The Ohio State University Extension

VegNet *The Vegetable and Fruit Crops Teams Newsletter*

http://vegnet.osu.edu

Lead Editor and Contributing Author: Brad Bergefurd
Graphic Designer & Editor: Charissa Gardner McGlothin

In this issue:

Vol. 22 Number 11, August 25, 2015

South Centers Update

from Thom Harker, Research Assistant, Horticulture, The Ohio State University

Hop harvest continues at the OSU South Centers. Many varieties have been harvested and dried at this time. There are still a few varieties remaining to be harvested. Strawberry plug plant production is underway as well. Tips have been stuck and placed under the mist system for rooting. The plug plants will be grown out 4-5 weeks, then transplanted to the field in early September. The raised beds have been formed and covered with plastic.

A. One week old strawberry plug plant
B. Oast Hop cones drying in oast.
C. Strawberry tip propagation
Photos by Thom Harker

2015 Upcoming Events

September 4	First Friday Hops Tours, Piketon and Wooster See page 12 for details
September 22-24	Farm Science Review, London Ohio For full details go to fsr.osu.edu
January 18-20	OPGMA Congress, Sandusky, Ohio For full details go to www.opgma.org

To list your upcoming events in future additions of the VegNet newsletter, please send details to bergefurd.1@osu.edu

Downy Mildew on Pumpkins in Southern Ohio, KY and IL

from Sally Miller, Professor-Agriculture and Natural Resources, The Ohio State University, Department of Plant Pathology

Downy mildew was found on pumpkins last week in Scioto County, OH. There have also been reports of pumpkin downy mildew in Kentucky and Illinois. Downy mildew can be quite severe on pumpkin leaves, as shown. Look for the angular brown lesions on the leaves. We found a great deal of the fuzzy look (sporulation) of the pathogen on the underside of these leaves. Downy mildew is managed using fungicides such as Ranman plus Bravo, alternated with Zing or another downy mildew product; products should be applied weekly.

As the summer winds down and cooler weather, with heavy morning dews, becomes common, we can expect downy mildew to ramp up. Sporangia of the downy mildew pathogen move from plant to plant through the air. They do not survive well on sunny days, but can move for long distances under overcast skies. It is important to keep downy mildew to a minimum on all types of cucurbits – not only to protect yield, but to prevent spread of the disease to other fields – near and far.

Small angular lesions of downy mildew on a pumpkin leaf
Photo by Sally Miller

Wayne County IPM Program: Scouting Summary

From Rory Lewandowski, Extension Educator, Agriculture and Natural Resources, The Ohio State University, Wayne County

Fruit:

Apples are maturing. Codling moth trap numbers have remained high in some orchards and other insect pests noted on scouting reports include green apple aphids, European red mites, 2-spotted spider mites, and Japanese beetles. As some apple varieties near harvest, growers need to be vigilant about reading labels and watching pre-harvest intervals if they need to treat for codling moths or any other insect pest. Disease-wise, most growers have done an excellent job of keeping up and maintaining fungicide spray programs and scouts are noting very little disease. There have been a few apples with some fly speck and some apples with white rot symptoms.

Really the only issue with peaches is that oriental fruit moth trap captures have remained high for the past 2 months so growers have been on a regular spray advisory to prevent damage from OFM larvae.

In small fruit, spotted wing drosophila (SWD) trap capture numbers have been increasing in control traps placed near wild fruit that is not being treated with insecticides. These traps have captured between 20 to 90 + in the past couple of weeks. Where growers are spraying on a consistent basis, fruit is protected and generally trap numbers are 0 or possibly with 1 or 2 SWD captured.

Vegetables:

It is dry in Wayne County. Lack of rainfall is becoming an issue, especially in larger fields without irrigation or in any smaller plantings without irrigation.

Tomatoes are being harvested and given the disease pressure that many plantings had to contend with quality is good. Scouts continue to see septoria leaf spot, and early blight in both field and high tunnel production. The recent dry weather spell is slowing the spread of these diseases and later plantings look much better than early plantings. Many field grown tomatoes also have bacterial diseases and scouts continue to note conditions due to environmental factors such as blossom end rot and yellow shoulder. In high tunnel production leaf mold continues on some farms and late blight is showing up in a few high tunnels as well along with powdery mildew. Tomato hornworms appear to have run their course but scouts are finding tomatoes with stink bug stings in both field and high tunnel production tomatoes. Aphids are being seen in some high tunnels as well.

