

NEWS

for the commercial vegetable, potato and berry grower

June 2018 / Volume 41 Number 6

Vegetable Marketing and Research Program Introduces New Logo

The Pennsylvania Vegetable Marketing and Research Program is introducing a new logo for its point-of-purchase items and other promotional materials. For many years the Program used the "Simply Delicious" logo developed by the Pennsylvania Department of Agriculture. However, the Department has since developed the "PA Preferred" brand and logo that is adaptable to promote all Pennsylvania agricultural commodities and industries, not just produce. Consequently, the Program Board decided it was best for the Program to have its own logo which it could use to promote Pennsylvania Vegetables.

The Program's Board considered a number of designs submitted by Kitchen Table Consultants, its marketing consultant. They settled on the design below. Here is its printed in green only but a full-color version with the vegetables will be used whenever printing capabilities allow that.



The Program is the statewide marketing order for vegetable growers in Pennsylvania. All growers who grow one or more acres of vegetables, or 1,000 sq. ft. of greenhouse vegetables, or grow and sell \$2,000 worth of vegetables a year are required to pay an annual assessment to the Program. The assessment is \$25 for the first five acres or 1,000 sq. ft. of production plus \$1.50 for each additional production unit. The funds are used to promote Pennsylvania vegetables and fund practical vegetable production research.

The Program was established in 1988 by a grower referendum. It must be approved by a grower referendum every five years. In March 2018, 80% of the growers voting in the five-year review referendum voted to continue the Program for another five years. The Program is controlled by a Board of 12 growers appointed by the Secretary of Agriculture plus one representative of vegetable sales agents.

Don't Miss These Summer Educational Events

Be sure to take advantage of these opportunities to get off your farm for an evening to see how other growers are meeting production challenges. You also have the chance to visit with fellow growers and share ideas, problems and solutions.

July 17, 2018

Central Susquehanna Summer Vegetable Meeting

This twilight meeting will be held at 6:00 p.m. at the Amos Martin Farm, 698 Troxelville Road in Middleburg (Snyder Co.) In Penn's Creek, at the intersection of Rt. 104 and Troxelville Road, head west on Troxelville Road. The farm is about 0.5 miles on the right.

The meeting will include vegetable pest updates while touring the production areas of the Amos Martin farm. Growers will have an opportunity to see and discuss current pest management first hand. There will also be a discussion of proper use of pesticides to avoid plant injury. Our speakers will be Dr. Shelby Fleischer, Entomologist, Penn State College of Agricultural Sciences; Dr. Beth Gugino, Plant Pathologist, Penn State College of Agricultural Sciences, and John Esslinger, Penn State Extension Educator.

There is no registration fee. Water and light refreshments

will be offered at the end of the meeting. Registration is not required. Any questions can be directed to John Esslinger at 570-316-6516 or cje2@psu.edu.

July 19, 2018

Introduction to Agritainment [Webinar]

Agritainment can diversify and add revenue to your farm business. However, whether you host U-Pick crops, fall festivals, farm dinners, weddings, or other on-site events, bringing the public onto your farm also brings risk.

Join the Pennsylvania Association for Sustainable Agriculture (PASA) and attorney Marlene van Es of Trellis Legal on July 19 from 12:00 noon to 1:30 p.m. to learn about the factors you should consider for hosting an agritainment venture on your farm, including knowing your legal responsibilities, analyzing potential risks to your farm business, and understanding steps you can take to protect your business from liability concerns.

This webinar will help you explore how you can make agritainment a safe and profitable endeavor. The cost is \$10 for PASA Members and \$15 for non-members.

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NEWS



**Pennsylvania
Vegetable Growers
Association**

An association of
commercial vegetable,
potato and berry growers.

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In Memory

Diane Miller

Diane E. (Kohler) Miller, 62, passed away peacefully at her residence surrounded by her family on Saturday, June 16, 2018. She was the beloved wife of 43 years to David E. Miller, Past President of PVGA and former chairman of the Pennsylvania Vegetable Marketing and Research Program.

Diane was born in York on July 15, 1955 and was the daughter of Betty E. (Clouser) Kohler and the late Richard D. Kohler of Dallastown. She was a 1973 graduate of Dallastown High School.

Diane worked as the retail store manager of Miller Plant Farm. She was a long time member of New Fairview Church of the Brethren. Diane enjoyed gardening, shopping and had a love for dogs. She was a dedicated mother and grandmother and enjoyed spending her time with her family and friends. She will be deeply missed by all who knew her.

In addition to her husband and mother, she is survived by her three children, Courtney Fauth and her husband Joshua, Whitney Miller and her husband, Matthew and Dustyn Miller and his wife, Christy. Diane had five grandchildren whom she loved very much, Avery, Wyatt, Cameron, Palmer and Alexandra, who knew her as "Bammaw." She is also survived by her brother, David R. Kohler and his wife, Debra, and their children; as well as Diane's beloved dog, Phoebe.

Memorial contributions in Diane's name can be made to New Fairview Church of the Brethren at the address listed above or to the York County SPCA, 3159 Susquehanna Trail, York, PA 17406.

Don't Miss These... (continued from page 1)

To register call (814) 349-9856 or visit <https://www.pasafarming.org/events/pasa-events/introduction-to-agritainment-law-webinar>.

July 20, 2018

Rodale Institute Annual Field Day 2018

This field day will be held from 8:30 a.m. to 3:30 p.m. at the Rodale Institute, 611 Siegfriedale Rd. in Kutztown.

Interact with Rodale Institute experts and learn about a wide variety of research and demonstration projects, all focused on organic agriculture. Stations will be set up throughout the farm so you'll have time to explore their 333-acre when walking or enjoying a leisurely wagon ride from site to site. If you're interested in one particular area, they invite you to spend more time with their expert on that demo, asking questions and sharing knowledge.

Demo Sites:

- Agriculture Supported Communities (ASC)
- Composting
- Farming Systems Trial (FST)
- High Tunnels and Grafted Tomatoes
- Honey Bee Conservancy
- Medicinal Garden
- No-Till Management
- Organic Onions: Managing Allium Leafminer & Soil
- Pest Management
- Vegetable Systems Trial (VST)

There is a \$25 registration fee. You can bring your own lunch or purchase a lunch on site. To register, visit RodaleInstitute.org or call 610-683-1481.

July 26, 2018

Optimizing Flavor During Production: Tree Fruits & Vegetables

This Pennsylvania Association for Sustainable Agriculture (PASA) event will be held at North Star Orchard and Vegetable CSA, 3226 Limestone Rd in Cochranville from 3:00 to 5:30 p.m.

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The Pennsylvania Vegetable Growers News is the official monthly publication of the Pennsylvania Vegetable Growers Association, Inc., 815 Middle Road, Richfield, PA 17086-9205 phone and fax - 717-694-3596, email - pvg@pvga.org website - www.pvga.org

Our Mission:

The Pennsylvania Vegetable Growers Association serves Pennsylvania's commercial vegetable, potato and berry growers

through education, research, advocacy and promotion.

Our Vision:

The Pennsylvania Vegetable Growers Association will be the driving force in ensuring the future viability of the commercial vegetable, potato and berry industries in Pennsylvania.

Inquiries about membership, this publication or advertising rates should be directed to William Troxell, Executive Secretary, at the above addresses.



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New and Improved PAVeggies.org Puts Pennsylvania Vegetables, Farmers in the Spotlight

The Pennsylvania Vegetable Marketing and Research Program (PVMRP) launch a new website this July at PAVeggies.org . With PA Produce Month unfolding all August long, the website has wrapped up just in time, and will serve as a perfect place for consumers to discover ways to celebrate one of Pennsylvania's most delicious months. The new updates will appease the needs of many consumers, from the veggie curious who's just beginning to dip their toe into the local bounty, to the expert who's eager to seize the local veggie scene for summer entertaining and winter preparation. It continues to offer annually updated marketing tools and resources for Pennsylvania farmers as well.]

Some exceptional new features of PAVeggies.org include:

Recipe Videos

Developed to educate and inspire in less than 5 minutes, these fun instructional videos offer 21 recipe ideas across 7 collections, each with a unique theme, like 3 No Fail Veggies Slaws and 3 Pestos Using Unexpected Ingredients.

Farm Videos

In an effort to bring the farm to consumers, these videos go behind the scenes through on-site interviews with 5 Pennsylvania farmers, featuring footage of operations and first-hand tellings of farm life.

New Blogs

The 2018 blogs give a fresh face to the extensive amount of good reading already present at PAVeggies.org, tempting consumers to explore every recipe, interview, farm glimpse, tip, and beyond.

Local Food Directories

These directories address various needs in one clear, central location, offering consumers information on local on-farm stands, community farmers' markets or CSA's and wholesale buyers information on growers for individual crops or a listing of the state's wholesale produce auctions.

Vegetable Guide

A perfect quick reference guide for consumers of the when, why, and how of local PA veggies. It outlines seasonality per vegetable, as well as unique tips for selecting and preparing.

Farmer Toolkit

Pennsylvania vegetable farmers can head directly to the Farmer Toolkit, where you'll find tools and resources to assist with your PA Produce Month promotions, and marketing all year long.

