

PVGA Membership Sets Another New Record at 1,063

For 2017, PVGA membership again reached its highest level in recent history at 1,063 members, up from 1,008 in 2016. In 2011 PVGA reached its long-held goal of having 1,000 members. Membership reached 1,004 to be precise. In 2012, membership dropped to 986 and in 2013 it dropped again to 961. While the increases in the last four years are steps in the right direction, the Census of Agriculture indicates there are over 3,300 farms in Pennsylvania that grow an acre or more of vegetables. Thus, PVGA has a large potential membership as yet untapped.

The Directors have set a goal of retaining 90% of the previous year's members and recruiting 15% new members each year. Unfortunately for 2017 only 85% of last year's members rejoined although the goal of 15% new members was exceeded as 20% are new members – that is they were not members in 2016. Membership has increased over the previous year in six of the last ten years, increasing 17% in that time period from 911 in 2008.

PVGA is completing its 91st year as an association. The Directors are fully aware that membership goals can only be met and maintained by providing an adequate return to members for their dues investment.

As a result of the Vegetable Industry Strategic Planning Initiative which the Association and the Pennsylvania Vegetable

Marketing and Research Program (PVMRP) undertook in early 2014, the Association and PVMRP applied for and received a Specialty Crop Block Grant from the Department of Agriculture. The grant will allow PVGA and PVMRP to use \$30,000 to further develop both groups' abilities to better serve the growers of Pennsylvania.

Meanwhile, however, the Association strove to continue to provide a good return on members' dues investment in 2017 with the following ongoing activities and member services:

- PVGA helped sponsor the 2017 Mid-Atlantic Fruit and Vegetable Convention – the premier grower meeting of its kind on the east coast.
- PVGA published the Pennsylvania Vegetable Growers News, its own 28-plus-page monthly newsletter with pertinent information for the Pennsylvania vegetable, potato, berry or greenhouse vegetable grower.
- PVGA produced a weekly PVGA Update email for members with email capability to keep members regularly updated about the Association as well as pertinent articles of interest on the internet.
- PVGA provided \$77,100 for vegetable and small fruit research in 2017 - bringing the Association's total for research contributions to \$1,019,000 over the last 29

(continued on page 13)

Charlie Arnot Will Be Keynote Speaker at 2018 Mid-Atlantic Convention

This year's keynote speaker for the Mid-Atlantic Fruit and Vegetable Convention is Charlie Arnot, a recognized thought leader in food and agriculture and CEO of The Center for Food Integrity. His topic will be "Values, Trust and Science: Building Trust in Our Post-Truth Tribal World" He will provide unique, research based insight into building trust with today's consumer. You will leave the session knowing three things you should start doing, and three things you should stop doing to make your conversations about your fruit and vegetable operations 100% more effective.



Charlie Arnot

The 2018 Mid-Atlantic Convention will be held January 30 to February 1, 2018, at the Hershey Lodge and Convention Center in Hershey, Pennsylvania. Over 2,400 fruit, vegetable, and berry growers and other industry persons from throughout the mid-Atlantic region and beyond are expected to attend. This

year's convention will again feature several pre-convention workshops, a farm market bus tour, and a trade show with over 170 exhibitors plus three full days of seven or more concurrent educational sessions.

Charlie Arnot is highly regarded as both a writer and sought-after speaker who engages audiences across the globe. Charlie has more than 25 years of experience working in communications, public relations and issues management within the food system. He serves as CEO of The Center for Food Integrity, a non-profit organization dedicated to building consumer trust and confidence in today's food system. He is also the founder and president of Look East, an employee-owned consulting firm with offices in Missouri and Iowa.

One client said of Charlie's work, "Others help us talk about our business, you help us think differently about who we are and what we do." His commitment to excellence, innovation and integrity have positioned him as a trusted counselor to CEOs, government leaders and executives, and as a respected industry advisor on critical issues within the food system. Clients and

(continued on page 14)

NEWS



**Pennsylvania
Vegetable Growers
Association**

*An association of
commercial vegetable,
potato and berry growers.*

President

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York

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Jonathan Strite '19

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New Alexandria

Michael Orzolek '18

State College

Christopher Powell '20

Strasburg

Rita Resick

Somerset

John Shenk '20

Lititz

Jeffrey Stoltzfus '20

Atglen

Thomas Strzelecki '18

Wapwalopen

Randy Treichler '18

Three Springs

Mark Troyer '18

Waterford

Timothy Weiser '19

York Springs

Executive Secretary

William Troxell

Richfield

Needed: Nominations for PVGA Directors

The terms of six members of the PVGA Board of Directors expire at the Annual Meeting scheduled for Wednesday, January 31, 2018, at the Mid-Atlantic Fruit and Vegetable Convention in Hershey. The Directors whose terms expires are:

Brian Campbell – Berwick – first elected 2007

Eric Oesterling – New Alexandria – first elected 2015

Michael Orzolek – State College – first elected 2015

Thomas Strzelecki – Peckville – first elected 2012

Randy Treichler – Three Springs – first elected 2015

Mark Troyer – Waterford – first elected 2015

All would be eligible for re-election under the 18-year term limits set by the Board however Mr. Oesterling and Mr. Treichler have indicated they do not wish to run for re-election.

Like last year, the election will be conducted by a mail-in ballot that will be mailed to all members with the dues renewal notices in late November/early December. The Leadership and Recognition Committee will be seeking additional nominees to be included on the ballot. Members who want to nominate someone for Director, or who would like to be considered, should contact the PVGA office at 717-694-3596 or pvga@pvga.org or Robert Shenot, who as Past President serves as chair of the Committee at rshenot@consolidated.net.

PVGA Young Grower Award Applications Being Accepted

The "PVGA Young Grower" award was a new award established this year. Brandon Christner was the first recipient at the 2017 Mid-Atlantic Convention. The winner is chosen each year by the PVGA Leadership and Recognition Committee. PVGA members are asked to nominate a young grower (someone they know or themselves) who meets the criteria for the Award. The criteria are as follows:

- is a PVGA Member who is 35 years old or younger;
- has been successfully growing vegetables, potatoes or berries for less than five years; and
- has contributed to advancing or promoting the Pennsylvania vegetable, potato or berry industry.

The prize for the winner will be free registration and lodging for the 2018 Mid-Atlantic Fruit and Vegetable Convention. To nominate someone or yourself, send a brief but comprehensive description of the farm operation and the nominee's qualifications to PVGA at pvga@pvga.org or 815 Middle Road, Richfield, PA 17086, by November 30, 2017.

We Need Your Help at the Farm Show!

Each year over 200 PVGA members and friends volunteer at the PVGA Food Booth at the Pennsylvania Farm Show in Harrisburg. We need at least 25 volunteers in the booth at all the times. Since the Farm Show runs from 8:00 a.m. to 9:00 p.m., we need two shifts to completely cover each day from January 6 to 13, 2017. That translates into a lot of volunteer hours. Plus, this year we will again be open the afternoon of Friday, January 5, from noon to 9:00 p.m.

You say you don't come to the Farm Show? Why not break tradition and come for once? It's worth the trip just to volunteer your time to the Association and any farmer is bound to see at least a few things of interest at the Farm Show. There is a wide array of exhibits throughout the Complex. Are you really too busy in the middle of the winter to take a day off to help support vegetable and small fruit research? Last year we earned about \$170 for each volunteer shift enabling the Association to give over \$72 per member to Penn State research.

We are grateful to the many PVGA members who help out each year but we need new volunteers each year. If YOU have never helped before, PLEASE call us today at 717-694-3596 and volunteer for 2017. You'll be helping your Association besides having an enjoyable time.

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 - pvga@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.

House Judiciary Committee Approves Ag Labor Act

The House Judiciary Committee approved by a vote of 17-16 a bill to create a new, workable agricultural guestworker program for America's farmers and ranchers.

