

VegNet

The Vegetable and Fruit Crops Teams Newsletter

<http://vegnet.osu.edu>

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Small Fruit Research Update South Centers

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

Container Fruit Production Research at OSU South Centers in Piketon

Our container fruit production plot has been set up by Research Assistant, Ryan Slaughter and Michael Daniels (formerly a student intern) at OSU South Centers in Piketon. We have blackberries, blueberries, and raspberries being grown in containers. So far, things are looking quite good. If you missed our super berry field night on July 7, you may still set up an appointment with me or Ryan to check out research projects at OSU South Centers. Fridays are probably the best time for a tour. We have at least two objectives for this study. One is to test how well blackberries, blueberries, and raspberries can be grown in container. Other one is winter protection. This project is funded by a specialty crop block grant from Ohio Department of Agriculture and USDA. Our sincere appreciation goes to Lori Panda (Program manager) and director Dave Daniels (ODA), ODA and USDA for their financial support.



Blueberry Harvest is in Full Swing Right Now

Our research crew has been collecting blueberries for our research project on super fruits. Both “Blue Ray” and “Draper” are ripening right now. “Blue Ray” has been around for a while and is one of the most reliable blueberry cultivars for Ohio. “Draper” is a newer cultivar. It is not very tall, but is very productive. I like this cultivar a lot; the fruit is larger, firm and very tasty. Our “Draper” planting was funded by another specialty crop block grant in 2012-2013. I knew that the blueberry growers in Oregon liked the variety a lot. I am very glad that “Draper” has done well for quite a few growers in Ohio. Since the rate of success of a blueberry cultivar is very soil dependent. Growers still need to test each cultivar on their farm, before they install a large planting of any blueberry cultivars.



Elderberries Started Setting Fruits at OSU South Centers in Piketon

Elderberries are in various stages of fruit development right now at OSU South Centers in Piketon. Some are in full bloom while others started setting fruits on July 7, 2016. In Piketon, we have six cultivars of elderberries, five American and one European. I am still seeing a few Japanese beetles on our elderberries. Insecticide applications took care of most of them. However, there seem to be an extended emergence of the Japanese beetles this year.



Elderberries are considered a super fruit since they are very high in antioxidants. If you have planted elderberries on your farm, please email me a picture or two at Gao.2@osu.edu I would love to see how your plants are doing! Our elderberry planting is funded by a specialty crop block grant in 2015-2016. We are very grateful for the funding. I hope our trial results and outreach efforts are helpful to many growers in Ohio.

Photos:

- A. Container fruit production plot at OSU South Centers in Piketon.
- B. Elderberries are blooming and setting fruits on July 7 in Piketon, Ohio.
- C. Ripe “Draper” blueberries at OSU South Centers in Piketon. (Photos by Gary Gao)

Will Grafted Plants be Useful in processing Tomato Production?

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

Many articles, including one in the June 21 edition of VegNet, have stated that grafted fresh market tomato plants can out-yield ungrafted ones by up to 50% or more depending on the circumstances. Those circumstances appear to include abiotic and biotic stresses that also occur in processing tomato production in Ohio and elsewhere. In some tests, grafted fresh market tomato plants have also out-yielded ungrafted ones when lower rates of fertilizer were used.

So, at first glance, it seems obvious that grafted plants will also be useful in processing tomato production. However, that has not been proven. Clearly, more information is needed to understand the value of grafted plants in processing tomato production. Their value is increasing in fresh market production and their potential to enhance processing production is real. That said, differences between fresh market and processing tomato production, including their economics and varieties, requires the value of grafted plants in processing production to be validated separately. Grafting effects on processing tomato yield, quality, and profit potential must be tested thoroughly.

Growers, researchers, and others must do the testing. Teams in California and Ohio have started. Currently, as described in Figure 1, plots at the OARDC in Wooster, OH contain plants representing thirty rootstock-scion variety combinations and ungrafted plants of the fruiting (scion) varieties. We are tracking crop development and we will record fruit yield and quality, including color and soluble solids. Our work is supported by The Ohio Vegetable & Small Fruit Research & Development Program (OVSFRDP), the USDA-SCRI program, The OSU-OARDC, and the Department of Horticulture and Crop Science. We will be happy to assist growers with tests on their farms. Contact Matt Kleinhenz (ph. 330.263.3810; kleinhenz.1@osu.edu) for more information. Also, see resources at <http://www.vegetablegrafting.org/> for additional information.



These are images of a study being completed by the Kleinhenz team at the OARDC in Wooster, OH. The study includes 140 plots of grafted and ungrafted processing tomato plants. In Spring-2016, we grafted seedlings of five fruiting (scion) varieties to seedlings of six rootstock varieties and those plants are being grown using standard practices. Doing that will allow us to test variety and grafting effects on yield and fruit traits using the thirty rootstock-scion combinations and ungrafted scion varieties. As of July 7, OARDC has received about five inches less rainfall than the historical average and temperatures have been above average. All plots have been irrigated twice since planting on June 2, delivering a total of about 0.75 inches between the irrigations.



