



**PennState**

# Update on Interstate Cooperation in Fruit Programs

Carolee T. Bull

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Environmental Microbiology

The Pennsylvania State University

Mid-Atlantic Fruit & Vegetable Convention

Hershey Convention Center in Hershey, Pennsylvania,

January 31 to February 2, 2017

# Bull Penn Projects

Blackleg and soft rot of potato: *Dickeya* species & *Pectobacterium* species



Blotch on Mushrooms: *Fluorescent Pseudomonas* species

Leaf spot on cucurbits: *P. syringae* (g1)



Leaf spot on crucifers: *P. cannabina*

Leaf spot on members of the Apiaceae: *P. syringae* (g3) and *P. cannabina*

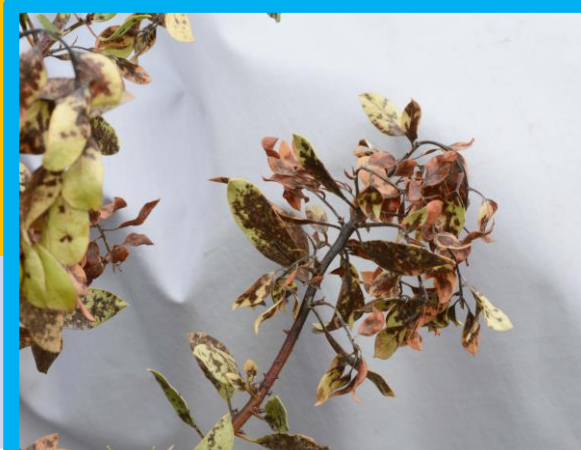


Leaf spot on Beet and Chard: *P. syringae* (g1)



Loropetalum gall: *P. amygdali* pv. *loropetali* (g2)

Leaf spot on manzanita: *Xanthomonas dyei*



# Topics

- Mid-Atlantic Fruit Research Consortium
- Grapes
- Pome Fruit
- Small Fruits
- Grower Alliances
- What's missing

# Contributors

- Andy Muza
- Bryan Hed
- Jody Timer
- Kari Peter
- Kathleen Demchak
- Kevin Martin
- Tara Baugher





2017

**MID-ATLANTIC**  
*fruit & vegetable convention*

**Celebrating Our 40<sup>th</sup> Anniversary**

***JANUARY 31—FEBRUARY 2, 2017***  
**HERSHEY LODGE AND CONVENTION CENTER**

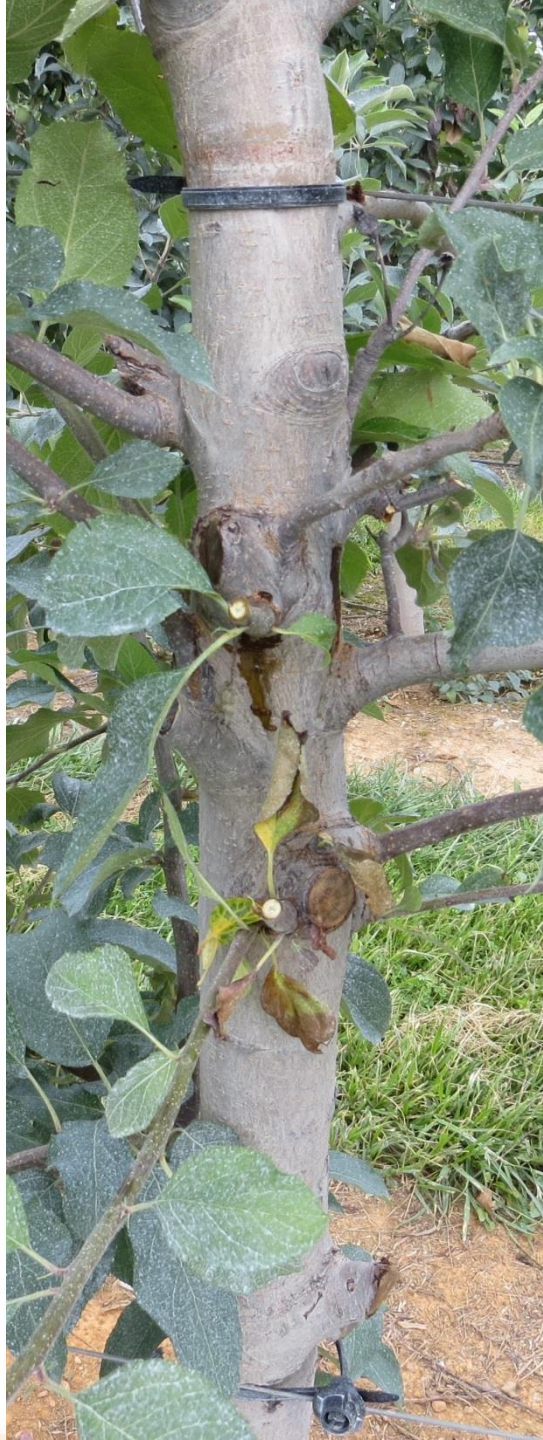
# Mid-Atlantic Fruit Research and Extension Consortium