Cole crops planted for fall harvest continue to have pressure from imported cabbage worm, with some fields at or above treatment threshold levels. Japanese beetles and grasshoppers were also noted on some scouting reports as causing some light damage to cole crop plants

Depending upon the planting date, vine crops range from bloom to harvest. There is a lot of cucumbers, summer squash, zucchini, and melons (cantaloupe and watermelon) currently being harvested.

(article continued on the next page)

Wayne County IPM Program: Scouting Summary Continued...

Powdery mildew is being found by scouts in virtually every planting and growers are being advised to maintain a fungicide spray program to minimize damage from this disease. Downy mildew has been found in a number of cucumber plantings and some growers have been able to greatly slow or even arrest the development of the disease with a good fungicide spray program and some help from recent dry and hot weather conditions. Downy mildew has also been found in some plantings of cantaloupe. Anthracnose and angular leaf spot are also commonly noted by scouts in many melon and fall squash and pumpkin plantings. Plectosporium blight has been found in several pumpkin plantings as well. Other diseases that have been noted, but that are not widespread, include phytophthora fruit rot, fusarium fruit rot and septoria leaf and fruit spot. Insect-wise, cucumber beetles continue to be present at anywhere from light to threshold or above numbers, and squash bugs and grasshoppers have also been noted in scout reports.

Eggplant and pepper fruit are being harvested. Sunscald is being noted on both crops by scouts on a frequent basis. Anthracnose has been found on both leaves and fruit. Some fusarium wilt on eggplant was noted this week along with some bacterial soft rot in peppers. In some eggplant plantings Colorado potato beetle numbers were very heavy, triggering a recommendation to treat. Scouts also noted some flea beetles on eggplants. In peppers, some growers are treating for European corn borer larvae to prevent damage. Stink bug stings have been noted on fruit by scouts along with the presence of aphids and grasshoppers.

Green snap beans range from in bloom to harvest. Scouts have not noted any disease problems in green beans, but a number of insect pests are present including bean leaf beetles, potato leaf hoppers, grasshoppers and Japanese beetles, although nothing at an economic treatment level.

Sweet corn ranges from plants at V-6 to harvest. Corn earworm trap numbers remain very low, 0 in traps at 4 locations this past week. European corn borer moth captures ranged from 0 to 8 at 4 locations. Currently there is low disease and insect pressure in sweet corn.

Potato harvest is underway in many plantings or plants are drying down so insect and disease monitoring has ended on this crop.

A. Imported cabbage worm larvae feeding on cole crop
B. Squash bugs
C. Anthracnose on pepper fruit
D. Pumpkins maturing in the field
Photos by Chris Smedley

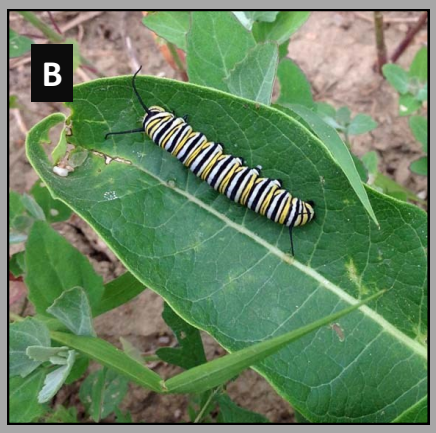
North Central Update

from Timothy Malinich, Extension Educator, Agriculture and Natural Resources, Erie County

Crop Report

Apple harvest is getting underway in the region. Growers are reporting a large harvest this year. Plums are ripe and picking is just getting underway this week. Peach varieties that survived the winter are also being picked now. In particular, *Contender* was being harvested at two orchards and it seems to have a full crop. *Galena* and *Cascade* hops are past their prime for harvest but *Crystal* seems to be perfect at this point. Blackberries were frozen to the snow line this year, but those branches that survived are producing right now. Additionally, Illini Hardy blackberries, along with the primocane-bearing varieties *Prime Jim*, *Prime Jan*, and *Prime Ark*, are producing a normal crop this year.

