) and the new publication, [Catalyst: Discovery into Practice](#).

ASEV offers individual membership and industrial affiliation. Click below for more information:

[Individual Membership \(Professional, Student, and Emeritus\)](#)
[Industrial Affiliate \(Company\)](#)

Interested? Click [here](#) to join today if you are not already a member.

And if you are already a member, we encourage you to share with your colleagues about the benefits you receive and how they, too, can have the same.

Have a particular topic or question you would like to see addressed in the *Vine to Wine*? Let us know.

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