Consumer Survey

The PVMRP wants to make this experience as user friendly as possible for consumers and growers. Please consider taking the survey or submitting a contact form with your ideas and feedback.

Consumers can also be on the lookout for PA Veggie brochures, PA Veggies price cards and roadside signs, which serve as trustworthy indicators that local produce is near. The

PVMRP leads continued efforts to support Pennsylvania's largest industry, agriculture. These resources are not meant to solely entertain but, more importantly, to cultivate and nourish new relationships. On-farm stands, neighborhood farmers' markets, supermarkets, CSA's, restaurants, specialty grocers, and auctions near you, all throughout the state, are offering fresh, local vegetables through spring, summer and fall, and especially in August. It's the perfect time to celebrate the state's successful industry and familiarize with the friendly people who grow your food.

By opting for produce from over 1,000 farm markets and community farmers' markets plus dozens of CSAs in the state and local produce in supermarkets, Pennsylvanians support both the environment and economy - reducing their impact of fossil fuels use and keeping money close to home. In fact, for every \$100 spent at a farmers market, \$62 stays in the local economy, and \$99 stays in state. With the new website offering an abundance of easily accessible information and inspiration, both consumers and farmers can enhance their efforts and fortify the local vegetable industry.

The Pennsylvania Vegetable Marketing and Research Program is a statewide marketing order established by a grower referendum, governed by a grower board and funded by grower assessments. The Program's sole purpose is to serve the vegetable growers of Pennsylvania by promoting Pennsylvania-grown vegetables and funding practical vegetable production research.

Consider liking PA Veggies on Facebook (PAVeggies), following along on Instagram (@PAVeggies); and using #PAVeggies to find and share homegrown PA happiness experiences.

Don't Miss These... (continued from page 2)

Take your growing methods to the next level by implementing production techniques to optimize flavor. Ike Kerschner and his crew at North Star Orchard and Vegetable CSA will share the practices they use to achieve optimal flavor in their perennial tree fruit and annual vegetable crops. You'll learn about North Star's irrigation regime and soil management system, how to recognize harvest windows, and other strategies for producing an unrivaled product.

North Star has been producing high-quality tree fruit for over twenty years and growing vegetables for CSA distribution for over a decade. In 2017, North Star added an on-farm store to their business model

Please contact Aaron de Long at (814) 349-9856 x25 or aaron@pasafarming.org for more information about this event. or visit <https://www.pasafarming.org/events/pasa-events/7-26-18-optimizing-flavor-during-production-tree-fruits-vegetables-craft>.

August 17, 2018

Reduced Tillage Methods for Organic Vegetable Production

This Pennsylvania Association for Sustainable Agriculture (PASA) event will be held at Dickinson College Farm, 553 Park Dr., Boiling Springs from 5:00 to 8:00 p.m. The cost is \$10.

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NEWS

Four Named to 40 Under 40 List

Four Pennsylvania vegetable growers have been named to the 40 Under 40 List compiled by the Vegetable Growers News and the Fruit Growers News from nominations submitted by industry members.

Adam Voll is the farm manager at Soergel Orchards, a fruit and vegetable farm, in Wexford, PA. Being part of a 6th generation farm, Voll's love of farming grew while spending many hours riding with his Pop on the tractor. He began working there since he could walk. Later, he attended Penn State University, graduating in 2005 with a degree in agricultural systems management and a minor in horticulture. Now married, he has two children.



David King (left) is a partner of Harvest Valley Farms with his father, Arthur King, and uncle, Larry King. He has a B.S. in Agricultural Sciences with a minor in Horticulture from Penn



State University. Harvest Valley Farms is located in Valencia (20 miles north of Pittsburgh). The farm's market base consists of three Farmers' Markets, Farm Market and Bakery Store, 350 member CSA, Pick-Your-Own Pumpkin Festival, Greater Pittsburgh Food Bank Farm Stand Project, and restaurant wholesale distributor. They grow 65+ varieties of vegetables on 135 acres.

Some of Dave's specialties on the farm include high tunnel production, employee management, website management, welding, and equipment maintenance. Harvest Valley Farms currently has 8 high tunnels, two greenhouses, and one cold frame. Dave is serving his second term on the PVGA Board of Directors.



Justin Hausman is 37 years old and has been farming his entire life on his family's fruit farm, Hausman Fruit Farm, in Coopersburg, Pennsylvania. The operation includes grain, fruit, vegetables and agritourism. He enjoys all aspects of the farm. Hausman's hobbies include collecting 2-cylinder John Deere tractors and camping with his family. He is highly involved with the community including 4H, scouts and baseball. Hausman and his wife April have four children: Lacey, Brent, Gregory and Lillian.

Steven Johnston, a 2008 graduate of Penn State University, is a sixth-generation farmer and business owner at Apple Castle in New Wilmington, Pennsylvania. He has built upon the foundation of his family farm by adding events that attract and build relationships with a new generation of customers, expanding the farm market offerings, and implementing new fruit growing techniques. Johnston serves in a leadership role on several farm and community-related boards.



Don't Miss These... (continued from page 3)

You care about the health of your soil, but you're still tilling, cultivating, or laying plastic to prepare your fields and control weeds more than you would like. What options do you have for reducing soil disturbance and fostering healthy soil on your vegetable farm?

At this workshop, you'll learn innovative methods for reducing tillage from:

Dr. Drew Smith from the Rodale Institute, who will share some of the early results from their recent experiments transplanting vegetable crops into strips of winter-killed tillage radish to provide a weed suppressing mulch, and using Yaomen's plows to provide deep tillage that reduces surfaces disturbance and alleviates sub-surface soil compaction.

Jenn Halpin from Dickinson College Farm, who will showcase their trials growing tomatoes and peppers into strips of tillage-radish mulch, and share the farm's other techniques for reducing tillage, such as using a roller crimper to terminate overwintered cover crops.

Dr. Franklin Egan from PASA, who will share tips and techniques that PASA member farmers are finding effective for

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NEWS

National News Briefs

Farm Bill Advances in U.S. Senate

As U.S. House leaders regroup following a failed vote on the 2018 Farm Bill last month, the Senate is pushing ahead with its version. The Senate Agriculture Committee advanced its farm bill legislation Wednesday, priming the bill for a vote by the full chamber. Having a new farm bill in place before the current law expires at the end of September is critical to continuing key agriculture programs that help farmers manage their risk to stay viable in an unpredictable business and give certainty during a struggling farm economy. "Low commodity prices, rising interest rates and an uncertain future for exports hang heavy over America's farm and ranch land," American Farm Bureau Federation President Zippy Duvall said. "But (the Senate committee's) vote means light on the horizon." The Senate bill cleared the committee with bipartisan support and appears likely to avoid the same pitfalls that led to the failed vote in the House. The House vote was derailed by partisan disagreement over nutrition programs as well as a spat within the GOP over the separate issue of immigration. House leaders plan to bring their version of the bill up for another vote next week, after the chamber votes on an immigration bill. It is vital that representatives and senators hear from farmers why the farm bill is critical to the viability of Pennsylvania farms and our nation's food security. Please be prepared in the coming week to contact your elected leaders by responding quickly to Farm Bureau action requests, which will be issued ahead of key votes.

From Farm Bureau Express, Penna. Farm Bureau, June 15, 2018.

Farm Bill Vote Fails in House

The U.S. House's first attempt at passing the 2018 Farm Bill fell short last month as lawmakers voted down the critical agriculture legislation.

While there's still time for Congress to act, the 193 to 213 vote marks a setback as advocates push to have the 2018 Farm Bill in place before the current farm bill expires at the end of September. Adopting a new farm bill by that deadline is vital to continuing essential risk management programs, including crop insurance and Title I commodity programs, as well as making improvements to programs that help dairy producers manage their risk.

House leaders must now return to the drawing board to determine how to build broader support for the legislation. The bill drew opposition from all Democrats, who objected to changes to nutrition programs, as well as 30 Republicans, who withheld support due to a separate disagreement over immigration. House leaders plan to bring the bill up for another vote by late June.

"Ensuring that our nation's farm families remain viable and continue to produce food for consumers should be a top priority for our elected leaders," Pennsylvania Farm Bureau President Rick Ebert said. "It's disappointing to see politics get in the way of such important legislation. But despite this setback, Congress is not finished debating the farm bill. Now more than ever, farmers need to tell their legislators why a strong farm bill is necessary for both the future of agriculture and our nation's food security."

Members of Pennsylvania's delegation who voted for the bill are: Reps. Lou Barletta, Ryan Costello, Mike Kelly, Tom Marino, Lloyd Smucker, Bill Shuster, and Glenn "G.T." Thompson.

From the Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, June 2018.

Crop Registry Available to Reduce Risk to Sensitive Crops from Herbicide Drift

Technology is being developed for agriculture that provides the location of crop fields that can help manage the federal requirement of consulting a sensitive crop registry before spraying dicamba.

Cropstream is a new computer network that allows growers to communicate crop information with other producers, agronomists and pesticide applicators. The crops grown in certain fields can be marked on a map and include any traits associated with that crop to notify other farmers that may be applying herbicides in the region.