Mite numbers are up in apples; numbers have dropped in treated blocks but are up in untreated blocks. Apple maggots (AM) are still trapped on a regular basis throughout the region. Coddling moth (CM) trap numbers continue to be low or zero in blocks with pheromone disruption. Two blocks in the region, however, have had sustained high numbers for the past two weeks; a pear block (no pheromone disruption) with about 3 moths per trap and an apple block (with pheromone disruption) with 13 and 9 CM in two traps last week (lower numbers this week). Dogwood borer (DWB) numbers are in decline.



Irrigation

The spotty showers make it impossible to give a good irrigation recommendation. Some growers report a one-inch rain at one location and nothing in the next township. Do not rely on the forecast for irrigation. Monitor soil moisture by checking several locations in the field. Dig down to assess soil moisture at root-level.

Moisture meters are a great tool for tracking soil moisture. Sensors at different depths and locations are a good means for making irrigation decisions. However, two or three data points do not always accurately reflect a much larger field. In one case for example, small areas of heavier soil within a larger field were being overly saturated because the sensors were placed in the more representative sandy soil of the field. The berry bushes in the heavier soil were constantly flooded and developing root problems from over irrigation. Moisture meters are not an excuse to not look at the entire field.

A. Plums are looking good and hitting the market shelves
B. A weed to producers, this milkweed is still fulfilling its niche as a habitat for the Monarch butterfly caterpillar
C. Hop Cascades
Photos by Jennifer Moyseenko

Southern Ohio Vegetable and Fruit Update

from Brad Bergefurd, Extension Educator, Agriculture and Natural Resources, The Ohio State University, Scioto County & South Centers

Vegetable & Fruit Field report

The two-week rainfall total for the area has been less than three inches, allowing growers to perform timely field and harvest activities including the last side-dress Nitrogen applications on sweet corn, squash, pickles, and cucumbers. Timely herbicide spraying, fungicide and insecticide applications, cultivation, planting, ground preparation, and harvest continues. The first Downy Mildew on Ohio pumpkins was diagnosed by Dr. Sally Miller's lab the week of August 10 in Scioto County. Tight fungicide spray schedules are being applied on tree fruit, small fruit, hops, vegetables, melons, and grapes. Burn-down and pre-emerge herbicides continue to be applied when possible. Scouting and trapping for insects and disease continues. Nutrient deficiencies continue to be reported on hops and vegetables where Nitrogen leached under heavy rainfall events; frequent fertigation is being applied to replace leached nutrients. Black rot is being reported on grapes. Fields are being prepared to begin garlic planting next month.

Harvest

Harvest is in full swing for all produce and specialty crops, including hops, pie pumpkins, fall squash, blackberries, red raspberries, late season blueberries, sweet corn, cantaloupe, watermelon, field and high-tunnel tomatoes, green beans, half-runner beans, potatoes, sweet potatoes, zucchini, yellow squash, cucumbers, pickles, cabbage, Brussel sprouts, broccoli, radishes, greens, lettuce, hot and bell peppers, summer apples, peaches, and day neutral strawberries. The first jack-o-lantern harvest is expected to begin the week of August 24 for Labor Day shipments. The season's wet weather has resulted in harvest gaps for sweet corn, summer squash, and green bean crops, with increased demand from retail farm markets and a continued spike in wholesale prices.