- **Formal agreement:** (MOU) expired in 2015
- MD-PA-WV
- Small fruit pathologist in MD (Cassandra Swett)
- Tree Fruit Pathologist in PA (Kari Peter)
- Hired to work across state lines and meet the needs of Tree fruit and Small fruit including grapes in both states.

# Mid-Atlantic Fruit Research and Extension Consortium

- Should a New Agreement be Developed?
  - Include all university extension faculty working in fruit crops
  - Relevant USDA researchers (eg. Breeders, Pathologist, etc)
  - State biologists
  - Stakeholder advisers
  - Across the mid-Atlantic states: MD, PA, VA, WV, DE, NJ, NY
  - Develop long-term and short-term goals
  - Hold annual meetings
  - Develop a fruit extension listserv
  - Seek funding as a group and pool resources





# Interstate Collaborative Research

## Project: Managing fire blight in high density orchards

- Examining different fire blight mitigation strategies in a high density orchard located at the UMD Western Maryland Research and Education Center in Keedysville, MD
- Project Personnel: Kari Peter (PSU) and Bryan Butler (UMD)
- Funded by Maryland State Horticultural Society (awarded to K. Peter in 2016)



*Creating an Agriculture Incubator Network for  
Education and Economic Development in West Virginia*

## **MISSION**

Patriot Gardens is an initiative between the West Virginia National Guard (WVNG), West Virginia State University (WVSU) Extension Service and the West Virginia Department of Agriculture (WVDA) to pool resources that will create a system to assist West Virginians, particularly but not limited to veterans and guardsmen, in building agriculture businesses.

- **One of the initiatives:** Planting 100,000 apple trees on formerly surface mined sites that are being reclaimed under a special reclamation program at the West Virginia Department of Environmental Protection
- **Tree Fruit Working Group includes: WVNG, WVSU, West Virginia University, USDA-ARS Appalachian Fruit Research Station, Penn State University, VA Tech, plus nurseries in PA and WV**



# Regional Research and Extension Efforts

## Grower-Supported Apple Maturity Project



PennState Extension

### 2016 Apple Maturity Assessments

Christopher S. Walsh, University of Maryland; Tara Baugher, Penn State Extension

This grower-supported apple maturity project focused on newer apple varieties grown at the University of Maryland orchard in Keedysville, a warm, low-elevation site in southern Washington County, MD, and Premier Honeycrisp and Honeycrisp harvested from a 1250 ft elevation commercial orchard in Adams County, PA. Weekly maturity updates were distributed to growers through the Penn State Extension network as a collaboration of the Mid-Atlantic Fruit Consortium. Our goal was to provide pertinent information on fruit maturity ahead of the typical picking date for growers to the North.



Assessments of starch (center photo) and background color (photo on the right): Premier Honeycrisp, Brookfield Gala, and Honeycrisp

During August and September, apples matured a bit earlier than normal. Once mature, they quickly tree-ripened. The hot, dry weather and full sun exposure of tall-spindle trees compressed the harvest window. After two blistering weeks in July, temperatures moderated briefly. That very brief reduction in temperature increased red color development. As a result Premier Honeycrisp spot-picking began August 11 [A]. As Gala fruit size increased, their stem-end cracking potential also increased [B]. Fruit sugar levels and osmotic potential are greater at the stem end of Gala, and so the small cracks developed there first. CrimsonCrisp fruit were smaller, firmer, and redder than Honeycrisp with a slightly greater soluble solids (sugar level). Watercore was evident when the fruit were still immature [C]. The CrimsonCrisp fruit were quite firm, with a median firmness of 23.4 pounds.