More information is available at www.cropstream.com.

From the Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, June 2018.

New Concerns for Agriculture as Trump Administration Eyes More Tariffs

Pennsylvania agriculture could be hit hard as tensions escalate between the U.S. and its major agricultural trade partners over President Donald Trump's proposal to raise tariffs on aluminum and steel imports.

Though it had earlier seemed that the U.S. and China would back off from their respective tariff threats and negotiate, the administration, as of publication deadline, planned to move forward on its proposal to tax several Chinese imports and also planned to impose new tariffs on steel and aluminum imports from Canada, Mexico and the European Union.

All three have already vowed to retaliate with tariffs on a number of U.S. agricultural goods, including pork bellies, apples, grapes, cranberry juice, peanut butter, whiskey, yogurt, processed condiments and more. And the renewed disagreement with China threatens to revive Chinese officials' plans to tax a bevy of U.S. farm products, including pork, soybeans, beef and some fruits.

Retaliatory tariffs could be especially damaging to Pennsylvania agriculture. The state's exports to China last year were valued at approximately \$413 million and trade with Canada and Mexico accounts for 60 percent of Pennsylvania agricultural exports.

Pennsylvania Farm Bureau recently voiced opposition to the Chinese tariffs in a letter to the U.S. Trade Representative highlighting the potential damage to Keystone State farmers.

From the Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, June 2018.

New Product for
Leafy Vegetables,
Cucurbits, Potatoes
and Apples

Controls foliar
diseases: early blight,
late blight, downy
mildew, powdery
mildew

IR Induced Resistance
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NEWS

Are You Crazy? Farm Market Tour

Join us for our 22nd Annual Are You Crazy? Retail Farm Market Bus Tour to explore some of the premier farm markets in Pennsylvania and New Jersey.

This annual farm market bus tour will be held on July 31, 2018. Buses will depart at 8:30 a.m. from the Penn State Extension Lehigh County office at 4184 Dorney Park Rd. in Allentown. They will return at 7:30 p.m. Registration deadline is July 23, 2018. Cost is \$50 per person.

Each year this tour brings unexpected learning opportunities and beneficial networking connections to its participants. We look forward to a full, well-rounded day of interactive education and networking!

This tour is for retail farm market professionals and is held at the height of the season to enable participants to learn from their regional farm market peers during their best and most robust season.

We have something for everyone — seasonal, year-round, produce, food, tourism, value-added, pick-your-own, entertainment, and educational farm direct-to-consumer marketing at its finest! Not to mention the “classroom-on-wheels” as we travel between markets with opportunities to network and learn from each other.

Markets to be visited include:

- Manoff Market Gardens, New Hope, PA
- Terhune Orchards, Princeton, NJ
- Dreyer Farms, Cranford, NJ
- Wightman Farms, Morristown, NJ

Hosts share marketing strategies that have helped make their agri-tourism businesses successful, including information on:

Seasonal and year-round produce

Tourism

Value-added entertainment

To register visit <https://extension.psu.edu/are-you-crazy-retail-farm-market-bus-tour>.

Don't Miss These... (continued from page 4)

reducing tillage, and will discuss the soil health data for Dickinson College Farm he's collected through our Soil Health Benchmark Study.

Steve Bogash from Marrone Bio Innovations, who will discuss biopesticides that can be used in place of copper-based pesticides as part of a comprehensive soil health and pest control plan.

You'll also tour Dickinson College Farm, a 50-acre organic vegetable and pastured-livestock farm that serves the Dickinson College dining halls, a CSA, and local farmers markets.

Dinner will be served so registration is required by calling 814-349-9856 or visit <https://www.pasafarming.org/events/pasa-events/reduced-tillage-methods-for-organic-vegetable-production>

August 22, 2018 Modern Farm Marketing

The Pennsylvania Association of Sustainable Agriculture (PASA) event conducted in cooperation with Penn State Extension will be held at Godshall Farm on 5318 Limeport Pike in Coopersburg from 3:00 to 5:30 p.m. There is no cost.

For successful farms, marketing is part of a daily routine. Yet, most farmers are not versed in farm marketing strategies and there are few resources available to them. Plus, now more than ever before, there is competition from big businesses advertising their products in such a way that make them appear to be locally produced.

Your farm and your product need to stand out from the crowd. At this workshop, we'll discuss how to tell the transparent and authentic farm story consumers are looking for. We'll also cover best practices for farm websites, email marketing, market displays, online stores, CSAs, and social media. Learn which marketing strategies deserve your time and money, and which are better to leave behind.

Please contact Aaron de Long at 814-349-9856 x25 or visit <https://www.pasafarming.org/events/pasa-events/modern-farm-marketing-craft> to register.





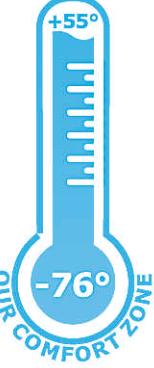
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Are your labels compliant with the Food Safety Modernization Act?

Now it is possible to create and print your own FSMA compliant labels even if you don't own a computer

In 2017, the government is requiring all fruit and vegetable companies to label their products, including information like when the product was packed, the grower number, field location, and other information.



The Texpak FSMA labeling system consists of a small printer that can either be operated with a computer or can be used as a stand-alone system with an optional keyboard.

Texpak can help create and design up to four label formats for you at no charge to fit your specific needs.

Below are samples of some of the labels we have created for fruit and vegetable growers. In addition, Texpak can provide full pre-printed labels should you be looking for product branding purposes.

Frecon Fruit Farm Inc 231 Powdermill Hollow Rd. Boyertown Pa 19512	
Variety:	
Block:	
Date:	
Picker(s):	
Amount:	

LARGE # 2 TOMATO	
JOE MARTIN #1277	
PACKED:	06/06/16

Growers #1400	Field # 2
Large Tomatoes	
Steven Martin	Packed Date
Shippensburg PA	8/11/16



If you have any questions about our system or would like help with your labeling needs, please contact us by email or phone, as indicated below.

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NEWS

State News Briefs

Bill Limiting Liability for Agritourism Operators Advances

A Pennsylvania Farm Bureau-supported bill that would help protect farmers who engage in agritourism from frivolous lawsuits has cleared its first hurdle in the General Assembly. Senate Bill 820, sponsored by Sen. Ryan Aument of Lancaster County, passed the Senate Judiciary Committee unanimously this week and now heads to the full Senate for consideration. The legislation would protect farmers from lawsuits over injuries that can occur from participating in agritourism activities while requiring that farmers post multiple signs around their businesses warning visitors of the inherent risks. Many other states already have similar laws on the books. PFB believes that this commonsense reform is needed to protect farm families and ensure that agritourism remains a viable option for diversification. Farmers cannot take away every potential hazard, such as trips and falls in fields, or the fact that animals can be unpredictable. However, under current law, those circumstances open farmers up to frivolous lawsuits.

From Farm Bureau Express, Penna. Farm Bureau, June 15, 2018.

Bill Clarifying Agritourism on Preserved Farmland Clears Committee

A bill that seeks to add more certainty for farmers who are looking to supplement their income by establishing agritourism operations on preserved farms has cleared its first hurdle in the General Assembly.

Senate Bill 819, sponsored by Sen. Ryan Aument of Lancaster County, was passed by the Senate Agriculture and Rural Affairs Committee and now heads to the full chamber for consideration. The legislation would establish a uniform definition of agritourism and clarify that such activities are permissible on preserved farms.

Currently, county farmland preservation boards may approve incidental businesses, including agritourism, on preserved farms. However, the definition of what constitutes agritourism can vary between counties. The bill would maintain county boards' roles in approving agritourism on preserved farms but establish common definitions that landowners and farmland preservation boards can rely on to make decisions.

From the Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, June 2018.

Farm Bureau Joins Effort to Open Trade with Cuba

Pennsylvania Farm Bureau is lending its voice to an effort to open trade between the U.S. and Cuba and expand markets for American agricultural products. PFB is a founding member of the Pennsylvania council of the Engage Cuba Coalition, as are several Farm Bureau members. The national coalition, which has also formed councils in 16 other states, advocates for Congress to remove Cold War-era trade restrictions on Cuba. In addition to PFB and several Farm Bureau members, founding members of the state council include political leaders, business and industry groups, other agriculture organizations and academics. Advocates say that expanding trade with Cuba would create new markets for Pennsylvania agricultural goods. Cuba imports about 80 percent of its food supply. That's \$1.8 billion in agricultural products a year, including \$188 million in dairy products. The Keystone State is also a major producer of other top

imports for Cuba: poultry, corn and soybeans. Advocates also say Pennsylvania would be well-positioned to supply Cuba's demand for agricultural products due to commercial shipping capabilities at the Port of Philadelphia. "At a time when certain industries have become collateral damage in trade disputes, opening up additional markets is the key to strengthening Pennsylvania's economy," said coalition President James Williams. "But in order to create that boost for Pennsylvania farmers and improve the lives of the Cuban people, Congress must lift arbitrary trade and travel restrictions that prevent U.S. competition in Cuban markets.