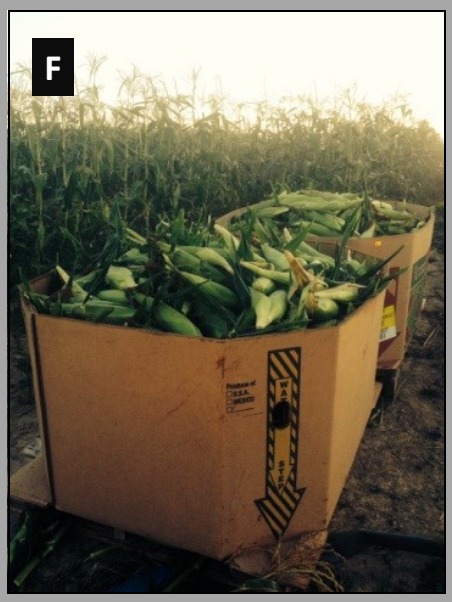
Hops

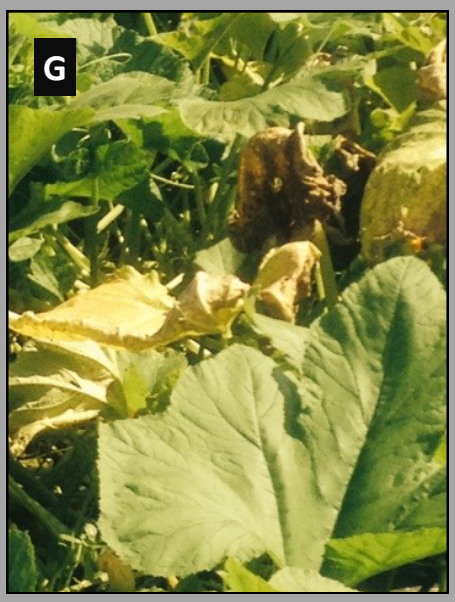
The hop harvest is about 2/3 complete with four mechanical harvesters now being operated throughout the state by the Ohio Hop Growers Guild members. Great yields, quality, and brewer demand are being reported. Virus, spider mites, Alternaria cone disorder, and downy mildew are being reported in hops being harvested. Hop growers are beginning to prepare new hop yards for fall planting, including deep tillage, deep incorporation of lime and fertilizer, pulling up beds, applying herbicide and laying fabric mulch and drip irrigation, and building high trellis systems. Fall planting of hops will begin in September through early October.

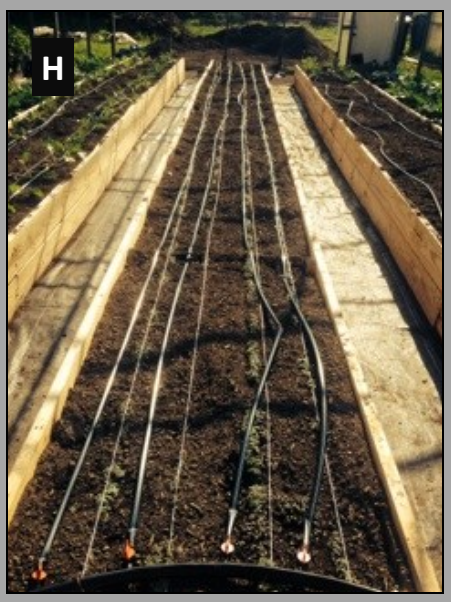
Strawberry

The last of the plasticulture strawberry runner tip shipments from Prince Edward Island and Nova Scotia were delivered the week of August 10, and planting of tips for plug plants finished up the week of August 16. Tip quality and size was great and consistent among all shipments this season. Plasticulture strawberry growers continue preparing ground, applying fertilizer, pulling up beds, applying herbicide, and laying plastic mulch and drip irrigation, with the anticipation of field planting to begin Labor Day weekend. Day neutral strawberry harvest continues, with one of the best summer crops ever being reported with the cool summer growing conditions.

Southern Ohio Vegetable and Fruit Update Continued...







A. Summer apple harvest began in southern Ohio the week of August 9
B. Late pumpkin plantings are in full bloom
C. Some apple varieties are showing frost ring damage from spring frost events during bloom
D. Beds have been made and plastic mulch laid for plasticulture strawberry planting
E. Bird cannons are having to be used in sweet corn plantings for bird control
F. Sweet corn harvest continues throughout Ohio with high yields and quality being reported
G. The first Downy Mildew on pumpkin was diagnosed in Scioto County on 8/13
H. Seeding of greens including mustard, collards and kale is being made
I. Dave Scurlock was one of several speakers at the Superberry field night held at Piketon On August 20

Photos by Brad Bergefurd

Testing the Soil Balancing (Base Cation Saturation Ratio) Approach in Organic Vegetable Production)

from Matt Kleinheinz, Professor & Educator, Department of Horticulture and Crop Science, The Ohio State University & Sonia Walker, Research Assistant, Department of Horticulture and Crop Science, The Ohio State University

Testing the Soil Balancing (Base Cation Saturation Ratio) Approach in Organic Vegetable Production

Soil Balancing, based on Base Cation Saturation Ratios, is one major approach to addressing major production challenges related to maintaining soil and crop health and limiting weed and pest pressures. Proponents of Soil Balancing say that soils are “ideal” and properly “balanced” when roughly 70%, 10%, and 5% of the exchangeable sites are occupied by calcium, magnesium, and potassium, respectively. Ideal ratios, Soil Balancing practitioners say, can be achieved by applying gypsum, lime, and other soil additives. Soil Balancing does not directly address nitrogen, phosphorus, or other nutrient supplies. The popularity of Soil Balancing is increasing faster than the research-based information available to help guide its use.

