

Ohio Grape-Wine Electronic Newsletter

Edited by: Dr. Maria Smith

December | 2018



Photo: Wine sensory evaluation from the Grape & Wine Workshop, December 2018; Photo credit: Diane Kinney

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Happy Holidays!

From all of us, we hope you all had a festive and wonderful holiday season!

In this issue of OGEN, we reflect back on the month of December, what temperature fluctuations can mean for your vine winter survival, and share with you our December extension activities.

With the upcoming events of 2019, we hope to see you all soon!

-Maria and The OSU V&E team

December at OARDC

By: Dr. Maria Smith, HCS-OSU

Following a below average November, December ushered in warmer temperatures and high precipitation at OARDC.

Temperatures

On the heels of an unseasonably cold November, with temperature departures of 10 °F below average, December has been much more moderate, with temperatures approximately 5 °F above average (**Figure 1**). While warmer temperatures are certainly a welcome change, excessively warm temperatures, especially during the later part of the winter, may be problematic for vine freeze tolerance and the ability to withstand future cold events (see **"Bud Dormancy Basics"** for more information).

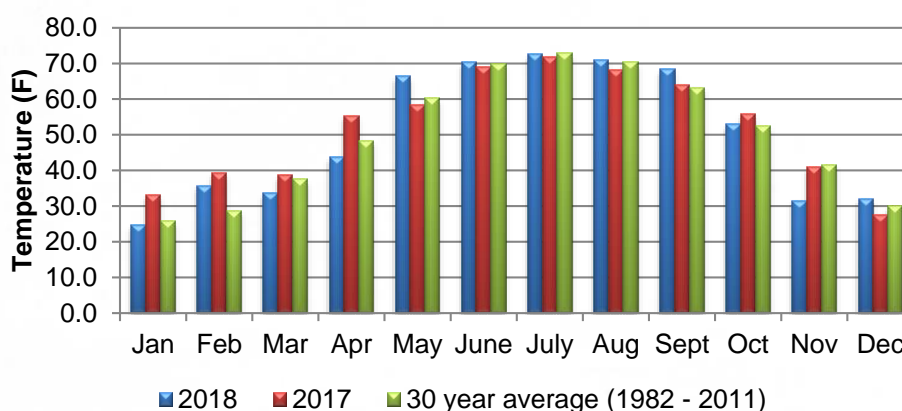


Figure 1. Monthly temperature deviation from the 30-year average at OARDC, Wooster, OH. Figure by Diane Kinney.

Precipitation

December continued the trend of high rainfall to close out 2018, accumulating 1.5" above the 30-year average for the month of December (**Figure 2**). In total, cumulative precipitation at OARDC reached nearly 13" above the 30-year annual average (**Figure 3**).

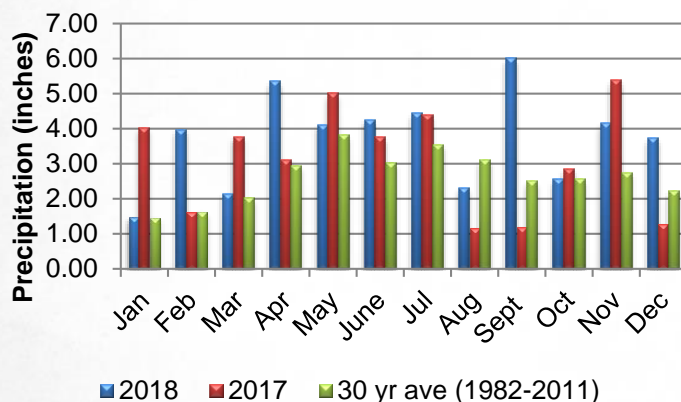


Figure 2. Monthly precipitation totals for 2018 (blue), 2017 (red), and the 30-year average (green) at OARDC, Wooster, OH. Figure by Diane Kinney.

