Ohio Grape-Wine Electronic Newsletter

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THE OHIO STATE UNIVERSITY
COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES
www.oardc.ohio-state.edu/grapeweb/

30 June 2017 (09)

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Thomas Todaro, an MS graduate from the OSU Viticulture Program, has recently accepted an Extension educator position at Michigan State University to serve the wine and grape industry in northwest Michigan (read more at this link: (http://msue.anr.msu.edu/news/new_wine_and_grape_educator_hired_in_northwest_michigan). While at OSU, Thomas's research focus has spanned cultural practices to improve fruit and wine quality, increased freezing tolerance of bud and cane tissues, and improved efficiency in vine recovery following winter damage. His thesis titled "*Evaluating Cultural Practices for Recovery from Cold Damage in Grapevines*" involved managing winter-damaged vines after the 2014-2015 polar vortex events. He has recently published a research paper titled "*Cane Morphology and Anatomy Influence Freezing Tolerance in Vitis vinifera Cabernet franc*" in the International Journal of Fruit Science (online access: http://www.tandfonline.com/doi/pdf/10.1080/15538362.2017.1330667?needAccess=true). Thomas has also been involved in extension and outreach activities in the viticulture program and has recently completed an educational video on *grapevine pruning* posted on You-Tube (https://ohiograpeweb.cfaes.ohio-state.edu/video.) Thomas's last day at OSU is June 30. We wish Thomas the best and much success on his new position and the new chapter of his professional journey.

Vineyard Update from OARDC in Wooster: May 2017

By Diane Kinney, Research Assistant and Dr. Imed Dami, Viticulture State Specialist

Grape Phenology:

In Wooster, all varieties are between the stage of fruit set and BB sized.

Phenology progression of Cabernet franc:

Cabernet franc (25 Apr 17)

Cabernet franc (30 May 17)

Cabernet franc (29 June 17)

Weather Conditions:

In Wooster, the average daily temperature of 68.8 ^{o}F is just slightly below the 30-year average of 70.0 ^{o}F during the month of June. However, due to April being warmer than normal, the accumulation of heat units since January (GDD = 1126) is ahead of the 30- year average (GDD = 1073). Precipitation during June follows the temperature trends as we are just a hair lower than the 30 year average with 2.96". This being said, we are still far ahead of the 30 year average cumulatively for the year at 20. 49" which means we are still ahead by 5.59" as of June 29.

Cultural Practices:

We are continuing to maintain vines with shoot tucking (VSP training), combing (High Cordon training) and suckering of trunks. In this latest week of June, we have begun to perform cluster thinning and leaf pulling on specific varieties at the BB stage of fruit growth.

Students performing cluster thinning on Chambourcin in Hort Unit 2, Wooster.

Our newly planted variety trial is growing rapidly and training is in constant works. We applied two additional fungicide sprays as well as the addition of Sevin on June 27th. Japanese beetles made their first appearance in our vineyard on June 22nd. This spray timing was fortunate as we were able to address the beetles before they had made a large presence in the vineyard and prior to any damage occurring.

Vineyard Update from OSU South Centers in Piketon: June 2017

By Dr. Gary Gao, Extension Specialist, and Ryan Slaughter, Research Assistant

Vineyard Leaf (Petiole) and Soil Testing in July and August: The period between July 15th and August 15 is typically the right time to conduct soil and tissue test for fertilizer recommendations. Grapevines may not need a lot of nutrients, but they definitely need some. As you all know, petiole testing (grape leaf stem) is what is used for tissue testing. Both tissue and soil testing is needed for more accurate recommendations. Depending on the grape types, about 40 or 50 grape petioles are needed for a more representative sample in sufficient quantity. Samples can be sent to Soil and Plant Analytical Labs at neighboring state universities or commercial labs. Growers should consult 'Midwest Grape Production Guide' for more information. This publication can be purchased from your local Extension office throughout Ohio or from the OSU Extension's eStore at http://estore.osu-extension.org/

Japanese Beetles Caused Damage in Vineyards in Southern Ohio: Japanese beetles showed up in quite a few vineyards in Southern Ohio. Shown here is typical skeletonizing damage to grape leaves. Grapes are some of Japanese beetles' favorite hosts. Blackberries, elderberries, raspberries, and roses are also highly attractive to them. Insecticide applications are definitely needed to keep Japanese beetles at bay. Please refer to the "Midwest Fruit Pest Management Guide" for management options. Dr. Elizabeth Long is the grape entomologist at OSU and should be consulted, if you have any questions.

