#### The Ohio State University Extension

## **VegNet** The Vegetable and Fruit Crops Teams Newsletter

http://vegnet.osu.edu

**Lead Editor and Contributing Author: Brad Bergefurd** 

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### Pepper Field Night to be held in July

Matt Hofelich, Research Station Manager, College of Food, Agricultural and Environmental Sciences North Central Agricultural Research Station

The North Central Agricultural Research Station will host a Pepper Field Night and Workshop on Thursday July 31, 2014 from 6:00 to 8:00 PM at the Station.

Sandusky County Extension Educator, Allen Gahler will review and discuss his 2014 Pepper Variety Trials which contain 50 pepper varieties most of which are new for 2014 or 15.

Sally Miller will discuss disease management, Celeste Welty will focus on insect control. Doug Doohan will talk about weed management and control. More information to come soon.



**Bell pepper planting**Photo by Robert Holthouse

## **2014 Upcoming Events**

- July 8- Cover Crop Cocktail & Soil Health Field Night at OSU South Centers. Contact Charissa McGlothin at 740.289.2071 ext. 132 or mcglothin.4@osu.edu
- July 15-Bramble, Blueberry and Wine Grape Field Night, South Centers at OSU South Centers. For details contact Charissa McGlothin at 740.289.2071 ext. 132 or mcglothin.4@osu.edu
- July 17- Hops Field Night at Wooster, Ohio. Contact Charissa McGlothin at 740.289.2071 ext. 132 or mcglothin.4@osu.edu
- July 31 Pepper Field Night. See article on front page for more details.
- August 12-Hops Workshop in Cleveland, Ohio. More information to come.
- August 14-Hops Field Night at OSU South Centers in Piketon, Ohio. Contact Charissa McGlothin at 740.289.2071 ext. 132 or mcglothin.4@osu.edu

### No Omega Label for Melons in Ohio

From Sally Miller, Department of Plant Pathology, OSU, OARDC

We have just learned that the label for Omega on melons in Ohio (for downy mildew management) has been cancelled (not sure why). Syngenta is working on re-instating the label. When that happens the info will be posted in this newsletter. Stay tuned!

Product	PHI (days)	FRAC Code	Comments
Chlorothalanil e.g. Bravo	0	M5	Protectant; tank mix with targeted fungicides
Weather Stik			below
Mancozeb e.g. Dithane	5	M3	Protectant; tank mix with targeted fungicides
or Manzate			below
Ranman	0	21	
Previcur Flex	2	28	Reduced activity suspected in some Ohio coun-
			ties
Tanos	3	11 + 27	Up to 2 days curative activity but low residual
			(3-5 days)
Gavel	5	22	Contains mancozeb; see label for worker safety
			requirements
Presidio	2	43	Possible resistance in some CDM populations
Curzate	3	27	Up to 2 days curative activity but low residual
			(3-5 days)
Zampro	0	40 + 45	

Note: Table has been updated to show that no Omega label for melons in Ohio

### Southern Ohio Vegetable and Fruit Update

from Brad Bergefurd, Ohio State University Extension Educator, Ohio State University Extension Scioto County and OSU South Centers

Growing and field conditions have been wet again this week with frequent rains of up to 4 inches in 40 minutes in areas of Montgomery, Clinton and Highland counties. Most areas are reporting 1 to 2 inch rainfall totals for the week, and supplemental irrigation has not been needed. Sweet corn has begun in Washington, Pike and Highland counties.





Sweet Corn harvest has begun in Washington, Pike and Highland counties Photos by Witten Farm

Matted row strawberry harvest is complete, except for a few late maturing varieties. San Andreas and other summer bearing varieties are being fertilized with Nitrogen in preparation for the beginning of the summer bloom period. Blackberry harvest, Natchez variety, began on Rotating Cross-Arm Trellis (RCA) Systems this past Monday 6/23 with outstanding fruit quality, size, fruit load and brix levels. Tipping of blackberry primocanes continues on RCA trellis and began this week on standard trellis.







Harvest of thornless blackberry began this week in Pickaway County Photos by Brett Rhoades

Harvest of field cucumber, pickle, summer squash, zucchini, sweet onion, garlic scapes, peas, turnips, red beets, tat-soi, mizuna, head and leaf lettuce, chives, basil, sweet corn, spinach, leeks, continues. Blueberry harvest which began 6/13 continues with great quality, yield and brix levels. Harvest of high tunnel tomato, cucumber, lettuce, spinach and herbs continue. Watermelon and cantaloupe have fruit the size of soft balls, some larger and full bloom continues.

