VegNet The Vegetable and Fruit Crops Teams Newsletter

http://vegnet.osu.edu

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Grafted Tomato Studies at OARDC

From Jennifer Moyseenko, Department of Horticulture and Crop Science, The Ohio State University, OARDC

The Vegetable Production Systems Laboratory under the direction of Matt Kleinhenz is conducting numerous studies involving grafted tomato and pepper. Two studies are being completed in plots located at the OARDC in Wooster. The team usually grafts plants it uses in its research. In 2015, however, two studies are being completed with plants provided by Plug Connection (http://www.plugconnection.com/), a commercial propagator. One study was established in organically-managed high tunnels; the researchers are documenting how grafted and ungrafted plants respond to being placed in plots that have a 10-year



history of either annual compost applications or no soil amendments but have been cropped to tomatoes for several successive years. The scion is BHN 589, a popular fresh market tomato variety, which is either ungrafted or grafted to one of two different rootstocks (Estamino, Maxifort), which differ in vigor. (ariticle continued on the next page)

2015 Upcoming Events

August 20 Superberry & Winegrape Field Night, Piketon Ohio. For full details see the flyer on page 11

Contact Charissa McGlothin at mcglothin.4@osu.edu to register

August 20 Pumpkin Field Day in South Charleston, Ohio. For full details see the flyer on page 12

August 25 Northwest Ohio Hops Field Day in Bowling Green Ohio. For full details see the flyer on

page 13

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

Grafted Tomato Studies at OARDC continued...

The other study also includes BHN 589 as the scion variety. This study is being completed in conventionally managed open field plots (raised beds, plastic mulch, drip irrigation). In this case, BHN 589 is grafted to one of three rootstocks (Estamino, Maxifort, Supernatural) chosen based on the supplier's description of their vigor. Ungrafted controls were also planted. Plots are being treated with one of 4 different fertility regimes to study grafted or ungrafted plant response to different nitrogen rates. Application of initial post-plant fertility treatments were slightly delayed due to the extreme wet weather.



High tunnel harvests began on July 17, and field harvests are expected to begin around August 17. For both studies, total and marketable yield will be analyzed, and fruit samples will be frozen for later quality analysis (BRIX, pH, and titratable acidity). We hope to determine whether yield and quality of fruit from grafted plants differs from fruit from ungrafted ones with different amounts of available nutrients.

- **A.** One of three high tunnels included in a grafted tomato study at OARDC in Wooster. Plots on the left have received no compost for 11 years. Plots on the right received annual compost applications. Both sides include grafted and ungrafted plants. Image taken the week of first harvest
- **B.** Grafted fresh market tomato field study at OARDC in Wooster. Image shows two replications (foreground and rear), each treated with different fertilization regimes

Photos by Jennifer Moyseenko

Wayne County IPM Program: Scouting Summary

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

Fruit:

Codling moth trap numbers remained high the weeks of July 20 and July 27 and trap numbers decreased the week of August 3. Growers are doing follow up applications for control of second generation codling moth. Fly speck and white rot were both noted on a few apples the week of July 27 and August 3. Growers need to stay on a fungicide program with a spray interval of no longer than 2 weeks to prevent sooty blotch, fly speck and white rot diseases from developing during the summer. All apple maggot traps have remained negative to this point in the season. Green apple aphid populations were at high levels, above treatment thresholds, the week of July 27 in several orchards. Other insects noted at below threshold levels in orchards included European red mites and leafminers.

Peaches are developing and some harvest is on-going. Oriental fruit moth trap captures have been at high levels in several orchards and growers are being advised to spray the week of August 3 against 3rd

generation OFM. Growers are encouraged to maintain fungicide sprays to prevent brown rot and scab and are doing a good job with this because scouts are not noting any disease in orchards that are scouted.

Spotted wing drosophila (SWD) were caught in traps at 6 different locations during the week of July 27-31. Trap numbers ranged from 1 to 22. Commercial small fruit growers should be spraying ripe fruit and fruit that is beginning to ripen to protect against SWD infestation. Rotate between chemical classes of approved insecticides.

Other than SWD, powdery mildew is showing up in grapes and growers need to be on a fungicide program to prevent damage from this disease. Some very light levels of grape black rot were also noted by scouts this week. Fall red raspberries are ripening, blackberry harvest is underway and later-maturing variety blueberries are still being harvested.

Vegetables:

Lots of sunshine was combined with hot temperatures the week of July 27. How quickly growing conditions change! There were a few comments by scouts on their grower reports that plants needed water or were showing symptoms of moisture stress.

