

VegNet

The Vegetable and Fruit Crops Teams Newsletter

<http://vegnet.osu.edu>

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In this issue:

Worms in Mid-Summer Sweet Corn	1
Tospoviruses in Tomatoes and Peppers	2
Combined Pumpkin & UAV Field Day	3
Woolly Apple Aphid After Cicada Control	3
Understanding the Base Cation Saturation Philosophy of Soil and Nutrient Management	4-5
Farm Service Agency to Host NAP Workshop for Specialty Crop Producers	5
Southern Ohio Vegetable and Fruit Update — IPM Report	6
Wayne County IPM Report	7
NAP (Non-Insured Crop Disaster Assistance Program) Workshop	8
What's New in Fruit Production & Vegetable Production	9
Orchard Sprayer Technology Field Day	10
OSU Vegetable Workshop Series Offered for Growers	11
Direct Marketing Webinars	12
Our Sponsors	13

Worms in Mid-Summer Sweet Corn

From From Celeste Welty, Extension Entomologist

Mid-July should be one of the easiest times to keep sweet corn ears free from caterpillar pests because none of the three key pest species are now abundant in Ohio, and many acres of grain corn are now silking and offering a good habitat to the few corn pests that are active. Once the large fields of grain corn are past the fresh-silk stage, then any smaller plantings of sweet corn will become very attractive to corn pests. At present, we are between generations of European corn borer, but the moths of the new generation are likely to begin emerging in late July. We have had detection of some corn earworm and fall armyworm moths but at very low density. Moth counts in pheromone traps at several Ohio locations can be found on a webpage: <http://u.osu.edu/pestmanagement/trap-reports/vegetable/>

Tospoviruses in Tomatoes and Peppers

From Sally Miller, Department of Plant Pathology, The Ohio State University and Celeste Welty, Department of Entomology, The Ohio State University

We have seen an unusually high number of tomato and pepper samples with Tomato spotted wilt virus and related Tospovirus diseases this spring and summer. Symptoms on foliage include necrotic and/or chlorotic spots, and necrotic spots or streaks on stems and petioles. Ringspots may be observed on leaves. Plants tend to be stunted and may wilt. Fruits develop a range of symptoms, from chlorotic blotches to ringspots.

Tospoviruses are transmitted from plant to plant by thrips. Thrips larvae feeding on plants acquire the virus and become infective for the lifetime of the insect. The viruses overwinter in infected plant debris and weeds. Plants infected at the seedling stage are likely to have more severe symptoms than plants infected later.

These viruses are managed differently than aphid-transmitted viruses because they have a longer development cycle within the thrips, so there is hope of getting the problem under control if prompt action is taken. If isolated plants show symptoms, these should be rogued and destroyed as soon as possible. Insecticides can be effective if applied as soon as the problem is diagnosed, however, note that thrips are one of the more difficult pests to kill with our current choices of insecticides. We have Radiant (spinetoram), Movento (spirotetramat), and Exirel (cyantraniliprole) that generally do the best; beware these are quite expensive. Lannate (methomyl) can do ok; the pyrethroids (such as Warrior, Mustang, Baythroid, Asana) are generally poor for thrips control. Movento is systemic but needs an adjuvant such as Dyne-Amic or LI-700 to get it into the plant. Note Radiant and Movento are not allowed in greenhouses or high tunnels.