Collaborating with OEFFA (http://www.oeffa.org/), a team of OSU investigators and educators is examining Soil Balancing in agronomic and specialty crop production and working to help farmers use Soil Balancing approaches more effectively. Support from the USDA-Organic Agriculture Research and Extension Initiative has allowed the team to start experiments on more than a dozen Ohio farms and at OARDC sites in Bowling Green, OH and Wooster, OH. All look to learn how soils, crops, weeds, farm economics, and other issues are influenced by Soil Balancing approaches. The Vegetable Production Systems Laboratory (VPSL) directed by Matt Kleinhenz is documenting soil management effects on specialty crops.

In 2015, the VPSL planted edamame soybean (“Butterbeans”), dwarf popcorn (“Tom Thumb”), and butternut squash (“Waltham”) in eight certifiable-organic plots in Wooster, OH between June 12 and June 19. One-half of each plot has either been amended with compost each spring for twelve years while the other half has received no amendments for twelve years. Regardless, the plots were previously grown to vegetables or hay or kept fallow.

Before seeding, on June 11, three soil amendment treatments were applied to each plot: 1) gypsum only (1500 lb/A), 2) potassium sulfate only (500 lb/A), and 3) gypsum (1500 lb/A) and potassium sulfate (500 lb/A). Also, rock phosphate (500 lb/A) was applied to the section of each main plot that had been unamended for twelve years.

Harvests are expected to begin around the end of August. The edamame pods are starting to fill out with most pods yielding 2 or 3 beans. The popcorn ears are nearing full size and are starting to dry down on the stalks. The ears appear to be nearly or completely filled with kernels. The butternut squash have been forming fruit for a couple of weeks. The fruit are up to 8” in length with some fruit starting to show hints of tan skin.

Data collection to date has included soil sampling for weed seed banks and soil fertility, plant and leaf measurements to track plant growth and plant nutrients, and pictures to document growth rates. Additional data that will be collected at harvest will include total and marketable yields and quality.

Learn more about the Soil Balancing and other projects at the Organic Farming Research Network website, http://organicfarmingresearchnetwork.org.ohio-state.edu/, by contacting a member of the project team, or by visiting one of the OARDC research sites. Also, consider joining us for the OEFFA-OSU Soil Balancing Field Day (September 10, 5 p.m. – 7 p.m.). The program will be held at the OARDC Agricultural Incubator Hirzel Site, 13737 Middleton Pike (State Route 582), Bowling Green, OH. ***(article continued on the next page)***

Testing the Soil Balancing (Base Cation Saturation Ratio) Approach in Organic Vegetable Production Continued...

An organic specialty crop Soil Balancing plot at OARDC in Wooster. Four rows of butternut squash (center of image) divide sections of this main plot that have either been amended with compost each spring for twelve years or received no amendment over the same time period. The section to the right of the squash has received compost and the section to the left has not been amended. Both sections contain four rows of edamame soybean, four rows of dwarf popcorn, two rows of butternut squash, and three soil amendment treatments based on Soil Balancing approaches. Picture taken August 11, 2015.

A Consultants Report From Ottawa & Sandusky Counties

from Michael Netz, Vegetable & Field Crop Specialist, Widmer & Associates, Ltd., Gibsonburg, Ohio

Peppers – Bell, Bananna, and Jalapeno harvest is in full swing now. Seeing a marked increase in corn borer moth activity. Finding a few worms in some fruit, too. Most of my customers have made an application of Coragen to protect the fruit through the second generation peak moth flight. Aphid populations are on the increase also. The major diseases this year have been Phytopthera root rot and blight, there is some bacterial spot too. With all the heavy rains early, many plants do not have adequate leaf cover, and I am seeing a good bit of sun scald as a result.

Processing Tomatoes – Harvest has begun in most client fields. Yields are very poor, in many fields, due to water damage. The excessive rains have caused a lot of variability down the rows and across the fields. This is making the decision of whether to ethrel or not, and when, very challenging. The early sets of red fruit are not holding very long and get soft very quickly. We are seeing lots of bacterial spot, early blight, fusarium wilt and white mold due to the heavy June/July rains. This will be a harvest year most growers will not want to remember long!