Typical Japanese beetle damage to the 'Traminette' grape leaves. Photo by Gary Gao, OSU South Centers.

Grape Phylloxera Damage Was Observed in Southern Ohio: Grape phylloxera was quite visible in our vineyard in some of the more susceptible cultivars. I happened to have seen the damage on our Aromella grapes on June 26 in Piketon, Ohio. A little bit of Phylloxera may not hurt much. However, too much damage can cause redued photosynthetic capacity. It is a little late to make insecticide applitions for effectively controlling grape phyllozera in Southern Ohio. Refer to the 'Midwest Grape Pest Management Guide" or Dr. Long for more information.

Shown here is grape Phylloxera damage on Aromella grape. Photo by Gary Gao, OSU South Centers.

Grapevines Under High Tunnels Are Looking Good So Far: Our research crew planted 'Cab Franc' and 'Regent' under high tunnel. The winter of 2017 was not particularly bad. Hence, both cultivars have been performing well in and outside the high tunnels. It has been quite a challenging year for maintaining our high tunnels since they are old three season high tunnels. Our research crew turned them into 4-season ones. Strong wind in spring ripped the plastic on one of our tunnels. We may need to look into additional funding for much stronger tunnels. So far, they are holding up okay. But, stronger tunnels may be a more permanent solution, if you were to erect one for estate wine production. Please also keep in mind that grapevines require enough chilling hours for proper flower bud development and flowering. High tunnels may get too hot in winter too. Proper venting of high tunnels for temperature control is critical for successful grape production in high tunnels. Stay tuned for more information.

Shown here are ‘Cab Franc’ and ‘Regent’ Grapevines under high tunnels at South Centers in Piketon. Photo by Gary Gao.

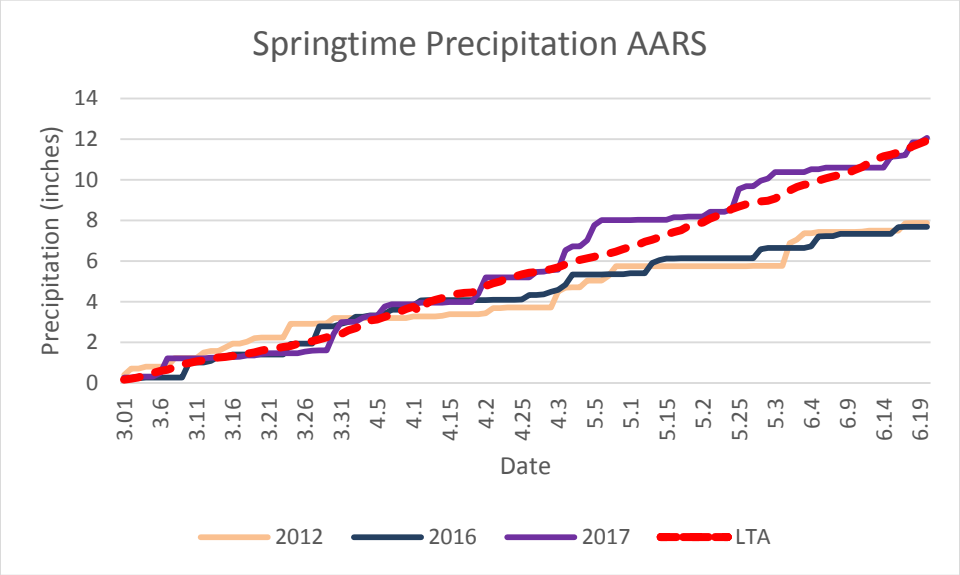
Black Rot has been spotted in Southern Ohio: A few growers have reported seeing black rot in southern Ohio. Fungicide sprays during three weeks of immediately before bloom, bloom, and one week after bloom are critical for black rot control. Please refer to the ‘Midwest Fruit Management Guide’ or consult Dr. Melanie Ivey for management options.

Shown here may be black rot symptoms on fruits. Photo by Gary Gao, OSU South Centers.