Aphids on Cucumbers and Other Vine Crops

From Celeste Welty, Extension Entomologist

Aphid outbreaks on cucumbers, melons, and other vine crops are being reported from several parts of Ohio. The aphids are often found in the presence of various natural enemies, but in some cases the natural enemies are not abundant enough to keep the aphids under control. Natural enemies currently being found are lady beetle adults, lady beetle larvae, lacewing larvae, hover fly larvae, and parasitoid wasps that cause aphid mummies.

If aphid infestations are in localized areas within a field, then a good IPM approach is use spot treatment in only the part of the field where aphid density is high. If an insecticide is needed for aphid control on muskmelons or watermelons, a good product to start with is Dimethoate, which is an old organophosphate product; note that **Dimethoate** is not allowed on cucumbers or squash or pumpkins. For licensed applicators, **Lannate** (methomyl) is a Restricted Use Product (RUP) that is a good choice for cucumbers and melons, but not allowed on squash. Although neonicotinoid insecticides such as **Admire**, **Assail**, **Actara**, and **Venom** are among the most effective products available for aphid control and are not RUP, we do not recommend them once the plants are flowering due to toxicity to bees. For squash and pumpkins, flowers are generally all closed by noon so spray of neonicotinoids in afternoon or evening is possible. For melons and cucumbers, flowers stay open, so there is no good time to use neonicotinoids. Neonicotinoids should NOT be used in drip irrigation once the crop is flowering due to systemic effects on bees. For good aphid control without worry to bees, the best choices are the narrow-spectrum products **Beleaf** (flonicamid) or **Fulfill** (pymetrozine), but these are expensive, costing about \$25 per acre. Although various pyrethroids (**Asana**, **Baythroid**, **Brigade**, **Mustang Maxx**, **Pounce**, **Warrior**) do include aphids on their labels as target pests, they do a good job of killing aphids only if the aphid population is light, and they do not do well against heavy populations of aphids. Insecticidal **soap** is an option for aphid control, but spray needs to contact the aphids to be effective, which can be challenging once vine crops develop a large canopy.

Decision on Flubendiamide Expected Soon

From Bill Deweese, Bayer Horticulture Tech Rep

The Environmental Appeals Board (EAB) review for a final decision on flubendiamide (marketed in the U.S. as Belt) is moving along and we now expect a final decision no later than July 30, 2016.

The EAB is reviewing the existing documentation diligently and has issued additional questions to the registrants as well as the EPA (deadline for submission: July 1st, 2016) with the intent to review these additional clarifications over the coming days and weeks.

Although we cannot speculate on the EAB's final decision, we are pleased by the level of engagement displayed by the board in conducting a thorough review of this case.

As soon as we receive any additional updates, we will inform customers immediately – in the meantime, please consider:

- While under EAB review, distributors, retailers and farmers can continue to buy, sell and use the product in their operations.
- Regardless of the final decision from the EAB, tolerances are unaffected by all this, hence the flubendiamide treated crops can be marketed at the end of the season.

If you have any questions about this issue, please feel free to contact your local Bayer Field Sales Representative, or call 1-866-99-BAYER (1-866-992-2937).

Dickeya Blackleg of Potato – New and More Damaging Than Blackleg

From Sally Miller, Ohio State University Extension Specialist—Vegetable Disease Management, Department of Plant Pathology

Last week we identified *Dickeya* blackleg disease in a potato sample from a farm in northern Ohio. This disease is new to Ohio, although it was found in several states in the Northeast and a few in the Midwest last year. *Dickeya* blackleg is a bacterial disease caused by *Dickeya dianthicola*, and is much more aggressive than the typical blackleg, caused by *Pectobacterium* spp., we have seen in Ohio in the past. *Dickeya* is introduced on seed potatoes, and results in poor seedling emergence and rapid wilting in hot weather. The black stems tend not to be slimy and often do not have the rancid odor we normally associate with soft rot and blackleg caused by *Pectobacterium*. So far this year, *Dickeya* has been found in NJ, NY, DE, PA, MD, NC and VA on potatoes; in all cases seed potatoes came from Maine or New Brunswick, Canada.

Despite the fact that the disease can cause very high losses, the USDA Animal and Plant Health Inspection Service (APHIS) has declared the pathogen *Dickeya dianthicola* non-reportable/non-actionable because it has been found in the US previously. Like most diseases caused by bacteria, management is mainly preventative, beginning with clean seed potatoes free of the pathogen. Maine certified seed potato growers are working to limit tolerances for blackleg in seed production fields. OH is one of many states that utilize Maine seed potatoes. While there is nothing that can be done this season to manage *Dickeya* blackleg, we strongly encourage growers to have potatoes with blackleg symptoms tested to determine if the causal agent is *Dickeya* or *Pectobacterium*. This information will be useful in selecting seed sources for next year's crop.

