

Ohio Grape–Wine Electronic Newsletter

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31 October 2017 (13)

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FOR IMMEDIATE RELEASE

Ohio Grape and Wine Industry Contributes \$1.3 Billion to State's Economy

REYNOLDSBURG, Ohio (Sept. 12, 2017) –The Ohio Grape Industries Committee today released its 2016 Economic Impact report, which finds that Ohio's grape and wine industry has a significant impact of \$1.3 billion on the state's economy and provides 8,067 full-time jobs, with more than 2,700 additional jobs created since 2012.

"This report further demonstrates the growing strength of food and agriculture as Ohio's number one industry," said Ohio Department of Agriculture Director David T. Daniels. "Ohio grape growers and wine makers are creating quality, award-winning products that rival those produced in historic wine producing areas like California and Europe. This new study is proof of their success and their impact on Ohio's economy."

Highlights of the report include the following:

- 2016's full economic impact of Ohio wine and grapes is \$1.3 billion.
- The number of wineries in the state of Ohio grew from 175 in 2012 to 265 in 2016, an increase of 51%.
- The industry provides 8,067 full-time jobs, with more than 2,700 additional jobs created since 2012, with a payroll of roughly \$264 million.
- Ohio is the 6th largest wine producer in the country, producing 1.23 million gallons or more than a half-million cases of wine. The Buckeye State was ranked 7th in 2012.
- Ohio is the 9th largest grape producer with 1,500 acres.
- 1.38 million people visited Ohio wineries in 2016, up 16% from approximately 1.19 million winery visitors in 2012.
- Ohio's wine, wine grape and allied industries generated \$75 million in federal taxes and \$72 million in state and local taxes in 2016, including more than \$6 million in total excise taxes.

The Economic Impact report was commissioned and funded by the Ohio Grape Industries Committee. A copy of the complete report can be found [here](#). The committee was created in 1982 and operates in-part through the Ohio Department of Agriculture, providing marketing and research opportunities to Ohio's wineries and vineyards. The committee helps increase consumer awareness of Ohio's modern, high-quality wine industry.

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Vineyard Update from OARDC in Wooster:

By Diane Kinney and Imed Dami, HCS-OSU

Grape phenology

As we have followed Cabernet franc throughout the growing season, it is interesting to see that the GDD at harvest was at 2831, which is very close to the 30-year average (2896 GDD), but considerably less than 2016 (3124 GDD). This was true for all varieties picked in Wooster; 2017 harvests were later, earlier or same as in 2016 (see table below). But, all varieties were picked at much lower GDDs this year. This has obviously affected fruit ripening by slowing it down, especially the rate of acidity drop (see the weekly posting of fruit maturity at: [2017 OSU Fruit Maturity](#)). For example, Riesling was picked on the exact same day (26 Sept) in both years, but GDDs at harvest were nearly 300 units lower this year than in 2016. Yet, sugars were 3 Brix higher, and acid 2 g/L higher in 2017 than in 2016. Once again, another example that grape maturity is not based on a calendar date or absolute GDD; rather, other additional factors that when combined all contribute to quality fruit with optimum flavors (to read more on the topic of fruit maturity, click here: [Are your grapes ready to pick?](#))

Phenology progression of Cabernet franc:



25 Apr 17



30 May 17



29 June 17



17 July 17



23 Aug 17



21 Sept 17



3 October 2017 (H)

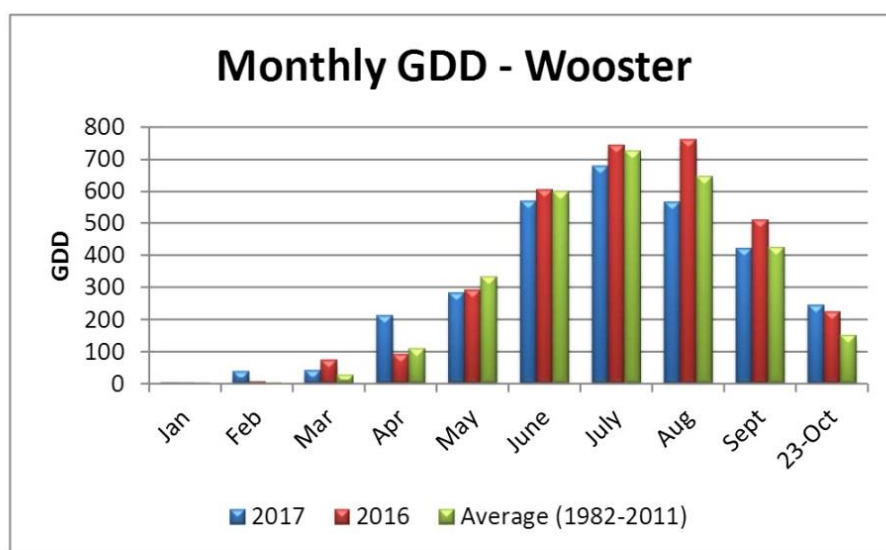
Harvest dates and corresponding GDD of selected varieties grown at OARDC in Wooster:

Variety	2016		2017	
	Harvest Date	GDD*	Harvest Date	GDD*
Cabernet franc	5-Oct	3124	3-Oct	2831
Chambourcin	6-Oct	3140	13-Oct	2975
Chardonnay	29-Sep	3068	18-Sep	2660
Frontenac	4-Oct	3112	29-Sep	2806
La Crescent	28-Sep	3061	27-Sep	2773
Marquette	21-Sep	2953	27-Sep	2773
Riesling	26-Sep	3043	26-Sep	2750
Sauvignon blanc	20-Sep	2915	25-Sep	2727
Traminette	5-Oct	3124	3-Oct	2831

*GDD: cumulative daily mean temperatures above 50F since January.

Weather conditions:

This season, the monthly GDDs fell behind the 30-year average from May through September, then picked up in October and ended with cumulative GDDs right in line with the 30-year average at 3061. October's warmer than normal temperatures helped ripen the late varieties. Although the cumulative precipitation was nearly 4" above the 30-year average, monthly precipitation between August and October was lower than normal thus the dry conditions were ideal for fruit ripening.



AARS Vineyard Update.

Andy Kirk. Research Specialist & Station Manager. Ashtabula Agricultural Research Station.

The harvest race is in its final paces here at the Ashtabula Agricultural Research Station, and it's time to take a step back and reflect on the 2017 vintage. Most vineyards and wineries in our tri-county area have wrapped up the bulk of their harvest operation. At AARS, our season has been long and pleasantly average, in terms of heat units (Figure 1). As of October 26th, we are eagerly awaiting the last of our Cabernet Franc to come in sometime in the next few days.

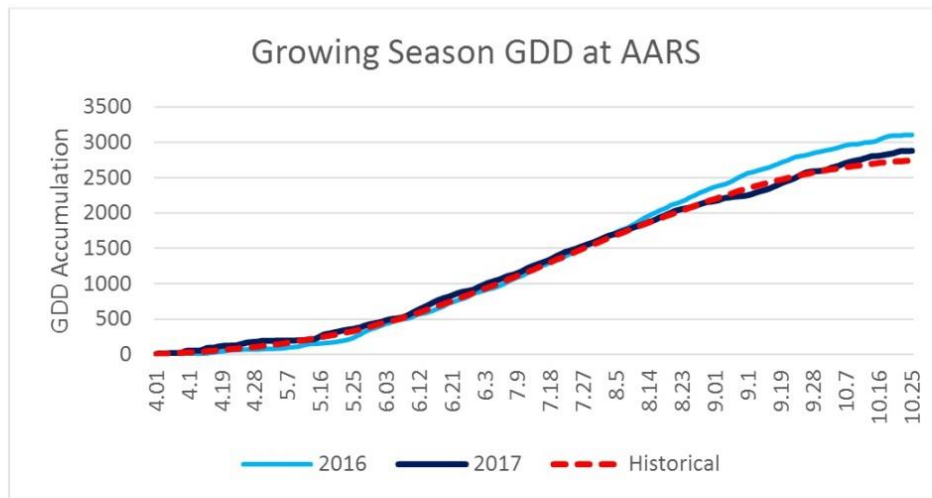


Figure 1: Growing Season GDD at Ashtabula Agricultural Research Station

Heat and drought were dominant features throughout the early days of the 2017 harvest. From the 9th of September until the 4th of October, our weather station registered 0.08 inches of precipitation (Figure 2). It is not certain to what extent these conditions contributed to the berry shrivel that we observed in early varieties such as Pinot Noir and Pinot Gris. Post-veraison water stress has been elsewhere linked to berry shrivel, but a thorough review of this symptom will reveal that it is not easily traced back to a single, definite cause (Krasnow et al. 2010).