[www.tunnelberries.org](http://www.tunnelberries.org)

## Growing Berries in Protective Structures




*The TunnelBerries Research & Extension Website is a berry grower information source for:*

- Selecting tunnel structures & plastics
- Optimizing productivity & pest management
- Increasing profits
- Minimizing plastic waste generation



Funded by the National Institute of Food and Agriculture, U.S. Department of Agriculture, Specialty Crops Research Initiative under Award Number 2014-51181-22380.





# Season-Long Strawberry Production with Everbearers

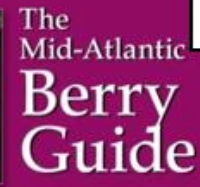
for Northeastern Producers  
EB 401

By:  
**Wille Lantz**  
Extension Educator-Agriculture and Natural Resources  
University of Maryland Extension-Garrett County

Dr. Harry Swartz  
Owner Five Acres Breeding and  
Retired-University of Maryland, Associate Professor, Horticulture

Kathleen Demchak  
Senior Extension Associate, Horticulture  
Penn State University

Sherry Frick  
Program Assistant, Horticulture  
University of Maryland Extension-Garrett County



## The Mid-Atlantic Berry Guide

for Commercial Growers  
2013-2014

This publication was originally developed by Penn State Extension through the Impact PPE (Seed Program), and was updated with funding from the Pennsylvania Department of Agriculture.

### Penn State Extension

## Spotted Wing Drosophila

### Part 1: Overview and Identification

**Spotted wing drosophila (SWD)** is an invasive species that has caused significant damage to fruit crops in the United States. It is a pest of many fruit crops, including strawberries, raspberries, and blueberries. The SWD is a small, dark fly with a distinctive white spot on its wing. It is a pest of many fruit crops, including strawberries, raspberries, and blueberries. The SWD is a small, dark fly with a distinctive white spot on its wing. It is a pest of many fruit crops, including strawberries, raspberries, and blueberries.

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**Damage:** The SWD causes damage to fruit crops by laying eggs on the fruit. The eggs hatch and the larvae feed on the fruit, causing damage and sometimes leading to the death of the fruit. The SWD is a pest of many fruit crops, including strawberries, raspberries, and blueberries.

**Control:** There are several ways to control the SWD. One way is to use insecticides. Another way is to use physical barriers, such as netting. A third way is to use biological control, such as releasing natural predators of the SWD. The SWD is a pest of many fruit crops, including strawberries, raspberries, and blueberries.

### Penn State Extension

## Spotted Wing Drosophila

### Part 2: Natural History

**Life Cycle:** The SWD has a life cycle that is similar to that of other fruit flies. It has four stages: egg, larva, pupa, and adult. The SWD is a pest of many fruit crops, including strawberries, raspberries, and blueberries.

**Overwintering:** The SWD overwinters as a pupa in the soil. It emerges as an adult in the spring. The SWD is a pest of many fruit crops, including strawberries, raspberries, and blueberries.

**Reproduction:** The SWD reproduces by laying eggs on the fruit. The eggs hatch and the larvae feed on the fruit, causing damage and sometimes leading to the death of the fruit. The SWD is a pest of many fruit crops, including strawberries, raspberries, and blueberries.

**Dispersal:** The SWD disperses by flying from one fruit crop to another. It is a pest of many fruit crops, including strawberries, raspberries, and blueberries.

### Penn State Extension

## Spotted Wing Drosophila

### Part 3: Monitoring

**Monitoring:** There are several ways to monitor the SWD. One way is to use traps. Another way is to use visual inspection. A third way is to use baited traps. The SWD is a pest of many fruit crops, including strawberries, raspberries, and blueberries.

**Traps:** There are several types of traps that can be used to monitor the SWD. One type is a baited trap. Another type is a visual trap. A third type is a trap that uses a combination of bait and visual cues. The SWD is a pest of many fruit crops, including strawberries, raspberries, and blueberries.