The most serious disease problems in both field and high tunnel grown tomatoes remain septoria leaf spot and early blight. Some early plantings have been finished off

by the advances of these diseases. In addition, late blight was found and confirmed in a commercial tomato planting in Wayne County the week of July 27.

В

Bacterial spot and canker can be found in field tomatoes and growers are being advised to not work with the plants when they are wet, practice good sanitation between infected and non-infected plants and maintain a copper spray program to suppress the disease. In high tunnel production scouts are finding fusarium crown rot, Fusarium wilt, leaf mold, botrytis gray mold, timber rot and powdery mildew. Non-disease, environmental disorders that scouts are finding in both field and high tunnel production include yellow shoulder, catfacing and zippering. *(article continued on the next page)*

Wayne County IPM Program: Scouting Summary Continued...

Stink bug damage is being found on tomatoes and hornworms have been found in both high tunnel and field grown tomatoes. Scouts noted some moderate to high aphid numbers in a couple of tomato high tunnels this week.

Onions are being harvested and dried down for storage and garlic harvest is also underway.

Cole crops overall look good. Some of the new plantings for a planned fall harvest had imported cabbage worm numbers above treatment threshold and growers were advised to treat. Flea beetles were also noted on some of the new plantings, but not at economic treatment level. Established plantings are at the almost ready to harvest to harvest underway stage.

In vine crops, many plantings of summer squash and zucchini are being harvested regularly, fall squash and pumpkins are in bloom to some approaching harvest, cantaloupes are being harvested, watermelons range from fruit set to harvest, and cucumbers range from new plantings to harvest. Downy mildew was found in more cucumber fields the week of July 27. Scouts also found possible downy mildew in cantaloupe and sent a sample in to the vegetable pathology lab at OARDC for confirmation. Growers are being advised to use a fungicide spray program on a 5-7 day schedule to protect against downy mildew. Cucumbers are most vulnerable followed by cantaloupe and then squash, pumpkins and watermelon.



Powdery mildew is developing quickly on all vine crops and scouts were advising growers to get on and maintain a regular fungicide program to protect leaves and to protect developing fruit. Scouts noted plectosporium blight, as confirmed by the vegetable pathology lab at OARDC, on several plantings of pumpkins in several different fields across the county.

Bacterial wilt is being found both in cucumbers as well as some fall squash and pumpkin. Fusarium wilt is being found in some melons.

Angular leaf spot, a bacterial disease has been found across all vine crops and in many fields. Anthracnose and alternaria leaf spot have also been found and growers need to be on a good fungicide spray program. Phytophthora blight on squash fruit was found in one field. Although not common, millipedes have been doing damage to some melons, primarily cantaloupe. Scouts also noted the presence of squash bug eggs and nymphs. Evidence of damage by squash vine borer was found on a few scattered plants.

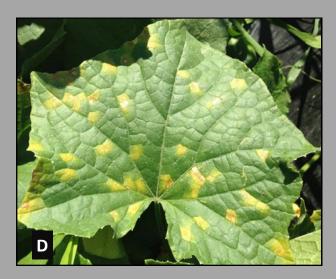
Many pepper plantings are at the harvest stage. In some plantings, bacterial spot is present and bacterial soft rot has been observed. Scouts were finding a number of pepper fruit with sunscald the week of July 27 as well as some blossom end rot. Scouts also noted mosaic virus in some plants this week. Grasshoppers and European corn borers were all found at low levels in some fields, along with damage from stinkbugs. Eggplant overall is doing well but there are plants with verticillium wilt and anthracnose. Colorado potato beetles and flea beetles were noted at above threshold levels in some field this week. Japanese beetles are present in low numbers. (article continued on the next page)

Wayne County IPM Program: Scouting Summary Continued...

Green beans vary from newly emerging to harvest. Defoliation generally below threshold damage levels by grasshoppers, and Japanese beetles have been noted, although in some isolated areas of some plantings defoliation by Japanese beetles is heavy.

Sweet corn, due to staggered plantings, ranges from V-4 to harvest. Only 1 corn earworm moth was caught between traps at 4 locations the week of July 27, continuing a trend of low moth captures. European corn borer moth captures ranged from 0 to 9 between 4 trap locations the week of July 27-31. Feeding by slugs, European corn borer larvae, Japanese beetles and fall armyworm was noted by scouts. Japanese beetles are feeding on corn silks. The heaviest feeding damage is being done by deer and raccoons. Scouts continued to find Northern corn leaf blight and corn rust as well.