H.R. 4092, the Agricultural Guestworker Act (AG Act), authored by House Judiciary Committee Chairman Bob Goodlatte (R-Va.), replaces the outdated and broken H-2A guestworker program with a reliable, efficient, and fair program. The H-2A program is widely known to be expensive, time-consuming, and flawed. Each year, employers using the H-2A program have to comply with a lengthy labor certification process that is slow and plagued with red tape. As a result of complying with H-2A regulations, employers using the program almost always find themselves at a competitive disadvantage in the marketplace.

To provide American farmers with access to a legal, stable supply of workers, the AG Act creates a new H-2C guestworker program designed to meet the needs of the diverse agriculture industry. The program covers year-round employers, like dairies, aquaculture operations, food processors, and others. Further, the AG Act allows experienced unauthorized agricultural workers to join the H-2C program and provides more flexibility to American farmers with respect to housing, transportation, and touchback periods. The AG Act will be administered by USDA rather than the US Dept. of Labor.

Chairman Bob Goodlatte said the following on today's Committee approval of the AG Act:

"Farming is a central part of American life and fuels our economy. Although no other country in the world rivals

America's agriculture industry, our nation's farmers face many obstacles in today's global economy. One challenge in particular is access to a stable and reliable workforce when not enough American workers can be found to fill jobs. The current agricultural guestworker program is unworkable for farmers, buries them in red tape and excessive costs, and must be replaced.

"The House Judiciary Committee today approved the AG Act to replace the broken H-2A program with a reliable, efficient, and fair program and provide American farmers access to a legal, stable supply of workers for seasonal as well as year-round work. These changes will help ensure that our meat and produce continue to be grown in America and that our nation's agricultural industry thrives in the global marketplace. I look forward to continue working with Members of Congress on this bill so that farmers can continue growing our food and our economy with the assurance that their labor needs will be met."

While the AG Act is a major step in the right direction, agricultural industry groups have some concerns over several provisions. One of the major concerns is an amendment added by the committee that would apparently require undocumented workers already in the United States to return to their home countries before they would be eligible for an H-2C visa. Previously the bill would have allowed them to remain in the U.S., apply for an H-2C visa and work for period of time before requiring them to return to their home country for a "touchback" stay. It is feared that few undocumented workers would risk returning to their home countries with no guarantee of being granted an H-2C visa to come back to the U.S.

National News Briefs

Act Now: Tell Congress Farmers Need Tax Reform

Tax reform is taking center stage in Washington with Congressional leaders and the White House releasing an outline of their goals. While this tax reform framework is promising, it is still just a framework and there is much work to be done. It is important that Congress gets the details of tax reform right so that farmers don't wind up facing a tax increase. Please help that happen by telling Congress to reform the tax code so that it is simpler, more transparent, revenue neutral and fair to farmers. We believe tax reform should help all farm businesses, including sole proprietors, partnerships and sub-S corporations; reduce effective tax rates by cutting income tax rates enough to make up for any deductions lost; allow businesses and farms to deduct expenses when they are incurred; repeal estate taxes and continue stepped-up basis, which sets the value of land and buildings at what the property is worth when inherited; and lower taxes on capital investments. Please contact your members of Congress and urge them to pass tax reform that's friendly to farmers by responding to Pennsylvania Farm Bureau's action alert at www.pfb.com/taxreform or by contacting members of Congress directly.

From Farm Bureau Express, Penna. Farm Bureau, October 20, 2017.

Farmers Urge EPA to Ditch the Rule

Pennsylvania farmers made it clear to federal regulators that they want to see the controversial Waters of the U.S. (WOTUS) repealed once and for all.

More than 600 grassroots Pennsylvania Farm Bureau members contacted the U.S. Environmental Protection Agency

during a public comment period on the agency's plan to rescind the controversial regulation. EPA must now review the comments before proceeding with next steps.

WOTUS gives EPA and the U.S. Army Corps of Engineers broad authority to regulate many land areas as "water" and would affect an estimated 98 percent of Pennsylvania land. The rule was issued in 2015 by former President Barack Obama's administration but never went into effect because of injunctions issued by federal courts that questioned the rule's legality.

PVGA, PFB and the American Farm Bureau Federation also submitted official comments to EPA, calling for the repeal of WOTUS.

"Farmers support clean water and work hard to protect our natural resources," PFB Director of Regulatory Affairs Grant Gulibon wrote in PFB's comments to EPA. "However, the 2015 rule has more to do with land than water. It is a 'land grab' that creates a huge regulatory burden for farmers and others who depend on their ability to work the land; increases costs for farmers and others; and produces confusion and uncertainty."

From Penna. Agricultural Alliance Issues Update, Penna. Farm Bureau, October 2017.

Protect Your Credit, Watch Out for Scams After Equifax Breach

With news that 143 million Americans' personal information was recently exposed in a data breach at Equifax, it's important that you take steps to protect yourself against identity theft that could have devastating consequences for your family, farm or business.

(continued on page 4)

NEWS

State News Briefs

Bill to Ease Regulations on High Tunnels Clears State House

A proposal to exempt certain high tunnel structures used to extend the growing season of locally grown produce from stormwater management planning has passed the state House. House Bill 1486, sponsored by Rep. David Zimmerman of Lancaster County, passed the House with bipartisan support and now heads to the state Senate for consideration. The bill would prevent municipalities from requiring that farmers submit stormwater management plans on high tunnel structures that meet common sense guidelines clearly identified in the legislation. Pennsylvania Farm Bureau supports the measure and believes farmers applying this technology on their farms should be free of the burdensome paperwork, delay and cost often imposed by local regulation. More and more farmers are using high tunnels to extend the growing season to meet increasing consumer demand for fresh, local fruits and vegetables.

From Farm Bureau Express, Penna. Farm Bureau, October 20, 2017.

Bill to Ease Construction Rules for Roadside Stands Heading to Governor

A Pennsylvania Farm Bureau-supported bill that would exempt seasonal farm stands from the burden of complying with regulations that govern construction of permanent buildings has passed the General Assembly. The state House recently voted to agree with changes the Senate made to House Bill 176, which is sponsored by Rep. Tina Pickett of Bradford County. The bill now heads to Gov. Tom Wolf for his signature. Some municipalities have required that even seasonal farm stands meet the requirements of the Uniform Construction Code. The bill would exempt from those rules farm stands that are 1,000 square feet or smaller and open on at least 25 percent of the perimeter when in use. A related bill that would exempt maple

National News Briefs *(continued from page 3)*

Hackers obtained Social Security numbers, birth dates, addresses, driver's license numbers, credit card numbers and other data through the attack on Equifax, one of three companies that gathers and reports information about consumers' credit.

To protect against identity theft, check your credit reports, bank accounts and credit card statements regularly and consider placing a freeze or fraud alert on your credit. Equifax is offering all consumers a year of free credit monitoring. For more information, visit www.equifaxsecurity2017.com.

The Federal Trade Commission has information online to help consumers navigate options for freezing or placing fraud alerts on their credit and taking other measures to protect themselves. To learn more, visit <http://bit.ly/2ffjGH>.

Some scammers are taking advantage of the data breach by trying to collect personal information by calling consumers and posing as representatives from Equifax. It's important to remember that Equifax will not call you unsolicited and you should never give out personal information over the phone unless you've initiated the call to a number you know is correct. Do not trust caller ID because scammers can make it appear they are calling from a company when they are not.

From Penna. Agricultural Alliance Issues Update, Penna. Farm Bureau, October 2017.

sugar houses from such codes cleared the House and awaits action by the Senate Labor and Industry Committee.

From Farm Bureau Express, Penna. Farm Bureau, October 20, 2017.

