

# VegNet

## *The Vegetable and Fruit Crops Teams Newsletter*

<http://vegnet.osu.edu>

Lead Editor and Contributing Author: Brad Bergefurd  
Graphic Designer & Editor: Abigail Fuhrmann

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## Five Tips to Reduce Spray Drift

*From Erdal Ozkan, Professor and Spray Technology Specialist, Ohio State University Extension*

Due to concerns for production costs, safety, and the environment, it is important to maximize the pesticide deposit on the target. One of the major problems challenging pesticide applicators is spray drift, which is defined as movement of pesticides by wind from the application site to an off-target site. Spray drift accounts for about half of all non-compliance cases investigated by the Ohio Department of Agriculture. Spray drift not only results in wasting expensive pesticides and pollution of the environment, it may damage non-target crops nearby, and poses a serious health risk to people living in areas where drift is occurring. **(Continued on next page)**



# Five Tips to Reduce Spray Drift...Continued

*From Erdal Ozkan, Professor and Spray Technology Specialist, Ohio State University Extension*

Although complete elimination of spray drift is impossible, problems can be reduced significantly if you are aware of major factors which influence drift, and take precautions to minimize their influence on off-target movement of droplets. The factors that play a role in either the creation, or reduction of spray drift are: a) Spray characteristics, such as volatility and viscosity of pesticide formulation; b) Equipment and application techniques used for spraying pesticides; c) Weather conditions at the time of application (wind speed and direction, temperature, relative humidity, and stability of air around the application site); and most importantly, d) Operator care, attitude, and skill.

Here are five cost-effective tips to vegetable producers on how to minimize spray drift:

1. If you can, keep your nozzles as close to the target as possible while still producing a uniform distribution of spray on the target. This doesn't cost any money as long as it is practical to make it happen.
2. When you're ready to change nozzles, consider selecting nozzles that produce much fewer of the extremely small droplets that are most likely to drift away. Low-drift nozzles are in the market and do a tremendous job of eliminating extremely small, drift-prone droplets from the droplet spectrum.
3. There are chemicals sold in the market that are designed to increase the droplet size, and reduce the number of very small droplets when added into the spray mixture. Most of them are some sort of polymer that tends to increase the viscosity and density of the spray mixture which leads to larger droplets. This, however, should be the last defense against drift. First consider the other option such as better targeting of the spray and switching to low-drift nozzles.
4. Use shields that cover partially or fully the distance between the target and the nozzles. There are companies manufacturing and selling such attachments to the boom. Shields prevent small droplets from moving away from the immediate application area. This, however may not be practical for sprayers with extremely large booms.
5. If there are any doubts about a spraying job that might result in drift, wait until there is no longer that element of doubt. Always pay attention to wind direction and magnitude. The best investment you can make is to buy a wind meter that tells you how high the wind velocity is at any given time. Having a wind meter handy will help you avoid a costly problem associated with spray drift.

More detailed discussion on these tips and other drift reduction strategies are outlined in following OSUE Extension Fact Sheets available online:

FABE-525 (<http://ohioline.osu.edu/factsheet/fabe-525>)

FABE- 523 (<http://ohioline.osu.edu/factsheet/fabe-523>)

FABE 524 (<http://ohioline.osu.edu/factsheet/fabe-524>)

# Strip Tillage and Grafting: Useful Combination?

*From Zheng Wang, Jennifer Moyseenko, and Matthew Kleinhenz, Department of Horticulture and Crop Science, The Ohio State University*

The Ohio Vegetable & Small Fruit Research & Development Program, The OSU Center for Applied Plant Sciences, and the USDA-SCRI Program are supporting our effort to determine if reduced tillage systems can be made more effective by using grafted tomato plants. The experiment was initiated in 2016 in five major steps. First, a winter wheat cover crop was cut approximately three inches above the soil using a sickle bar mower. Heads were visible on the plants and stems averaged approximately thirty inches when cut. The wheat laid down in a firm and uniform mulch at cutting. Second, a PTO-driven roto-tiller with a single tine was used to create strips measuring ten to twelve inches wide in strip-till plots. Soil was not disturbed in other (no-till) plots. The rototilled strip was approximately four inches deep. Third, pre-emergent herbicides (Dual Magnum and Sencor) were applied to each tilled strip to suppress weed germination. The herbicides were NOT applied elsewhere in the field. Fourth, grafted and ungrafted plants representing four rootstock-scion combinations were transplanted into the strip- and no-till plots on May 25. The combinations are: a) ungrafted (control) plants of 'BHN 589', b) 'BHN 589'/'Estamino', c) 'BHN 589'/'SuperNatural', and d) 'BHN 589'/'Maxifort'. The rootstocks 'Estamino', 'SuperNatural', and 'Maxifort' differ in vigor and other characteristics that may affect their suitability for use in reduced tillage systems. Most recently, a post-emergence grass herbicide (Select Max) was applied to the entire field after transplanting to prevent wheat regrowth. Also, soil probes were installed two inches below the soil surface to monitor soil temperatures. Going forward, plant growth, fruit yield, and soil properties will be documented.