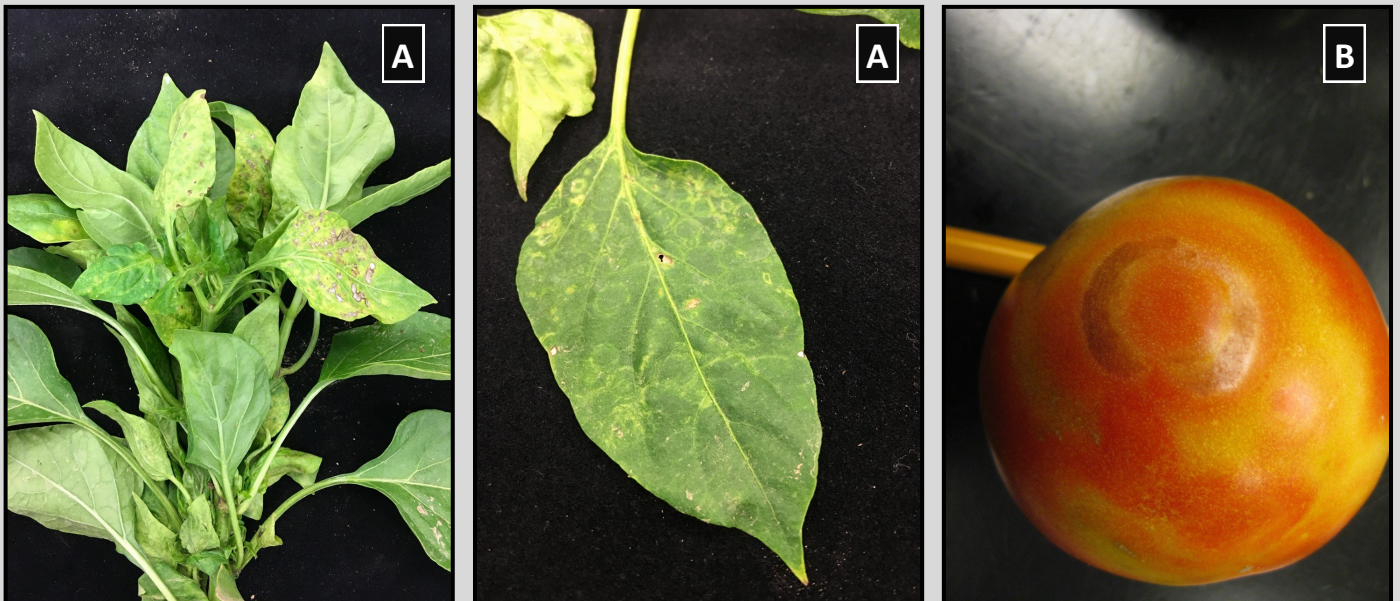


Photo:

- A. Tomato spotted wilt virus symptoms on pepper. Note ringspots on leaf closeup.
- B. Tospovirus symptoms on a tomato fruit.

Combined Pumpkin & UAV Field Day

From From Jim Jasinski, IPM Program Coordinator

Mark your calendar for the annual Pumpkin Field Day on Thursday, August 18th from 6-8 p.m. at the Western Ag Research Station in South Charleston. Featured at the field day will be some traditional stops including an 8-treatment powdery mildew fungicide demonstration trial, a variety trial with 12 powdery mildew resistant hybrids ranging from small to large fruit, and a downy mildew sentinel plot. Several state specialists will be present at the field day to answer your questions about insect, weed, and disease control.

Some new research will be highlighted including an update on the use of multi-spectral imagery from cameras mounted on Unmanned Aerial Vehicles (UAVs) to detect diseases like powdery and downy mildew on pumpkins and cucumbers. A demonstration of the UAV surveying a field will follow the presentation.

Pre-registration for the field day is required by August 15th. Handouts and liquid refreshments will be served. The field day fee is \$5 per person, payable at the field day. To pre-register, send an email to Jim Jasinski (Jasinski.4@osu.edu) or leave a message at the research station on the answering machine (937-462-8016). The Western Ag Research Station is located at 7721 South Charleston Pike, South Charleston, 45368



Photos: Cucurbit pest management and use of UAVs to detect diseases will be the focus of the August 18th field day.

Woolly Apple Aphid After Cicada Control

From Celeste Welty, Extension Entomologist

In last week's newsletter we discussed the need for spider mite control in some orchards where periodical cicadas were targeted by harsh insecticides that had a side-effect of suppressing insect natural enemies. Another pest that is showing the same flare-up is woolly apple aphid. This aphid can be difficult to control because it is protected by its waxy covering. The insecticide that can do a good job of controlling woolly apple aphids is diazinon, but beware that the various formulations of diazinon have very different labels, and some are not allowed for use on apples at all or others are not allowed on apples after petal-fall. One that is allowed on apples with a 21-day pre-harvest interval is Diazinon AG600 WBC, by Loveland. Beleaf (flonicamid) is another option; it has a narrow range of activity with aphids as the primary target.

Understanding the Base Cation Saturation (BCSR) Philosophy of Soil and Nutrient Management

From Matt Kleinhenz, Department of Horticulture and Crop Science, The Ohio State University

Soil testing and interpreting the results of soil tests are bedrock parts of soil and nutrient management. At its most basic, the process is about analyzing the content of soils and using the numbers to guide both the application of fertilizer and other materials (e.g., lime, gypsum) and various soil and irrigation management practices.