Noxious Weeds Update Passes Senate

A Pennsylvania Farm Bureau-supported update to the state laws governing control of noxious weeds has cleared the state Senate. House Bill 790, by Rep. Eddie Day Pashinski of Luzerne County, now returns to the House, which must vote on whether to approve changes to the legislation made in the Senate. The House passed an earlier version of the bill in May. The measure would add to the list of noxious weeds to be controlled several new species that are adversely affecting agriculture. It would also, by default, include weeds that are on the federal list and allow the state Controlled Plant and Noxious Weed Committee to conduct studies to add or delete plants from the list. The bill would also allow beneficial weeds with the potential to become invasive - such as *Miscanthus*, which is used for bio-fuel - to be cultivated in a controlled environment with a permit for research.

From Farm Bureau Express, Penna. Farm Bureau, October 20, 2017.

State Funding Available for Agricultural Plans in Chesapeake Bay Watershed

Farmers in the Chesapeake Bay Watershed can get funding from the state to help cover the cost of developing water-quality-related plans for their farms. Farmers in the watershed are required to implement one or more plans for manure management, nutrient management, and agriculture erosion and sediment control. Enlisting technical experts to help develop those plans can cost \$500 to \$1,500 per plan depending on the size of the farm. Through the state program, farmers can seek reimbursement for plans developed during 2017 or later. The program is set up to cover the cost of at least 800 and up to 2,200 plans. The deadline to register to participate is April 1. Farmers in Bradford, Cameron, Carbon, Centre, Clearfield, Clinton, Columbia, Elk, Jefferson, Lackawanna, Luzerne, Lycoming, McKean, Montour, Northumberland, Potter, Schuylkill, Snyder, Sullivan, Susquehanna, Union, Tioga, Wayne, and Wyoming counties should contact Sara Bolton of Larson Design Group at 570.374.5700 or sbolton@larsondesigngroup.com. Farmers in Adams, Bedford, Berks, Blair, Cambria, Chester, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Indiana, Juniata, Lancaster, Lebanon, Mifflin, Perry, Somerset, and York counties should contact Jedd Moncavage of TeamAg at 717.721.6795 or jeddm@teamag-inc.com.

From Farm Bureau Express, Penna. Farm Bureau, October 20, 2017.

Understanding the Referendum on Property Taxes

In November, voters across Pennsylvania will have a chance to weigh in on whether to change the state Constitution to alter a program that offers property tax reductions for homes and farms.

The proposal—which will appear as a ballot question in the upcoming Nov. 7 election—would increase the maximum level of property tax relief a school district or other taxing body (such

(continued on page 6)



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NEWS

State News Briefs *(continued from page 4)*

as a county or municipality) may allow through the homestead/farmstead exemption.

That program allows districts to exempt a portion of the assessed value of eligible properties from taxation as long as that revenue is made up through other means.

For farm properties, eligibility for that relief is limited. Farmland does not qualify at all for the exemption. And only farm buildings located on properties where the landowner lives are eligible.

The proposed Constitutional amendment would increase the maximum amount of a property's assessed value that districts may exempt from taxes. Now, that exemption is capped at 50 percent of the median assessed value of residential properties in the district. With the change, the cap would essentially be eliminated. Taxing districts would be allowed to exempt to up 100 percent of the assessed value of each property eligible for relief.

So what would the proposal's adoption mean for taxpayers? Not much unless further action is taken to generate the revenue needed to pay for tax relief.

Districts won't be able to allow a greater homestead/farmstead exemption if they don't have another funding source to pay for it. State law prohibits districts from simply increasing the property tax millage rate and using the funds to provide relief for homeowners while businesses pay more.

Currently, most homestead/farmstead relief is funded through the state's share of casino slot revenue, which is distributed to school districts to provide the exemptions. But for most districts, that funding is well below even the maximum amount of relief allowed now. So unless state lawmakers approve an additional source of state funding for the exemptions—such as higher sales or income taxes—landowners would not likely see any additional property tax relief from voters approving the referendum.

But even under the best of circumstances, the change would not provide meaningful property tax relief to farmers because there would still be limits on what types of agricultural property are eligible for relief.

From Penna. Agricultural Alliance Issues Update, Penna. Farm Bureau, October 2017.

Pennsylvania Farm Bureau to Offer Campaign Classroom

With the 2018 elections looming, Pennsylvania Farm Bureau is offering a nationally-recognized seminar designed to help individuals run a successful campaign.

PFB will host the Campaign Classroom, a two-day, non-partisan program that delves into several aspects of running a campaign for elected office. Strategies offered in the school are helpful for any elected office—from the local level to national—and include identifying and communicating with swing voters, dealing with the media, effective fundraising and getting out the vote.

The focus is on campaign strategy and management, not on issues or philosophy. The school is taught by Kristina Watson, PFB's Director of Federal Government Affairs and Darrin Youker, PFB's Director of State Government Affairs, both of whom have backgrounds in communications, media relations and public speaking in addition to advocating for Farm Bureau.

The program will be offered Nov. 29 and 30 at PFB's office in Camp Hill and costs \$100 for Farm Bureau members and \$175 for non-members.

Registration deadline is Nov. 8. Contact Ginny Keever at 717.761.2740 or vkkeever@pfb.com to register or for questions. For more information, visit www.pfb.com/campaign.

Make Your Voice Heard in Local Elections

Policies that can help or hurt agriculture don't just come from Harrisburg and Washington. Decisions made by local and county governments often have far more direct effect on farm families and agribusiness than those made by the state or federal governments.

Local leaders pass laws that may boost or restrict agricultural operations. They make decisions that affect quality of life for farm families and other rural Pennsylvanians. And they have a say over many of the factors that affect farm businesses—from property taxes to infrastructure to land use.

Across the commonwealth, Pennsylvanians will have a chance to elect local government leaders in the Nov. 7 general election.

Voters in many areas will elect township supervisors or commissioners or borough or city council members. Such leaders make decisions about zoning, land use regulations, road maintenance and municipal taxes. Voters in some counties will elect county commissioners and row officers. County commissioners often oversee programs such as farmland preservation and Clean and Green as well as other regional agriculture initiatives.

Across the state, voters will also elect school board members who make decisions about school curriculum, property taxes and budgets. Voters in some counties will elect local judges and across the state, voters will elect judges to fill vacancies on statewide appellate courts.

While races for president, governor or Congress tend to be the ones that grab headlines, elections for local officials are just as important for agribusiness and life in rural Pennsylvania.

To register to vote, obtain an absentee ballot, find your polling place or learn more about voting, visit www.votespa.com.

From Penna. Agricultural Alliance Issues Update, Penna. Farm Bureau, October 2017.

Input Sought on State Pollinator Plan

Penn State researchers and the Pennsylvania Department of Agriculture are seeking input from farmers and other people interested in the health of pollinators as they finalize the state's proposed Pollinator Protection Plan.

The document, developed in response to a directive from the U.S. Environmental Protection Agency, lays out strategies for protecting bees and other insects that pollinate nearly 75 percent of the commonwealth's food crops.

"The Pennsylvania Pollinator Protection Plan is a living document that will change over time as researchers and interested citizens share personal experience and best practices when it comes to protecting and expanding pollinator populations," Pennsylvania Agriculture Secretary Russell Redding said.

Pollinator populations have steadily declined in recent years. At the same time, pollinators play a critical role in the production of fruit and vegetable crops.