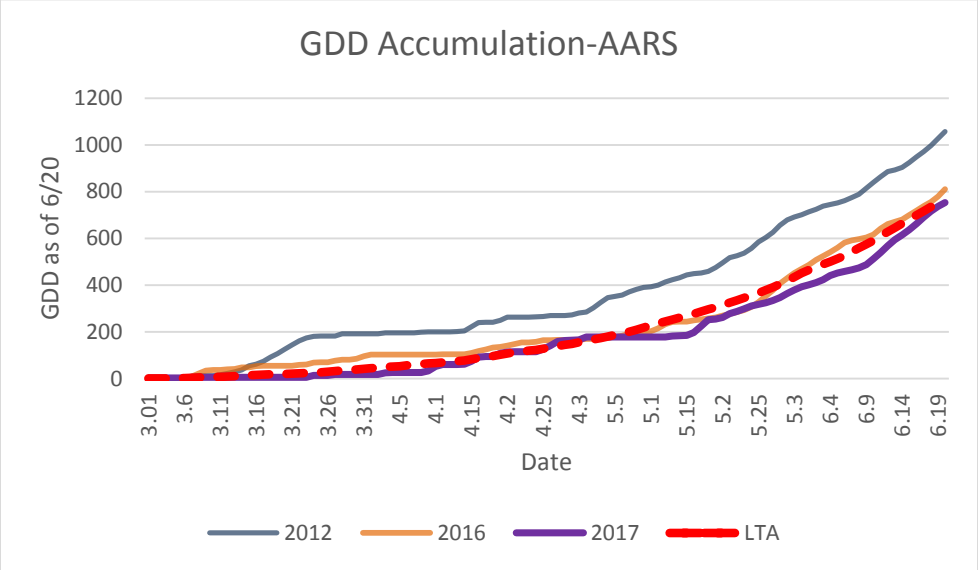
Vineyard Update from AARS Kingsville: June 2017

By Andy Kirk, Research Specialist, Ashtabula Agricultural Research Station

Summer is here and we have fruit on the vines at AARS. The last of our varieties are finishing up fruit set this week, while earlier varieties are pea-sized and beyond. Unfortunately, as some of you may have noticed, our weather station has been down since June 20th. The graphs you see here are current as of that date, and we can try to fill in the gaps as to where we are now at the end of June.



The story of the last few weeks has been rain, and lots of it. As of the 20th of June, we were sitting right around the long term average for rainfall, but that has surely changed with the frequency and amount of precipitation in the last 10 days. Flowering and fruit set are by no means the ideal moments to experience cool and damp conditions, as both temperature and sunlight intensity are known to contribute to vine productivity and yield (Ewart and Kliewer 1977; Howell 1999). We'll see over the next month or so how yields are looking for the 2017 harvest.



Despite conditions favoring disease, the vineyards at AARS are in healthy and stable condition. With respect to fungicide, I have kept a tight schedule this season. It seems that each time we near the end of our rainfast period for the previous spray, a significant rain event (.5in to 1 inch) appears in the short-term forecast. Now that the critical fruit set period has nearly come to an end, I hope to lengthen spray intervals to cut back slightly on fungicide usage, weather permitting. This goal will hopefully be more attainable when our weather system is fully linked up with the NEWA disease forecasting system (expected by 2018 growing season).

A week or two ago we noticed a non-negligible amount of insect feeding in our vineyards. Our main culprits, as was the case last year, were Rose Chafers. Rose Chafers are particularly common in sandy soils and, in our vineyard at least, they eat reasonably large holes in the grape leaves. We have also been working with Dr. Long to identify insect pests in other local vineyards. An unsightly, but ultimately not terribly damaging outbreak of Grape Cane Gallmaker was identified. This damage is characterized by the appearances of dark crevices in new shoots, petioles, and cluster stems (see image below). Leafhoppers have also been identified at a local vineyard, with symptoms appearing as pale-yellow spots indicating insect feeding on cell contents. Dr. Long is the OSU authority on vineyard insects, please contact her for specific questions or recommendations on insect control!

Figure 1: A Shoot Cutting with Grape Cane Gallmaker Damage

As was the case in last month's update, weeds have not been a major concern in our vineyards. To recap, we applied roundup and a pre-emergent onto our mounds in April before takeaway. This bought us at least a month of weed control. We waited until weeds were starting to emerge again and took hills away. Several weeks after that, we made a pass through the vineyard (around 2.5 to 3 mph) with a Braun undercutting blade. Our operator set the blade to a very shallow depth in the soil and constantly agitated the blade to ensure that soil would flow off the blade. We wanted to move a minimal amount of soil, as we are very concerned about erosion and banking, due to our sandy soil and sloping topography. In the next week or so, we will likely repeat this mechanical weed control.