From Farm Bureau Express, Penna. Farm Bureau, June 15, 2018.

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CROP CARE

Reduce Labor!

PA1600
Picking Assistant

The Picking Assistant is a motorized field hand designed to boost your picking productivity and reduce sore backs! It features adjustable height & width, variable speed controller, an all-weather canopy and a solar powered charging system.

CropCareEquipment.com | Lititz, PA
Manufactured by PBZ LLC, a Paul B. Zimmerman, Inc. company

Please contact your local CropCare® dealer with any questions.

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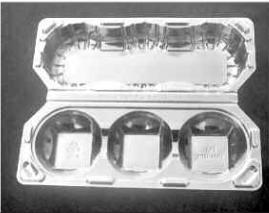
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NEWS

State News Briefs (continued from page 10)

Pennsylvania Department of Agriculture Issues Spotted Lanternfly Quarantine Order

The Pennsylvania Department of Agriculture recently posted an "Order of Quarantine and Treatment" for the spotted lanternfly, an invasive plant pest dangerous to forests, ornamental trees, orchards, grapes, and other plant, stone and wood products.

The spotted lanternfly is not yet widely prevalent or distributed within or throughout Pennsylvania, but has been found in several primarily southeastern Pennsylvania counties. The quarantine order supersedes all previous orders by PDA and presently applies to Berks, Bucks, Carbon, Chester, Delaware, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Philadelphia, and Schuylkill Counties.

Intentional movement of the spotted lanternfly is expressly prohibited and is a serious offense. Violations could result in criminal or civil penalties and/or fines. The quarantine also restricts the movement of certain articles. If you are seeking to enter into a compliance agreement to be able to move these articles you can request a permit by contacting Dana Rhodes at PDA at 717.772.5205 or at danrhodes@pa.gov.

From the Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, June 2018.

Sign-up Begins for Growing Greener Plus Grant Program

The state Department of Environmental Protection is accepting applications for the Growing Greener Plus Grant Program May 14 to July 13 to help fund projects that improve water quality.

Conservation districts typically have access to these funds to initiate projects on farms, such as streambank fencing, forested buffers and protection of animal heavy use areas. Emphasis has been placed on BMPs implemented in the 43 counties within the Chesapeake Bay Watershed which reduce nutrients and sediment from reaching Pennsylvania waterways.

From the Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, June 2018.

New Application Period for REAP Tax Credits Begins This Summer

A new round of applications will be accepted for the Resource Enhancement and Protection (REAP) tax credit program beginning in August.

The REAP program is used by agricultural producers in Pennsylvania to apply tax credits generated from purchasing conservation equipment or implementing BMPs that reduce the loss of nutrients and sediment. The new applications will expand tax credits from planting cover crops and include expenses incurred for maintaining forested riparian buffers.

From the Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, June 2018.

Pennsylvania Farmers Can Apply for Prestigious Conservation Award

A prestigious award that celebrates voluntary conservation by farmland owners is coming to Pennsylvania. This year Pennsylvania will become the 14th state to present the Leopold Conservation Award in partnership with the Pennsylvania Farm Bureau and Heinz Endowments.

The Wisconsin-based Sand County Foundation, the nation's leading voice for private land conservation, presents the award to farmers, ranchers and foresters for extraordinary achievement in voluntary conservation on private working lands. The inaugural award will be presented at the Pennsylvania Farm Show in January. The recipient receives \$10,000 and a crystal award.

Nominations for the award will be accepted through Aug. 15. Nominations may be submitted on behalf of a landowner, or landowners may nominate themselves. The application is available at <http://bit.ly/LeopoldAwardPA>. For more information, visit www.leopoldconservationaward.org.

From the Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, June 2018.



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GENERAL

Understanding FSMA: The Produce Safety Rule

Luke LaBorde

Editor's Note: This is the third in a series of articles on FSMA that will appear in the Penna. Vegetable Growers News. Dr. LaBorde at the Department of Food Science at Penn State University prepared this summary which we have divided into segments to be published in the newsletter. The entire article is at <https://extension.psu.edu/understanding-fsma-the-produce-safety-rule>.

Key Requirements in the Produce Safety Rule

(continued)

Biological Soil Amendments

Biological soil amendments are materials of animal or plant origin that are intentionally added to the soil to improve its chemical or physical properties (e.g., compost and manure). Animal manures are often added to soil because they are a rich source of nutrients that support plant growth. However, untreated animal manure is a potential food safety hazard if it comes into contact with the harvestable part of the crop. For this reason, the Produce Safety Rule establishes farm food standards for the application of biological soil amendments of animal origin. The regulation forbids the use of human waste except for sewage sludge biosolids that have been treated according to applicable federal or state regulations.

FDA has established standards in the Produce Safety Rule for the use of raw animal manure and compost prepared from raw animal manure as soil supplements.

"Only raw or composted animal manure that can come into contact with the harvestable part of the crop is regulated."

Raw Manure - FDA states that it is highly likely that raw animal manure contains one or more microbial species that can cause human illness. However, scientific studies have shown that once human pathogens are no longer within the protective environment of the animal colon, they begin to die in response to the destructive effects of sunlight and less favorable temperature and humidity conditions. FDA is currently sponsoring studies to measure the rate at which pathogens die as affected by climatological conditions, application methods, and soil type. Of particular interest is determining the number of days needed between field application and harvest to reduce pathogens to safe levels.

FDA has stated that this will require several years of research under actual farming conditions. Until these studies are complete, FDA does not object to farmers adhering to the raw manure application standards described in the USDA National Organic Program, which call for a 120-day interval between the application of raw manure for crops likely to come in contact with the soil amendment, and 90 days for crops that do not contact the soil. They further state that all untreated biological soil amendments of animal origin, including raw manure, must be applied in a manner that does not contact produce during application, and minimizes the potential for contact with cov-

(continued on page 16)

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GENERAL

PA PRODUCE MONTH
MARKETING INSIDERJUNE 2018
PLANNING FOR GROWTH

PENNSYLVANIA VEGETABLE MARKETING & RESEARCH PROGRAM



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PA PRODUCE MONTH IS BACK!

Just like designing a crop plan, successful marketing campaigns begin way before harvest or, in this case, before August, the official PA Produce Month. Now's the time to prepare! Much like ordering seeds and repairing equipment, we should start to gather content, update our consumer touch points, familiarize ourselves with a promotional timeline, and have a firm grasp on our goals. The details and suggestions on Page 2 will serve as an excellent resource to get your marketing in motion.

BUT FIRST, A QUICK MARKETING LESSON! TERMS & TECHNIQUES

1 CONSISTENCY

Consistency is key and has dual meaning. Content should be shared frequently, following a consistent schedule as much as possible, and the style of content shared should remain consistent. In other words, keep in touch with your customers as often as possible and make sure your style and messaging is not all over the place. From company flyers to Facebook posts, use similar colors, fonts, words, phrases, and personality in all your content.

2 CONTENT

Content includes printed and digital images or messaging that comes in contact with the consumer. Your website, blogs, social media posts, business cards, flyers, farmers market banners, and newspaper ads all qualify as content.

5 EMAILS

Focus on a tempting subject title; the rest is useless if it doesn't get opened. Make sure the content is visually compelling and encourages a click to your website or another valuable platform.

3 FACEBOOK & INSTAGRAM

Here's your chance to endear yourself to your consumers. It's important to keep a consistent focus, but use it as if you're holding a conversation with a friend or regular customer. Let your authentic personality shine and remember that a conversation should be two-way. Share "day-in-the-life" updates on your platform regularly and be educational, but also interact with and ask questions to like-minded businesses and people. On Facebook, share industry news, links to your latest blog, quick videos, and plenty of photos. On Instagram, keep the content brief and the imagery captivating. Present a call to action as often as possible.

4 BLOG

Blogging is all about sharing your voice, personality, and knowledge. Don't be afraid to offer insider tips to colleagues and potential customers. Being generous with what you know will help you develop trust by positioning yourself as an industry expert. Keep it relatively short, from the heart, and motivate readers to take action.

6 ANALYZE

If a crop kept failing, would you just let it be? Make sure you measure effectiveness and adjust accordingly.

GENERALPA PRODUCE MONTH
MARKETING INSIDERJUNE 2017
PLANNING FOR GROWTH**HOW TO GET READY FOR AUGUST**

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1) PA FARMERS ARE THE STAR OF THE SHOW!

PA Produce Month is all about growing your business by increasing consumer awareness of local vegetables through exciting and educational content and events. This year, WWW.PAVEGGIES.ORG will feature custom recipe videos and NEW relevant articles throughout August for you to share with your audience. However, don't forget to put yourself in the spotlight as much as possible - whether it's a personal mailer to your customers or a quick video in the field. People connect with people and authentic messaging should always be part of your strategy.

2) BE PROACTIVE, MAKE IT YOUR OWN!