**Visual Inspection:** One way to monitor the SWD is to visually inspect the fruit. Look for small, dark flies with a white spot on the wing. The SWD is a pest of many fruit crops, including strawberries, raspberries, and blueberries.

**Baited Traps:** Baited traps can be used to monitor the SWD. The bait attracts the SWD, and the trap catches them. The SWD is a pest of many fruit crops, including strawberries, raspberries, and blueberries.

### Penn State Extension

## Spotted Wing Drosophila

### Part 4: Management

**Management:** There are several ways to manage the SWD. One way is to use insecticides. Another way is to use physical barriers, such as netting. A third way is to use biological control, such as releasing natural predators of the SWD. The SWD is a pest of many fruit crops, including strawberries, raspberries, and blueberries.

**Insecticides:** There are several insecticides that can be used to control the SWD. One type is a contact insecticide. Another type is a systemic insecticide. A third type is a bioinsecticide. The SWD is a pest of many fruit crops, including strawberries, raspberries, and blueberries.

**Physical Barriers:** Physical barriers, such as netting, can be used to prevent the SWD from reaching the fruit. The SWD is a pest of many fruit crops, including strawberries, raspberries, and blueberries.

**Biological Control:** Biological control involves releasing natural predators of the SWD. These predators feed on the SWD, reducing their numbers. The SWD is a pest of many fruit crops, including strawberries, raspberries, and blueberries.

### Penn State Extension

## Spotted Wing Drosophila

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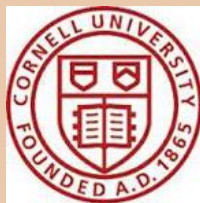
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# Lake Erie Regional Grape Program

- Cooperative research & educational program between Penn State and Cornell ***Universities and grape industry*** since 1992
- Serving Lake Erie grape growing region of PA and NY; an industry of 30,000 acres of juice grapes.
- LERGP Involves 5 Counties: Cattaraugus, Chautauqua, Erie and Niagara Counties in New York and Erie County in Pennsylvania
- Extension Education and Research “devoted to projects aimed at increasing yields, product quality, diversity and improvement of cultivars, efficiency of production, profitability and adoption of environmentally sound cultural and pest management strategies”.



**PennState**



**Cornell University**  
Cooperative Extension  
Chautauqua County

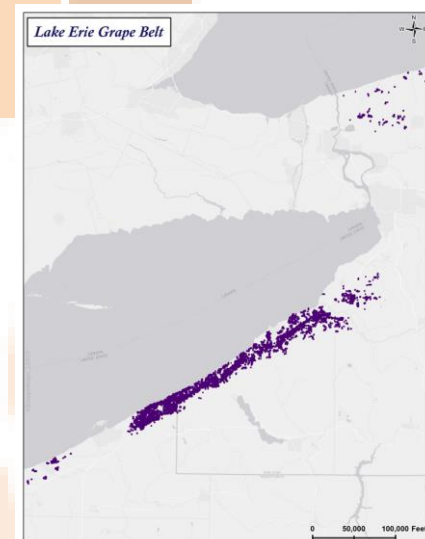




# LERGP Extension Programming:

## (Extension Team – 2 Penn State & 2 Cornell Educators)

- 880 growers attended 32 LERGP Educational Events
- Over 2,000 on-site, telephone, office consultations, and vineyard visits
- 31.5 Pesticide recertification credits available
- 5 Crop Insurance meetings
- Monthly meetings with Field Reps from local grape processors/industry
- Weekly Coffee pot meetings across Lake Erie Region during growing season.
- Weekly Crop Update electronic newsletter.
- Annual LERGP Growers Conference
- Annual NY & PA Pest Management Guidelines for Grapes
- LERGP Annual Winter Grower Conference & Twilight Meetings
- On-farm Demonstration Trials.
- LERGP *Vineyard Notes* newsletter
- 39 Electronic Crop Updates
- Enology Workshops (Penn State & Cornell Extension Enologists)
- 13 Externally funded applied research and extension projects