In the vineyards themselves, we are now fully immersed in canopy management. One thing of note, that we tried this year in a few vineyards, is early leaf removal in the fruiting zone. We did this with Pinot Noir and Regent, as the practice is known to boost production of phenolic compounds (anthocyanin, tannin precursors) while resulting in only moderate yield reductions (Tardaguila et Al. 2010). The timing on this was a week or so before bloom. Another reason behind this decision was the extensive sun burn we had on our fruit last year, which I believe led to sour rot problems later in the year. Pulling leaves in the fruiting zone too late in the season, under intense sunlight is known to increase the likelihood of sunburn (Smith et Al. 1998).

Next up, we are going to be estimating yields and making decisions about crop load. Please see this resource from Dr. Dami about different methods for estimating yield. One thing that I have found helpful is to track average cluster weights at harvest from year to year, for different varieties. It doesn't require a herculean effort to come up with a general reference point. In the end, historical cluster weights at harvest can be a good cross-validation resource, to make sure your estimates with a more scientific method such as GDD method or Lag Phase Method are reasonable.

References

Ewart, A., & Kliewer, W. M. (1977). Effects of controlled day and night temperatures and nitrogen on fruit-set, ovule fertility, and fruit composition of several wine grape cultivars. *American Journal of Enology and Viticulture*, *28*(2), 88-95.

Howell, G. S. (2001). Sustainable grape productivity and the growth-yield relationship: A review. *American Journal of Enology and Viticulture*, *52*(3), 165-174.

Smith, S., Codrington, I. C., Robertson, M., & Smart, R. E. (1988, January). Viticultural and oenological implications of leaf removal for New Zealand vineyards. In *Proceedings of the second international symposium for cool climate viticulture and oenology* (pp. 127-133).

Tardaguila, J., de Toda, F. M., Poni, S., & Diago, M. P. (2010). Impact of early leaf removal on yield and fruit and wine composition of Vitis vinifera L. Graciano and Carignan. *American Journal of Enology and Viticulture*, *61*(3), 372-381.

New Product Registered in Ohio for Grape Downy Mildew Control

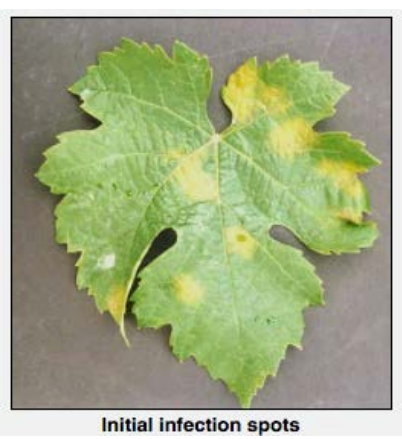
2017

By: Melanie Lewis Ivey, Assistant Professor, OSU Plant Pathologist

LifeGard (Certis USA) is a new biocontrol product registered in Ohio for grape downy mildew control. The active ingredient in LifeGard is a bacterium– *Bacillus mycoides* isolate J to be specific, that can activate the plants natural immunity to some pathogens. LifeGard is approved for organic production by the National Organic Program and is bee safe! It has a 0 day post-harvest interval (PHI) and a 4 hour re-entry interval (REI).

LifeGard applications should begin 2 – 3 weeks before bloom and be repeated at 7-21 day intervals as part of a rotational program with fungicides. Applications should continue until 2-4 weeks after fruit set. The product label can be downloaded here. Please note that the efficacy of LifeGard has not been tested in Ohio. You can learn more about identifying and managing downy mildew of grape at the Grape IPM Webpage.

Symptoms of Downy Mildew On Grape



Initial infection spots

Dr Wilcox's Final Grape Disease Management Update | 2017

Editor's note: Over the past few years, Dr. Wayne Wilcox**,** Professor of Plant Pathology, at Cornell University and expert in Eastern US grapevine disease management, has shared his annual summary of disease management in grapes with growers and extension educators across eastern US. As in previous years, we have included his 2017 summary in OGEN (the article is very long; so we created a link to our Buckeye Appellation website to view and/or download) @ Grape Disease Management Update

The 2017 summary is actually Dr. Wilcox's last since he's retiring this year. We would like to take this opportunity and thank Dr. Wilcox for his excellent and relevant research to help grape growers in the East and his years of service and education on grape disease management. We wish Dr. Wilcox the best on his next journey. BTW, you could still see him at the Double A vineyards – Summer Grape Conference & Field Day (see event details below). Note that this is a good resource to add to your MUST have 2017 Midwest Fruit Pest Management Guide. Also, you can consult with Dr. Melanie Ivey (see contact information below in OSU Specialists), OSU fruit pathologist on any grape disease questions or fungicide recommendations in Ohio.