"Many of our favorite foods depend on bees, flies and others to transfer pollen between plants. They are critical to the

(continued on page 9)

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NEWS

2017–2018 FSMA Trainings

Bedford County | November 3, 2017
Travelodge Bedford
4517 US 220 Business, Bedford, PA
814-445-8911

Erie County | December 5, 2017
Erie County 911 Center
2880 Flower Rd., Erie, PA
724-627-3745

Columbia County | December 13, 2017
Columbia County Extension Office
702 Sawmill Rd., Bloomsburg, PA
570-988-3950

Berks County | January 18, 2018
Berks County Ag Center
1238 County Welfare Rd., Leesport, PA
610-378-1327

Hershey MAFVC | January 29, 2018
Hershey Convention Center
Hershey, PA
717-694-3596

Westmoreland County | February 13, 2018
Donohoe Center
214 Donohoe Rd., Greensburg, PA
724-627-3745

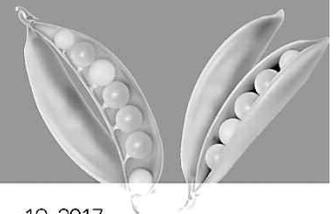
Philadelphia County | February 13, 2018
Philadelphia County Extension Office
675 Sansom Street, Philadelphia, PA
215-471-2200

Lehigh County | February 20, 2018
Penn State Lehigh Valley
2809 Saucon Valley Rd., Center Valley, PA
610-391-9840

Lancaster County | February 28, 2018
Lancaster County Farm & Home Center
1383 Arcadia Rd., Lancaster, PA
717-394-6851

Centre County | March 6, 2018
Penn State University Park Campus
252 Erickson Food Science Bldg.
University Park, PA
814-865-4027

Adams County | March 8, 2018
Penn State Fruit Research
and Education Center (FREC)
205 University Dr.
Biglerville, PA
717-334-6271 ext 0



Food Safety Plan Writing

Erie County | December 19, 2017
Lancaster County | February 22, 2018
Westmoreland County | February 27, 2018
Berks County | March 27, 2018

Learn how to keep your farm in compliance with food safety standards.

The Food Safety Modernization Act (FSMA) Produce Safety Rule in §112.22(c) requires that at least one supervisor or responsible party from the farm successfully complete food safety training at least equivalent to that received under a standardized curriculum recognized as adequate by the Food and Drug Administration. This one-day training course, developed by the Produce Safety Alliance (PSA), is intended for those who grow produce covered under the Produce Safety Rule, work with wholesale buyers that require this course as a condition of sale, or are just interested in learning about produce safety.

To learn more about the FSMA Produce Safety Rule and find out if your produce growing operation is covered under the regulation, visit extension.psu.edu/fsma.

Approximately seven hours of instruction time will be spent on the following modules:

- Introduction to Produce Safety
- Worker Health, Hygiene, and Training
- Soil Amendments
- Wildlife, Domesticated Animals, and Land Use
- Agricultural Water (Part I: Production Water; Part II: Postharvest Water)
- Postharvest Handling and Sanitation
- How to Develop a Farm Food Safety Plan

After attending the entire course, participants will be eligible to receive a certificate from the Association of Food and Drug Officials verifying that they have completed the training. To receive a certificate, participants must be present for the entire training and submit the appropriate paperwork to their trainer at the end of the course.

Cost and registration: \$20 per participant.* To register, go to extension.psu.edu/fsma-grower-training.



*Funding for this training was provided through the Pennsylvania Department of Agriculture. Registration cost is \$150 with a \$130 discount for Pennsylvania residents; one registration per farm.



PennState Extension

State News Briefs *(continued from page 6)*

success of our food supply," said Dr. Christina M. Grozinger, director of Penn State's Center for Pollinator Research. "If you enjoy strawberries, raspberries, cherries, plums, peaches or pears, you can thank these pollinators."

To view the plan and offer comments, visit ento.psu.edu/pollinators/research/the-pennsylvania-pollinator-protection-plan-p4. Comments will be accepted through Dec. 15, after which they will be incorporated into the final plan.

From Penna. Agricultural Alliance Issues Update, Penna. Farm Bureau, October 2017.

State Budget Update

On October 27, the Governor signed bills into law to free up funding for Penn State University College of Agricultural Sciences and the University of Pennsylvania School of Veterinary Medicine, as well as for the University of Pittsburgh, Temple University and Lincoln University.

The Governor has also signed bills that provide the revenue for the budget passed earlier as follows:

- Borrowing of \$1.5 billion from future payments to Pennsylvania from the Tobacco Master Settlement to be paid back within 30 years.
- Taking \$200 million from reserves held by the Joint Underwriting Association (JUA), the medical malpractice insurer of last resort. The Administrative Code bill specifies that if JUA does not hand over the money by December 1st, it will be abolished. JUA says that it is illegal for the state to "seize" insurance company reserves and that it will sue to prevent this from occurring.
- Gaining a projected \$200 million from gambling expansion.
- Increasing Labor & Industry inspection fees for boilers, elevators, ski lifts, etc. and
- adding new taxes on fireworks: 12% for consumers buying fireworks; annual fees ranging from \$2,000 to \$20,000 for permanent structures selling fireworks; and \$3,000 per year for temporary structures.

In limbo is the Governor's unilateral decision October 4 to borrow ahead ("securitize") future profits from the PA Liquor Control Board and his October 9 pronouncement that PA would take out an equity loan on the Farm Show Complex owned by the state. His rationale was that he would take budget matters into his own hands, absent a legislative resolution to the State Budget impasse. The Pennsylvania State Council of Farm Organizations (PSCFO) has requested a meeting with Governor Wolf to discuss the Farm Show Complex loan issue.

The Governor also signed House Bill 674 that allows the Governor to use \$300 million from various special state fund accounts and restricted accounts to fund the General Fund expenditures in the Budget. This is the ultimate outcome of those seeking to balance the State Budget by taking monies from over 50 specified dedicated funds. The Senate derailed that notion but this final language gives the Governor the discretionary authority to decide from which funds this \$300 million shall come. HB 674 does not contain language limiting his choices so they might or might not be agriculture or environmental funds. PSCFO sent a heads up memo to Council members about this section.

From AG ONE Newsletter, Penna. State Council of Farm Organizations, Issue 2017.17, November 1, 2017.

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NEWS

Farm to Institution Wholesaling Workshop is December 6

Interested in expanding your sales to institutions, but not sure if it's right for your farm? Join us for our Farm to Institution Wholesaling Workshop! We will work directly with you to assess whether your farm is right for sales to schools. The workshop will be December 6, 2017 at the Pennsylvania Farm Show Complex and Expo Center in Harrisburg from 9:00 a.m. to 4:00 p.m.

Our goal is to have you leave this workshop knowing exactly how to determine if farm to school wholesale is a good fit for your business, and if yes, how to successfully develop those sales. Or if you're already selling to institutions, we'll help you determine how to approach increasing those sales.

There is an application process for acceptance into the workshop, and workshop applicants should have a business accounting system already in place. To apply, go to <https://papreferred.wufoo.com/forms/wholesaling-workshop/>

The agenda for the workshop is as follows:

- 9:00 Introductions for workshop participants
- 9:30 Farm to School Buying Process w/ Kelsey Porter from The Food Trust
- 9:50 Realities of GAP Certification w/ Lindsay Gilmour of Organic Planet
- 10:20 Break
- 10:30 Crop Costing & The Bottom Line
- 12:30 Working Lunch & How to Start Selling w/ Jimmy Meadowcroft of The Common Market
- 1:15 Financial Modeling & Budgets
- 2:15 Break
- 2:30 Capacity Building & Your Project Plan
- 3:30 Questions and Answers / Networking

FSMA Information Available

Central Location for Key Compliance Dates

A new web page on fda.gov lists compliance dates for rules that form the foundation of the FDA Food Safety Modernization Act. There is also a graphic timeline on the page that lists key compliance dates by year. Additionally, the web pages for the two preventive controls rules – which had the first major compliance dates – have been updated. The page is located at: <https://www.fda.gov/Food/GuidanceRegulation/FSMA/ucm540944.htm>

Compliance Guide for Small Businesses Available

Small Entity Compliance Guides (SECGs) are designed to help small businesses meet federal standards. They are among the resources that the FDA is providing to support compliance with the new FDA Food Safety Modernization Act (FSMA) standards.

