

Ohio Grape-Wine Electronic Newsletter

Edited by: Dr. Maria Smith

February | 2019



Photo: Quaker City, OH Grape Pruning Workshop, February 25, 2019, Photo credit: Christine Gelley

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Late winter happenings...

Our largest annual event of 2019, the Ohio Grape and Wine Conference, is now behind us. We certainly enjoyed the event this year, and we hope you gained as much from the experience as we did!

At the end of winter and into early spring, pruning is at the front of the vineyard priority list. In this issue of OGEN, we take a closer look at pruning styles and tips for beginning the season successfully.

For hands-on pruning assistance for you or your crew members, look to attend one of our upcoming pruning events in the coming weeks!

-Maria and the V&E Team

Grapevine dormant pruning

By: Dr. Maria Smith

With March upon us, most of us have begun pruning or will begin shortly. Prior to pruning, it is important to consider a number of factors and carefully consider the pros and cons of pruning decisions.

Pruning is an annual practice, marking the first in a series of canopy management practices that help growers achieve high quality fruit production and maintain vine shape and size.

Why do we prune [1]? Grapes are woody perennial vines that produce the highest maturity fruit from primary buds (see: [December OGEN](#)) arising from one-year-old wood (canes). Pruning mature fruiting vines (>3-4 years old) adjusts the number of available buds, which, in part, determines the number of potential shoots and inflorescences/berry clusters for the upcoming season. Therefore, pruning is an important component of the vine balance concept, which aims to achieve an ideal fruit to vegetation ratio for optimal fruit maturity. In addition, pruning controls vine size and assists in maintaining vine architecture according to the preferred training system.

The plant perspective: New plant growth in the spring is initiated by the plant hormones auxin and cytokinin, which are responsible for cell elongation and cell division, respectively (**Figure 1; [2]**). These plant hormones that are responsible for bud break demonstrate predictable and observable patterns of behavior and interaction. We can pay attention to and take advantage of these behaviors when choosing when and how to prune grapes.

Auxin is made in the shoot tip and is transported DOWN from shoots to roots



Cytokinin is made in the root tip and is transported UP from roots to shoots

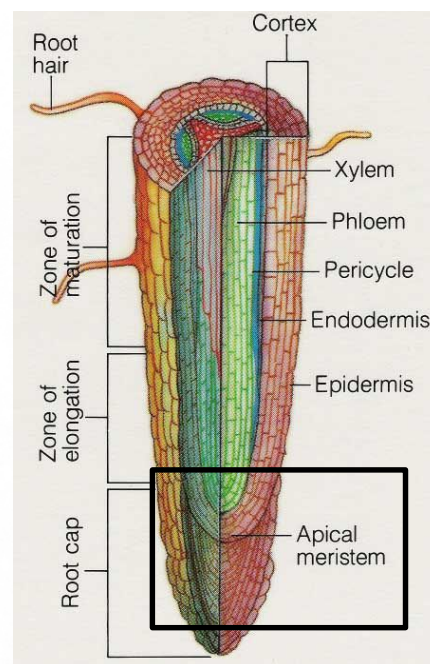


Figure 1: Grape shoot (left) and generic root anatomy (right; photo from: <https://www.pinterest.com/pin/62346776061306267/>). The meristematic tissues responsible for growth and development hormone production are highlighted in black boxes.

Dormant pruning (continued)

The relationship between plant hormones and pruning: As grape growers, we beneficially manipulate natural plant biology. For instance, **delayed or double pruning** is a strategy we can use to delay bud break for frost avoidance. This practice is based on *apical dominance*, or the hormonal suppression of basal (bottom) bud break by the distal (top) buds. Apical dominance is a result of auxin moving downward from the distal most buds of the cane toward the basal buds nearest the cordon (**Figure 2; [3]**). Auxin and cytokinin interactions also play a role in the success of cane arching as a method to promote stronger shoot growth in the middle section of canes – a useful practice for varieties that tend to display weak growth in the middle when laid flat (e.g., *V. vinifera* Cabernet Sauvignon; **Figure 3; [4]**). Lastly, apical dominance is the reason why long canes often develop blank areas (i.e., buds that don't develop) and a propensity for less uniform shoot growth in the middle section of canes – a useful practice for varieties that tend to display weak growth in the middle when laid flat (e.g., *V. vinifera* Cabernet Sauvignon; **Figure 3; [4]**). Buds on long canes often develop at the distal end, suppressing development closer towards the trunk causing the blank area (**Figure 4**). When developing cordons, blank regions can be combatted by laying down shorter 5 to 7 bud canes in successive years. Retaining fewer buds per cane promotes more uniform bud break, shoot development, and overall better cordons and spurs.