By: Diane Kinney, Research Assistant and Imed Dami, Viticulture State Specialist

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 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 past month, we have posted the following:

Educational Materials:

- Ohio Grape Electronic Newsletter (OGEN) on homepage and tab (current issue).
- The Grape Exchange (TGE) on the homepage and tab (latest posting on 11 May).

News:

- Grape Disease Control, 2017 – Wayne Wilcox – Cornell University
- A Cautionary Tale about Producing Spirits
- FDA Begins Winery Inspections
- OSU Viticulture Student Earns 4 National Scholarships

Misc:

- Video: Pruning Grapevines - VSP

Upcoming Events:

- 42nd Annual American Society for Enology and Viticulture – Eastern Section Conference
- Wine Grape Disease, Insect and Weed Diagnostic Workshop hosted by OSU
- Summer Grape Conference and Field Day hosted by Double A Vineyards
- Orchard Sprayer Field Day hosted by OSU and USDA-ARS

1. **<u>Wine Grape Disease, Insect and Weed Diagnostic Workshops:</u> 2 locations and dates.**
   Friday July 21, 25017 at Ashtabula Agricultural Research Station
   Wednesday July 26, 2017 at OSU South Centers, Piketon.
   Detailed flier and registration form

OHIO STATE UNIVERSITY EXTENSION

AGENDA

Times for the OSU South Centers Workshop are in listed in brackets.

Instructors:
Drs. Melanie Lewis Ivey, Doug Doohan, Elizabeth Long, OSU-Wooster Campus

Guest Presenter (Ashtabula only):
Dr. Tim Weigle, Cornell University

8:30-9:00 (9:30-10:00)	Welcome and provide tool kit
9:00-10:00 (10:00-11:00)	Scouting and sampling techniques
10:00-10:15 (11:00-11:15)	Break
10:15-10:45 (11:15-11:45)	Disease diagnostics and management
10:45-11:15 (11:45-12:15)	Insect diagnostics and management
11:15-11:45 (12:15-12:45)	Weed diagnostics and management
11:45-12:30 (12:45-1:30)	Basic microscopy and imaging for pest diagnostics
12:30-1:00 (1:30-2:00)	Lunch (and workshop evaluation for OSU South Centers)
1:00-2:30	NEWA and pest forecasting (Ashtabula only)
2:30-3:00	Workshop evaluation Adjourn

2. **<u>Double A Vineyards – Summer Grape conference and Field Day:</u> Tuesday July 25, 2017**

DOUBLE A VINEYARDS, INC.
10277 Christy Road
Fredonia, NY 14063
www.doubleavineyards.com

TUESDAY, JULY 25, 2017
CLARION HOTEL, MARINA & CONFERENCE CENTER, DUNKIRK, NY

7:30 – 8:15 AM **Registration**

8:15 – 8:30 **Introductions**

8:30 – 9:15 **Effective Vineyard Spraying – What Now, What Next**
Dr. Andrew Landers, Faculty Fellow, Atkinson Centre for a Sustainable Future, Cornell University, Geneva, NY

9:15 – 10:00 **Looking Backward, Forward, and Straight Ahead: A Perspective on Disease Control in Eastern Vineyards**
Dr. Wayne Wilcox, Professor of Grape Pathology, Plant Pathology and Plant-Microbe Biology, Cornell University, Geneva, NY

10:00 – 10:30 **Coffee Break and visit with your fellow growers**

10:30 – 11:15 **Clean Vines for the Eastern US: Why and How?**
Dr. Marc Fuchs, Professor of Virology, Plant Pathology and Plant-Microbe Biology, Cornell University, Geneva, NY

11:15 – 12:00 **Grapevine Breeding and New Cold Hardy Varieties**
Peter Hemstad, Cold Climate Viticulture Consultant and Grape Breeder, Hemstad Consulting and St. Croix Vineyards, Stillwater, MN

12:00 – 1:00 **Lunch**

1:00 – 4:00 **Field Tour of Double A Vineyards Certified Grapevine Nursery Blocks** *(travel by bus)*

4:00 **Return to Clarion, Conference ends**

$75 registration fee.
Register at www.doubleavineyards.com or by calling the office at 716-672-8493

3. **<u>Orchard Sprayer Technology Field Day: Bauman Orchards, Rittman OH:</u> Thursday August 3, 2017.** Although the field day will be conducted in an apple orchard, principles discussed for air blast sprayers and the sprayers used in demonstrations are applicable to grape growers as well.