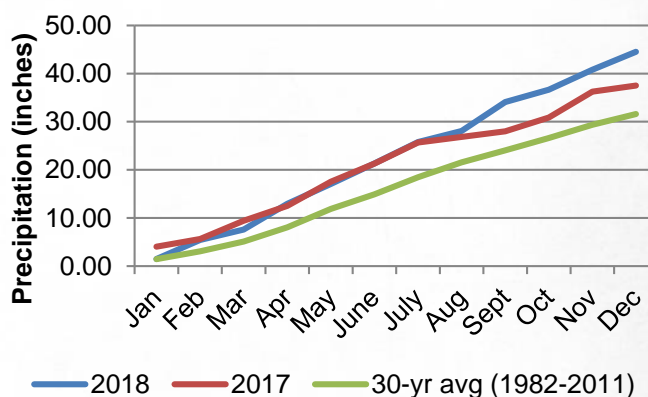


Figure 3. Cumulative precipitation totals for 2018 (blue), 2017 (red), and the 30-year average (green) at OARDC, Wooster, OH. Figure by Diane Kinney.

Understanding the basics of bud dormancy

By: Dr. Maria Smith, HCS-OSU

Defining dormancy:

Dormancy in perennial horticultural crops such as grapevines is defined as the “absence of visible growth in any plant structure containing a meristem” [1]. The meristem is the undifferentiated cells that divide and eventually become new plant organs like shoots, clusters, and roots. Meristems can be found in tissues such as buds, root tips, and the thin layer of cells that promote expansion of permanent wood such as trunks and cordons (i.e., vascular cambium). The major purpose of dormancy is plant survival under harsh freezing winter conditions. Because of the aboveground exposure to cold temperatures, we spend most of our time in research and extension talking about winter survival of bud (**Figure 1**) and water, sugar, and nutrient transporting (woody) tissues (i.e., xylem and phloem; **Figure 2**) instead of roots, which are insulated by soil and, ideally, snow.

An up-close of grape bud and cane tissues

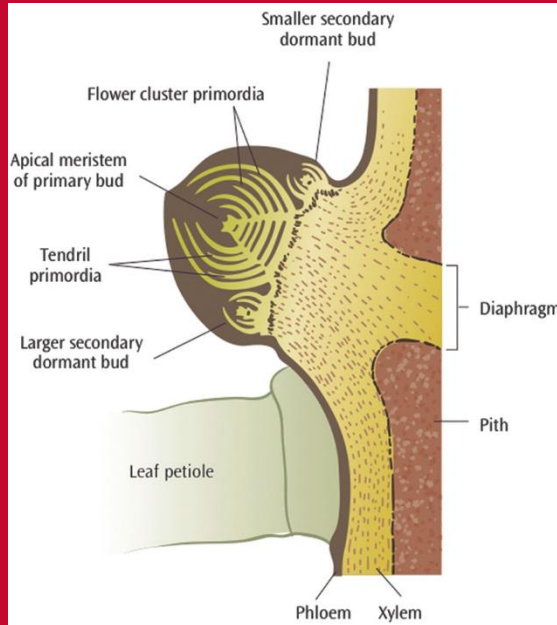


Figure 1. Dormant compound grape bud anatomy. The meristem tissue provides new cells for developing shoots, and the primordia become leaves and eventual flower/fruit clusters following budburst. Figure from Li-Mallet, et al. 2015.