Please contact Zheng Wang ([wang.2735@osu.edu](mailto:wang.2735@osu.edu)), Matt Kleinhenz ([kleinhenz.1@osu.edu](mailto:kleinhenz.1@osu.edu)), or Jennifer Moyseenko ([moyseenko.2@osu.edu](mailto:moyseenko.2@osu.edu)) for more information.



Wheat cover crop was sickle bar mowed as ground cover (A, B, and C); Roto-tiller with single tine was used to create a narrow strip (D and E); Tomatoes were transplanted using water-wheel transplanter (F)

Photos were taken by Zheng Wang and Aaron Cochran



# Southern Ohio Vegetable and Fruit Report June 9th

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

With little to no rainfall for the area in the past week, field work remains in full force with farms getting caught up and harvest beginning to be the main farm activity of importance. Sweet corn is in full-tassel and silk and harvest is estimated to begin in 2 weeks. Field work has included plowing, working ground, spraying, bed shaping, laying plastic, staking and tying tomatoes, transplanting peppers, tomatoes, cabbage and melons, and direct seeding pumpkins, sweet corn, cucumbers, beans, summer squash and winter squash. Apples and peach crops are looking very good and continue to be sprayed regularly.

Harvest activities include daily asparagus harvest (which is beginning to wind down), plasticulture and matted-row strawberry harvest (which is beginning to wind down), high tunnel tomato and cucumber harvest, pea, zucchini and summer squash, lettuce, and spinach harvest. Growers are spraying fungicides on tree fruit, hops, strawberries, brambles, blueberries and grapes, and also spraying herbicides. 17-year periodical Cicada damage continues to be reported on blueberry and brambles throughout central, northeast, and southeastern Ohio, but this emergence is almost complete.

Hop plantings are being fertigated weekly with Nitrogen and injections of systemic fungicides for Downy Mildew continue to be applied. New plantings of hops continue to be hand-planted and new high-trellis hop systems are being installed. Cucumber beetles are increasing in activity and at-planting insecticide treatments are beginning to lose their effectiveness, requiring close scouting and monitoring for treatment in vine crops as needed. Flea beetles continue to cause damage to eggplant.



Pictures:

- A. Sweet Corn Harvest is estimated to begin in Highland and Washington Counties over Father's Day weekend. (photos by Brad Bergefurd)
- B. Blueberry bird netting systems have been installed with harvest estimated to begin with the next 10 days to 2 weeks in southern Ohio. (photos by Brad Bergefurd)