The OSU Vegetable Pathology Lab will test potato blackleg samples for *Dickeya* free of charge for Ohio growers. Samples can be dropped off at our lab on the OSU-OARDC Wooster campus, at OARDC Experiment Stations in Celeryville or Fremont, or mailed to us. Since samples will rot very quickly, we highly recommend they be shipped via overnight mail. Please follow instructions and use our sample submission form (<http://go.osu.edu/BXhG>). For more information see Ohio Veggie Disease News (u.osu.edu/miller.769). On Twitter, follow @OhioVeggieDoc for updates.



Pictures:

A. *Dickeya* blackleg symptoms on potato. The darkened stem tissue was not slimy and there was no foul odor.

B. Internal symptoms of *Dickeya* blackleg.

Press Release: Orchard Sprayer Technology Field Day

*From Rory Lewandowski Extension Educator, Agriculture and Natural Resources
OSU Extension Wayne County*

An orchard sprayer technology field day is scheduled for Thursday, August 18 at Moreland Fruit Farm, located at 1558 West Moreland Rd., Wooster OH (44691). The field day will begin with registration at 3:00 pm and conclude by 7:30 pm. The field day will feature sprayer demonstrations and will provide a glimpse of the future; introducing participants to the “Intelligent Sprayer” technology.

Fruit and nursery growers rely on pesticides to protect their crops against insects and diseases. Current sprayers used by the growers apply pesticides at a constant rate regardless of large variations in canopy size, leaf density, plant spacing, and gaps within target trees. Researchers of USDA’s Application Technology Research Unit located at the OARDC Wooster campus and at The Ohio State University Columbus campus designed a laser-guided sprayer which recognizes those variations and immediately stops spraying when there are no trees, and other times continues spraying along with changing the application rate in real time based on variations in canopy size (height, width, depth) and leaf density. This intelligent sprayer is the only one of its kind in the world that has proven to provide equal pest control to that achieved from conventional sprayers while operating at a significantly lower spray volume. Trials with the intelligent sprayer have shown reductions in pesticide use of 47-70% compared to conventional orchard sprayers and annual chemical savings of \$140 to \$280 per acre.

Field day participants will have the opportunity to see comparisons of conventional, current technology orchard sprayers and intelligent sprayer technology operated side by side. There will be discussions and demonstrations of how any type of sprayer can be used more effectively and efficiently to get the best results possible. Heping Zhu, USDA-ARS, lead scientist of the intelligent sprayer team and Erdal Ozkan, OSU Extension Sprayer Technology Specialist will be on hand to lead the sprayer demonstrations, explain the intelligent sprayer technology, show participants how to adjust sprayers for more efficient and effective use, lead discussions and answer questions. Fred and Steve Finney of Moreland Fruit Farm who are field testing the intelligent sprayer will be on hand to talk about on-farm results and savings noted compared to their conventional orchard sprayer. Participants will have the opportunity to visit with and hear from event sponsors exhibiting and displaying orchard sprayers, equipment and supplies.

Pre-registration is requested and the registration cost is \$5 per person which includes handout materials and a light supper. **Pre-register by Thursday August 11** to the Wayne County Extension office by phone at 330-264-8722 or by email to Sutton.281@osu.edu. An informational flyer and registration form is available on the Wayne County Extension web site at: <http://go.osu.edu/agwayne> .

The Orchard Sprayer Technology Field Day is presented by Moreland Fruit Farm, OSU Extension, and USDA-ARS.

Cucumber Downy Mildew Now in Ohio

From Sally Miller, Professor and State Extension Specialist

The Ohio State University, Department of Plant Pathology, Wooster, OH 44691

Downy mildew was confirmed on July 6 in cucumbers in West Salem (Wayne County), OH. This follows closely the confirmed report of downy mildew in a pickle field in Kent County, Ontario on July 5. Cooling temperatures and possible rainfall expected over the weekend in northern Ohio increases the risk of downy mildew. Cucumber and melon growers should intensify scouting, and these crops should be protected with effective fungicides. In areas where downy mildew is not present, and where the weather is hot and dry, protectant fungicides such as chlorothalanil (Bravo, Echo, Equus, Initiate) or mancozeb (Dithane, Manzate, Penncozeb) should be applied. These will also help protect plants from anthracnose and gummy stem blight. Now that downy mildew has been spotted in northern Ohio, Presidio, Zing!, Gavel and/or Zampro can be added to fungicide programs in northern counties as long as downy mildew pressure is relatively low due to low inoculum (sporangia) levels and/or hot, dry weather.