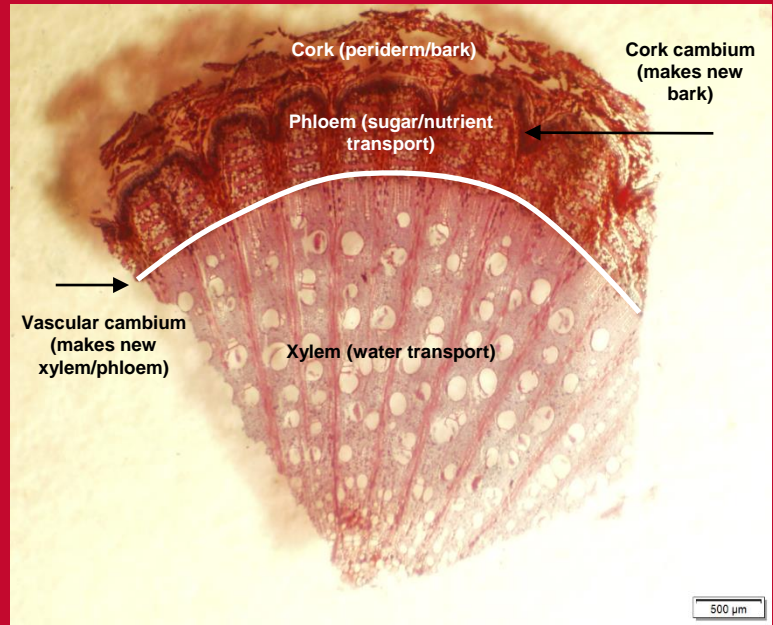


Figure 2. Anatomy of a one-year-old grape cane (quartered section) from *V. vinifera* Chardonnay

Bud dormancy (continued)

The winter dormancy process:

During the fall, grapevines transition to dormancy in a process called **cold acclimation** [2]. During this time, decreasing temperatures and daylight cause a series of changes within the vine that allow it to withstand below freezing temperatures. A few of the major changes include visible leaf fall and formation of brown periderm (e.g., bark) on canes, as well as increases in carbohydrate (sugar) concentration and decreases in water content of vulnerable living bud and woody tissues.

Following acclimation to near maximum freeze tolerance (e.g., the coldest temperatures a vine tissue can withstand without dying), vines transition into a phase called **endodormancy**. Endodormancy lasts through a pre-determined length of time at or below freezing temperatures, referred to as **chilling hours**. During this time, the vine hormonal and genetic signals suppress budburst. For instance, vines refrain from budburst now in early January despite above freezing temperature fluctuations in December because they are in an endodormant state. However, required chilling hours vary based on the parentage of the vine, which in part explains why different grape varieties at the same site may reach budburst at very different times [3]. For example, it is well known that many Minnesota cold hardy grape varieties (*V. riparia* parentage) tend to reach budburst before *V. vinifera* (**Table 1**).

Once the required chilling hours have been met, vines enter a state of **ecodormancy**. This is when budburst is suppressed by continued exposure to below freezing temperatures and shorter day lengths during the later parts of winter. It is at this point, periods of warm temperatures can become very problematic. During ecodormancy, buds may **deacclimate** to warm temperature exposure, losing their winter maximum freeze tolerance and increasing injury probability from cold snaps.

Table 1. Example: Date of 50% budburst from 2012, data modified from OSU variety trial at OARDC Wooster, OH

Variety (M = MN cold hardy – <i>V. riparia</i>) (V = <i>V. vinifera</i>)	Date of 50% budburst
Frontenac (M)	Apr 18
La Crescent (M)	Mar 23
Marquette (M)	Mar 23
Cabernet franc (V)	Apr 20
Cabernet sauvignon (V)	May 1
Chardonnay (V)	Apr 19
Sauvignon blanc (V)	Apr 24

Bud dormancy (continued)

OK, so what?

Dormancy is a very complex state, with freeze tolerance being highly influenced by changes in environmental conditions and vineyard management practices [2, 4]. We also know that the *extent* of cold temperature exposure matters significantly to maximum freeze tolerance. Maximum bud freeze tolerance is higher when vines are exposed to colder temperatures during the acclimation period [2, 5]. Basically, this means that a warm December, while nice and comfy for us, may potentially be problematic for surviving future cold events.

Hold off on the pruning through the worst of winter, but brush up on pruning techniques to be ready in the next couple of months

Knowing when to prune is as important as pruning itself. Pruning closer to budburst provides ample bud availability in case pruning adjustments are needed because of winter injury. This helps increase the chances of maintaining normal crop levels in the following season. Furthermore, it is important to consider the order in which varieties are pruned. Pruning the earliest budburst varieties last will help stave off the potential for spring frost injury. This is based on the concept of apical dominance, discussed in [6].