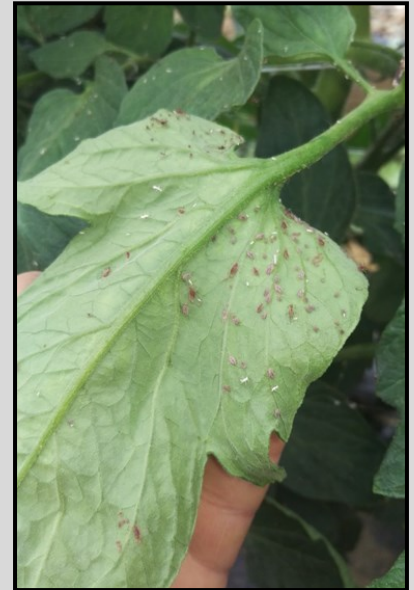


# Wayne County IPM Report: June 9<sup>th</sup>

*From Rory Lewandowski, Extension Educator, Wayne County*

The hot temperatures that characterized the week of May 29-June 4 gave way to much cooler temperatures and less sunshine during the week of June 5-11. These weather fluctuations may explain in part some of the incidence of blossom end rot (BER) scouts reported in tomatoes this week. We see the symptoms of BER when the growing tomato fruit do not receive an adequate supply of calcium. We also know that BER does not simply equal a deficiency in soil calcium. Additionally, adding calcium to the soil is generally not the solution to BER. Most often, BER is triggered as a result of a water issue. We see BER develop when plants that are developing fruit become moisture stressed and/or when the plants experience fluctuations in soil moisture. Our Wayne County IPM scouts had notes to numerous growers the preceding week cautioning those growers about water stressed plants and encouraging growers to provide adequate moisture during dry periods, especially when combined with high temperatures. This week's weather, cool and cloudy may also end up playing a role in BER, as we can get restricted transpiration during this kind of weather and thus have less soil calcium moved up into the plant.

An insect pest that appeared on the scene in a big way this past week was the bean leaf beetle. Scouts noted the presence of the beetle in a number of green snap bean plantings and in a few of those the damage caused by the beetle exceeded the threshold level and treatment was recommended. In addition, flea beetles were noted on a number of vegetable crops including green snap beans, eggplant, potatoes, and peppers. In at least one planting of peppers, flea beetles were over threshold and triggered a recommendation for treatment. Cucumber beetles continue to be seen by scouts in cucumbers, zucchini, and summer squash plantings. Levels range from very low to over threshold. In plantings where scouts had previously recommended treatment, growers have had good success with applied insecticides. Imported cabbage worm larvae and eggs were noted in cauliflower and broccoli at levels in some plantings that resulted in scouts recommending treatment.



Picture: Aphids on high tunnel tomatoes. Photo by Levi Myers, IPM scout.

Unfortunately, Colorado potato beetle populations are doing well; scouts reported being able to find all the various growth and development stages of the insect this past week. Treatment has been effective in many plantings, while other plantings reached threshold this past week. In some high tunnel tomatoes, scouts noted a significant number of aphids and white flies. Thrip numbers have been variable in onions, ranging from very light to threshold treatment levels. Sweet corn is developing well. Scouts noted growth stages ranging from Ve to V10 depending upon the planting date. Young European corn borer (ECB) larvae and their feeding damage was noted by scouts in some sweet corn plantings this week. Slug activity has declined; scouts noted damage from a low of 0% to a high of 11%. Some low levels of black cutworm damage were also detected in a couple of fields.

On a final note, scouts reported symptoms of fertilizer burn on some vegetable crops across a number of growers.

**(Continued on next page)**



# Wayne County IPM Report: June 9<sup>th</sup> Continued



## Pictures:

- A. Bean leaf beetle on green snap beans. Photo by Chris Smedley, IPM scout.
- B. Feeding damage by bean leaf beetle on green snap beans. Photo by Chris Smedley, IPM scout.
- C. Recently hatched first instar Colorado potato beetle. Photo by Chris Smedley, IPM scout
- D. High Tunnel cucumber production. Photo by Chris Smedley IPM scout.



# Insect Update

*From Celeste Welty, Extension Entomologist*

## European Corn Borer and Other Vegetable Insects

The European corn borer is now active. We detected it for the first time this year in Columbus on May 30th in both pheromone and blacklight traps. Trends in the activity of this pest (and several other pests) can be found at our online trap report page: <https://docs.google.com/spreadsheets/d/1d-8WwH6ommlvJaZ75TrZCv1sNHhpAAyhmxtW6cUvLmg/edit?usp=sharing>

Although the European corn borer has been less abundant in the past decade than previously, it can still cause extensive damage to vegetable crops in some locations. Its lower abundance is due to the presence of caterpillar-resistant transgenic corn throughout the region.

The crop at greatest risk of attack by European corn borer during early summer is sweet corn at the whorl, tassel, or silking stages. In Ohio during June, most sweet corn plantings are in the late whorl or emerging tassel stages. The European corn borer moth lays egg masses on the whorl leaves. Young larvae feed on leaves causing characteristic small holes known as “shot-hole” damage. As the tassels begin to push up from the whorl, the larvae move to the tassels. As the silks and ears begin to form, the larvae drop from the tassel to the ears, and enter either through the tip or the side of the ears.

Pepper fruits are also attacked by the European corn borer. In Ohio, typical peppers are transplanted in late May or early June and do not yet have fruit in June or early July when the first generation of European corn borer is active; these typical peppers are attacked by the second generation of borer that usually becomes active in late July and throughout August. The exception to this general trend is any peppers that are transplanted extra early or at a larger than normal size; if these have fruit present during June, then they can be attacked by the first generation of borers in June.