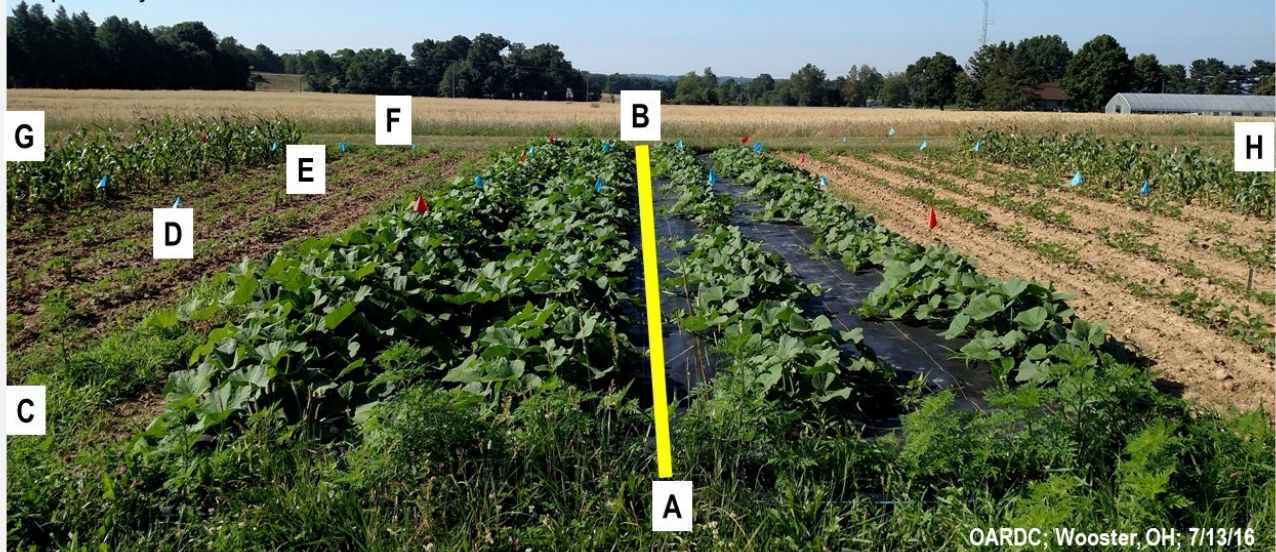
Analyzing the nutrient content of soils is relatively straightforward. Choosing how to use the data in developing fertilizer recommendations is not. Philosophies about soils, crops, agriculture and the environment, business management, the role of science, etc., come into play.

Currently, three philosophies are prominent. Vegetable fertility management experts at the University of Florida summarize these philosophies in an excellent publication (see (<http://edis.ifas.ufl.edu/pdffiles/SS/SS62300.pdf>)). Base Cation Saturation Ratio (BCSR) or “Soil Balancing” is one of the philosophies included in the UF publication. With USDA and other support, BCSR is also being tested by a team of OSU researchers and Ohio farmers.

Overall, university-based research supporting and describing how to use two other philosophies (Sufficiency Level of Available Nutrient – SLAN, and Build-up and Maintenance) is stronger than for BCSR. That has not stopped growers and the consultant community from using the BCSR philosophy in, it seems, ever larger numbers. Although many who use the BCSR philosophy farm organically, soil balancing is used by other growers, too. In its work, The OSU and farmer team is not comparing BCSR to other philosophies. Instead, the team is examining BCSR and its main aspects only. Our experiments on farms and research stations document BCSR effects on soils, crops, and weeds. We also want to better understand the appeal of BCSR and its economics.

(Continued on next page)

A typical main plot in the OSU BCSR specialty crop field experiment. Each main plot measures 56 ft x 60 ft (A-B and G-H, resp.). Each subplot where gypsum, potassium sulfate, or both were applied in 2015 and 2016 (C-D, D-E, E-F) is about 19 ft long. Subplot treatments and crop plantings (dwarf popcorn, edamame soybean, butternut squash) are repeated in each half of the main plot (i.e., on both sides of the yellow A-B line). Soil on each side of that line has either received dairy manure compost each spring since 2003 or none at all. Therefore, BCSR treatment effects are being tested in soils with this different history. In this main plot, since 2003, soil on the right has received no compost while soil on the left has received compost each year.