Figure 2: Delayed pruning in Riesling (2017, Lewisburg, PA). Notice how all of the buds have broken in the white box at the cane tips (top) but not in the red box nearer the cordon (base buds)?



Figure 3: Example of arched canes, which takes advantage of auxin/cytokinin movement to enhance mid-cane bud break and shoot vigor; Photo from: <http://www.vitpractice.co.nz/pruning.html>



Figure 4: "Blank" region, often a result of high bud retention during cordon training.

Dormant pruning (continued): addressing timing and strategy

Two of the most frequent questions that I receive on pruning are 1) When can I start pruning?; and 2) What do you think about cane vs. spur pruning?

Timing: Observationally, vines that are pruned in the fall demonstrate lower bud freeze tolerance and higher susceptibility to dormant winter freeze injury [6]. Labor constraints and vineyard size often dictate when pruning begins, but ideally pruning should be delayed until spring to reduce risk of winter bud injury. If waiting is not optional, it is best to prune the most cold hardy varieties first and the most cold tender last (**exception:** MN cold hardy hybrids exhibit very early bud break, which can be exacerbated by early pruning and increase the risk of spring freeze injury).

Strategy (cane vs. spur pruning): The age-old debate. Both cane and spur pruning have their benefits and drawbacks: both methods require intensive canopy management and tying canes (cane-pruning) or shoot thinning (spur-pruning; **Figure 5**) both involve significant inputs of time and labor. Cane pruning may improve vine vegetative vigor by removing carbohydrate and nutrient storage tissues [7], minimizing old wood that can harbor disease inoculum such as *Phomopsis*, and may reduce the overall number of pruning cuts, creating fewer potential disease infection sites. Furthermore, cane pruning is generally more efficient for managing high-density plantings (e.g. 3-4' between vine spacing). Despite these benefits, there is one advantage to spur pruning that may ultimately make it the better strategy for Ohio vineyards. With spur pruning, a grower is able to adjust bud counts in the event of winter injury. In fact, hedge pruning to 5-bud spurs has been found to maintain harvestable crop levels and ideal crop load balance (measured by pruning weight:yield) in *V. vinifera* Pinot Gris despite exceedingly high (~90%) bud injury levels [8]. This cannot be accomplished using a cane pruning strategy. Regardless of strategy, consider your specific vineyard conditions and needs when making pruning decisions.



Figure 5: Cane-pruned *V. vinifera* trained with vertical shoot positioning (VSP; left) and a 2-bud, spur-pruned *V. vinifera* VSP (right)

[1] Dami et al. 2008. Midwest grape Production Guide. OSU Bulletin 919.

[2] Martinson and Goffinet. 2002. <https://grapesandwine.cals.cornell.edu/newsletters/appellation-cornell/2012-newsletters/issue-9/how-grapevines-reconnect-spring/>

[3] Centinari. 2016. <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/>

[4] Rosner and Cook. 1983. AJEV 34:243-248.

[5] Westover. 2018. <http://www.vineyardadvising.com/pruning/>

[6] Wolpert and Howell. 1984. AJEV 35:237-241.

[7] Hatch et al. 2019. ASEV Catalyst doi:10.5344/catalyst.2019.18004.

[8] Dami et al. 2012. AJEV 63:106-111.

2019 Ohio Grape and Wine Conference summary

By: Diane Kinney

In the blink of an eye, the 46th meeting of the Ohio Grape and Wine Conference is now in the rear-view mirror.

This year, a record 240 attendees came together to learn and share experiences with one another. Leading the way were our featured speakers who covered many topics of interest that sparked conversations that will continue for the coming months. We would like to extend a thank you to Dr. Michela Centinari (Penn State University), Steve DiFrancesco (Glenora Wine Cellars), and Dr. James Kennedy (President of Polyphenolics and Canandaigua Concentrate) for their willingness to share their knowledge that will help to benefit all of you, our growers and wine producers.



Photos: Enology key note speakers Steve DiFrancesco (Top left) and Dr. James Kennedy (Top right); Viticulture key note speaker Dr. Michela Centinari (Bottom left). All photo credit: Diane Kinney

2019 OGWC (Continued)

Several panel discussions gave a broad spectrum of viewpoints throughout the two-day conference. This included topics on **regional identity, grape quality and pricing** with Walter Borda (Caesar Creek Vineyards), Lee Klingshirn (Klingshirn Winery), and Gene Sigel (South River Winery) on Monday morning.



Photo: Monday invited panel discussion with Lee Klingshirn (left), Walter Borda (Center), and Gene Sigel (right).

Dr. Melanie Lewis Ivey (OSU-Wooster) led a Tuesday morning panel on grower experience using **Network for Environment and Weather Applications** (NEWA; <http://newa.cornell.edu>) as a tool to manage disease and insect pests. Three users of the NEWA weather tool discuss specific benefits and challenges with the system including Andy Kirk (AARS-Kingsville), John Linehan (Linehan's Grape Cluster), and Eric Cotton (Silver Crest Cellars).