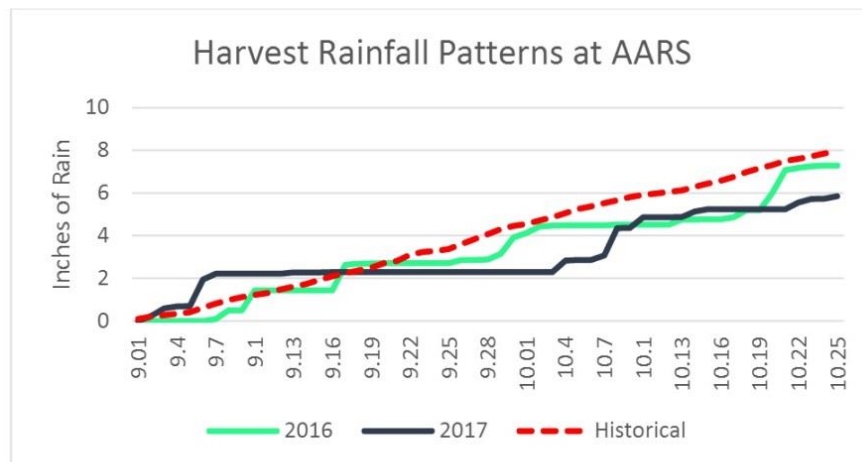


Figure 2: Harvest Rainfall Patterns at AARS

Fortunately, I heard mostly growing reports of early season fruit quality from our friends in the Grand River Valley and Lake Erie growing regions. One grower told me he'd never seen fruit like this from our area. It will be exciting to see how the wines develop over the next few years. Whereas last season many vineyards started picking in the first weeks of September, this year picking started a few weeks later. One thing we noted, anecdotally, at AARS, was a marked improvement in color this year in our early season red varieties. It will be interesting to compare 2016 and 2017 early season varietal wines from our AVAs in Northeast Ohio.

Thus far, conditions have been manageable as well for late season varieties. In general, we have been fortunate to have several long stretches of warm, dry, weather in October. Our vineyards at AARS avoided a killing frost on the chilly nights of October 16th and 26th, making it possible to have patience with our late season reds. Acidity in some varieties has remained a challenge despite these favorable conditions. Several varieties have developed adequate sugars, but are still maintaining high levels of Titratable Acidity.

I have continued to make periodic sprays for Downy Mildew with Phostrol. In my view, this has been worthwhile endeavor for our particular situation, as it has maintained the viability of our canopies for ripening late season varieties. Further, I have been pleased by the progress of lignification and periderm development in our shoots, which are changes generally associated with increased cold acclimation (Fennel and Hoover 1991, Zabadal et al. 2007). We have seen only minor amounts of sour rot thus far this year, and virtually no Botrytis. I did spray some of our late varieties with a botrytis product in late September, in anticipation of a long ripening season this year. For best practice information, and guidance on formulating your own spray program, please see Dr. Melanie Lewis Ivey's 2017 edition of "Developing an Effective Fungicide Spray Program for Wine Grapes in Ohio".

We began hilling up with the Buckeye Disk in Mid-October. Several challenges we are considering at the moment are: a) how to maintain stability and appropriate tilling depth on sloping terrain and b) how effective will the buckeye disk be in areas where we have allowed (deliberately) under-vine weed growth? So far the instrument is proving capable and effective in a wide range of situations. As many of you will know, it is a heavy implement. Hopefully none of us have to experience the joy of getting it unstuck from between vines this year!

Happy harvest.