\*\*Article continued on the next page.\*\*

With all of the rains, and not being able to get into the fields to cultivate on a regular schedule, weed pressure continues in all vegetable and fruit fields. Cultivation, hand hoeing and post emergent herbicide applications are being performed. Direct seeding and transplanting of all vegetable crops continues, with the last of the jack-o-lantern pumpkins being seeded or transplanted this week. The first fall broccoli, cauliflower and cabbage was transplanted to the field this week. Seeding of cauliflower, broccoli and cabbage for a fall planting continues. Staking and stringing of tomatoes, cucumbers and peppers continues. Ground continues to be worked, fertilizer spread, beds formed and plastic and drip lines installed.





Tipping of primocanes continues on RCA and standard trellised blackberry
Photos by Brad Bergefurd

## Northwest Ohio Pepper and Corn Update

from Allen Gahler, Extension Educator, Agriculture and Natural Resources, Sandusky County



Peppers flowering at research station
Photos by Allen Gahler



First sweet corn tassels at research station
Photos by Allen Gahler

### **Spotted Wing Drosophila Update**

from Jim Jasinski & Celeste Welty, OSUE IPM Program, Entomology Integrated Pest Management Program Coordinator

The spotted wing drosophila was first detected in Ohio in September, 2011. Since then it has been found in many locations around the state on many crops in both 2012 and 2013. Already in 2014 this pest has been detected in Michigan, Indiana, and Kentucky, but NOT reported in Ohio or Pennsylvania.

The OSU Extension IPM Program has established a monitoring network of over 40 traps for this pest across the state. Once detected, we will notify growers immediately to take necessary action.

Crops at risk are generally small fruit, including everbearing strawberries (June berries are considered low risk), brambles (raspberries and blackberries), blueberries, grapes, peaches and even cherry tomatoes are reported as hosts. Any ripening or ripe fruit is potentially at risk IF SWD is reported in the area. For more pictures and details of life cycle, management once detected, and pesticide recommendations, refer to factsheets and information here <a href="http://entomology.osu.edu/welty/fruit\_info1/Fruit\_info.html">http://entomology.osu.edu/welty/fruit\_info1/Fruit\_info.html</a>.

The detection of these flies is important to determine on a farm by farm basis to begin a protective spray program, thus monitoring is extremely important. We have posted some YouTube videos on the OSU IPM Program Channel (<a href="https://www.youtube.com/channel/UCzcWaLH3mx7HUKh4OF7bYPA">https://www.youtube.com/channel/UCzcWaLH3mx7HUKh4OF7bYPA</a>) for you to see how a basic apple cider vinegar and fermented bait trap are assembled, monitored, and placed in the field in case you would like to do this on your farm.

If you decide to put out a trap just remember that there will be many non-targets insects captured and your task will be to separate SWD from these non-targets. To aid in separating insects, a stereo microscope is needed for the females, but sometimes males can be seen with the naked eye. A great guide for identification can be found here <a href="http://www.ipm.msu.edu/uploads/files/SWD/MSU\_SWD">http://www.ipm.msu.edu/uploads/files/SWD/MSU\_SWD</a> and <a href="mailtrators">Imitators</a> identification sheet-6-13-2013.pdf

Despite the sub zero temperatures of the winter, this pest seems to have avoided being frozen out and is expected to surface in Ohio in the next few weeks. If we hear of this pest or detect it in our trapping network, we will report it ASAP.

# North Central Agricultural Research Station Update

Matt Hofelich, Research Station Manager, College of Food, Agricultural and Environmental Sciences

A timely, well-needed, rain fell last Thursday, June 19th. Many areas received an inch or less with an isolated band from Tiffin to Willard receiving 2 – 3 inches. Area and regional tomatoes, peppers cabbage, cucumbers, melons, pumpkins and sweet corn for the most part look good overall this year. This is in large part due to timely and gentle rains, as well as, favorable growing conditions the region has experienced thus far this season. Early planted tomatoes, peppers, squash, and melons are in bloom and beginning to set fruit.

As for disease and crop injury, last week with the high temperatures, humidity, and strong winds the Station received a number of plant samples that turned out to be leaf scorch. There has also been a few isolated and confirmed cases of Pythium root rot in peppers.



**Celeste Welty-Melon Trap Crop Study**Photo by Matt Hofelich



**Tomato breeding field at North Central ARS**Photo by Matt Hofelich



Northern Ohio pepper variety Photo by Matt Hofelich



Plot field at North Central ARS
Photo by Matt Hofelich

## **OSU South Centers Update at Piketon**

from Thom Harker & Ryan Slaughter, Research Assistants OSU South Centers

Second tie is going on the tomatoes, suckers are also being removed from the plant that may have been missed at the first tie. Any unwanted foliage on grafted plants that has formed below the graft union is also being removed. Tomatoes are starting to bloom with some small fruit present.