In addition to utilizing the resources and custom content created by PA Veggies, use this opportunity to host your own events. Here are just a few ideas:

- Invite regular market goers or standout CSA members for a tour of the farm or a planting demonstration
- Run a special all month long that can only be redeemed if people LIKE and SHARE your Facebook page
- Host a community potluck, with your vegetables as the shining stars in each dish

3) USE YOUR RESOURCES

We'll be sharing marketing ideas and tools to help you promote your products and services through August, and the rest of the season. Some items to get excited about include:

- | | | |
|---------------------------|-------------------------|-------------------------|
| • marketing checklist | • campaign themes | • social media graphics |
| • press release templates | • communication prompts | • blogs |
| • email graphics | • recipe videos | • campaign checklist |

4) FOLLOW THESE NEXT STEPS FOR SUCCESS

- **EMAIL** pvmrp@embarqmail.com today to join the PA Produce Month email list to receive messages through August, featuring resources and helpful instructions.
- **LIKE** PA Veggies on Facebook and **FOLLOW** @PAVeggies on Instagram
- **FAMILIARIZE** yourself with the paveggies.org and all the resources, created just for you!

GENERAL

Understanding FSMA... (continued from page 13)

ered produce after application. FDA advises that adherence to these standards is a prudent step toward minimizing the likelihood of contamination while the issue continues to be studied.

Compost Containing Materials of Animal Origin - FDA has established microbial reduction targets for processes used to treat biological soil amendments, including manure. Safe compost must have no detectable levels of *Listeria monocytogenes*, *Salmonella* spp., and *E. coli* O157:H7. Alternatively, if only *Salmonella* species are tested, they must be absent in a 4-gram dried sample, and fecal coliforms must be fewer than 1,000 colony-forming units per gram (CFU/gm).

The Produce Safety Rule provides two examples of scientifically valid composting methods that will meet these standards:

Static composting that maintains aerobic (i.e., oxygenated) conditions at a minimum of 131°F (55°C) for three consecutive days and followed by adequate curing

Turned composting that maintains aerobic conditions at a minimum of 131°F (55°C) for 15 days (which do not have to be consecutive), with a minimum of five turnings followed by adequate curing

There is no restriction on the number of days between application of compost and harvesting for either of these two methods. Any composting method that deviates from these protocols must follow the application intervals for raw manure. In addition to compost preparation requirements, FDA requires that preventive measures be taken to minimize the potential for contact of the compost with produce during and after application. Research will continue to develop and validate alternative composting methods that can meet the microbial reduction standards, and further guidance will become available in the future.

Domesticated and Wild Animals

The Produce Safety Rule addresses concerns about the potential for grazing animals (e.g., livestock and dairy cattle), working animals used in fields for various purposes (e.g., mules or horses), and intrusion by wild animals (e.g., birds, deer, or feral swine) into fields. Growers must take measures to prevent entry of domesticated animals such as cattle, swine, and poultry into fields. Control measures include confining them to designated areas that are not accessible to fields, and being aware of potential routes for contamination, such as wind-blown dust or water runoff.

During the growing season, fields must be inspected for evidence of fecal contamination and measures must be taken as necessary to ensure that contamination cannot occur during harvesting. For example, placing brightly colored flags or cones around a contamination site is a recommended way to notify harvesters that they should not harvest produce within the designated perimeter.

FDA recognizes the challenges associated with preventing wildlife intrusion and does not expect growers to completely eliminate this potential hazard, such as by surrounding fields with fences. FDA also acknowledges that unwarranted killing or trapping of animals is not

recommended if they threaten protected species. Instead, all reasonable and practical nonlethal methods, such as noise cannons, decoys, or netting, are appropriate.

"FDA requires that reasonable and practical measures be taken to ensure that wild and domesticated animals do not become a source of contamination."

Equipment, Tools, Buildings, and Sanitation

Sanitation standards for equipment and tools that are likely to contact produce during harvesting and postharvest handling are written into the Produce Safety Rule. Knives, implements, mechanical harvesters, hydro-coolers, grading belts, sizers, and equipment used to store or convey harvested, covered produce (e.g., containers, bins, food-packing material, dump tanks, flumes, and transport vehicles) are examples of equipment with produce-contact surfaces.

Equipment and tools must be designed and constructed so they can be easily cleaned and, when necessary, properly sanitized. They must be stored and maintained to protect produce from becoming contaminated and to prevent them from attracting and harboring pests.

Postharvest packing or storage facilities must be suitable in size, construction, and design to facilitate maintenance and sanitary operations that reduce the potential for produce contamination. Packing buildings must have adequate space for efficient operation, pest intrusion must be monitored and controlled, and overhead drip or condensate minimized. There must be adequate drainage to prevent accumulation of water and waste liquids on the floor. Readily accessible toilet facilities must be provided that are designed, located, equipped, and maintained so they cannot become a source of contamination.

FDA has no objection to packing or sorting activities that are conducted outdoors or in buildings with open walls, as long as measures are taken to prevent pests from becoming established and to trap or otherwise remove them when necessary.

"Postharvest equipment, containers, tools, and the packing environment must not be potential sources of contamination."

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GENERAL**Tools for Writing a Farm Food Safety Plan***Luke LaBorde and Lee Stivers*

Penn State Extension offers a set of templates, checklist and logs, to assist farmers of fresh fruits and vegetables in writing farm food safety plans.

For fresh fruit and vegetable growers adapting to meet the requirements of the Food Safety Modernization Act (FSMA) and third party GAP audits mandated by buyers, putting together a farm food safety plan is often a good starting point. A written farm food safety plan provides a way for growers of fresh fruits and vegetables to get organized and focused on produce safety on their farm operations. A written farm food safety plan is not specifically required by FSMA, but it is nonetheless a useful tool in complying with FSMA. A written farm food safety plan is usually required for third party GAP audits. A written farm food safety plan becomes a central place for growers to assess risks, outline practices to reduce those risks, record policies and standard operating procedures (SOPs), and keep needed records.

Every farm is unique and the risks on the farm will be specific to each operation. Developing a farm food safety plan should therefore be done by someone on the farm who knows



the farm well, can assess risks, and identify practices to reduce risk that fit the farm.

Farm food safety plans can have many parts, but generally include the farm name, address, and description; the name and contact information for the farm food safety manager; a risk assessment of practices and conditions on the farm that can impact food safety; a description of practices that the farm undertakes to reduce risks; and records that document those practices. Other items that can be included are farm maps, policies and SOPs, training records, monitoring and risk assessment records, water test results, supplier and buyer information, input and equipment logs, cleaning logs, and self-audits.

Penn State Extension has developed the following set of templates, checklists and logs, patterned after the USDA Harmonized GAP audit, to assist farmers in writing their farm food safety plans:

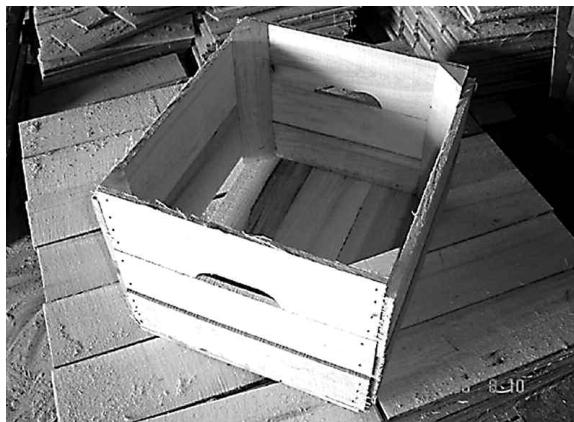
This template plan, following the USDA Harmonized GAP audit, can be filled in section by section to create your farm food safety plan.

This sample plan, is only an example of what a farm food safety plan might look like. It is imperative that you write your own farm food safety plan to reflect your own farm operation and conditions.

(continued on page 18)

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VEGETABLE PRODUCTION

Vegetable and Small Fruit Current Issues – Mid-June 2018

Cloudy weather, rainstorms, and variable temperatures across the state have slowed some crops and created very favorable conditions for disease development.

Berries

Weather conditions are causing some strawberry crops to ripen slowly. Not surprisingly, we have observed several strawberry diseases around the state, including common leaf spot, anthracnose, and botrytis blight. There have also been reports across the Northeast of cyclamen mites in strawberries. In matted-row plantings, an effective time to treat for cyclamen mites with miticides is after mowing at renovation, as the majority of the mites reside at the base of the leaf petioles in the crown area.

Vine Crops

Striped cucumber beetles are now active in many vine crop fields in Pennsylvania. Not only do these insects directly damage young seedlings, flowers and immature fruit with their feeding, they also vector bacterial wilt disease, primarily to cucumber and muskmelon, but sometimes also to pumpkin and squash.

While cucumbers in Pennsylvania are not yet at risk, there are several reports of downy mildew on cucumber as far north as North Carolina. *Alternaria* has been observed on several vine crops in the state so far this season, including cantaloupe seedlings and cucumbers. Angular leaf spot is also showing up on cucumbers, particularly in local varieties where the seed is saved year to year.

Sweet Corn

There have been several reports of root and stem rots in newly emerging sweet corn plantings. While the specific pathogens have not yet been identified, a number of fungal root pathogens can infect corn seedlings, such as *Fusarium*, *Diplodia*, *Pythium*, and *Macrophomina*. These fungi infect root and stem tissue, causing stunting, and often, seedling death. Sometimes the best option is replanting the field. Pheromone traps for monitoring lepidopteran pests of sweet corn (European corn borer, corn earworm, and fall armyworm) are being set out around the state; reporting of trap counts will begin the week of June 18.