When downy mildew risk increases, with wetter weather and greater incidences of the disease (= more inoculum), the more effective downy mildew fungicides Ranman and/or Orondis Opti A & B can be added to the program. Remember that Orondis Opti A & B applications are restricted to 1/3 of the total fungicide applications. For more information, see Ohio Veggie Disease News (u.osu.edu/miller.769/) and follow @OhioVeggieDoc on Twitter for updates. New outbreaks of cucurbit downy mildew are reported on my Twitter feed as soon as they are confirmed. Also see the Cucurbit Downy Mildew IPM PIPE website (<http://cdm.ipmpipe.org/>) for forecasts and the national picture.



Photo: Symptoms of downy mildew on cucumber.

Southern Ohio Vegetable and Fruit Update

July 8th — IPM Report

From Zach Charville, OSU Extension IPM Crop Scout Intern

As berry harvest continues across Southern Ohio, no signs of the Spotted Wing Drosophila are present, but traps will continue to be monitored weekly for activity. Many producers in the area have begun to harvest cantaloupe and watermelon. Tomato hornworms are starting to be found on tomato plants across the area. These insects feed on the leaves and blossoms of tomato plants. The best way to control the population is to work the ground well after each growing season and practice good crop rotation to keep the pupae from attacking next year's crop. Pulling the insects off the plant and killing them is the best way to combat the insect without harming other helpful predators. Septoria leaf spot on tomato plants has also been a problem recently with the hot, humid weather that has been present. Adequate air flow is key to preventing this disease. Controlling weed growth near the plants is essential for preventing the disease. Fungicides can also be used to prevent the disease from spreading once it is present.



Photo:

- A. Tomato hornworm feeding on a tomato plant
- B. Lack of weed control caused these tomato plants to develop Septoria leaf spot.
- C. Cantaloupes are thriving in the heat of Southern Ohio

Wayne County IPM Report: July 7th

From Rory Lewandowski, Extension Educator, Wayne County

After weeks of relatively disease free scouting in vegetables, the week of July 4-9 reversed that trend. Downy mildew was confirmed by Sally Miller's lab on a cucumber plant sample brought in by IPM scouts from a field in the West Salem area of Wayne County on July 6. Growers in the Wayne County area will now be advised to be on a protectant fungicide spray program against downy mildew. Bacterial speck or spot (samples brought in to Sally Miller's lab and waiting diagnosis) was found by scouts in field tomatoes. Control options are limited with bacterial diseases and growers will be cautioned to follow good sanitation practices and enter and work areas with bacterial disease last. Scouts also found early blight in field tomatoes this week.

Other vegetable diseases noted by scouts included angular leaf spot in fall squash, pumpkins, zucchini, summer squash and melons, anthracnose in zucchini, summer squash and melons and powdery mildew in zucchini and summer squash. Scouts found black leg in a few potato samples as well. Some non-disease conditions noted by scouts included blossom end rot in tomatoes, peppers, zucchini and summer squash along with sunscald in some high tunnel tomatoes and in some field peppers.

Insects were noted by scouts at varying levels. In onions thrips ranged from very light to over treatment threshold. In one high tunnel, whiteflies were very heavy and scouts recommended treatment to the grower. Many cole crops were at harvest stage, and some plantings had imported cabbage worm feeding damage over treatment threshold. Although scouts noted cucumber beetles, numbers were low and based on the development stage of plants, treatment was not necessary. Japanese beetles were noted feeding on a variety of vegetables, but were not causing enough damage to warrant an insecticide spray application. Colorado potato beetles ranged from just a few to over threshold in both potatoes and eggplant. Sweet corn ranged from V1 to kernels at milk stage of development. Pheromone trap counts for corn earworm moths were at 0 and only 3 European corn borer (ECB) moths were detected in 2 trapping locations. However scouts did find ECB larvae damage in sweet corn fields ranging from 0 to 50%.

Overall most vegetable crops remain in good condition and growers are harvesting tomatoes, onions, cabbage, broccoli, cauliflower, zucchini, summer squash, cucumbers, peppers, green snap beans, and potatoes.



Photo:

A. Downy mildew symptoms on cucumber leaf. Photo by Chris Smedley, IPM program scout.

Southern Ohio Vegetable and Fruit Report

July 1st to July 10th

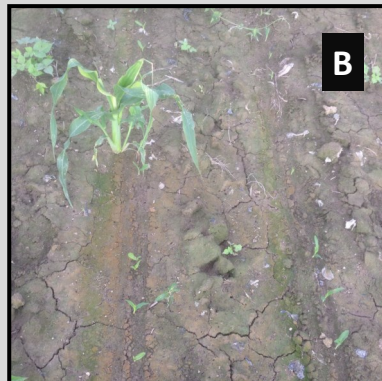
From Brad Bergefurd, OSU Extension Educator and Horticulture Specialist, Ohio State University Extension Scioto County & OSU South Centers