Understanding the Base Cation Saturation (BCSR) Philosophy of Soil and Nutrient Management Continued

From Matt Kleinhenz, Department of Horticulture and Crop Science, The Ohio State University

Using the BCSR philosophy calls for maintaining target ratios of calcium, magnesium, and potassium on the soil cation-exchange complex, often by applying gypsum and other materials. One BCSR experiment at the OSU-OARDC (see picture) is documenting the effects of gypsum (G), potassium sulfate (KS), and G+KS applications on the yield and quality of dwarf popcorn, edamame soybean, and butternut squash. Effects on soils and weeds are also being evaluated. Dwarf popcorn and edamame soybean were included in the experiment partly as “specialty crop equivalents” to the standard corn and soybean varieties used in other experiments in the project.

Other articles on BCSR will follow in VegNet. One will describe soils growers and consultants say give the best results when a BCSR philosophy is used. Another will discuss the BCSR-crop quality relationship. Contact Matt Kleinhenz (ph. 330.263.3810; kleinhenz.1@osu.edu) for more information. Also, see http://organicfarmingresearchnetwork.org.ohio-state.edu/network_activities/soil_balancing/ for additional information on the OSU-farmer BCSR project.

Farm Service Agency to Host Non-Insured Crop Disaster Assistance Program (NAP) Workshop for Specialty Crop Producers in Central/Southwest Ohio

From Mary Griffith, Agriculture and Natural Resources Educator, OSU Extension Madison County

The Farm Service Agency (FSA) invites specialty crop producers in central and southwest Ohio to attend a free NAP workshop on August 18, from 6:30 p.m. -8:00 p.m. at the Madison County USDA Service Center in London, Ohio.

Producers interested in learning more about NAP can benefit from attending this program, which will cover the following topics:

- * Review of NAP coverage levels and application process;
- * Discussion of acreage, production, and loss reporting;
- * Discounted buy-up options available to beginning, underserved, and limited resource producers;
- * Overview of other programs of interest to specialty crop producers, including the Farm Storage Facility Loan Program.

FSA administers the NAP program, providing financial assistance to producers of many specialty crops when low yields, loss of inventory, or prevented planting occur due to damaging weather. The NAP workshop is free to attend. To register, contact your local FSA Office, or email joseph.howard@oh.usda.gov.

Southern Ohio Vegetable and Fruit Update

July 14th — IPM Report

From Zach Charville, OSU Extension IPM Crop Scout Intern

Harvest of watermelon and cantaloupe has begun across Southern Ohio, as harvest of onions, cabbage, and greens slows down. Pumpkin plants are beginning to set pumpkins and continue to thrive in the warm temperatures of the area. Tomato hornworms continue to cause damage on tomato plants on several farms. The hornworms cause damage to much of the canopy of the plant and will sometimes feed on the fruit itself. Tillage at the beginning and end of the tomato season is essential to control the larvae population in the soil. Insecticides can be used to control the population of hornworms, but physically removing the worms from the plant is the most effective method.



Pictures:

- A. A ripe watermelon awaits harvest
- B. A hornworm attached to the stem of a tomato plant
- C. Hornworm damage to a tomato
- D. Pumpkins thriving in the warm weather.

Wayne County IPM Report: July 14th

From Rory Lewandowski, Extension Educator, Wayne County

Scouting reports this past week have contained frequent comments to growers about plants under moisture stress and dry field conditions. Sunscald has shown up on some high-tunnel tomatoes and in some field zucchini and summer squash. Overall, growers are harvesting a range of vegetable crops, with some garlic added to that harvest list this week.

Disease pressure continues to grow. Early blight on tomatoes was detected by scouts on more fields and in more high tunnels this past week. *Alternaria* also showed up in some melons this past week. Downy mildew symptoms were reported on another field this week, from a different grower than where downy mildew was found last week. All area growers are being urged to maintain a preventative spray program against downy mildew in cucurbits, following recommendations provided by Sally Miller. Other fungal diseases reported by scouts this past week include anthracnose in squash, pumpkins, zucchini/summer squash and melons. Powdery mildew is common in zucchini and summer squash with some infections at heavy levels. Powdery mildew was also found in some cucumber plantings this past week.

Bacterial speck/spot has been found in field tomatoes and in peppers. Bacterial wilt is showing up in some cucumber and melon plantings. This past week scouts found tomato spotted wilt virus (TSWV) in some high tunnel peppers. This virus disease is vectored by aphids.