For additional resources on pruning techniques, see [the Midwest Grape Production Guide](#) and [A Primer on Pruning from PSU](#).

Lastly, three pruning workshops from OSU viticulture extension are being scheduled for late February and early March. **Be on the lookout in January for the upcoming dates, times, and locations!**

Citations:

[1] Lang GA. 1987. HortSci 22:817-820.

[2] Zabadal TJ, et al. 2007. Winter injury to grapevines and methods of protection. Michigan State University Extension, East Lansing.

[3] Londo and Johnson. 2016. Environ Exp Bot 138-147.

[4] Martinson T. 2011. How grapevine buds gain and lose cold-hardness. Retrieved from: <https://grapesandwine.cals.cornell.edu/newsletters/appellation-cornell/2011-newsletters/issue-5/how-grapevine-buds-gain-and-lose-cold/>

[5] Centinari M. 2016. Winter notes: What is going on in your vineyard right now? Retrieved from: <https://psuwineandgrapes.wordpress.com/2016/03/04/winter-notes-what-is-going-on-in-your-vineyard-right-now/>

[6] Centinari M. 2016. How does delaying spur-pruning to the onset or after bud burst impact vine performance? Insights from recent studies. Retrieved from: <https://psuwineandgrapes.wordpress.com/2016/11/11/how-does-delaying-spur-pruning-to-the-onset-or-after-bud-burst-impact-vine-performance-insights-from-recent-studies/>

December workshop wrap-up

By: Dr. Maria Smith, HCS-OSU

Three regional workshops were held by The OSU V&E team in the month of December. These included two post-fermentation workshops on December 11 and 18 in Vermillion and Thornville, OH, and the Grape and Wine Workshop on December 19 at OSU South Centers in Piketon, OH.

Post-fermentation workshops

The post-fermentation workshops provide an annual opportunity for wine sensory analysis and networking between regional industry members. A total of 31 participants were in attendance between the two events. At each workshop, participants critically discussed both positive wine qualities and wine faults in the 2018 vintage, as well as potential methods for making wine adjustments performed following fermentation (e.g., blending, fining). Additional discussions assessed the 2018 vintage potential from a regional viticulture perspective.



Post fermentation workshop Dec 11 in Vermillion, OH.
Photo credit: Diane Kinney



Post fermentation workshop winery tour Dec 18 in Thornville, OH. Photo credit: Diane Kinney

Grape and Wine Workshop

The Grape and Wine Workshop at OSU South Centers is an annual event intended as an informal atmosphere to provide guidance and education in a broad range of grape and wine production topics. This year, vine nutrition and canopy management were topics covered in viticulture, while basic enological topics included fermentation and sulfur dioxide management, in addition to evaluation of grape varieties for quality wines.



Grape and Wine Workshop – grape variety evaluation. Photo credit: Diane Kinney

Upcoming Post-Fermentation Workshops:

January 8 – Valley Vineyards

January 24 – Laurentia Vineyards & Winery

For additional details and event registration, see the Events Page at

<https://ohiograpeweb.cfaes.ohio-state.edu/events>

OSU Grape Pathology survey

Help us, help you! The FRAME Network, a national research and extension team working on fungicide resistance in grape powdery mildew, is interested in hearing about how you approach powdery mildew management and fungicide selection. If you are a vineyard owner, manager, consultant, or someone who provides fungicide recommendations for vineyards in the United States, please consider taking our survey! The survey should only take you about 10 minutes to complete. Click the link below to complete the survey OR you can email Dr. Melanie Lewis Ivey (ivey.14@osu.edu) to receive a copy of the survey in the mail.

https://wsu.co1.qualtrics.com/jfe/form/SV_2lylQooeFKjMCwJ



Vines & Wines News @ Buckeye Appellation | Dec 2018

By: Diane Kinney, HCS-OSU

Vine & Wine News continues to provide updates on grape growing and wine making in Ohio and elsewhere. These updates will be posted on the program website, *Buckeye Appellation* (BA) at:

<http://ohiograpeweb.cfaes.ohio-state.edu/>.