OHIO STATE UNIVERSITY EXTENSION

Orchard Sprayer Technology Field Day

BAUMAN ORCHARDS

161 RITTMAN AVENUE, RITTMAN OH 44270
2:30 PM - 7:30 PM

The field day will be an opportunity to gain some education and hands on experience regarding:

- Effective spraying using airblast sprayers
- Calibration of sprayers
- Orchard and small fruit equipment and supplies
- Distribution and Deposition of spray material
- Conventional sprayer Demonstrations
- Intelligent Sprayer Demonstration: Automatic adjustment of spray volume, spray pattern and nozzle output based on tree size, canopy density and spacing between trees

Presented by OSU Extension, USDA-ARS, and Bauman Orchards

SPONSORS OF THE FIELD DAY INCLUDE:

CPS - Dave O'Brian, Columbus Irrigation, Farm Credit Mid-America, Farmers National Bank, Farmers State Bank, Fred's Water Service, The George F. Ackerman Company, Miller Chemical, Sterling Farm Equipment, and Wayne Savings Bank

Handout Materials, Refreshments and Light Supper Provided!
Pre-register to the Wayne County Extension Office by July 27 COST: $5 per person
Contact the office for more information at 330-264-8722 or Lewandowski.11@osu.edu

Orchard Technology Field Day

Registration cost is only $5/person. Pre-registration requested to the Wayne County Extension Office at 330-264-8722 or email Lewandowski.11@osu.edu by **Thursday, July 27**. Make checks payable to Ohio State University Extension and mail to Ohio State University Extension – Wayne County, 428 W. Liberty St. Wooster, OH 44691. Please detach and return this form with payment. Thank you.

Name:_____

Address:_____

Phone Number:_____ Email:_____

$5 registration fee. Register by phone at 330-264-8722 or by email at lewandowski.11@osu.edu

OSU Grape & Wine Research & Outreach Specialist

Please contact the following Research, Extension/Outreach Specialists and Educators if you have any questions relating to their respective field of expertise.

Contact Information			
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. Recommendation on variety selection. Imed is the primary research contact of the viticulture program.
Dr. Doug Doohan, Professor Dept. Of Horticulture & Crop Science 205 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@cfaes.osu.edu Website: OSU South Centers	Viticulture Research and Outreach, VEAP visits in southern Ohio, vineyard management practices, soil fertility and plant nutrition, fruit quality improvement, variety evaluation, table and wine grape production.
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 Facebook: OSU Fruit Pathology	Grape Diseases Diagnostics and Management. Recommendation on grape fungicides and biocontrols. Good Agricultural Practices and Food Safety Recommendations.
Andrew Kirk, AARS Station Manager Ashtabula Agricultural Research Station 2625 South Ridge Road Kingsville, OH 44048	330-263-3881	Email: Kirk.197@osu.edu Website: OSU Branch Campus	Wine grape production in Northeast OH, especially *vinifera* varieties
Dr. Elizabeth Long, Assist. Professor OSU/OARDC Entomologist 105 Thorne Hall 1680 Madison Avenue Wooster, OH 44691	330-263-3725	Email: long.1542@osu.edu	Fruit and vegetable insects.
David Marrison, County Extension Director, Assoc. Professor & Extension Educator OSU Extension – Ashtabula County 39 Wall Street Jefferson, OH 44047	440-576-9008 Ext. 106	Email: Marrison.2@osu.edu Website: Ashtabula OSU	Vineyard and winery economics, estate planning and extension programs in Northeast Ohio.

Contact Information			
Name & Address	**Phone**	**Email & Website**	**Area of Expertise & Assistance Provided**
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, Dept. Of Horticulture & Crop Science 130 Gourley Hall – OARDC 1680 Madison Avenue Wooster, OH 44691	330-263-3879	Email: Pierquet.1@osu.edu	Wine Cellar Master – OSU Micro-vinification, sensory evaluation and laboratory analysis
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	Commercial wine production, sensory evaluation, laboratory analysis/setup and winery establishment. Todd is the primary research and extension contact of the enology program.
Dr. Celeste Welty OSU main campus Department of Entomology Columbus, OH	614-292-2803	Email: Welty.1@osu.edu	Fruit and vegetable insects