The FDA announced today the availability of an SECG to help small businesses comply with the Produce Safety Rule mandated by FSMA.

The SECG provides information that can help small and very small businesses understand how the requirements of the Produce Safety Rule apply to them. Specifically, the SECG can help farmers determine whether they are eligible for a qualified exemption, which would modify the requirements they are subject to under the Produce Safety Rule. The SECG can also help them understand those modified requirements. The link to the guide is available at <https://www.fda.gov/Food/NewsEvents/ConstituentUpdates/ucm574599.htm>

SARE Offers Farmer Grants

The Northeast SARE program announced the call for Farmer Grant applications, due online by Tuesday, December 5, 2017 at 11:59 p.m. ET.

Farmer grants are for farm business owners and managers who have an innovative idea they want to test using a field trial, on-farm demonstration, marketing initiative, or other technique. Projects should seek results other farmers can use and must have the potential to add to our region's knowledge about effective sustainable practices. A narrated slide presentation provides an overview of the Farmer Grants program.

Awards are capped at \$15,000 and projects may address the wide range of issues that affect farming throughout the Northeast and Mid-Atlantic. Applicants must work with a technical advisor who serves in a consulting capacity.

Application Materials

Visit nesare.org/FarmerGrant for the following application materials and helpful tools.

Application Instructions

Budget Template

A Tip Sheet for Technical Advisors (a companion video is also available)

"What is a Farm?" Definition

Grant Timeline

December 5, 2017: Online applications due.

March 2018: Awards announced.

Spring 2018: Projects begin and can run for up to two years.

For more information, see <http://www.nesare.org/Grants/Get-a-Grant/Farmer-Grant>.

Farm Transition Workshop Set for December 1

The Preserved Farms Resource Center has been established by the Pennsylvania Department of Agriculture, through the Bureau of Farmland Preservation, to assist Pennsylvania's preserved farm owners with their transition, succession and business planning needs. If you are the owner of a preserved farm, you are invited to join us for a farm transition planning workshop.

When: Friday, December 1 from 9:30 a.m. to 3 p.m.

Where: Berks County Agricultural Center, 1238 County Welfare Road, Leesport, PA

Registration: RSVP by Nov. 15 and mail check, payable to "Commonwealth of PA", for \$15 to: Pennsylvania Dept. of Agriculture, ATTN: Bureau of Farmland Preservation, 2301 N. Cameron Street, Harrisburg, PA 17110

Agenda:

9:30 a.m. to 10 a.m. Arrive and sign-in

10 a.m. to 12 p.m.

Pennsylvania's Farmland Preservation Program - Douglas Wolfgang, Director of Farmland Preservation, PDA

Farm Succession Planning - Darlene Livingston, Executive Director at PA Farm Link

Financial Challenges of Succession Planning - Kyle Heffner, Economic Development Analyst, PDA

12 p.m. to 1 p.m. Lunch Break

1 p.m. to 3 p.m.

Succeeding at Farm Succession - Ron Bare and Ryan Kurtz, Bare Wealth Advisors

(continued on page 13)

What's Your Exit Strategy?

"Empowering families to get started on their succession plan."

How will your family farm business operate in the future when the owner retires or is gone? Are you currently working with another generation who may be questioning their role in the future of the farm business or are you yourself questioning your current role?



More than 80% of farm families hope to pass the family farm on to the next generation, but research shows only 30% of family farms survive to the second generation, and only 12% survive to the third generation. A successful transition to the next generation takes careful planning and preparation.

To help farm families start their succession planning process, Penn State Extension is offering a new interactive program, "What's your exit strategy?" This program provides many of the tools and resources for producers who want to begin the succession planning process.

Participants will have an opportunity to open the lines of communication with family to create a shared vision for the family business. They will also learn to choose and work with professionals such as attorneys, accountants, lenders, insurance agents and tax experts to construct a plan and documents that put the family's vision into action.

"The program will prepare you to envision, communicate, plan, write and shape the legacy of your family farm business, as well as save hundreds of dollars by completing these crucial

planning steps before visiting with professionals," said John Berry, Business Management Educator, Penn State Extension.

This program is being offered in six locations across Pennsylvania. Contact John Berry at 610.391.9840 or johnberry@psu.edu for information on a workshop near you or visit our web site at:

<https://extension.psu.edu/succession-planning-what-s-your-exit-strategy> for more information.

This program will be offered at following locations and dates:

November 29 &

December 6, 2017 - Christiana, Chester County
Dutch Way Restaurant
365 PA-41, Gap, PA 17527

December 7 & 12, 2017 - Montoursville, Lycoming County
Montoursville Presbyterian Church
205 Tule St, Montoursville, PA 17754

January 4 & 11, 2018 - Indiana, Indiana County
Hoss's Steak & Seafood
1198 Wayne Ave, Indiana, PA 15701

January 5 & 12, 2018 - Northeast, Erie County
Burch Farms Country Market & Winery
9210 Sidehill Rd, North East, PA 16428

February 8 & 15, 2018 - York, York County
Meadow Hill Family Restaurant
2935 E Prospect Rd, York, PA 17402

February 9 & 16, 2018 - Lehigh Valley, Lehigh County
PSU-Lehigh Valley
2809 Saucon Valley Rd, Center Valley, PA 18034

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NEWS

Be a Keystone Member for 2018 and Invest in PVGA's Future

In 1994, the Association established a new membership class, the Keystone membership, and an endowment-type fund, the Keystone Fund. PVGA members who wish to support the vegetable, potato and berry industries in a special way pay dues above the regular rate, with the dues above the regular rate being placed in the Keystone Fund. The current balance in the Keystone Fund is about \$134,500 which is invested in money market accounts, two bond mutual funds and an index stock mutual fund.

The Board of Directors has approved the following uses for the annual interest earned by the Keystone Fund:

- Two annual \$1,000 student scholarships that will be awarded according to criteria set by a special committee. The committee has awarded a total of twelve scholarships to date.

- Half of any remaining interest is given to the Penn State Plant Pathology Department as a general research grant in support of the vegetable pathologist's ongoing research work.

- The other half of any remaining interest is given to the Penn State Entomology Department as a general research grant in support of the vegetable entomologist's ongoing research work.

The special research grants from the Keystone Fund were designated for the Plant Pathology and Entomology Departments at this point in time rather than the Plant Science Department because the Association for several years has been giving \$10,000 annually to partially support a research technician in the Plant Science Department. This support comes from the Association's General Fund. As interest rates have declined over the past several years, these research grants have grown smaller unfortunately.

Suggested Keystone dues are based on a member's gross income from vegetables, potatoes or berries instead of being a flat rate. However, any member who pays dues of \$75 or more is considered a Keystone member regardless of their gross income. The amount of Keystone dues paid by individual members is not published so as not to disclose their gross income. Keystone dues are added to the principal of the Keystone Fund, thus increasing the potential amount of interest available each year.