Photo: Tuesday morning NEWA panel discussion led by Dr. Melanie Lewis-Ivey (far left) with Andy Kirk, John Linehan, and Eric Cotton (left to right).

2019 OGWC (Continued)

Herbicide drift injury was a topic discussion led by Dr. Doug Doohan (OSU-Wooster). Panelists included Seth Meranda (Meranda-Nixon Winery), Jeff Unverferth (Hirzel Farms), Julie Nofziger (Knotty Vines Winery), and Matt Beale (Chief of the Pesticide Division, Ohio Department of Agriculture). Each panelist discussed their experience with drift and gave suggestions on how to best document and follow through after a spray drift injury event.



Photo: Tuesday afternoon panel on herbicide drift damage lead by Dr. Doug Doohan (far left) with Seth Meranda, Jeff Unverferth, Julie Nofziger, and Matt Beale (left to right)

Our final panel discussed how commercial and research winemakers handled the **2018 vintage**. Sharing their challenges were Dave Smith (Gervasi Vineyard), Joe Juniper (Vermillion Valley Vineyards) and Patrick Pierquet (OSU-Wooster).



Photo: Tuesday enology section panelists included Dave Smith (left), Joe Juniper (center), and Patrick Pierquet (OSU-Wooster).

2019 OGWC (Continued)

Beginning with Monday evening's **Ohio Wine Reception** and continuing through the banquet, Ohio Quality Wine (OQW) winners were poured for attendees to enjoy. The **Monday evening banquet** was a time of comradery and an opportunity for networking. Building friendships within the industry is as important as the knowledge gained from the educational workshops.

One highlight of the evening is celebrating with the newest inductees into the **Ohio Wine Hall of Fame**. This year's outstanding individuals are **Paul and Donna Roberts of Terra Cotta Vineyards**. Located in New Concord, OH, Paul and Donna established their vineyard in 1995, with the winery opening in 1999. Both have served the industry by voluntarily participating on multiple boards and planning committees that support the industry. Thank you both for all you have done and continue to help build and promote Ohio grape and wine industry!



Photos: 2019 Ohio Wine Hall of Fame inductees Paul and Donna Roberts of Terra Cotta Vineyards (left), accompanied by their family (right).

2019 OGWC (Continued)

Other views from around the 2019 Ohio Grape and Wine Conference



2019 OGWC (Continued)



2019 OGWC (Continued)



2019 OGWC (Continued)

A special thank you to our conference sponsors: **Ohio Grape Industries Committee, Ohio Wine Producers Association, Paul Hall & Associates, Kent State University, Waterloo Containers, and Kendall Farms.** Financial contributions from these institutions help us pass savings on to each of you thereby making attendance much more affordable.



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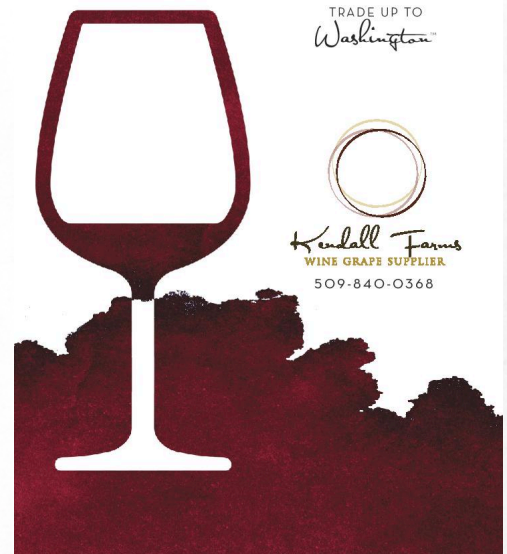


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2019 OGWC (Continued)

The Ohio State Grape and Wine Team would like to thank all of you who attended the conference. Your willingness to improve your knowledge base greatly helps the Ohio wine industry continue to grow in a positive direction.

We will be reviewing all your comments collected from the conference surveys soon. It is our hope to continue making our conference better each year by incorporating as many of your suggestions as possible.



2019 Northeast Ohio Winter Grape School Weenies, Winter and Wines



Thursday, March 7th, 2019
2:00 -6:00PM followed by
Tri-County Grape Growers meeting 6:00PM

Silver Crest Cellars
4511 Bates Rd. Madison, OH 44057

Registration starts at 1:30PM

*Travel South from
Interstate 90 on Route
528 south, turn left at
Bates Rd, the winery will
be on the right side of
road.*

Registration will begin at 1:30pm and the workshop will run from 2-5. Dinner at 5. Tri-County Grape Growers meeting will follow at 6 PM (Optional). See complete registration form on the back of this sheet. This workshop is being sponsored by OSU Lake and Ashtabula County Extension, the Ashtabula Agricultural Research Station and OARDC.