Field work and harvest remains in full force. Most areas were driven out of fields over the 4th of July Weekend and Holiday with most areas receiving .75 to 2.5 inches of rainfall. Fields dried out on Wednesday July 8 for a few hours until storms rolled through again early afternoon dropping another .85 to 2.5 inches of rainfall throughout the area. This morning (July 10) farmers were able to get back into fields, not working ground, but planting sweet corn and green beans into stale seedbeds. Harvest of most all produce is in full swing with daily harvests being made and excellent quality, yields and market demand being reported. Harvests include sweet corn, peaches, cherries, day neutral strawberries, green beans, half runner beans, red beets, radishes, high tunnel tomatoes, peppers, cucumbers, pickles, field tomatoes, cucumbers, cabbage, sugar peas, zucchini and summer squash, lettuce, sweet onion, new potatoes, bell and hot peppers, blueberries, red raspberries, black raspberries and blackberries.

Field work between rains has included plowing, working ground, spraying, bed shaping, laying plastic, staking and tying tomatoes and staking and tying peppers. Transplanting continues on tomatoes, cabbage, melons and watermelons and the last transplanting of pumpkins and gourds. Direct seeding of sweet corn, cucumbers, beans, summer squash, cucumbers, pickles, pumpkins, pie pumpkins, gourds and winter squash continues. One variety lot of sweet corn seed was reported by several area farmers having very poor emergence and stands this was reported to the seed company and they replaced this seed and the replant had great emergence. Apple crops are looking very good and continue to be sprayed regularly. Spraying fungicides on tree fruit, hops, brambles, blueberries, grapes, and all vegetable crops continues. Spraying pre-emerge and post-emerge herbicides on all planting continues. Systemic and foliar fungicides for hops Downy and Powdery Mildew continue to be applied with new infections being reported weekly.

Leafhoppers and spider mites are reaching threshold levels in some hop plantings requiring a tight insecticide and miticide program. New plantings of hops continue to be hand-planted and new high trellis hop systems are being installed. Cucumber beetles continue to reach threshold levels in melons, cucumbers and squash. Flea beetles continue to cause damage to eggplants. Tomato hornworms continue to be reported in tomato plantings. Eastern Ohio Counties that had the 17-year periodical cicada emergence this month are still experiencing severe plant damage and crop loss on blueberries and caneberries due to cicada damaged limbs and tips which are breaking off. With the recent excessive rainfall and saturated field conditions, along with high

humidity and high temperatures, tomato plantings are showing more pronounced physiological leaf roll symptoms.



Photos:

- A. Physiological leaf roll is being reported in tomato fields (Photo by Zach Charville)
- B. Sweet corn being replanted where first variety lot has poor emergence (photo by Brad Bergefurd)

Physiological Leaf Roll of Tomato

From Brad Bergefurd, OSU Extension Educator and Horticulture Specialist, Ohio State University Extension Scioto County & OSU South Centers

With some localized areas experiencing excess soil moisture throughout southern Ohio and a lack of moisture in northern Ohio, along with the persistent heat and humidity, physiological leaf roll or curl is starting to show up on tomatoes in the field as well as in high tunnels. This physiological disorder starts with an upward cupping of the leaves that progress to an inward rolling of the leaves. Typically, the lower leaves are affected first and then progress up the plant. In some cases, when the environmental stress is alleviated, the plants will recover. Other times the leaves will become rough and leathery. The severity of the symptoms can vary by cultivar with high yielding cultivars being more susceptible as well as indeterminate cultivars. Leaf roll can be caused by a number of conditions including: 1) heavy pruning during dry soil conditions; 2) high transpiration conditions that cause the leaves to roll to reduce water loss through the leaves; 3) high yielding cultivars being grown under high nitrogen fertility programs; and 4) sometimes excess soil moisture conditions during extended periods of high temperatures. Since leaf curl does not typically impact yield, in-season management is not required. However, reducing environmental stress through maintaining consistent soil moisture content and optimal fertility will help. Cornell has a good online resource to help determine what may be causing wilt in your tomato or other vegetable plantings. Go to <http://vegetablemdonline.ppath.cornell.edu/DiagnosticKeys/TomWilt/TomWiltKey.html>



Mite Management on Apples

From Celeste Welty, Extension Entomologist

The European red mite population is reaching high density in some apple orchards that were sprayed with harsh insecticides to control the periodical cicada last month. The two-spotted spider mite is also being found in some orchards, as well as the apple rust mite, which is much smaller than the spider mites. Many growers used pyrethroids such as permethrin to control cicadas, and mite flare-ups are not surprising due to the toxicity of pyrethroids to most of our species of predatory mites that usually help to control the spider mites and rust mites. Most of the insecticides used for control of common apple insects do not control mites. We currently have quite a few options for mite control. Envidor, Nealta, Acramite, Nexter, and Kanemite are all effective for control of adult spider mites in mid-summer, but all are moderately harsh on beneficial predatory mites. Zeal, Apollo, Onager, and Savey are less harsh on predators and are excellent for control of eggs and immature spider mites but have little effect on adult mites; these are best when applied during mite population build-up but before mites are in an outbreak situation. Agri-Mek is not a good choice for this time of year; it is a good miticide but most effective if applied when leaves are young in early summer. For control of apple rust mite, Nexter is somewhat better than the alternatives. If mites are building but not exceeding our mid-summer action threshold of 5 mites per leaf, an alternative is to use a 0.5% oil spray tank mixed with the usual fungicide cover sprays.