Downy mildew applications are being made in the OSU hop yard. Most varieties of hops are blooming or have cones formed on the bines. Japanese beetles are being seen on blackberry, blueberry and grape plantings, no beetles have been spotted in the hop yard at this time.

Blackberries in the tunnel are starting to show color. Blueberry plantings are also ripening.



Tomatoes beginning to flower and fruit Photo by Ryan Slaughter



**Blueberries ripe for picking**Photo by Ryan Slaughter



Thom Harker training and suckering tomato
Photo by Ryan Slaughter



Brigade pesticide was applied this week for Japanese Beetle control

Photo by Ryan Slaughter



Cane collapse after berry set Photo by Ryan Slaughter

### **Hardin County Report**

from Mark A. Badertscher, Agriculture and Natural Resources Educator, OSU Extension Hardin County

There have been several calls this spring about herbicide damage to crops and gardens. Because of the wet spring, farmers and commercial applicators have had a very limited window to apply pesticides and some days have not been ideal due to some producers and homeowners reporting possible herbicide drift concerns. Twisted and upward cupped leaves, along with brown burned edges of plants, have been visible in some of the plants checked. Many of these problems can be avoided by following proper pesticide application guidelines, using correct nozzles, correct pressures, and being aware of sensitive crops in the area. Communication is key to working out concerns between homeowners, producers, and applicators. Maintaining good relationships between these groups can eliminate possible issues in the future.



**Herbicide damage to tomato** Photos by Mark Badertscher



**Spray drip injury on tomato** Photos by Mark Badertscher



**Herbicide injury on melon**Photos by Mark Badertscher

### **Managing Mechanically Transmitted Diseases in Tomato**

From Sally Miller, Department of Plant Pathology, OSU, OARDC

Tomato growers are now in the midst of intensive management practices – pruning, tying, etc., that require handling the plants multiple times. Several diseases are easily moved from plant to plant "mechanically" – by sap from an infected plant contaminating healthy plants. In the last 2 weeks, the OSU Vegetable Pathology Lab (<a href="http://go.osu.edu/jng">http://go.osu.edu/jng</a>) has received tomatoes with the following mechanically-transmitted diseases:

<u>Bacterial canker</u>. This is a very harmful disease that can destroy a tomato crop if infected early and conditions (rain and high humidity) are favorable. Symptoms include stunting and spots on the fruit and foliage; eventually plants may be killed.







Bacterial canker symptoms on leaves (I), branches and petioles (m) and fruit (r). Photos by Sally Miller

Tobacco mosaic virus (TMV)/Tomato mosaic virus (ToMV)

TMV and ToMV both cause a mottled appearance on the leaves, with patches of green and pale green or yellow. Leaves may also be distorted, "fernlike", or curling. Long brown streaks may be seen on the stems.

<u>Management</u>. The pathogens that cause these diseases can be found throughout the plant and can therefore be easily picked up on hands or tools during pruning and other operations. Machinery, people and animals that brush by diseased plants can also move infected sap from plant to plant. Both diseases must be managed *preventatively* - once a plant is infected it cannot be cured of the disease.

What to do now. Sanitation is the most important management approach when plants are already in the field. Since the bacteria and viruses can survive a long time in plant sap, it is very important to limit movement of sap from plant to plant. The following practices can be helpful:

- 1. Remove diseased plants from the field, without allowing them to touch other plants. Destroy the plants by burning or burying.
- 2. Do not allow workers or others entering the field to use tobacco products. Workers who are users of tobacco products should wear clean clothes and wash hands thoroughly before entering a tomato field. Both TMV and ToMV are very stable viruses that can survive many years, even in cured tobacco products!
- 3. Clean hands and tools. If one or both of these diseases is present in a field, hands and tools should be sanitized after each plant. A solution of 20% Clorox will kill the bacterial canker pathogen and ToMV/TMV. Tools should be dipped into the solution then rinsed. It is not recommended to rinse hands in this bleach solution, so waterproof gloves may be worn and sanitized. If no gloves are available, hands should be washed often in warm soapy water and rinsed.

  \*\*Article continued on the next page\*\*

If ToMV/TMV is present, but bacterial canker is not, hands and tools can be dipped in a 20% solution of non-fat dry milk in water (e.g. 1 cup dry milk powder: 4 cups water). Milk has been shown to inactivate viruses, but is ineffective against bacteria.

4. Clean and sanitize equipment after leaving a field with one or both of these diseases.

<u>Planning for next season</u>. These are suggestions to reduce the risk of economic losses due to these diseases.