Potatoes overall look good and some are being harvested. Colorado potato beetle is at threshold levels in some plantings and under control in others. Low numbers of potato leaf hoppers and flea beetle were noted. Early blight and septoria leaf spot are showing up in some plantings. The occasional plant with blackleg is also being noted by scouts.



- A. Sunscald on peppers
- B. Millipedes doing damage to cantaloupe
- C. Bacterial wilt symptoms
- D. Downy mildew symptoms on curcurbit Photos by Chris Smedley & Austin Pelyak

North Central Update

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

Potentially large apple crops are being forecast by many of the growers. Mites are showing up in large numbers on apples. The populations can be variety specific so when scouting mixed blocks, be sure to check all varieties. Check for the presence of eggs as well as live mites. Mite surveys of appropriately treated trees (proper selection of product and good coverage) show significant decreases in mites and ovicidal activity.

Coddling moth (CM) numbers have been low or absent in blocks that are using pheromone disruption. Traps in untreated blocks are currently showing up with several CM per trap. Apple maggot (AM) numbers are up in all areas.

Brown marmorated stink bug (BMSB) traps are catching lightening bugs, bees, spiders and flies, but still no BMSB in our area.

Spotted wing Drosophila (SWD) are being caught in large numbers in brambles. Early ripening blackberries are infested with the larva--untreated blocks have significant numbers of larva in the berries. Blueberry growers are also reporting SWD larva in untreated berries. The first positive SWD in grapes was found this week. When planning to spray for SWD, pay attention to the maximum number of applications allowed for the pesticide. Some have a maximum application numbers that will necessitate rotating to another product after one or two applications.

Southern Ohio Vegetable and Fruit Update

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

Frequent rains and wet field conditions over the past two weeks, have resulted in continued wet and muddy field conditions for some of the region. Whereas other areas have had limited rainfall. Drought conditions are being reported by farms in Monroe, Belmont, Columbiana and Mahoning Counties with frequent irrigation being applied the past three weeks. The two week rainfall total for wetter areas has been less than 4 inches, allowing growers to perform field and harvest activities including side-dress Nitrogen applications. herbicide spraying, fungicide and insecticide applications, cultivation, planting and ground preparation and harvest. Harvest is in full swing for all produce and specialty crops including: hops, pie pumpkins, fall squash, blackberry, raspberry, late season blueberry, sweet corn, cantaloupe, watermelon, field & high tunnel tomato, green beans, half runner beans, potato, zucchini, vellow squash, cucumber, pickles, cabbage, Brussel sprouts, broccoli, radish, greens, lettuce, hot and bell pepper, summer apples, peaches, and day neutral strawberry. The seasons wet weather has resulted in harvest gaps for many crops with increased demand from retail farm markets and continued spike in wholesale prices. Field conditions did dry enough in the region to perform pesticide and herbicide spraying, ground preparation and planting







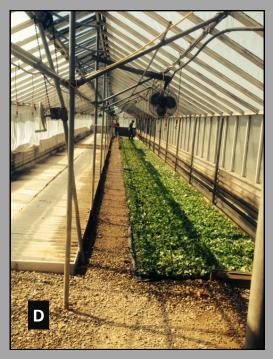
of sweet corn, cucumbers, pickles, squash, beans turnips, radish, daikon and transplanting of mustard, kale, collards, cauliflower, broccoli and cabbage. Side-dressing of Nitrogen and cultivation was conducted during this dry spell with strong storms rolling into much of the region on Sunday evening 8/2.

Plasticulture strawberry runner tip shipments from Prince Edward Island and Nova Scotia in Canada were delivered the last week of July, the first week of August; planting of tips for plug plants is underway with tip quality and size looking very good so far. Plasticulture strawberry growers have also been preparing ground, applying fertilizer, pulling up beds, applying herbicide & fumigation and laying plastic mulch and drip irrigation for field planting will begin in about 20 to 25 days. (article continued on the next page)

Southern Ohio Vegetable and Fruit Update Continued...

Reports of growth regulator herbicide drift injury symptoms continue to be reported on small fruit, grapes, hops, field vegetables and tunnel crops. Wildlife damage from deer, raccoon, birds and skunk are being reported on sweet corn, blackberries, peaches, watermelon and melons.

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 continue. Nutrient deficiencies continue to be reported on hops and vegetables where Nitrogen has leached under isolated heavy rainfall events so frequent fertigation has been applied to replace leached nutrients. Virus, spider mites, Alternaria cone disorder and downy mildew are being reported in hops being harvested. Black rot is being reported on grapes.