Keystone membership is open to all vegetable, potato and berry farm operations, processing firms and allied industry firms. Associate Keystone Members are additional family members or employees of Keystone Members. The following farms, firms and persons are Keystone or Associate Keystone Members for 2017:

Amsterdam Produce Enterprises (Robert Amsterdam) -
Mechanicsburg

Baronner Farms (Robert Baronner) - *Hollidaysburg*
Lady Moon Farms (Thomas Beddard) - *Chambersburg*
Triple B Farms (R.J. and William Beinlich) - *Monongahela*
Benshoff Farms of New Germany (James Benshoff) -
Summerhill

Indian Orchards (Nancy Bernhardt) - *Media*
Bitler Farms (Timothy Bitler) - *Birdsboro*
William Bitler - *Bloomsburg*

Master Made Farms LLC (Ronald Clark) - *Quarryville*
Dudas Farm (Roberta Dudas) - *Fairview*
Dymond's Farm Market (Christopher, Fred III, and
Timothy Dymond) - *Dallas*
Fred W. Eckel's Sons (Keith Eckel) - *Clarks Summit*
John G. Esh Kirkwood

Windy Hill Farm (Marian Fifer) - *Bulger*

Douds Floyd Farm (Philip Doud Floyd) - *Aliquippa*

Pete's Produce Farm (J. Peter Flynn) - *West Chester*

Furmano Foods (Donald Bergey, Don Geise, Scott

Hoffman, James Kohl, Kenneth Martin) -

Northumberland

Graceland Farm Market (Jonathan Grace) - *Grove City*

Graver's Orchards (Richard Graver) - *Lehighton, PA*

Juniata Stinking Rose (Anton Hatfield-Nicholson) -

Mifflintown

Haupt Produce (Wilford J Haupt) - *Paxinos*

B & R Farms (Barron Hetherington) - *Ringtown*

Hopkin's Farm (E. Harry Hopkins) - *Falls*

Indian Oven Farms (Edward C. Hopkins) - *Falls*

Cedar Run Produce (John M Hurst) East Earl

Harvest Valley Farms (Arthur, David and Larry King,

Caleb Costanzo) - *Valencia*

Peaceful Acres Farms (Clair King) - *Cochranville*

Kings Sweet Corn and Produce (David and Kathy King) -

Atglen

Gerald R. King - *Cochranville*

Kreiders Market (J. Lloyd Krieder) - *Kirkwood*

Kitchen Table Consultants (Ted Lebow) - *Collegeville*

Harvest View Farm and Market (Kenneth Metrick) - *Butler*

Miller Plant Farm (David Miller) - *York*

Mock's Greenhouse (Paul Mock Sr) - *Berkeley Springs*

General Store Farm Market (David Moyer) - *Birdsboro*

Daniel's Farm Store (Justus Nolt) - *Leola*

Nourse Farms Inc (Nathan S Nourse) - *Massachusetts*

Michael Orzolek - *State College*

Institute for Plant Based Nutrition (James & Dorothy

Oswald) - *Bala Cynwyd*

Peters Produce (Dennis S. Peters) - *Red Lion*

Nells Venture (Herbert Pollock) - *Indiana*

Rimol Greenhouse Systems (Bob Rimol) -

New Hampshire

Pumpkinhill Produce Farms (Harry N. Roinick, Jr.) -

Nescopeck

Red Wagon Farm (Eric Ross) - *Columbia Station, OH*

Sample's Vegetable Farm (Steve Sample) - *Duncannon*

Dan Schantz Farm and Greenhouse (Daniel Schantz,

Patrick Flanley) - *Zionsville*

Shenot Farms (Edward & Robert Shenot) - *Wexford*

Snyder's Farm Market (George A Snyder) - *Grampian*

David Sokoloski - *Beaver Falls*

Stauffer Huling Farm - *Sandford, FL*

Bill Sterling - *Newtown*

William and Cheryl Troxell - *Richfield*

Glenn Troyer Farms Inc (Ellery Troyer) - *Waterford*

Van der Grinten Farms (Peter Van der Grinten) -

Guilford, CT

Full Circle Mushroom Compost, LLC (Lisa Vanhouten) -

Frostburg, MD

Greenstar Cooperative Inc (John Webel) - *Greenford, OH*



PVGA Membership... (continued from page 1)

- years.
- PVGA represents the interests of the vegetable, potato and small fruit industries on legislative and regulatory issues through letters and meetings with public officials.
- PVGA cooperated with the Department of Agriculture and the Vegetable Marketing and Research Program to represent the Pennsylvania vegetable industry at various promotion events.
- PVGA co-sponsored several regional twilight meetings and field days this summer and fall as grower educational opportunities plus a bus tour of New York farm markets.
- PVGA holds the trademark for the Pennsylvania Simply Sweet Onion to help develop a new profitable, branded crop for Pennsylvania growers.
- PVGA is especially proud of the volunteer effort put forth each year by PVGA members to run the Association's Food Booths at the Farm Show and Ag Progress Days. These efforts have enabled PVGA to donate over \$1,000,000 dollars towards research and promotion activities over the last 29 years. The Board of Directors has essentially devoted the profits from the Food Booths to fund the Association's research, promotion and donation budgets rather than any of the Association's general operations.

In 2017 PVGA members again received free subscriptions to the *American Vegetable Grower* magazine and the *Vegetable Growers News*.

Dues invoices for 2018 will be mailed in late November or early December. We hope all members will renew your memberships for 2018 and that you will urge a neighboring grower to join as well. We want to see PVGA membership continue to increase. Increased membership allows the Association to better serve the vegetable, potato and berry growers of Pennsylvania – and that is our end purpose.

AgHelp Mobil App: Connecting Growers, Resources and Workers

Feliciano Paredes grew up in a family of migrant farm workers. Every spring, Dad would take the truck to the mechanic to make sure it was in good condition to make that 2,000-mile trip across the country to pick crops. I'd let my friends know when we were leaving, and when they could expect to see me again in the fall. I remember waking up to Mom yelling at us from downstairs to get up and get ready to go. We'd scramble out of bed, make sure we all went to the bathroom, and sit down for breakfast before heading out just before dawn.



Feliciano Paredes grew up in a family of migrant farm workers. (continued on page 14)

Farm Transition... (continued from page 10)

Tax Planning for Generational Farm Transfers - Jay Clark, Esquire, Law Office of James Clark
Question & Answer Session

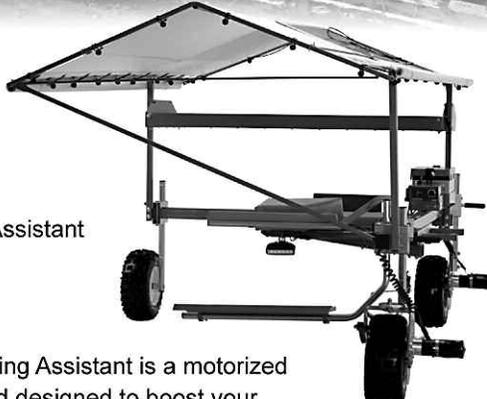
RSVP: Via phone at 717-783-3167 or via email at ra-farm-land@pa.gov by November 15 Attendance will be limited to 60 persons, first-come first-served.



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NEWS

Charlie Arnot Will... *(continued from page 1)*

food and farm industry leaders seek his unique expertise in applying the peer-reviewed trust model developed in 2007 to help them build trust in their processes and products.

Charlie spent 10 years as a corporate officer for a leading food company. He also worked for a public relations agency, was an award-winning radio journalist and worked in video and film. Charlie grew up in southeast Nebraska and graduated from the University of Nebraska with a Bachelor of Journalism degree.

The day before the main Convention opens, growers can choose between a bus tour of Pennsylvania farm markets or several different workshops. The workshops include FSMA Grower Training, UK Hard Cider Production (off-site), Orchard Trellis Construction (off-site), Vegetable Biocontrols, Computer Recordkeeping, Urban Community Farming, Farm Market Business Management, and Pennsylvania Pesticide Applicator License Training.

The Mid-Atlantic Convention has been jointly sponsored by the State Horticultural Association of Pennsylvania, the Pennsylvania Vegetable Growers Association, the Maryland State Horticultural Society and the New Jersey State Horticultural Society for the past 40 years making this year's Convention the 41st meeting. In 2014, the Virginia State Horticultural Society also began meeting at the Convention. The Pennsylvania State University, University of Maryland, Rutgers University Cooperative Extension and Virginia Tech University all assist in organizing the three days of educational sessions.

The Convention has become one of the premier grower meetings in the Northeast. The Great American Hall and the Aztec Room at the Hershey Lodge and Convention Center will host most of the Trade Show with several additional booths being located in the Confection Level Lobby. Specialized horticultural equipment, farm market merchandise, and packaging will all be on display along with information on the latest seed varieties, fruit varieties, pesticides and other supplies and serv-

ices for the commercial grower.