Symptoms of magnesium deficiency in tomatoes include interveinal chlorosis and leaf curling on lower leaves. Photo: Lee Stivers, (continued on page 20) Penn State

Tools for Writing...

(continued from page 17)

These checklists, logs and forms are templates that may also be useful as sections in your farm food safety plan:

- Annual self-audit
- Pre-harvest risk assessment
- Animal and wildlife monitoring
- Buyer contact list
- Employee training log
- Equipment cleaning log
- Manure application records
- Packing house cleaning log
- Restroom cleaning log
- Traceability mock recall exercise
- Truck checklist
- Wash water treatment log
- Equipment list

Links to these resources are available at <https://extension.psu.edu/tools-for-writing-a-farm-food-safety-plan>.

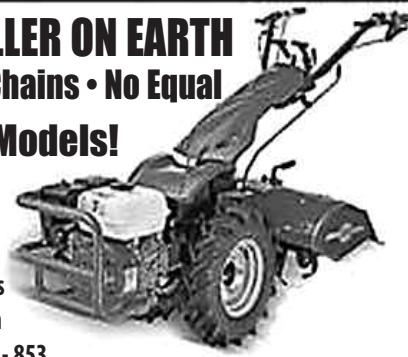
Dr. LaBorde is with the Department of Food Science at Penn State Univ. and Ms. Stivers is with Penn State Extension in Washington Co. From Penn State Extension at <https://extension.psu.edu/tools-for-writing-a-farm-food-safety-plan>?



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GENERAL

Worker Protection Standard Update

James Harvey



Photo: Penn State Pesticide Education

The 2015 EPA Worker Protection Standard (WPS) revision is now in full effect with the only exception being the requirement for new training materials.

EPA has delayed the requirement for the revised training materials "for the time being." However, Pennsylvania growers can now get free copies of the new EPA approved materials by contacting Jim Harvey at jdh18@psu.edu or calling him at 814-863-8214. Both worker handbooks, training DVDs, and revised posters are available.

According to the revision, you must train your workers and handlers every year, and there is no longer a grace period for training. All workers must be trained before they begin work in an area where a pesticide has been used, or a restricted-entry interval has been in effect over the past 30 days. After the training, workers should sign a sheet acknowledging that they have been trained and the employer must keep the sign-off sheet for at least two years. There was an update in the revision that now requires handlers and early-entry workers to be at least 18 years old. However, this does not apply to the owner's immediate family, which includes spouse, parents, stepparents, foster parents, children, stepchildren, foster children, brothers, sisters, in-laws, grandparents, grandchildren, aunts, uncles, nieces, nephews, and first cousins.

One new requirement of the WPS revision is related to respirators. If the chemical label requires the use of a respirator, then a medical evaluation, fit test, and training are required. The requirement is a label requirement and owners, and their immediate family members are NOT exempt. Respirator use adds physical stress to the pesticide handler because it takes effort above what is usual to inhale and exhale through the respirator filters.

A medical evaluation can be done online or by a physician or licensed health care professional who is, making sure the handler can accept this additional stress and is medically able to use the respirator. Both options require a fee and are offered by various providers, including 3M. The 3M website claims that

(continued on page 20)

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VEGETABLE PRODUCTION

Vegetable and Small Fruit... (continued from page 18)

season with lots of rainfall. There is one report of tomato plants shipped to a garden center in northeastern Pennsylvania that were infected with late blight; these plants were destroyed.

Early varieties of tomatoes in high tunnels are developing heavy fruit loads, although some problems with flower abortion due to the cold, wet weather have also been observed. Magnesium deficiency, a fairly common occurrence, is also starting to appear. Magnesium deficiency symptoms include interveinal chlorosis (yellowing) and curling on the lower leaves. Tomatoes typically scavenge magnesium from the lower leaves to meet the demand of the maturing fruit. While not usually an acute problem, it can be addressed through foliar applications of magnesium (for a quicker fix; 1 lb Epsom salts per 100 gal water) or through the drip irrigation system (greater crop safety; at a rate of 20 lb Epsom salts per acre). While only low levels of bacterial spot have been observed in the high tunnel and greenhouse tomatoes, botrytis grey mold has been much more frequent due to the cold, wet conditions.

Other Vegetables

Other observations around the state include black rot in cabbage, possible Rhizoctonia stem rot in lettuce, flea beetles on cabbage, and asparagus beetles in asparagus. In the Penn State onion trial at SEAREC in Landisville, purple blotch is



Black rot on cabbage, caused by the bacterium Xanthomonas campestris pv. campestris. Note characteristic "V" shaped lesions starting at leaf margin. Photo: Lee Stivers, Penn State

starting to develop. Poor potato emergence has also been observed in select fields due to soft rot issues.

Compiled by Penn State Extension educators and specialists. From Penn State Extension at <https://extension.psu.edu/vegetable-small-fruit-current-issues-mid-june-2018?>, June 15, 2019

Worker Protection... (continued from page 19)

98% of those requiring the medical evaluation are certifiable through the online option. For most handlers, the medical evaluation is a one-time requirement, but a few growers may need to retake the medical evaluation every year or two due to existing medical conditions. Because the medical evaluation is also directed toward OSHA users, the WPS applicants can ignore the portion about the written respirator program.

Following the medical exam, the fit of the respirator is tested. This fit testing is done with the handler using the respirator that will be used on the job. Because different people have different facial structures, not all respirators will work with every person. The use of a loose fitting Powered Air Purifying Respirator (PAPR) will exempt a handler from the annual respirator fit test requirement and will overcome problems passing the fit test with a beard.

The Application Exclusion Zone (AEZ) is a new requirement that prohibits handlers from applying pesticides when anyone is within a 25 foot (for low drift applications) of the application equipment as it dispenses the product or 100 feet of a high drift application. This exclusion is for any human even if they are off the farm property but still within that 25 or 100-foot "halo."

Additional WPS revisions include pesticide safety information, personal protective equipment, decontamination supplies and more. If you would like more information about the WPS revision or would like to meet with a WPS Program staff person at your operation, please contact Jim Harvey at jdh18@psu.edu or 814-863-8214.

Mr. Harvey is with the Penn State Extension Pesticide Education Office. From Penn State Extension at <https://extension.psu.edu/worker-protection-standard-update>.



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VEGETABLE PRODUCTION

What Should I Be Looking For in My High Tunnel Soil Test Report?

Elsa Sanchez and Thomas Ford

Over the last year (2017), we have been working with 27 farmers across Pennsylvania to get a better picture of the soils in their high tunnels. Farmers collected soil samples and sent them to Penn State's Agricultural Analytical Services Laboratory(hereafter "the Lab") for analysis. We are focusing on soil pH in this article.



Photo: Tom Ford, Penn State

Most vegetables grow best with a soil pH between about 6.0 and 7.0. Sweet potatoes and some white potato cultivars are exceptions and grow best with a soil pH around 5.2. pH

uses a logarithmic scale which means that a 1 unit change is a 10-fold difference. For example, a pH of 8.0 is ten times higher than 7.0 and 100 times higher than 6.0. Out of the 27 high tunnels, 13 (48 percent) had a soil pH within the optimal range of

6.0 to 7.0, one (4 percent) was below the range, and 13 (48 percent) were above the range.

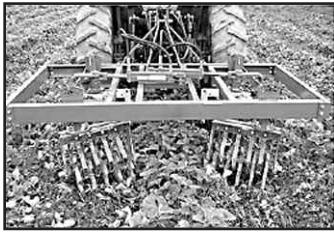
The Lab also tracks soil pH for all samples received for commercial vegetables. This would be a combination of vegetables grown in the field and high tunnels. Out of 1,359 samples in 2016-17, roughly half had a pH within the optimal range, similar to what we saw in the high tunnels. For the



Photo: Tom Ford, Penn State

(continued on page 22)

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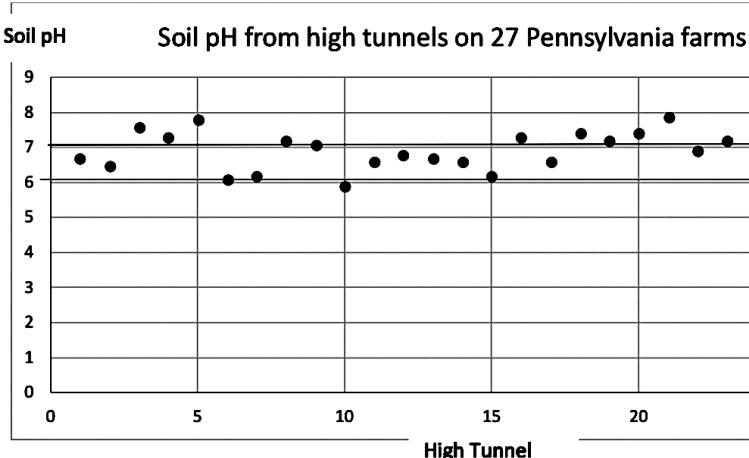
VEGETABLE PRODUCTION

What Should I Be... (continued from page 21)

other half, about 40 percent were below the optimum range, and 60 percent were above the optimum range.