- A. Several mechanical hop harvesters are in operation throughout Ohio this season
- B, C. Hop harvest quality has been very good so far with high demand being reported by brewers
- D. Planting of strawberry runner tips for plug plant production is underway the week of 7.28 to 8.10
- E. Beds are being formed and plastic is being laid for plasticulture strawberry planting
- F. Field days were taught at the Captina and Owl Creek Produce Auctions on August 5

Photos by Brad Bergefurd & Ohio Valley Hops

Strip Tillage Vegetable Production Update

from Zheng Wang, Postdoctoral Researcher, Department of Horticulture and Crop Science, The Ohio State University

General Updates

- 1) The strip tillage research team (Dr. Matt Kleinhenz, Dr. Zheng Wang, and Julie Laudick) attended the Wayne County Scout Training Activity held by Rory Lewandowski on July 17 and Zheng gave a brief talk about the study to several local vegetable growers.
- 2) Peppers had the first harvest on July 28. Fruit yield showed big differences between plastic bed and strip tillage with plastic beds having higher yield than plants harvested from strip tillage plots. There were also some variations among different replications within both tillage plots due to some stunting plants caused by the excessive rain in June.

Field Management

- 1) Weeds were continuously controlled by different strategies in plastic bed and strip tillage plots. Living grasses in furrows between both plastic beds and strips were mowed and sprayed by broadleaf herbicide to maintain them short but competitive over broadleaf species. Newly emerged weeds in other between-row areas were burned down with corresponding herbicide to keep them as residual ground cover.
- 2) Insects and diseases were scouted weekly by spraying preventive chemicals every Thursday. Please check Vegnet and http://hcs.osu.edu/vpslab for more updates or contact me (wang.2735@osu.edu), Dr. Matt Kleinhenz (kleinhenz.1@osu.edu), or Jennifer Moyseenko (moyseenko.2@osu.edu) for more information.









- A. Dead weeds after herbicide spray as ground cover in plastic plot
- B. Rye grass as living mulch in plastic plot
- C. Dead weeds after herbicide spray as ground cover in strip tillage plot
- D. Grasses as living mulch in strip tillage plot

Photos by Zheng Wang

NCARS and North Central Ohio Update

From Allen Gahler, Extension Educator, Agriculture and Natural Resources, The Ohio State University, Sandusky County

Sweet corn harvest is in full swing at the North Central Ag Research Station, just as it is with growers in the area. Harvest evaluation of the variety trial corn is showing mixed results for yield and ear characteristics, as well as tenderness and sweetness ratings. Varieties have been slow to mature, averaging 8-10 days longer than listed maturity, and in low lying areas with water damage, maturity and size has been even more inconsistent. This is creating challenges for growers to keep their stands and wholesale buyers supplied in a timely manner. This is similar across other crops, especially melons.

It should also come as no surprise in Sandusky and surrounding counties where we reported large amounts of rainfall in June and early July, that not only are we experiencing inconsistent maturity, but some crops such as tomatoes, processing cabbage, and bell peppers have over 50% loss. Banana peppers, pumpkins, and processing pickles in many areas have experienced 80+% losses due to wet conditions and disease. The FSA disaster report for Sandusky County indicated an average of 50-60% loss across all specialty crops.

Machine harvest processing pickles are trying to recoup early losses with continued plantings through August 5, but growers will run out of time and an estimated 20-25% of total acres for a normal year will go unplanted.

On the bright side, fruit growers have begun harvest of some peaches, and depending on variety and the area of the county, a harvest of approximately 25-50% of normal is expected, which is significantly higher than most other counties. Plums that have not died off over the past two winters are looking like a normal crop, and sweet cherries experienced a 25% of normal harvest.





NCARS and North Central Ohio Update Continued...

The apple crop is progressing nicely despite some disease challenges, and growers expect a normal yield.

A very timely rain of .75 inches to 1.25 inches fell across North Central Ohio on August 2, which gave a significant boost to sweet corn, fruit crops, and especially grain crops. Despite the wet June and July, many vegetable growers hauled irrigation equipment to fields, and applied small amounts prior to the August 2 rain.

Pepper harvest is expected to get underway in the next few days for those who still have a crop, and processing cabbage harvest began August 1. Variety trial harvest of peppers and cabbage will begin in the next week.