# Lake Erie Regional Grape Program: examples of cooperative research for management of disease and insect pests

- Efficacy of alternative fungicides for grape disease management.
- Efficacy of fungicide and insecticide programs without use of CA Prop 65 listed materials.
- Improving Recommendations for Phomopsis Fruit Rot and Grape Berry Moth Management in High Brix Niagara Grape Production.
- Improving Management Protocols of The Grape Berry Moth, *Paralobesia viteana*.
- Optimizing Insecticide and Fungicide Spray Programs in High Pressure Vineyards.
- Determining the Magnitude of the Populations of invasive insect pests in the Lake Erie Grape Growing Region.
- Assessing Spotted Wing Drosophila Injury Potential on Grape Production.
- Detecting Taint from the Brown Marmorated Stink Bug in Concord Grape Juice.



# Young Grower Alliance

## *Regional and National Collaborations*



About Us

Initiatives

Members

Upcoming Events

Programs

Publicity

We are the Future Faces of Farming!  
YGA offers educational opportunities for growers taking over the family operation, developing a new enterprise or innovating production practices.



YGA members are looking to connect with others working in a similar profession and living a similar lifestyle. Activities include field trips,

### Upcoming Events

Hands-on Grafting Workshop  
January 30, 2017

Tree Fruit Meeting  
February 14, 2017

Fruit Growers Meeting  
February 28, 2017



# Education and Outreach in Support of Hispanic/Latino Horticulturists

Starting a New Agricultural Business

Financing & Capital

Land and Equipment

Marketing

Vegetables

Fruit and Berries

Beekeeping

Livestock

Soils

Apprentices and Mentor Farmers

About Start Farming - Supporting the Next Generation of Farmers

En Español

Workplace Communication

## Engaging Spanish-Speaking Farmers and Farmworkers at MAFVC

Posted: February 18, 2016

Since 2009, Penn State Extension has hosted a full-day session at the Mid-Atlantic Fruit and Vegetable Convention (MAFVC), taught completely in Spanish. These sessions have targeted Hispanic and Latino farmers, farm managers and farm workers, working in horticultural crop production. Bilingual educators from surrounding states have collaborated in the project, and helped to create a learning environment that is friendly, engaging, inclusive, and highly relevant.

**U.Md., Va.Tech.,  
Rutgers, Penn State**

The number of Hispanic farmers in Pennsylvania is increasing every year, mirroring national trends. Many of these entrepreneurs get their start as workers on established Pennsylvania farms, often rising to management positions. Educating Hispanic and Latino farmers, farm managers and farm workers in best management practices in crop production, pest control, pesticide safety, food

Share





# Regional Twilight Meetings, Fruit Workers Conferences, and Grower Conventions



The Mid-Atlantic Regional Fruit Loop:

## Cumberland-Shenandoah Fruit Workers Conference

[Return to Mid-Atlantic Regional Fruit Loop Home Page](#)



In 1924, fruit research and extension specialists in several mid-Atlantic states began an annual gathering to share the season's research results, the Cumberland-Shenandoah Fruit Workers Conference. This gathering of entomologists, plant pathologists and horticulturists has expanded somewhat and now includes Virginia, West Virginia, Pennsylvania, Maryland, Delaware, New Jersey, New York, South Carolina and North Carolina, with participation from additional states such as Michigan and Massachusetts. The annual conference is open to university fruit specialists, consultants and industry representatives. Material developed at the conference will be presented later in grower and scientific meetings.

### • Attendance at Conference

This conference is intended for university fruit specialists, consultants and representatives of pheromone and pesticide companies. The goal of the conference is to discuss research results and develop research and extension programs. Material developed at this conference will be disseminated at subsequent grower meetings. Specific registration materials for this year's conference will be posted in the group's Scholar project management site ([scholar.vt.edu](http://scholar.vt.edu)). Contact General Chair Art Agnello ([ama4@cornell.edu](mailto:ama4@cornell.edu)) or webmaster Doug Pfeiffer ([dgpfeiff@vt.edu](mailto:dgpfeiff@vt.edu)) for enrollment in this site.

# What are the next steps

- What is working?
- What are the gaps?
- Who needs to be involved?
- Do these agreements need to be formal or informal?
- How do we develop regional funding?
- Can our state departments of agriculture, the federal agencies, universities and grower groups all work together?