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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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: _____



THE OHIO STATE UNIVERSITY
COLLEGE OF FOOD, AGRICULTURAL,
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KEY BENEFITS

- Excellent Control of Powdery Mildew in Grapes, Cucurbits, and Strawberries
- New Mode of Action for use in Resistance Management Programs
- Coverage enhanced through Translaminar Movement within Leaves
- Beneficial REI and PHI
- 'CAUTION' Signal Word
- Easy to Use Liquid Formulation with Low Use Rates
- Classified as non-toxic to bees*

ABOUT TORINO[®] FUNGICIDE

- Torino contains the novel active ingredient CYFLUFENAMID, which provides growers with a new mode of action for the control of powdery mildew in labeled crops.
- Torino is labeled for use on cucurbits, grapes, and strawberries.
- Torino is highly effective in controlling various powdery mildew species and exhibits no cross-resistance with fungicides in other chemical groups such as the aminopyrimidines, DMI's, strobilurins, morpholines, anilinopyrimidines, and MBC's.
- Torino is classified by FRAC (Fungicide Resistance Action Committee) as a Group U6 fungicide.
- Torino has displayed some curative activity in field trials, though limited, and should be used as a protectant for the control of powdery mildew.
- Torino is formulated as a 10% Suspension Concentrate (SC) containing 0.85 pounds of cyflufenamid per gallon.

APPLICATION GUIDELINES

- Use Rate: 3.4 fluid ounces of Torino per acre for all labeled crops
- Maximum of 2 applications per acre per year
 - » Applications of Torino should NOT be back-to-back for best resistance management
- Approved Application Methods
 - » Aerial: minimum 5 gallons of finished spray volume
 - » Ground Rig: minimum 20 gallons of finished spray volume
- Plantback Restrictions:
 - » 0 days for all crops listed on label
 - » 30 days for all crops NOT listed on label
- Cucurbit PHI: 0 days
- Cucurbit REI: 4 hours

PACKAGING CONFIGURATION

- 34 fl oz/bottle x 12 bottles/case x 10 cases/layer = 31.875 gallons/layer
- 1 bottle = 10 acres, 1 case = 120 acres, 1 layer = 1,200 acres

Gowan
USA
The Go To Company



*Purdue University Department of Entomology honey bee pesticide toxicity classification

Zing!

Fungicide

Zing!® Fungicide combines zoxamide and chlorothalonil in an easy-to-use liquid formulation. It's a broad-spectrum, multi-site, multi-activity protectant fungicide with activity against key pathogens.

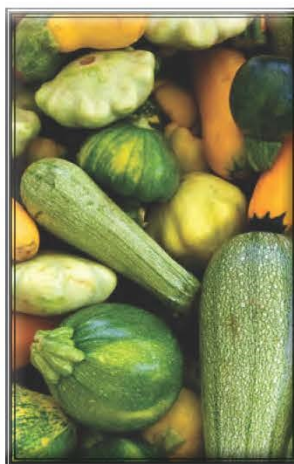


Tomatoes

36 fl oz/acre
5 day PHI

Controls:

- Early blight
- Late blight
- Septoria leaf spot



Cucurbits

36 fl oz/acre
0 day PHI

Controls:

- Downy mildew
- Anthracnose
- Alternaria leaf blight and leaf spot

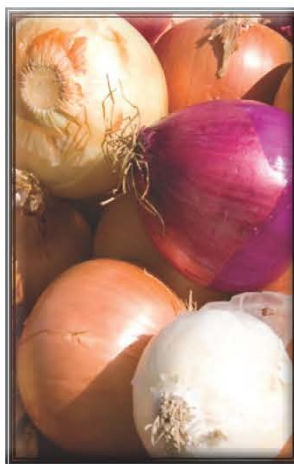


Potatoes

32-34 fl oz/acre
7 day PHI

Controls:

- Early blight
- Late blight
- Botrytis vine rot
- Black dot



Onions

30 fl oz/acre
7 day PHI

Controls:

- Downy mildew
- Purple blotch
- Botrytis leaf blight

To find out more about Zing! Fungicide contact your local Gowan USA Representative:

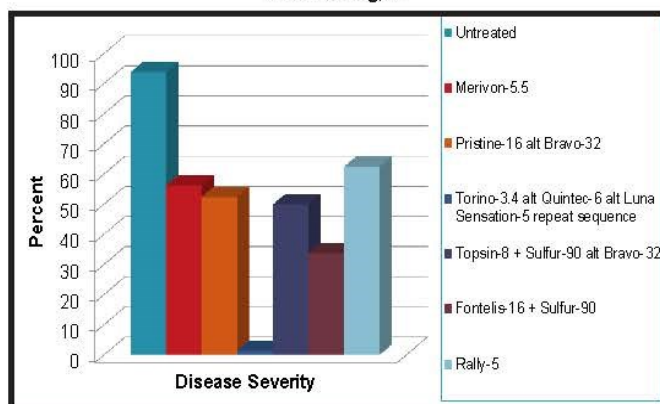
Joe Wilson • (937) 622-8020 • jwilson@gowanco.com

or visit our website at www.gowanco.com



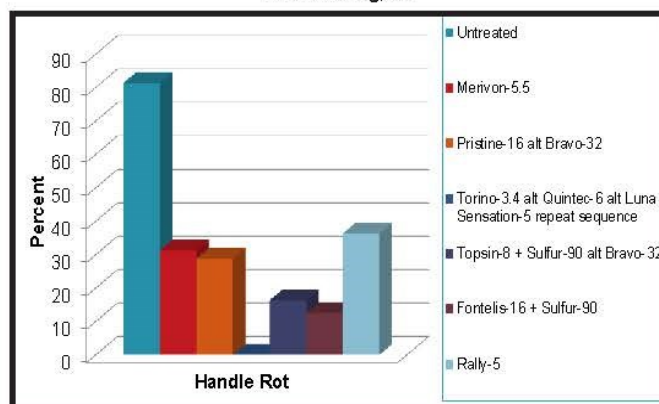
CUCURBIT FIELD PERFORMANCE*

**Powdery Mildew Control - Pumpkins
East Lansing, MI**



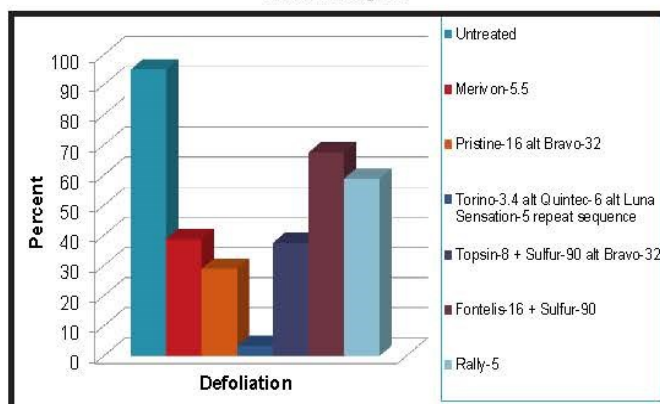
50 GPA; Rates in oz/A; Treated: 6/29, 7/6, 12, 18, 26, 8/1, 8, 15, 22, 29, 9/5; Evaluation: 8/23
Bravo WS @ 2pts/A included in all Torino program treatments

**Powdery Mildew Control - Handle Rot - Pumpkins
East Lansing, MI**



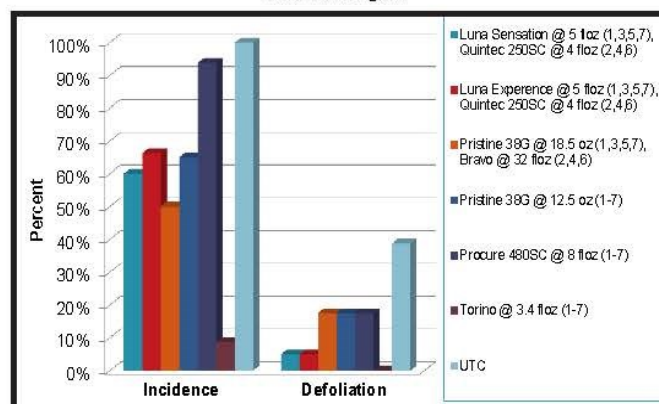
50 GPA; Rates in oz/A; Treated: 6/29, 7/6, 12, 18, 26, 8/1, 8, 15, 22, 29, 9/5; Evaluation: 8/23
Bravo WS @ 2pts/A included in all Torino program treatments

**Powdery Mildew Control - Pumpkins
East Lansing, MI**



50 GPA; Rates in oz/A; Treated: 6/29, 7/6, 12, 18, 26, 8/1, 8, 15, 22, 29, 9/5; Evaluation: 9/5
Bravo WS @ 2pts/A included in all Torino program treatments

**Pumpkin Powdery Mildew Trial
East Lansing, MI**



*Treatments designed for comparative purposes only. Refer to product labels for specific use directions and restrictions.