- A. Peaches nearly ready for harvest in Sandusky County
- B. Aronia berry crop ripening in Sandusky County
- C. You never know what you might find in a stinkbug trap Photos by Allen Gahler



OHIO AGRICUTURAL RESEARCH AND DEVELOPMENT CENTER OHIO STATE UNIVERSITY EXTENSION

Ohio Superberry & Winegrape Field Night

at Ohio State University South Centers

Thursday,

August 20, 2015 6:00 — 9:00 P.M.

Hosted by Dr. Gary Gao, Dave Scurlock, & Ryan Slaughter

Location: OSU South Centers 1864 Shyville Rd., Piketon, OH Large Auditorium, Research Building

Cost: \$25.00*
*includes a light dinner

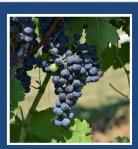
To Register:

Contact Charissa Gardner McGlothin at mcglothin.4@osu.edu or at 740.289.2071 ext. 132

DEADLINE to Register: Monday, August 17, 2015







Learn the basics on these topics:

- Eldeberry, Aronia Berry, and Goji Berry Production and Marketing
- Blueberry Cultivars and Production Techniques
- Summer and Fall Vineyard Management Practices
- Blackberry & Raspberry Production Systems
- Introduction to Elderberry, Aronia, and Goji Berry Production
- Field tour
- And more!





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OHIO AGRICULTURAL RESEARCH AND DEVELOPMENT CENTER OHIO STATE UNIVERSITY EXTENSION

2015 PUMPKIN FIELD DAY



Thursday, August 20 • 6 – 8 P.M.

Western Agricultural Research Station 7721 S. Charleston Pike South Charleston, OH 45368

Topics

- Current and Unregistered Fungicides for Powdery Mildew
- Aerial Imagery Used to Advance Early and Late Season Pest Management in Cucumbers and Pumpkins
- Downy Mildew Sentinel Trial
- Impact of Insecticides and Fungicides on Squash Bee and Honey Bee Populations
- Row Covers and Trap Crops

Speakers

- · Sally Miller, Plant Pathology
- Reed Johnson, Entomology
- · Jim Jasinski, OSU Extension
- · Celeste Welty, Entomology

Please note, the speaker lineup is subject to change.

Registration

Please pre-register by sending an email to Jim Jasinski, <u>jasinski.4@osu.edu</u>, by August 13.

History

The Western Agricultural Research Station was established in 1958 on 428 acres north of South Charleston in Clark County. It houses one of the world's oldest no-till experimental plots, started by Ohio State scientists in the early 1960s. The renovated barns that used to house the Station were replaced with new facilities in 2008. Included are offices, a workshop, a conference room, and seed and machinery storage areas.

Directions

3.5 miles northwest of South Charleston on SR 41, Clark County, Ohio

For more information

Jim Jasinski

937-484-1526

Jasinski.4@osu.edu

http://www.oardc.osu.edu/branches/branchinfo.asp?id=9



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OHIO AGRICULTURAL RESEARCH AND DEVELOPMENT CENTER
OHIO STATE UNIVERSITY EXTENSION

NORTHWEST OHIO HOPS FIELD DAY



TUESDAY, AUGUST 25 • 9 A.M. – 3 P.M.

Agricultural Incubator Foundation 13737 Middleton Pike Bowling Green, OH 43402

Topics

- New Hop Cultivars
- Pest Control Methods
- · Harvesting and Processing
- Newest Research and Hops Production Techniques

Program

According to event organizer, Alan Sundermeier, "Potential hops growers can learn the requirements for producing hops, the techniques and management tools needed for establishing a successful hops business."

Directions

From the North: Take I-75 south to State Route 582, exit 187, Luckey/Haskins. Turn west (right) on Middleton Pike/582 and continue approximately 2.2 miles. AIF will be on the south (left) side of the road.

From the South: Take I-75 north to State Route 582, exit 187, Luckey/Haskins. Turn west (left) on Middleton Pike/582 and continue approximately 2.2 miles. AIF will be on the south (left) side of the road.

For More Information

Alan Sundermeier • 419-354-9050 sundermeier.5@osu.edu

PRE-REGISTRATION IS REQUIRED. \$50 per person. Registration deadline is August 19. Includes meals and materials. Make checks payable to OSU Extension. Mail to Alan Sundermeier, OSU Extension Wood County, 639 Dunbridge Rd., Bowling Green, OH 45640. Please detach and return this form with your payment. Thank you.

Name(s):	
Address:	
Number attending/amount enclosed:	



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VegNet Newsletter

COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES

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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.



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