Many pesticide applicator update training credits will be available to Pennsylvania, Maryland, New Jersey and Virginia growers attending the sessions. The program covers nearly every aspect of fruit, vegetable, potato and berry production. Commercial growers should not pass up this terrific educational opportunity.

Seven or eight concurrent educational sessions will be offered on all three days of the Convention. Besides a combined session for the keynote address, the opening day will feature breakout sessions on Pome Fruit, Tomatoes, Organic Vegetables, Food Trends, Agritourism, Rhubarb, Kale/Brussels Sprouts, Microgreens, Ethnic/Specialty Vegetables, Root Vegetables, Cut Flowers, Use of Drones, and Farm Management.

On the second day, sessions on Farm Market Development, Educating Consumers and the Media, Wholesale Marketing, Small Fruit, Pome Fruit, Stone Fruit, Pumpkins/Vine Crops, Greenhouse Ornamentals, Wine Grapes, Soil Health/Reduced Tillage, Cover Crops, and General Vegetables will be offered. A special feature in the afternoon will be an Apple Variety Showcase where nurseries will have their best varieties on display and available for tasting. Also offered will be the session "Técnicas de Producción de Frutas y Hortalizas" especially for Spanish speaking workers in the fruit and vegetable industries. It will feature various relevant production presentations in Spanish.

The Convention will close on the third day with sessions on: Tree Fruit, Small Fruit, High Tunnels, Sweet Corn, Potatoes, Farm Labor, Alternative Activities for On-Farm Marketing, Marketing on Social Media, General Vegetables, Asparagus, and Third-Party GAP Audits.

The twelfth annual Mid-Atlantic Cider Contest will be conducted during the Convention to determine the best tasting cider produced in the region. On January 30 fruit and vegetable
(continued on page 27)

AgHelp Mobil App... *(continued from page 13)*

No matter how prepared we were, we would encounter many challenges as we went from state to state. It was common to arrive at farms only to find out that they didn't have work for us, or that the labor camp was full. Because we weren't familiar with what resources were available, sometimes we would end up spending a few nights in the truck until Dad could figure out what to do next. Basic health care and educational resources were also scarce. The transient nature of our work, our language, income, and the insecurity of not knowing the local area also worked against us.

About five years ago, I began work on an app called AgHelp. Our goal is to help farm workers maximize their earning potential. This is accomplished by connecting them with farms that are hiring, even during down times, and helping them arrive to farms on-time, while giving them access to the resources they need along the way. For agricultural employers, we see this as another tool they can use to help attract labor. It will allow farmers to post jobs nationally and create profiles that will inform workers about their farm, crops, and amenities. Aghelp will also help retain labor by allowing workers to receive notifications of crop status from farms they like, among other features.



We're currently testing our prototype and asking agricultural employers to download, post jobs, and provide feedback on their user experience, as well as what they'd like to see in our 2018 version. Currently, it's only available for Apple, but we intend to develop it for Android, and in Spanish. You can go to our page: <http://www.aghelpusa.com/>, and sign up to receive updates and notification of when it officially launches in both platforms in 2018.

Here are some simple directions for growers who may have questions on how to setup their profile for the first time.

Click on Home

Click on "Official Account Management", this will prompt you to create an account.

Create your account, and then verify it by clicking on the link that is sent to the email address used to create the account
Once you've done that

Go back to "Home"

Click on "Official Account Management"

Enter your agency's information and hit submit

Go back Home and click on "Official account Management" to get started using the features!

We're also seeking funding opportunities or sponsorships to help us get to the next stage of our development sooner. We can be reached at contactus@aghelpusa.com.

Young Grower Specialty Crop Tour is November 15

The Young Grower Alliance invites young specialty crop producers to a tour on Wednesday, November 15, 2017. The experiential learning opportunity will feature Butler's Orchard and Waters Orchard in Germantown, MD.

Tour Schedule

10:30 am - Meet at Butler's Orchard for a tour led by young growers, Hallie, Tyler, & Ben at 22222 Davis Mill Road, Germantown MD 20876

12:15 pm - Lunch

1:30 pm - Tour of Waters Orchard, hosted by Susan Butler & Washington White at 22711 Wildcat Road, Germantown, MD 20876

3:00 pm - Depart for Home

Hallie Butler-Van Horn, Tyler Butler, and Ben Butler have been active members of the Young Grower Alliance. Hallie is Purchasing Manager and shares her enthusiasm for farming with customers at the farm market. Tyler and Ben graduated from the University of Maryland with degrees in Horticulture and Crop Production. Tyler is General Farm Manager and Ben is the Farm and Finance Manager. Susan Butler and Washington White are active in the International Fruit Tree Association and their high density orchard systems show the best practices they've learned during tours and conventions.

Tour Highlights:

Butler's Orchard - <http://www.butlersorchard.com/> Good green family fun and local produce

Agritourism innovations such as a Day Pass

Diversified plantings of vegetables and fruit for pick-your-own

Farm market ready for holiday season sales

Waters Orchard - <http://watersorchard.com/> business plan to market all fruit on-site

16 apple varieties on tall spindle for U-pick

New hard cidery and plantings of hard cider apples

The program and lunch are free but we ask that you pre-register by November 9, 2017, by registering on line at <https://extension.psu.edu/specialty-crop-tour-for-young-growers> or by contacting Tara Baugher at tab36@psu.edu, or 717-334-6271. If you would like to carpool, please indicate this in your email or phone message and meet at the Adams County Ag Center, 670 Old Harrisburg Rd., Gettysburg, PA 17325 at 8:30 am. More information available at the Penn State Extension website.



Open Enrollment for Health Care Starts Soon

The open enrollment period of finding health insurance starts soon. And Pennsylvania Farm Bureau's Health Services Division is here to answer your questions and help you shop for the best plans and rates through a variety of insurance companies in Pennsylvania to find the coverage that best fits you and your family. The open enrollment period for individual and family health coverage runs Nov. 1 through Dec. 15. Open enrollment for senior and Medicare coverage runs now through Dec. 7. PFB Health Services also offers group dental and vision coverage. Open enrollment for group dental and vision coverage runs Nov. 1 through Dec. 31. Contact a Health Services representative today at 800.522.2375. Representatives are available Monday through Friday, 8:00 a.m. to 5:00 p.m. To purchase health insurance through PFB, you must join PFB.

Health care insurance is also available to PVGA members through Agri-Services Agency, a subsidiary of Dairy Farmers of America. They offer coverage through a number of different carriers. The local representative is Peter Switalski who can be reached at 724-449-6333 or at Peter.Switalski@Agri-ServicesAgency.com. Information is also available online at 222.agri-servicesagency.com/coverage/health-insurance.

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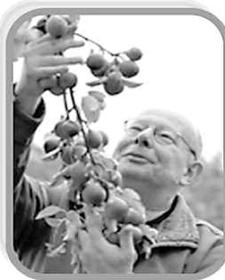
NEWS

UK Cider Session



PennState Extension

A glimpse into UK cider industry, methodology, and tradition



TOM OLIVER—OLIVER’S CIDER AND PERRY

Tom makes cider on his family farm in Ocle Pychard, Herefordshire, situated in the largest bitter-sweet apple growing area in the world, his ciders reflect the terroir and are reinforced by wild yeast fermentations. He is fascinated by the taste and world of cider and by the blurring of identity created by collaborations. His aim is to make great cider and perry, complex and drinkable and to spread the world of cider far and wide.



GABE COOK - THE CIDEROLOGIST

With more than a decade of experience, Gabe has a unique insight into the global cider industry, from traditional farm to world’s largest producer. He has worked across a wide range of roles encompassing cider making, new product development, customer liaison, media relations, public affairs, international cider competition judge and community engagement in the U.K., New Zealand and the U.S.