References

- Fennel, A. and E. Hoover. 1991. Photoperiod influences growth, bud dormancy, and cold acclimation in *Vitis labruscana* and *V. riparia*. *J. Amer. Soc. Hort. Sci.* 116:270–273.
- Krasnow, M., Matthews, M., Smith, R., Benz, J., Weber, E., & Shackel, K. (2010). Distinctive symptoms differentiate four common types of berry shrivel disorder in grape. *California Agriculture*, 64(3), 155-159.
- Zabadal, T.J., I.E. Dami, M.C. Goffinet, T.E. Martinson, and M.L. Chien, 2007. Winter injury to grapevines and methods of protection. *Mich. State Univ. Ext. Bul.* 2930



Suggested Vineyard Management Practices in Autumn and Beyond

Gary Gao, Ph.D., Extension Specialist and Associate Professor, OSU South Centers

It is hard to image that another growing is about over, unless you have late-ripening cultivars, or will be doing late harvests or ice wine. There are still quite a few vineyard tasks that can be done to help the grapevines. Soil sampling and testing, removal of plant debris, and winterizing the irrigation system and spray equipment are some of the suggested tasks.

Fall is a great time to take soil samples and have them tested so that fertilizers can be purchased at lower price and be applied in a more timely fashion. Soil samples can be collected with a soil probe, a spade, or a shovel. Follow a zig zag pattern and collect at least 15 soil cores per cultivar. The sampling depth for an existing vineyard is 8". Air dry the soil cores overnight, crumble them, and make a composite sample. Take one cup of that composite for testing. Growers can use a commercial lab or a university lab. Refer to the OSU Extension Bulletin, #919, "Midwest Grape Production Guide" for more information on suggested nutrient levels and application rates.



Photo caption: Shown here is Dr. Yanliang Chu taking a soil sample at the Research and Demonstration Vineyard at OSU South Centers in Piketon. Dr. Chu is a lecture with the College of Biotechnology, Jiangsu University of Science and Technology, Zhenjiang, Jiangsu Province, China. Dr. Chu will be working with Dr. Gary Gao for one year. Photo by Gary Gao, OSU South Centers.

In terms of soil testing, we did what I preached, well this time anyway. It was interesting for us to find out that our phosphorus, potassium and calcium levels in our high tunnel vineyard are quite low. Our magnesium level is very high though. We will have to address these issues soon.

Removal of plant debris is another beneficial thing to do. Diseased fruits, canes and leaves should be removed from the vineyard and then be placed in a compost pile that is far from the vineyard. Sod in the middle should be mowed and weeds should still be managed.

Spray equipment should be cleaned up, put away, and maintained for next growing season. Vineyard tools should also be cleaned. If an irrigation system is used in your vineyard, then the system needs to be winterized.

We had a frost on October 26, 2017 in Columbus. Before too long, grapevines will need to be pruned. Another cycle of fun will start all over again before we know it!

Late Season and Post-Harvest Disease Management in the Vineyard

Melanie Lewis Ivey, Fruit Pathologist

While early season is arguably the most critical period for controlling grape diseases in Ohio, late season and post-harvest vine and fruit disease management should not be ignored. Diseases that occur after veraison are considered late season diseases, these include Botrytis bunch rot and bitter rot.

While the pathogen that causes Botrytis (*Botrytis cinerea*) is active throughout the season, berries are most susceptible to infection after veraison. Under favorable environmental conditions (mild and wet conditions) the fungus can penetrate through the skin of the grape directly. However, the pathogen can also infect berries through wounds caused by birds, insects or hail. Promoting good air circulation by canopy management and leaf pulling, preventing wounding by controlling insects, birds, and other grape diseases, and an application of a fungicide at veraison are practices recommended to control late season Botrytis.

Bitter rot is also a late season disease, especially in southern Ohio where warmer conditions persist longer into the season compared to Northeastern Ohio. Bitter rot, caused by the fungus *Melanconium fuligineum*, infects fruit at maturity or after color change. Bitter rot can reduce the quality of wine by giving it a bitter and/or moldy flavor. If more than 10% of the berries used to make wine are infected with bitter rot, the wine may be undrinkable. Similar to Botrytis bunch rot, promoting good air circulation by canopy management and leaf pulling and preventing wounding by controlling insects, birds, and other grape diseases are important management tactics. Specific late season sprays for bitter rot are not necessary if a recommended fungicide spray program for other common grape diseases in Ohio is implemented throughout the entire season. Stopping sprays when berries begin to change color could be disastrous if bitter rot is present!