We would like to invite you to visit the website on a regular basis to help inform you of what our OSU Team has available to you through OGEN, TGE, research updates, events and news. Our hope is that it becomes a resource you look up periodically. ***So why not bookmark this site today?***

In the month of December, we have posted the following updates. Simply click on the underlined link and the desired document will automatically open.

Educational Materials:

- ❖ Ohio Grape-Wine Electronic Newsletter (OGEN) on homepage and tab (current issue).
- ❖ The Grape Exchange (TGE) on the homepage and tab (latest posting on Dec. 13).

News:

- ❖ Fruit Maturity reporting for 2018 is complete at OSU-Wooster and AARS-Kingsville

Upcoming events:

- ❖ January 8, 2019: 2018 Post Fermentation Wine Quality Control Workshop – Valley Vineyard.
- ❖ January 22, 2019: 2018 Post Fermentation Wine Quality Control Workshop – Laurentia Vineyards & Winery
- ❖ February 18-19, 2019: 2019 Ohio Grape and wine Conference

OGEN survey reminder:

Have you completed the OGEN survey yet? If not, we would like your feedback to improve the future communications from the OSU viticulture and enology teams!

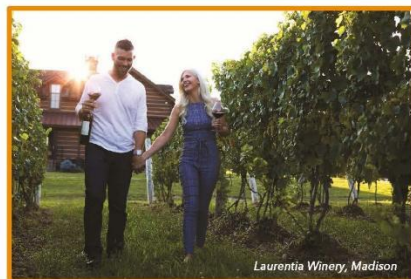
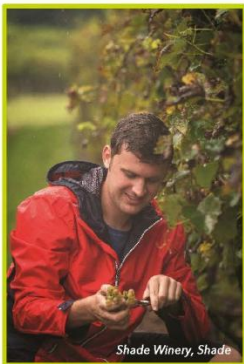
All responses will remain anonymous and confidential. The survey takes approximately 5 minutes to complete. Please click the following link to take the survey! https://osu.az1.qualtrics.com/jfe/form/SV_dbTzt1xeOTkGQXb

Vines and Wines News @ Buckeye Appellation Dec | 2018

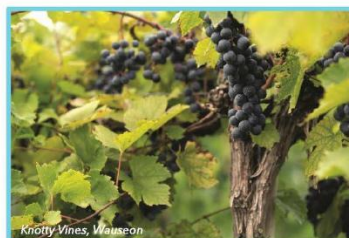
Has a fellow grape grower or wine maker gone above and beyond?

Nominate your industry colleagues for winemaker and grape grower of the year! Forms are located on pp. 10-11. For additional application information, please email Christy Eckstein at ceckstein@agri.ohio.gov.

2019 Ohio Grape and Wine Conference



Registration Information



The 2019 Ohio Grape and Wine Conference Registration is now open!

For more on featured speakers and registration information visit the event page!

February 18-19, 2019
Embassy Suites Columbus/Dublin
5100 Upper Metro Place, Dublin, OH 43017



Grower of the Year Award Nomination Form

Ohio's "Grower of the Year" award is an annual honor awarded by the Ohio Grape Industries Committee (OGIC), to an individual, family or vineyard who displays outstanding excellence in viticulture management. The award recipient is recognized by others for their innovation and leadership within the Ohio's grape industry.

This award is limited to Ohio's grape growers only. Nominees may include an individual, family or vineyard who reside or are located in Ohio. Consideration will only be given to nominations that clearly address the criteria on this form. Nominations or endorsements received after the submission deadline will not be reviewed.