For more information please contact your local Gowan USA Representative:

Joe Wilson • (937) 622-8020

or visit us online at www.gowanco.com

Gowan
USA
The Go To Company

Torino® is a registered trademark of Nippon Soda Company, Ltd. EPA Reg No 8033-103-10163. All other brands are trademarks of their respective owners.
Always read and follow label directions. IB12-52529_cucurbits - North Central 12/03/2014

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

Allen Gahler

419-334-6340

gahler.2@osu.edu



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OHIO AGRICULTURAL RESEARCH AND DEVELOPMENT CENTER
OHIO STATE UNIVERSITY EXTENSION

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 Rigsby	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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<http://directmarketing.osu.edu>

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Water Quality Workshop for Fish Farmers

Join us to learn about the importance of water quality management:

Each participant will receive lunch and an informational flash drive. Registration includes a tour of the aquaculture research facility and aquaponic greenhouse. Come out and learn from our research and Extension experts! Speakers range with backgrounds in Aquaculture, Aquaponics, Horticulture, Small Business Development, and Soil, Water, and BioEnergy. The workshop will include PowerPoint lectures, but will also include hands-on work identifying water and weed problems applicable to fish farmers in Ohio.

Collecting, recording, and interpreting water quality parameters are essential to running a successful fish farm in a sustainable manner. Stressed fish due to poor water quality do not grow well! Whether you have been in the business for many years, just starting out, or haven't broken ground yet, it is important to understand what parameters are important to fish and plant crops so that the business or hobby will succeed. We look forward to seeing you there!

What we will cover:

- Understanding and interpreting WQ parameters necessary for fish production
- Understanding your water quality analysis report from the South Centers
- How does poor WQ affect your wallet?
- Hands-on testing of key WQ parameters
- Fish WQ management in RAS/aquaponics
- Plant and pest management in aquaponics
- Hands-on aquatic weed identification and treatment options



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Saturday, August 6, 2016

8:30 am - 5:00 pm

Location: OSU South Centers

1864 Shyville Rd., Piketon, Ohio 45661

Large Auditorium (Research Building)

Cost: Early registration before July 16
\$35

Registration after July 16
\$45

All registrations due by noon, July 29

Limited space: 30 participants

To register: Contact Sarah Strausbaugh
strausbaugh.54@osu.edu
740.289.2071 x112

OHIO AGRICULTURAL RESEARCH AND DEVELOPMENT CENTER
OHIO STATE UNIVERSITY EXTENSION

Soil, Water, and BioEnergy Field Night

Agenda:

- 5:30 pm Registration and Welcome –**
Rafiq Islam and Tom Worley
- 5:45 pm Comments –** Mary Sibole, Pike SWCD
- 6:00 pm Dinner**
- 6:15 pm *Gypsum, a Win-Win for Soils, Crops, and the Environment –***
Ron Chamberlain, Gypsoil (Indianapolis)
- 7:00 pm Wagon tour –** Wayne Lewis
- Future smart agriculture: iCAST Technology
 - Gypsum use in agriculture
 - Long-term tillage and cover crops
- 8:45 pm Door Prizes**
- 9:00 pm Adjourn**



See our new iCAST technology research during the tour!



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Thursday, July 28, 2016
5:30 pm - 9:00 pm

Location: OSU South Centers

1864 Shyville Rd., Piketon, Ohio 45661

Large Auditorium
(Research and Extension Building)

Cost: No Charge

To register: Contact **Sarah Strausbaugh**
at strausbaugh.54@osu.edu or
740.289.2071 x112

For more information:
Contact **Mary Sibole** at 740.947.5353

Deadline to register is July 21st

Sponsors:

Ohio State University, Pike County SWCD,
Pike County Solid Waste District





VegNet Newsletter

COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES

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<http://vegnet.osu.edu/newsletter>

Disclaimer: Information in this newsletter presented above and where trade names are used, they are supplied with the understanding that no discrimination is intended and no endorsement by Ohio State University Extension is implied. Although every attempt is made to produce information that is complete, timely, and accurate, the pesticide user bears responsibility of consulting the pesticide label and adhering to those directions. Ohio State University Extension embraces human diversity and is committed to ensuring that all research and related educational programs are available to clientele on a nondiscriminatory basis without regard to race, color, religion, sex, age, national origin, sexual orientation, gender identity or expression, disability, or veteran status. This statement is in accordance with United States Civil Rights Laws and the USDA. Keith L. Smith, Associate Vice President for Agricultural Administration; Associate Dean, College of Food, Agricultural, and Environmental Sciences; Director, Ohio State University Extension and Gist Chair in Extension Education and Leadership. TDD No. 800-589-8292 (Ohio only) or 614-292-1868.

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

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