When soil pH was out of the optimal range in the high tunnels, it was almost always higher than 7.0 compared to the combination of field and high tunnel samples where about 40 percent of the time the soil pH was below 6.0 and 60 percent of the time above 7.0. The average soil pH in the high tunnels was 6.9. The average soil pH for commercial vegetable samples at the Lab was a little lower at 6.6.

(Each point on the graph represents the soil pH from an individual high tunnel. The optimal range for most vegetable crops falls between the two red lines.)



Five of the farms we have been working with are certified organic; the remaining 22 are conventional, with several farmers indicating that they use organic growing methods. Certified organic or conventional farming status did not seem to be linked with soil pH with an average of 7.0 from certified organic tunnels and 6.9 from conventional ones.

We wondered if there was a link between using compost in high tunnels and high soil pH. Fourteen of the farmers used compost in their high tunnels. Compost was used in eight tunnels with soil pH above 7.0, and five did not. From another perspective, compost was used in six tunnels with soil pH within the optimal range, and seven did not. A link between using compost and having a pH above 7.0 does not appear to exist. Other issues relating to compost, the amount or type used, for example, may play a role. We were not able to determine that.

Soil pH affects nutrient availability to plants. When pH is not in the optimal range, plants have a hard time getting the nutrients they need. That is why when the pH value is not within the optimum range; it is commonly the first thing we recommend addressing. If the soil pH in your high tunnel is out of the optimal range, it is likely high, and you may need to add sulfur to bring it down.

(continued on page 23)

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VEGETABLE PRODUCTION

What Should I Be... (continued from page 22)

Below is a table from the Lab showing the amount of sulfur to add based on the soil pH you want. A good target is 6.5. For example, if your current pH is 7.5 and you want to change it to 6.5, you would add 1.25 pounds of sulfur per 100 square feet on a loam soil.

Table 1. Amount Of Sulfur Needed To Lower Soil pH To Optimum Level

From Current Soil pH	To Optimum Soil pH	Sulfur lb/100sq ft
6.0	5.5	1.50
6.5	6.0	1.00
	5.5	1.75
7.0	6.5	0.75
	6.0	1.25
	5.5	2.50
7.5	7.0	0.75
	6.5	1.25
	6.0	2.50
	5.5	3.50
8.0	7.5	0.50
	7.0	1.00
	6.5	2.00
	6.0	3.00
	5.5	4.00

Apply sulfur at the above rates for a loam soil. On heavier soil (silt loams) use one-third more than the amount shown. On lighter soils (sandy loams) use one-half of the amounts shown. If aluminum or ferrous sulfate is used to lower pH, multiply the above amounts by 2.5. Follow the same suggestions as above for soil types. If four or more pounds are needed, divide the amount in half and make two applications, six months apart.

Dr. Sanchez is with the Plant Science Department at Penn State Univ. and Mr. Ford is with Penn State Extension in Cambria Co. From Penn State Extension at <https://extension.psu.edu/what-should-i-be-looking-for-in-my-high-tunnel-soil-test-report>.

Sulfur and Vegetable Crops

Gordon Johnson

With the recent heavy, leaching rains, we are seeing signs of sulfur deficiency in some vegetable crops. Sulfur is considered one of the secondary macronutrients that vegetable crops require for growth. Sulfur is a component of four amino acids and is therefore critical for protein formation. It is also a component of certain glycosides that give pungency to mustard family crops (greens, cole crops) and Allium crops (onions, garlic).

In the last 25 years, as industrial air pollution has been reduced (especially pollution from coal fired power plants) we have had less sulfur deposition from rainfall. Sulfur deficiencies are more common and sulfur additions in fertilizers or manures is being required for many crops to produce high yields.

Most of the sulfur in the upper part of the soil is held in organic matter. Upon mineralization, sulfur is found in the soil as the sulfate ion (SO_4^{2-}) which has two negative charges. The sulfate ion is subject to leaching, especially in sandy textured soils (loamy sands, sandy loams). It does accumulate in the subsoil but may not be available for shallow rooted vegetables.

Sulfur can be added by using sulfate containing fertilizers such as ammonium sulfate, potassium sulfate, and K-mag (sulfate of potassium and magnesium). It is also a component of gypsum (calcium sulfate). In liquid solutions, ammonium thiosulfate is often used as the sulfur source. Sulfur is also found in manures and composts. For example, broiler litter has about 12-15 lbs of sulfur per ton.

In vegetable crops, sulfur removal is generally in the 10-20 lb/A range. Mustard family crops (cole crops such as cabbage and broccoli, mustard and turnip greens, radishes) remove between 30 and 40 lbs/A of sulfur. Research in our region has shown response to added sulfur for sweet corn and for watermelons. In Florida research it was shown that adding 25 pounds of sulfur per acre boosted yields by 1.7 tons per acre in tomatoes. Similar results were found with strawberries.

Our general recommendations are to apply 20-30 lbs of sulfur per acre on sandy soils for most vegetable crops. Remember to take credit for any sulfur being added with fertilizer sources such as ammonium sulfate (24% sulfur).

One vegetable where we want to limit sulfur is with sweet onions. Because sulfur increases onion pungency, and sweet onions are sold based on their low pungency, we limit sulfur applications to this crop.

*Dr. Johnson is the Extension Vegetable and Fruit Specialist at the University of Delaware. From the **Weekly Crop Update**, Univ. of Delaware Extension, Issue 26:12, June 15, 2018.*



VEGETABLE PRODUCTION

Downy Mildew Confirmed on Cucumber in Maryland

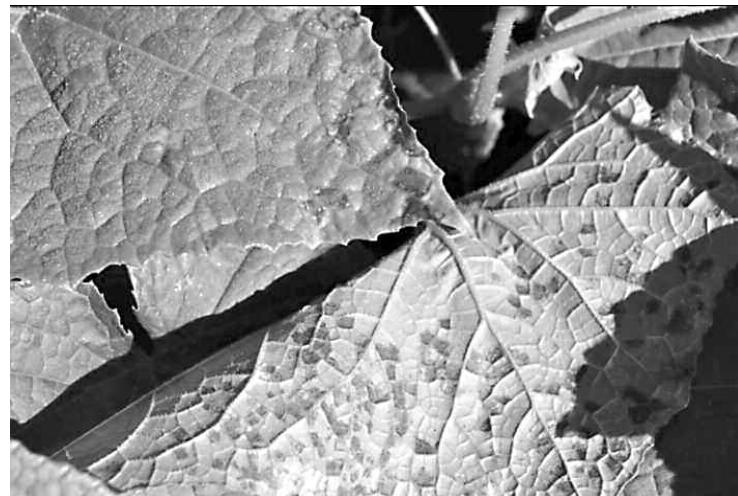
Beth Gugino

Downy mildew has been confirmed in Dorchester Co. MD on cucumber. Last year the first report from the mid-Atlantic was on June 21st from the same county in Maryland. This is the furthest northern report beyond those reported in North and South Carolina and Georgia. In North Carolina and Georgia, cucumbers are primarily affected while in South Carolina downy mildew has been reported on cucumber, butternut squash, acorn squash, yellow/summer squash and cantaloupe.

Fortunately, the weather patterns have restricted the risk area to right along the east coast with the spread remaining local around the source fields. It is never too early to start scouting your cucurbits. Even small seedlings are susceptible. On cucumber look for light yellow (chlorotic) spots that are restricted by the leaf veins. As the disease progresses the spots will become brown. On the lower leaf surface opposite the yellow spots, purplish grey sporulation will be seen under conditions of high humidity. Downy mildew can often be confused with the bacterial disease angular leaf spot (see photos below). The symptoms are very similar; the lesions are initially water soaked in appearance before turning brown or straw-colored and are also vein limited. The lesions will often dry and drop out, leaving irregular shaped holes in the leaves. If you do not see downy mildew sporulation in the field, place several symptomatic leaves in a sealed bag overnight and then check for purplish gray sporulation the next day.

Different cucurbit crops are susceptible to different strains of the pathogen which is why we do not see it on all our different types of cucurbits at the same time. Usually we see it on cucumber and cantaloupe/musk melon first in the season and on jack-o-lantern pumpkin later in the season.

Remember that the pathogen that causes cucurbit downy mildew does not survive overwinter unless on living plant tissue so for Pennsylvania growers, the pathogen is typically moving in via long-distance transport from other infected fields some-



Downy mildew lesions on the upper surface of a cucumber leaf and water soaking on the underside early in the morning. (Photo credit: Beth Gugino).

times over 100 miles away. Awareness of where potential sources of the pathogen and forecasted weather conditions can help guide in-season management decisions. For the latest information on outbreaks and to receive email or text alerts please visit the Cucurbit Downy Mildew Forecasting website. Updates will also be made to the 1-800-PENN-IPM hotline weekly or more frequently if needed to provide growers with information that can be used to help make timely management decisions. The forecasted risk maps are also based on knowing where there are downy mildew infected fields (sources of the pathogen) so it is important if you suspect downy mildew on your farm to let me know either by email at bkgugino@psu.edu or by phone at 814-865-7328 or contact your local Penn State Cooperative Extension Office.