With regard to insect pests, aphids, white flies and stink bugs have all been identified in high tunnel tomatoes. Imported cabbage worm larvae, flea beetles and Japanese beetles were identified in cole crops. Cucumber beetles continue to be found at varying levels from light to treatment threshold levels in cucumbers, fall squash, pumpkins, zucchini, summer squash, and melons. Japanese beetles are found on a range of crops including the fore mentioned cole crops and also fall squash, pumpkins, melons, eggplant, green snap beans, sweet corn and potatoes. None of the feeding damage warrants any treatment at this point. Colorado potato beetles range from light to over treatment threshold in potatoes and eggplant. In sweet corn, corn earworm moth captures were still at 0, but 15 European corn borer moths were captured between 2 locations. Racoons did some heavy damage in one sweet corn planting at the point of harvest.



Photos:

- A. Newly harvested garlic laid out to dry down. Photo by Chris Smedley, IPM program scout
- B. Pepper leaf with Tomato Spotted Wilt Virus symptoms. Photo by Chris Smedley, IPM program scout.
- C. Powdery mildew on cucurbit. Photo by Levi Myers, ACRE program intern.



United States Department of Agriculture

Attention Specialty Crop Producers!

Free NAP Workshop

Non-Insured Crop Disaster Assistance Program (NAP)

August 18, 2016

6:30pm - 8:00pm

Madison County USDA Service Center

829 US Highway 42 NE

London, Ohio 43140

Come Learn!

No Cost!

What is NAP?

The Farm Service Agency administers NAP which provides financial assistance to producers of non-insurable crops when low yields, loss of inventory, or prevented planting occur due to damaging weather.

To read more about NAP coverage visit www.fsa.usda.gov/nap.

Workshop Highlights

Workshop highlights include:

- Explanation of NAP requirements, benefits, coverage levels, application, & payment processes.
- Discussion of reporting requirements and presentation by loss adjustor
- Overview of other FSA programs

To register, contact your local Farm Service Agency County Office, or email joseph.howard@oh.usda.gov by **August 5th**.

Registration is encouraged, though walk-ins are welcome!

Persons with disabilities who require accommodations to attend or participate in this meeting should contact Joe Howard at 740-852-4003 or Federal Relay Service at 1-800-877-8339 by August 5, 2016.



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What's New in Fruit & Vegetable Production?

Presented by OSU Extension Greene County



Join Extension specialists for an update on the latest news in fruit and vegetable production! Topics include:

- **10:00 -11:00 What's eating my produce?**
Keep up to date on high impact insect pests and how to better control them in fruits and vegetables.
- **11:00-12:00 Hydroponics 101**
Learn why cultivating plants in water is gaining popularity, and how to get started using these systems!
- **12:00-12:30: Lunch**
- **12:30 – 2:00 Agritourism and Marketing Local Foods**
Get an update on the new agritourism bill, and an overview of alternative marketing opportunities
- **2:00 – 2:30: Tour Caesar Creek Vineyard**
Learn about Xenia's local vineyard and winery!

FRIDAY

AUG 12

10 A.M. – 2:30 P.M.

Caesar Creek Vineyard
962 Long Rd, Xenia, OH
45385

Cost: \$20 includes lunch

Registration Required
by August 8:

Register online:
<https://www.regonline.com/osuccfruitandvegetable>

**Contact hiatt.32@osu.edu or
937-372.9971x123**



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OHIO STATE UNIVERSITY EXTENSION

Orchard Sprayer Technology Field Day

THURSDAY, AUGUST 18 ■ 3:00 - 7:30 pm

Moreland Fruit Farm ■ 1558 Moreland Rd, Wooster OH 44691



Featuring:

- Sprayer demonstrations with new and current sprayer technology
- Education and discussion on how sprayers can be used more effectively and efficiently
- A glimpse of the future: Introducing the Intelligent Sprayer technology
 - Prototype sprayer designed by USDA-ARS/OSU using laser guidance to automatically adjust spray volume and nozzle pattern based upon tree size, leaf density and plant spacing.
 - Trials have shown reductions in pesticide use of 47-70% compared to conventional orchard air blast sprayers
 - Annual chemical savings can amount to \$140 to \$280 per acre
- Resource people: Heping Zhu - USDA-ARS, Lead Scientist of the Intelligent sprayer and Erdal Ozkan - OSU Extension Sprayer Technology Specialist
- Sponsor displays, orchard equipment and supply exhibits

Registration: includes handout materials, refreshments, and a light supper for only \$5.00 per person, pre-register by **Thursday August 11**

For more information:

Rory Lewandowski, 330-264-8722, Lewandowski.11@osu.edu, wayne.osu.edu

Presented by:



Orchard Sprayer 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, August 11**. 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: _____ E-mail: _____



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OHIO AGRICULTURAL RESEARCH AND DEVELOPMENT CENTER
OHIO STATE UNIVERSITY EXTENSION

2016 VEGETABLE WORKSHOP SERIES



2nd Thursday, April - October

North Central Agricultural Research Station
1165 County Road 43
Fremont, OH 43420

Topics

April 14: New Fungicide Strategies with Orondis™, Sally Miller, Plant Pathology

May 12: Scouting Cucurbits with Drones, Jim Jasinski, OSU Extension

June 9: Alternative Crop Enterprises – Barley and Hops – Are They an Option for You?, Eric Stockinger, Horticulture and Crop Science

July 14: The OSU Food Safety Program – What It Can Do for You, Beth Scheckelhoff, OSU Extension

August 11: Sweet Corn Evaluation, Field Walk, and Taste It for Yourself, Mike Gastier, OSU Extension

September 8: Pepper Evaluation and Field Walk – Bells, Bananas, Jalapenos, Allen Gahler, OSU Extension

October 13: Soil Health and Water Quality – How Does It Affect Me? A Look at Edge of Field Studies and NCARS Water Samples, Libby Dayton, School of Environmental and Natural Resources

Please join us at the North Central Agricultural Research Station, Fremont, OH, the second Thursday beginning April 14 through October 13 for breakfast, industry updates, in-depth tips, tricks, and information from researchers to help make your 2016 growing season a profitable one! Attend when the topic suits you or take advantage of each month's program

Registration

Free and open to the public

Bring your plant disease and insect samples to the OARDC Lab for identification and same day results, free of charge!

Free breakfast begins at 7 A.M. followed by the featured speaker, field walk and networking

For more information

Matt Hofelich

419-332-5142

hofelich.4@osu.edu

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Ohio State University Direct Marketing Food & Agriculture

2016 Webinar Series

One-hour webinars will be offered to bring exceptional speakers to your home, office or local Extension center. If you're interested in finding out more about marketing issues, visit the website for details.



2016 Direct Marketing Webinar Series All webinars begin at 12 noon

Date	Topic	Lead Presenter	Connection
Feb. 18	Marketing Trends Learned from the Super Bowl	Eric Barrett & Rob Leeds	http://carmenconnect.osu.edu/marketingtrends2016/
Mar. 2	Using All Your Senses in Branding Your Business	Eric Barrett & Rob Leeds	http://carmenconnect.osu.edu/brandingyourbusiness/
Apr. 21	Enhancing Your Web Presence	Melissa Carter	http://carmenconnect.osu.edu/enhancingwebpresence/
May 26	Product Recall & Traceability	Eric Pawlowski	http://carmenconnect.osu.edu/productrecallandtracibility/
June 16	Product Labeling	Emily Adams	http://carmenconnect.osu.edu/productlabeling/
July 21	Celebrate Ohio Local Foods Week	Heather Neikirk & Patricia Barker	http://carmenconnect.osu.edu/localfoodsweek/
Aug. 18	Produce Auctions	Brad Bergefurd	http://carmenconnect.osu.edu/auctionsforproduce/
Sept. 15	Pricing Your Products	Megan Leffew	http://carmenconnect.osu.edu/pricingproducts/
Oct. 20	Cooperatively Marketing Your Products	Hannah Scott	http://carmenconnect.osu.edu/marketingyourproducts/
Nov. 17	Using Facebook For Your Business	Duane Rigby	http://carmenconnect.osu.edu/facebookforyourbusiness/
Dec. 15	Survey Results for Ohio Produce Marketers	Direct Marketing Team	http://carmenconnect.osu.edu/surveyresultsformarketers/

For recordings of all webinars go to go.osu.edu/DirectMarketingWebinars



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Submit Articles:

To submit an article to the VegNet newsletter please send the article and any photos to **Brad Bergefurd** at bergefurd.1@osu.edu or for questions regarding the newsletter call 740.289.2071 ext.132

About the editor

Brad Bergefurd

Bergefurd is an Extension Educator, Agriculture and Horticulture Specialist with Ohio State University Extension, with statewide responsibilities for outreach and research to the agriculture and commercial fruit and vegetable industries Brad has offices at the OSU Piketon Research & Extension Center in Piketon and at OSU Extension Scioto County in Portsmouth.



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