The downy mildew (*Plasmopara viticola*) and powdery mildew (*Uncinula necator*) pathogens can continue to infect leaves and all green tissue up until leaf drop and in some years, may cause defoliation well before the onset of cool weather in the fall. Therefore, even after grapes have been harvested growers still need to manage grape diseases in the vineyard. This is especially important for varieties with early harvest dates or in southern regions of Ohio where there is an extended lag period between harvest and normal leaf drop. Post-harvest early defoliation can predispose vines to winter injury and reduce productivity the following season by preventing the accumulation of carbohydrates for storage over winter. Foliage should be protected from new infections until a frost event or natural senescence causes the leaves to drop. Depending on the lag time between harvest and natural leaf drop only one or two fungicide applications are generally required. The same fungicides and rates used to treat downy mildew and powdery mildew during the season can be used for post-harvest vine treatments.

In addition to late season and post-harvest vine diseases, growers who produce table grapes also need to consider post-harvest fruit rots. The post-harvest quality of table grapes can be significantly reduced by rotting fungi such as *Botrytis*, *Cladosporium*, *Fusarium*, *Penicillium*, *Mucor* and *Rhizopus*. However, Botrytis is the most destructive of the post-harvest rot pathogens of table grapes. Berries harvested with latent (hidden) infections can develop gray mold symptoms during storage causing rapid decay and rot within five to seven days. Table grapes exposed to rainfall or high humidity with mild temperatures prior to harvest are particularly susceptible to Botrytis infections. If possible, delaying harvest by five to seven days after wet weather will allow the picker or packer to remove diseased berries. During harvest care should be taken not to injure the berries. Harvested bunches should be gently placed in clean containers, pre-cooled and then moved to cold storage (32-33 F, 95% humidity) immediately.

Note: For fungicide recommendations consult [Developing an Effective Fungicide Spray Program for Wine Grapes in Ohio](#), PP Series No. 147 or the [Midwest Fruit Pest Management Guide](#).



Botrytis Bunch Rot

Photo courtesy of M. Ellis,
Professor Emeritus, OSU



Premature defoliation due to
downy mildew

Photo courtesy of F. Westover,
Westover Advising



New late season downy
mildew infections

Photo courtesy of M.L. Lewis
Ivey, OSU

Vine & Wine News @ Buckeye Appellation 2017

By: Diane Kinney and Imed Dami, 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 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 October, 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 Oct 16).

News:

- [Fruit Maturity](#) at OSU-Wooster and AARS-Kingsville
- [Ohio Grape and Wine Industry](#) Contributes \$1.3 Billion to State's Economy.
- [Monsanto Attacks Scientists](#) After Studies Show Trouble for Weedkiller Dicamba

Upcoming Events:

- February 19-20: [2018 Ohio Grape and Wine Conference](#)

Miscellaneous:

- Homepage slide: [NEWA Weather Stations](#)
- Homepage slide: [Ohio Grape & Wine: A Billion Dollar Industry](#)
- Homepage slide: [2018 OGWC -- Save the Date Announcement](#)
- Homepage slide: [2017 Fruit Maturity at OSU-Wooster and Kingsville](#)

Upcoming Events:

1. **2018 Ohio Grape & Wine Conference, Embassy Suites Dublin:** February 19-20, 2018.



2018 Ohio Grape & Wine Conference

DATE:

FEBRUARY 19-20, 2018

LOCATION:

Embassy Suites Columbus– Dublin
5100 Upper Metro Place
Dublin, OH 43017
(614) 790-9000

PROGRAM HIGHLIGHTS:

- ◆ Two information-packed days with viticulture, enology, entomology, plant pathology, virology and weed science presentations, as well as an industry trade show, Ohio wine reception, and exquisitely-prepared banquet.
- ◆ Flexible registration options and affordable registration fee.



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OSU Grape & Wine Research & Outreach Specialists

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 <i>vinifera</i> 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.

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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