Pickles / Cucumbers – The majority of the hand-pick pickle fields are finished for the year. Many growers only picked four weeks. There was very heavy disease pressure from all of the wet weather. Most fields were only at the 3-4 leaf stage when downy mildew started. Many fields were picked under very wet field conditions and the resulting compaction caused an early end to the crop. Cucumbers growing on beds and plastic are doing much better. There is a good bit of disease pressure in these too, but not to the point where it is prematurely ending picking. Seeing increased aphid pressure in fields in the last week.

Cabbage – Harvest continues, currently most fields have a lot of issues due to early heavy rains. This has been one of the worse years for diseases, in my opinion! Alternaria, white mold, rhizoctonia and black rot have been especially heavy. Many fields and areas of fields that survived the heavy rains, lost too many hair roots, resulting in a lot of internal tipburn. The good news is that worms and thrips have not been as bad as most years. ***(article continued on the next page)***

A Consultants Report From Ottawa & Sandusky Counties Continued...

Pumpkins – The fields that survived the floods look pretty decent. Plants are now getting some good size and runners. Fruit sets and sizing look pretty good. Most of the fields I am looking at have 2-4 set and sizing fruit per plant. The main disease I have been seeing is gummy stem blight. In my fields, powdery mildew pressure has been minimal so far. Cucumber beetle pressure has been light so far. Squash bugs, vine borers and the other bothersome insects have been light too. I am also seeing increased aphid pressure in pumpkins too.
From what I am hearing from most of my vegetable customers, they all wish the year was over with already! It has not been a profitable one in most cases!

A. Cucumber harvest is in full swing in Northwest Ohio
B. Tomato harvest is in full swing in Northwest Ohio
C. Fresh Market and Processing Cabbage is in full swing in Northwest Ohio
D. Bell and hot pepper harvest is in full swing throughout Ohio
Photos by Mike Netz

Cuyahoga County Crop Updates

From Jacqueline Kowalski, Extension Educator, Agriculture and Natural

The weather has been hot, humid and dry in Cuyahoga County for the past few weeks. Field preparations for fall crops continue. Farmer's Markets are busy and vendors state that sales have been strong. Ohio apples have been in the market for a few weeks . Flea beetles and cabbage worms remain active on fall-planted cole crops. Vine crops are developing powdery mildew. Although downy mildew is present in area, cucumber harvest for market growers remains strong. Bacterial spot is prevalent on field grown peppers.

A. Tomatallis-Standard Farm
B. Broc transplants for fall production
Photos by Jacqueline Kowalski

OHIO AGRICUTURAL RESEARCH AND DEVELOPMENT CENTER

OHIO STATE UNIVERSITY EXTENSION

Hops
First Friday Tour

Date:

First Friday of
Every Month
10:00 A.M.—12:00 P.M.

Locations:
OSU South Centers
1864 Shyville Rd.
Piketon, OH
AND
OARDC Horticultural
Research Unit 2
5082 Oil City Rd
Wooster, OH

Cost: $15 per family

To Register: (you must preregister)
Contact Charissa McGlothin
at mcglothin.4@osu.edu or
at 740.289.2071 ext. 132

DEADLINE to Register:
The Wednesday before the
first Friday of the month

Hosted by Brad Bergefurd & Mary Gardiner

The tour will include:

- Hop yard construction
- Establishment cost
- Bine training
- Irrigation
- Variety Selection
- Fertilization
- And more!

For more information on Hops go to
go.osu.edu/hopsinformation

THE OHIO STATE UNIVERSITY
COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

oardc.osu.edu | extension.osu.edu

THE OHIO STATE UNIVERSITY
COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES

VegNet Newsletter

COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES

Editor, **Brad Bergefurd**
Bergefurd.1@osu.edu
740.289.2071 Ext. 136

Graphic Designer and Editor, **Charissa McGlothin**
Mcglothin.4@osu.edu
740.289.2071 Ext. 132

http://vegnet.osu.edu/newsletter

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.

Brad Bergefurd, MS

Extension Educator, Agriculture and Horticulture Specialist with Ohio State University Extension