Topics :

Maria Smith, Vine Balance & Winter Pruning

Lakeview Vineyard Equipment: Equipment Options through the Vineyard Year

David Marrison: Tax Law & Capital Planning

Mark Lancaster: Agri-America -New Concord Juice Processing Plant

OSU Extension, Pest Ed Credit Session



Refreshments

Hot dogs, chips and drinks will be provided as part of the registration fee.

Private Applicator Credit

1 Hour of Core

½ hour - Category 3 – Fruit and Vegetable Crops

Total 1 ½ hrs. of Pesticide Education Credit



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GRAPE PRUNING WORKSHOPS

MONDAY, FEBRUARY 25, 2019 | 1pm to 4pm

TUESDAY, MARCH 12, 2019 | 1pm to 4pm

Hosted by: Dr. Maria Smith, Dr. Imed Dami, and Diane Kinney



The aim of this workshop is to provide experience in assessing grapevine winter injury and pruning techniques. Weather permitted, we will travel to the vineyard, so please dress appropriately. **Please feel free to bring your own canes for bud dissection and pruning shears.**

Locations:

February 25 • Vines on Hillside | 25600 Hillside Dr., Quaker City, OH 43773

March 12 • OARDC-Fisher Auditorium | 1680 Madison Ave., Wooster, OH 44691

Cost: \$10 per person • **Details:** Fee covers refreshments and handouts

Pre-register: Maria Smith | smith.12720@osu.edu or 330-263-3825

ohiograpeweb.cfaes.ohio-state.edu/events



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CFAES

Blueberry, Bramble and Wine Grape **PRUNING SCHOOL**

THURSDAY, MARCH 14, 2019

9:30 a.m. - 3:30 p.m.

Hosted by Dr. Gary Gao, Dr. Maria Smith, and Ryan Slaughter

Come join us for an informative workshop to learn proven pruning techniques to maximize production and quality in your vineyard and fruit plantings. Experts from The Ohio State University South Centers and Department of Horticulture Crop Science will be on hand for presentations and to answer your questions.

Learn the basics on these topics:

- Project update of brambles, hardy figs, and hardy kiwis research
- Blueberry rootstock and grafted blueberry tree project update
- Grafting of fruit plants
- Pruning demonstrations of grapevine, blueberry, blackberry, and raspberry
- Field tour and more



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LOCATION: OSU SOUTH CENTERS

1864 SHYVILLE ROAD

PIKETON, OHIO, 45661

go.osu.edu/pruningschool

COST: \$25 per person

Lunch will be provided

REGISTER: Contact Bradford Sherman

sherman.1473@osu.edu

740-289-2071 x 115

DEADLINE TO REGISTER:

Friday, March 8, 2019

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Save-the-Date

Monday, March 25, 2019

Ohio Agritourism Conference & Trade Show

Location: Maize Valley
6193 Edison Street NE
Hartville, Ohio 44632

Details: Agritourism is proving to be an successful enterprise for many farms looking to diversify their farm revenue streams. Join us to learn about the latest trends and topics impacting the industry and explore options for your farm, all while visiting a premier Ohio agritourism operation; Maize Valley = Winery, Craft Brewery, Farmers Market, and Family Fun Zone.

Contact & Registration Information:

Christie Welch welch.183@osu.edu 740.289.2071 ext. 234

Charissa Gardner gardner.1148@osu.edu 740.289.2071 ext. 132

go.osu.edu/agritourismconference2019



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Practical Skills for Managing Invasive Pests Workshop

Tuesday, March 26 • 9 A.M. - Noon

Lawrence Barringer, PDA, Bugwood.org

Commercial and backyard growers are invited to join members from the Departments of Entomology and Extension for a workshop that highlights recent research results and reviews the latest recommendations for key practices in monitoring, identifying, and managing the **spotted-wing Drosophila** and **Brown Marmorated Stink Bug** on fruit and vegetable crops.

Although the **spotted lanternfly** has **not** yet been found in Ohio, this invasive pest has been detected in nearby states, so we'll provide some tips to remain vigilant for this potentially new pest of grapes, hops, apples and cherries.

For more program details, visit: go.osu.edu/invasives19 or contact Jim Jasinski, jasinski.4@osu.edu

Registration required. Deadline March 22. Limit 35 participants. Coffee and snacks provided. Cost \$5 at the door. Register at www.surveymonkey.com/r/OSUinvasive

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**DEPARTMENT OF EXTENSION
DEPARTMENT OF ENTOMOLOGY
USDA NIFA / IPM PROGRAM**

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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	330-202-3556	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.

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