Other pests being noticed are striped cucumber beetles on cucumbers and zucchini, leafminers on spinach and beets, and parsleyworms on carrots. Our first detection of the squash vine borer was on June 8th when one adult was caught in a pheromone trap in Columbus.

## Apple Insects in Mid-June

While the codling moth is currently active as the key internal pest in apples, aphids and leafhoppers on leaves are now noticeable in central Ohio. We are seeing some heavy populations of green apple aphid, increasing numbers of leafhopper nymphs, some lingering activity of rosy apple aphid, and traces of woolly apple aphid. Many lady beetles and other generalist predators are present in aphid colonies. Although we are not yet noticing damage by stink bugs on young fruit, we are detecting some stink bugs in pheromone traps; both our native one-spotted stink bug and the new invasive pest, the brown marmorated stink bug.



OHIO AGRICULTURAL RESEARCH AND DEVELOPMENT CENTER  
OHIO STATE UNIVERSITY EXTENSION

# 2016 VEGETABLE WORKSHOP SERIES



2<sup>nd</sup> 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](mailto:hofelich.4@osu.edu)

Allen Gahler

419-334-6340

[gahler.2@osu.edu](mailto:gahler.2@osu.edu)



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# SUMMER *& field* tour day

June 22, 2016

## REGISTRATION IS NOW OPEN!

### SCHEDULE OF EVENTS

**1:00 PM—5:00 PM**

Tradeshow

**1:00 PM—2:00 PM**

FSMA Update

**2:00 PM—4:00 PM**

Wagon Tours

**2:00 PM**

Practical Food Safety Walk  
Through

**4:00 PM—7:00 PM**

Food trucks available

**5:00 PM**

OPGMA Business Meeting

**5:15 PM**

Live music on the patio

### FEATURED FOOD TRUCKS

**The Beautiful Flame**

*Known for their*

**BRICK OVEN PIZZA**

**Harvest at Hillcrest**

*Known for their*

**LAKE ERIE PERCH TACOS**  
**APPLE CHUTNEY & CHEDDAR**  
**GOURMET HOT DOGS**

### FEATURED MUSIC

**The Smer Brothers Band**



Get out of your business for the day to **network with your peers**, take a **tour of Quarry Hill Orchards'** innovative farm, enjoy **one-on-one time** with industry vendors, get the information you need to **stay current on food safety regulations**, and **HAVE SOME FUN**. *Yes, it's okay to have some fun!* You work hard **every day**. The **OPGMA Summer Tour & Field Day** gives you the opportunity to **combine work and play**.

**QUARRY HILL ORCHARDS**  
8903 Mason Rd, Berlin Heights, OH



Quarry Hill Orchards is a relationship-driven, family-centric, and quality-focused 130-acre fruit tree farm and retail market that specializes in growing, harvesting, and bringing to market boutique apples, peaches, pears, plums, cherries, and nectarines.

In 2005, Quarry Hill Winery was opened, offering a wide variety of award-winning, estate-grown and bottled wines. The vineyard is planted on the highest point of the farm, so it has added protection from spring frosts and allows longer ripening time in the fall. The rolling land and sandy loam soil provide excellent drainage.

### REGISTRATION INFO

#### OPGMA Members

\$25 1st company attendee  
\$10 each additional attendee

#### Non-Members

\$30 1st company attendee  
\$10 each additional attendee

**No refunds after June 17**

Register online at: [www.opgma.org/summer-tour](http://www.opgma.org/summer-tour)

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# Ohio State University Direct Marketing Food & Agriculture

## 2016 Webinar Series

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



## 2016 Direct Marketing Webinar Series All webinars begin at 12 noon

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

For recordings of all webinars go to [go.osu.edu/DirectMarketingWebinars](http://go.osu.edu/DirectMarketingWebinars)



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## VegNet Newsletter

COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES

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

Co-Graphic Designer and Editor, **Charissa Gardner**  
Gardner.1148@osu.edu  
740.289.2071 Ext. 132

Co- Graphic Designer and Editor, **Abigail Fuhrmann**  
Fuhrmann.13@osu.edu  
OSU Student

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

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### Submit Articles:

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

## About the editor

### Brad Bergefurd

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



**Brad Bergefurd, MS**

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