Late Blight Confirmed on Tomato Transplants in PA and NY

Beth Gugino



Late blight was confirmed by the PA Department of Agriculture on transplants that were supplied from New York State to a smaller garden center in far northeastern region of PA (Susquehanna Co.). These plants have since been destroyed

Irregularly shaped late blight lesion on a tomato leaf with characteristic white sporulation on the underside of the leaf. (Photo credit: Beth Gugino).

but some plants from a previous shipment were sold and may be planted out in some nearby gardens. Plants from this supplier were not shipped to any other garden centers in PA. Late blight was also confirmed on transplants in New York and subsequently destroyed as directed by NYS Department of Agriculture and Markets. According to NYS Ag and Markets and the Cornell Plant Disease Clinic, the late blight strain detected is not one of the known or common strains that we have typically seen over the past several years. Researchers at Cornell are working to further characterize the isolate. Unfortunately, the sample collected from the PA transplants was too degraded to determine the genotype.

Keep in mind that tomato and potato are susceptible at any growth stage. It is characterized by lesions that are irregular in shape and initially water-soaked and pale-green before turning more gray-brown in color. Under humid conditions, the lesions on the underside of the leaves will sporulate giving them

(continued on page 25)

VEGETABLE PRODUCTION

Seldom Seen Tomato Disease Found in High Tunnel

Jerry Brust and Karen Rane

A root disease that is most commonly associated with potato has turned up on tomato in a high tunnel last week. This disease goes by the delightful name of black dot root rot. The causal agent is *Colletotrichum coccodes*, which also causes anthracnose fruit rot on tomato (sunken, water-soaked, circular lesions). *C. coccodes* infection on tomato roots appears as lesions on the root surface that produce black microsclerotia (the 'black dot' in its name) (Fig. 1). Infected plants will sometimes wilt, with the lower and middle leaves of the plant turning yellow. *C. coccodes* has a very large host range, which includes members of Solanaceae, Cucurbitaceae and Leguminosae, both crops and weeds. Nightshade in particular (a solanaceous weed) can harbor the fungus, often without showing symptoms. The pathogen can survive in the soil for up to 8 years as microsclerotia.

This pathogen causes problems only under poor growing conditions or when other pathogens are present. The disease occurs in greenhouses or high tunnels where there has been a continuous cropping of tomato for several years, resulting in very high levels of inoculum. Other conditions that can be encountered in high tunnels, such as high soluble salt levels, low pH, low or excessive fertilization, high temperatures and water stress, can predispose plants to infection and root rot by *C. coccodes*. These infected plants can at times show few symptoms, but still be responsible for yield reductions.

Management

The disease can be prevented by growing in optimal conditions for tomato in the high tunnel. Deep plowing (12-15 inches, not easy to do in a high tunnel, we know) degrades infected plant debris more rapidly and buries propagules, both of which

Late Blight Confirmed...

(continued from page 24)

a white fuzzy appearance. The lesions will tend to develop on the upper to middle part of the plant as opposed to early blight and Septoria leaf spot (tomato only) that start on the lower leaves and progress up the plant.

Although not reported in PA this season, there have been numerous reports of *Phytophthora nicotianae* on both potato and tomato in North Carolina due to the excessive wet weather. The symptoms can look very similar to those of late blight however, this pathogen does not produce a lot of spores so fuzzy white sporulation will not be observed on the leaves. Symptoms tend to develop on the lower part of the plant as a result of soil splashing.

If you suspect late blight on your farm, please contact your local Penn State Extension Office or let Beth Gugino know via email at bkgugino@psu.edu or by phone at 814-865-7328. We are interested in collecting samples so we can better understand how the pathogen population is changing both within and across growing seasons. Also for the information regarding where the latest confirmed outbreaks have been reported and to receive email or text alerts about when late blight has been confirmed with a personally defined radius from your location visit <http://usabligh.org>.

Dr. Gugino is with the Department of Plant Pathology and Environmental Microbiology at Penn State University. From the **Pennsylvania Vegetable Disease Update**, Penn State Extension, June 20, 2018.



K Rane

Figure 1. Black dots (microsclerotia of *C. coccodes*) on tomato root

may help reduce fungal populations. Steam sterilization of the soil, or soil solarization for 8 weeks, can reduce disease incidence. Crop rotation is another tried and true management plan if growers can rotate out of any solanaceous, leguminous or cucurbit crops for 3-4 years — something most growers may not be able to accomplish. What may be the best solution for high tunnel growers with heavy inoculum levels of this disease is to move the high tunnel to different ground. Grafting is another possibility, but the plants in this high tunnel were grafted tomato plants, a different root stock may be resistant or more tolerant of the disease, but this is something that would need to be checked before using. Small grain or corn can be used in rotation in the field to reduce fungal populations.

Dr. Brust is the IPM Vegetable Specialist and Ms. Rane is with the Plant Diagnostic Lab, both at the Univ. of Maryland. From the **Weekly Crop Update**, Univ. of Delaware Extension, Issue 26:12, June 15, 2018.

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BERRY PRODUCTION

Causes of Strawberry Blossom Blights and Dried Berries

Kathleen Demchak

The warm wet weather the past couple of weeks together with high humidity is creating perfect conditions for a number of strawberry diseases.

Are your berries turning brown and drying up? Check to see that the pedicle is not damaged. Photo: Kathy Demchak, Penn State

Some growers are noticing that the later blossoms on their strawberries are failing to set fruit, and instead, are just turning brown and drying up.

This can be a little puzzling since the cause often is not obvious. Two things could be happening – one is that the flower itself was infected and colonized by a disease—often botrytis, which is usually fairly obvious once the gray fuzziness becomes apparent. However, a second cause is often that the pedicle (the little stem connected directly to the berry) or the tissue that connects the pedicle to the berry may have been damaged. When this happens, the flow of water and nutrients to the flower bud or developing fruit is stopped as the tissue collapses. The flower bud or tiny developing berry then simply dries up and turns brown. Anthracnose commonly causes this type of blight, especially in anthracnose-susceptible varieties.

So, how can one figure out what might be going on? It is beneficial to take a close look at other clues that are present in the planting and consider other factors such as timing, weather conditions, and variety. If symptoms showed up early while it was still cool and wet, then botrytis could be involved. If growing an anthracnose-susceptible variety, such as Chandler, perhaps anthracnose is the more likely issue. Are there other



symptoms present, such as leaf spots, or lesions on runners or caps? Are there symptoms of angular leaf spot (clearing of tissue when holding leaves up to the light, or completely brown or black caps)? While more than one disease may be present at the same time, a severe case of any particular disease is likely to cause multiple symptoms on the same plant, including blossom blights and berries that fail to form.

Ms. Demchak is with the Department of Plant Science at Penn State Univ. From Penn State Extension at <https://extension.psu.edu/causes-of-strawberry-blossom-blights-and-dried-berries>, June 19, 2018.

POTATO PRODUCTION

Poor Emergence Observed in Some PA Potato Fields

Beth Gugino

Thanks to the excessively wet conditions, there have been a number of reports of poor potato seed emergence over the past couple of weeks. Upon inspection, growers have either found decaying seed pieces or symptoms of blackleg on emerging plants. Blackleg has typically been caused by the bacterial pathogen *Pectobacterium atrosepticum* but in some cases more recently it has been caused by a species of *Dickeya*. Both bacterial pathogens are seed-borne so it is common to see symptoms associated with specific seed lots and cultivars. Blackleg caused by *Dickeya* is described as being more aggressive and favored by warmer temperatures. So far this season, *Dickeya dianthicola* has been confirmed in New Jersey on 'Norwis' potato that originated from Prince Edward Island and *Pectobacterium* spp. confirmed on 'Dark Red Norland' originating from P.E.I and 'Atlantic' from Maine. The pathogens associated with the samples submitted from PA potato fields are still in the process of being identified. If you suspect black leg in your field, please contact me by email at bkgugino@psu.edu or by phone at 814-865-7328 and/or submit a sample to the Penn

(continued on page 27)



Potato stem with characteristic blackleg symptoms. (Photo credit: Beth Gugino).



POTATO PRODUCTION

Poor Emergence... (continued from page 26)

State Plant Disease Clinic (<http://plantpath.psu.edu/facilities/plant-disease-clinic>). We are interested in collecting samples for confirmation of blackleg as well as determining whether it is caused by *Pectobacterium* or *Dickeya*.

Dr. Gugino is with the Department of Plant Pathology and Environmental Microbiology at Penn State University. From the Pennsylvania Vegetable Disease Update, Penn State Extension, June 20, 2018.

Weekly Vegetable IPM Updates Available

The Vegetable Marketing and Research Program in cooperation with Penn State and PVGA publish a weekly update on sweet corn insect pest counts and information tomato, potato and cucurbit disease conditions with recommendations for appropriate control measures and other information. It is available by regular mail, by email and by fax. Contact PVGA at 717-694-3596 or pvga@pvga.org to be added to the list to receive these updates.

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