Nominator Information:

Name: _____

Business: _____

Phone: _____ E-mail: _____

Nominee Information:

Name: _____

Business: _____

Phone: _____ E-mail: _____

Grower of the Year Criteria:

- Recognized by fellow growers and wineries as an efficient, successful producer of high-quality grapes
- Contributed to the success of other growers
- Demonstrates a commitment to adoption of new technologies, processes or innovations to improve grape quality and/or profitability
- Demonstrates a commitment to industry well-being
- Demonstrates a commitment to enhancing the environmental benefits of grape production
- Contributes to the awareness and market success of a grape variety(ies) or an appellation
- Follows viticultural practices to produce optimum fruit quality and healthy vines.

Submission Requirement Checklist:

- Completed nomination form.
- One-page letter highlighting why this individual and/or company is being nominated.
- A biography of the nominee, not to exceed one page. (Should include statement of industry contributions.)

Nomination Guidelines:

- The nominator must NOT be an immediate family relative, employer, employee or co-worker of the nominee.
- The nominator can only put forward one nominee per year.
- The nominee cannot be a current Ohio Grape Industries Committee member.
- The nominee must "serve" in the actual capacity for which they are being nominated, not just be an owner.

Nomination Submission:

Send items listed under "Submission Requirement Checklist" to the following:

Ohio Grape Industries Committee
Attn: Christy Eckstein
8995 E. Main Street
Reynoldsburg, OH 43068
ceckstein@agri.ohio.gov
Fax: (614) 466-7754

Questions, contact Christy Eckstein at
(614) 728-6438 or
ceckstein@agri.ohio.gov

Nominations must be received by March 8, 2019



Winemaker of the Year Award

Nomination Form

Ohio's "Winemaker of the Year" award is an annual honor awarded by the Ohio Grape Industries Committee (OGIC), to a winemaker who displays outstanding excellence in winemaking. The award recipient is recognized by others for their innovation and leadership within Ohio's wine industry.

This award is limited to Ohio winemakers only. Consideration will only be given to nominations that clearly address the criteria on this form. Nominations or endorsements received after the submission deadline will not be reviewed.

Nominator Information:

Name: _____

Business: _____

Phone: _____ E-mail: _____

Nominee Information:

Name: _____

Business: _____

Phone: _____ E-mail: _____

Winemaker of the Year Criteria:

- Nominee must be a current A2 permit holder.
- Recognized by fellow winemakers as an efficient, successful producer of high-quality wines.
- Contributed to the success of other winemakers.
- Demonstrates a commitment to adoption of new technologies, processes or innovations to improve winemaking in Ohio and/or nationally.
- Demonstrates a commitment to industry well-being.
- Contributes to the awareness and market success of wines produced in Ohio.

Submission Requirement Checklist:

- Completed nomination form.
- One-page letter highlighting why this individual and/or company is being nominated.
- A biography of the nominee, not to exceed one page. (Should include statement of industry contributions.)

Nomination Guidelines:

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- The nominee must "serve" in the actual capacity for which they are being nominated, not just be an owner.

Nomination Submission:

Send items listed under "Submission Requirement Checklist" to the following:

Ohio Grape Industries Committee

Attn: Christy Eckstein

8995 E. Main Street

Reynoldsburg, OH 43068

ceckstein@agri.ohio.gov

Fax: (614) 466-7754

Questions, contact Christy Eckstein at
(614) 728-6438 or

ceckstein@agri.ohio.gov

Nominations must be received by March 8, 2019



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

Name & Address	Phone	Email & Website	Area of Expertise & Assistance Provided
Dr. Imed Dami, Professor & Viticulture State Specialist Dept. Of Horticulture & Crop Science 216 Gourley Hall – OARDC 1680 Madison Avenue Wooster, OH 44691	330-263-3882	e-mail: dami.1@osu.edu Website: Buckeye Appellation	Viticulture research and statewide extension & outreach programs.
Dr. Doug Doohan, Professor Dept. Of Horticulture & Crop Science 116 Gourley Hall – OARDC 1680 Madison Avenue Wooster, OH 44691	330-202-3593	Email: Doohan.1@osu.edu Website: OARDC Weed Lab	Vineyard weeds and control. Recommendation on herbicides.
Dr. Gary Gao, Small Fruit Specialist and Associate Professor , OSU South Centers 1864 Shyville Rd, Piketon, OH 45661 OSU main campus, Rm 256B, Howlett Hall, 2001 Fyffe Ct Columbus, OH	740-289-2071 Ext. 123 Fax: 740-289-4591	Email: gao.2@osu.edu Website: OSU South Centers	Viticulture Research and Outreach in southern Ohio
Dr. Melanie Lewis Ivey, Assist. Professor Dept. of Plant Pathology 224 Selby Hall – OARDC 1680 Madison Avenue Wooster, OH 44691	330-263-3849 330-465-0309	Email: ivey.14@osu.edu Website: OSU Fruit Pathology	Grape Diseases Diagnostics and Management. Recommendation on grape fungicides and biocontrols. Good Agricultural Practices and Food Safety Recommendations.
Diane Kinney, Research Assistant Dept. Of Horticulture & Crop Science 218 Gourley Hall – OARDC 1680 Madison Avenue Wooster, OH 44691	330-263-3814	Email: kinney.63@osu.edu Website: Buckeye Appellation	Vineyard and Lab Manager – Viticulture Program. Website manager for Buckeye Appellation website.
Andrew Kirk, AARS Station Manager Ashtabula Agricultural Research Station 2625 South Ridge Road Kingsville, OH 44048	440-224-0273	Email: Kirk.197@osu.edu	Viticulture Research and Outreach in northeastern Ohio.
Dr. Elizabeth Long, Assist. Professor OSU/OARDC Entomologist 105 Thorne Hall 1680 Madison Avenue Wooster, OH 44691	330-263-3725	Email: long.1541@osu.edu	Fruit and vegetable insects.
Dr. Erdal Ozkan, Professor & Extension State Specialist Food, Agriculture & Biological Engineering Dept, OSU 590 Woody Hayes Drive Columbus, OH 43210	614-292-3006	Email: ozkan.2@osu.edu	Pesticide application technology, Sprayer calibration
Patrick Pierquet, Research Associate Dept. Of Horticulture & Crop Science 220 Gourley Hall – OARDC 1680 Madison Avenue Wooster, OH 44691	330-263-3879	Email: Pierquet.1@osu.edu	Wine Cellar Master Enology research, micro-vinification, sensory evaluation, and laboratory analysis
Dr. Lisa Robbins Dunlap, Research Associate Dept. of Horticulture & Crop Science 218 Gourley Hall – OARDC 1680 Madison Avenue Wooster, OH 44691	330- 202-3543	Email: Dunlap.352@osu.edu	Cellar assistant Enology research, sensory evaluation, and laboratory analysis
Dr. Maria Smith, Viticulture Outreach Specialist Dept. of Horticulture & Crop Science 205 Gourley Hall – OARDC 1680 Madison Avenue Wooster, OH 44691	330-263-3825	Email: Smith.12720@osu.edu Website: Buckeye Appellation	Maria is the primary contact for viticulture extension and outreach. Evaluation of site suitability for vineyard establishment and all aspects of commercial grape production.
Todd Steiner, Enology Program Manager & Outreach Specialist Dept. Of Horticulture & Crop Science 118 Gourley Hall – OARDC 1680 Madison Avenue Wooster, OH 44691	330-263-3881	Email: Steiner.4@osu.edu Website: Buckeye Appellation	Todd is the primary research and extension contact of the enology program. Commercial wine production, sensory evaluation, laboratory analysis/setup and winery establishment.

CFAES provides research and related educational programs to clientele on a nondiscriminatory basis. For more information, visit cfaesdiversity.osu.edu. For an accessible format of this publication, visit cfaes.osu.edu/accessibility.