- 1. Choose a resistant variety. A number of tomato varieties are resistant to TMV/ToMV. Check with your seed provider for a listing of TMV/ToMV-resistant varieties. Unfortunately, bacterial canker-resistant varieties are not available.
- 2. Use clean seed. Raw seed can be treated with 20% Clorox for 1 minute, followed by 5 minutes rinsing under running tap water, to remove bacterial and viral pathogens from the surface of seeds. The canker bacterium may be present inside the seed, and hot water treatment may be needed. See <a href="http://ohioline.osu.edu/hyg-fact/3000/3085.html">http://ohioline.osu.edu/hyg-fact/3000/3085.html</a> for additional information.
- 3. Handle seedlings a little as possible and sanitize tools with bleach and/or dip them in milk as described above. Prohibit use of tobacco products in the greenhouse and require tobacco users to wear clean clothes and wash hands before entering the greenhouse. Do not raise tomato seedlings in greenhouses also containing ornamental/bedding plants, which may carry ToMV/TMV and other viruses.
- 4. Scout plants thoroughly and discard flats containing diseased seedlings.



**Bacterial canker in staked tomatoes** Photo by Sally Miller



Mottled tomato leaf (mosaic symptom) caused by ToMV/TMV

Photo by Sally Miller

# OPGMA Summer Tour & Field Day a Wet Success

from Brad Bergefurd, Ohio State University Extension Educator, Ohio State University Extension Scioto County and OSU South Centers

The annual Ohio Produce Growers and Marketers Association (OPGMA) Summer Tour & Field Day was held this week, Wednesday June 25th in northeast Ohio in Canfield and Columbiana. Despite a rainy day, 100's endured the wet and rainy weather, and toured two top notch fruit and vegetable farms.

The morning began with tours of the White House Fruit Farm in Canfield, Ohio where the Hull family has grown fruits and vegetables for over 90 years. Today the second and third generations of the Hull family operate this diversified farm market and farm which includes 75 acres of orchard, berries, and vegetables. David and Dave Hull showcased their peach and apple orchard production systems. Debbie Pifer shared details of their farm market operation, OSU Extension Educator Brad Bergefurd described the Hulls plasticulture strawberry production system, and OSU Extension Small Fruit Specialist Gary Gao described the Hulls blueberry production and bird control.

After an outstanding buffet lunch, prepared by the Hulls, and an Ohio produce and food safety update, the crowd departed for McMaster Farms LLC which is located a short distance away in Columbiana, Ohio. McMaster Farms is a third generation 1,800 acre farm with 350 acres devoted to sweet corn, 75 acres to pumpkins and the remaining acreage in grain crops. Crowds gathered to watch a video of the history of McMaster Farms. Attendees had an opportunity to view their sweet corn packing line and their custom made one-of—a-kind sweet corn counter that counts each ear of corn as it goes into the bags that are filled for shipping. The McMasters were one of the first farms in Ohio to adopt produce traceability programs and to participate in the newly launched regulatory third-party produce safety standards program, the Ohio Produce Marketing Agreement (OPMA).

While at McMaster Farms, muck crops grower Robert Holthouse presented a well-attended session on "Creating Videos for Marketing and Training", that taught attendees how technology can be used to draw potential customers to their sites, enhance their experience and lead to possibly more sales.

Michael McMaster made a presentation on their newly launched Tico Irrigation business and provided tours of the newly built irrigation shop, where they custom weld and build any type of aluminum irrigation pipe.

The final stop included an explanation by Phil McMaster and OSU Extension Educator Brad Bergefurd on the sweet corn fertilization and production techniques used at the farm, showcasing the planting, harvesting, tillage and field equipment used.

Article continued on the next page.

# OPGMA Summer Tour & Field Day a Wet Success-Whitehouse Fruit Farm



White House Fruit Farm was the first stop of the day Photo by Brad Bergefurd



Non-stop farm tours were conducted Photo by Steve Carver



Dave Hull explained pruning, trellising and deer control used in their orchard Photo by Steve Carver



David Hull explaining pruning and thinning Photo by Steve Carver



Gary Gao explained the Smart Net bird control system Photo by Brad Bergefurd



Brad Bergefurd explaining
Plasticulture Strawberry
production Photo by Steve Carver



**New varieties are being planted** Photo by Steve Carver

# OPGMA Summer Tour & Field Day a Wet Success-McMasters





Carrie McMaster explaining their automated corn counting system Photos by Brad Bergefurd



McMaster Farms displayed all of the equipment required to plant, spray and harvest 425 acres of sweet corn and pumpkins

Photo by Brad Bergefurd



Muck crops grower Robert Holthouse taught several sessions on how to create videos for marketing and training

Photo by Brad Bergefurd



#### VegNet Newsletter

COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES

Editor, Brad Bergefurd bergefurd.1@osu.edu 740 289 2071

http://vegnet.osu.edu

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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 <u>bergefurd.1@osu.edu</u> 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