Workshop Agenda

U.K. Cider—Tradition & Today

Statistics show that the U.S. cider industry follow U.K. trends. Find out if this holds true for English Cider & Perry traditions and what the industry is up to today.

Wild Fermentation

Have you tried your hand at wild fermentation? Learn tricks of the trade from Tom Oliver on his preferred methods, lessons learned and why using wild yeast is his preference.

Blending—Structure & Practice

Try your hand at blending techniques popular in the U.K. and discuss how to best use the delicate balance between acids, tannins and sweetness.

Sensory Analysis

Hone your olfactory skills as The Ciderologist and Tom Oliver walk you through the nuances of tasting English and North American ciders.

Your Cider Analyzed

Drop off a cider sample at the workshop and we will supply you individual tasting notes from the Ciderologist via postal mail following the event. Use this information to assist in refining your product, developing your own tasting vocabulary or enhancing your labels.

Monday, January 29, 2018

1pm - 4pm

Wyndridge Farm

885 S. Pleasant Ave., Dallastown, PA

Workshop will include:

Interactive Educational Sessions

Sensory Analysis Tastings

Networking Opportunities

Opportunity for Analysis of Your Cider

Registration Fee: \$150

No refunds given for cancellations after 12/1/17

Questions?

Contact: Carla Snyder

at snyder.carla@psu.edu or

Tanya Lamo at tel20@psu.edu or

call 717-334-6271

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Penn State encourages persons with disabilities to participate in its programs and activities. If you anticipate needing any type of accommodation or have questions about the physical access provided, contact Penn State Extension, at 334-6271, in advance of your participation or visit.

**A Cider Share
Networking Event and
Cidery Tour will follow
the close of the Session.**

Name _____ Business _____

List additional persons attending _____

Address _____

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High Tunnel Production Basics and Bio-Intensive Tomato Production School Set for December

Penn State Extension is partnering with the Pennsylvania Association of Sustainable Agriculture (PASA) to hold a two-day High Tunnel School in Mercer, PA. Participants can choose to attend either or both days. Pesticide recertification credits will be awarded.

The Production School will be held on December 13th and 14th, 2017 from 8:30am to 4pm at the Mercer County Extension Office.

The December 13th High Tunnel Production Basics program topics include:

- Site and construction considerations
- Monitoring and managing soils in high tunnels
- Water quality and its impact on plant growth and plant protection

- Managing the growing environment
- Implementing an IPM system in high tunnels
- Marketing strategies and marketing niches
- Food safety.

The December 14th Bio-Intensive Tomato Production program topics include:

- Tomato cultivars for the high tunnel grower
- Tomato production: fertilization, nutrient management, pruning and training, and pollination
- Using biological organisms to manage insects and mites
- Using bio-fungicides and bio-insecticides in high tunnels
- Post-harvest handling of tomatoes.

Nontraditional Irrigation Water

The U.S. Department of Agriculture (USDA) considers possible nontraditional sources of irrigation water to include recycled, brackish, desalinated, fracking, agricultural runoff, aquaculture, livestock wastewater, and process waters. With funding from the USDA National Institute of Food and Agriculture, CONSERVE: A Center of Excellence at the Nexus of Sustainable Water Reuse, Food, and Health, a multi-partner project, is focusing on multiple types of nontraditional irrigation water in the Mid-Atlantic and Southwest regions of the United States. The CONSERVE team of researchers, Extension professionals, and educators aim to provide effective on-farm irrigation solutions.

To help steer the future of the center, Extension professionals from the University of Maryland and the University of Arizona are conducting a joint needs assessment survey (<https://go.umd.edu/q5n>) among the agricultural community with three goals: 1) assessing prior knowledge of nontraditional water sources; 2) determining concerns; and 3) understanding the most effective outreach methods.

The results of this survey will be used to inform priority areas for CONSERVE researchers as well as direct future educational programming and resource development for farmers in the study areas. The survey will be distributed in several ways, including at a variety of agricultural meetings and electronically through Extension and other networks. If you are a farmer in the Mid-Atlantic or Southwest and would like to take the survey, you can find it here: <https://go.umd.edu/q5n>.

This survey is open to all individuals who are at least 18 years old. To learn more about CONSERVE, please visit the website at: www.ConserveWaterForFood.org.

To register, please visit <http://tinyurl.com/HighTunnelBiointensive> or call 724-627-3745. The registration fee is \$120 per person for both days or \$65 per person for a single day. Checks, credit cards, and debit cards are accepted. The registration deadline is December 8. Walk-ins will be accepted as space allows. Walk-in fees are \$150 for both days or \$70 for a single day payable by check or cash.

Registration cost includes all program materials, snacks, lunch, and a flash drive with all of the presentations and handouts loaded onto it. Please direct any questions about the program to Lee Stivers 724-228-6881 or ljs32@psu.edu.

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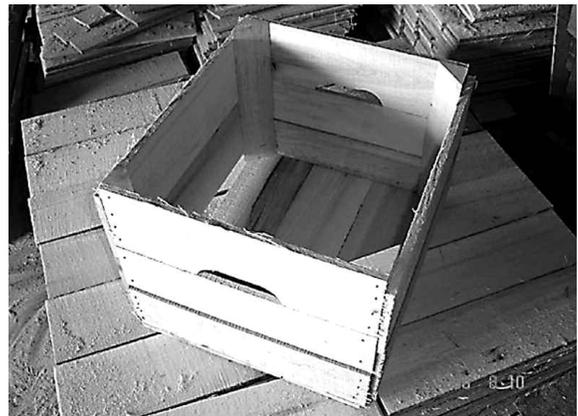
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VEGETABLE PRODUCTION

Identifying Beneficial Insects

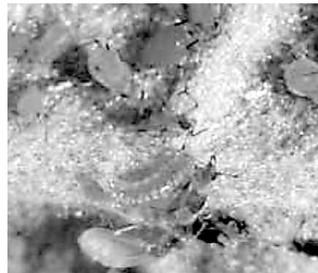
Kristina Fahey and Ayana LaSalle, adapted by Lisa McKeag

While scouting in the field for insect pests, also keep an eye out for the insects that are working in your favor. Your pest management decisions should be based in part on the natural controls that are already at work! It is important to be able to identify which insects are doing harm to your crops, and which are doing harm to the pests. Many different insects either prey upon or parasitize other insects that are pests of vegetable crops. Some are generalists and will feed on a variety of insect species, while others are more discriminating—this is generally true of the parasitoids, which lay their eggs within the eggs or body of a specific host. The most effective natural enemies on farms tend to be those that either consume voraciously (e.g., green lacewing larvae, which feed on aphids and many other small insects) or those that are host-specific (e.g., *Diaeretiella* spp., a wasp which parasitizes aphids exclusively). They should have high reproductive rates and life cycles that coincide with those of their hosts or prey.

The principals of Integrated Pest Management (IPM) include capitalizing on these natural controls to manage vegetable pests, along with using cultural practices and making strategic applications of appropriate chemical controls that interfere with the work of natural enemies as minimally as possible. The goal of IPM is not to eliminate all of the pests from a crop, but to reduce the populations of pests so that they are not causing economic losses, while maintaining enough of the pest population to sustain their natural enemies. It is often the larval stages of predators that do the bulk of the feeding; the adult stages of many beneficial species may only feed on pollen or nectar, so maintaining flowering plants—whether wildflowers at the edges of fields, or sweet alyssum interspersed within the crop—can help to provide both food and shelter for beneficial insects.

Predators

Predatory Midge (*Aphidoletes aphidimyza*) adults are very small (2-3 mm), delicate, mosquito-like flies with long legs and long antennae. They feed on honeydew (aphid excrement). The larvae are small (2 mm) legless maggots, usually orange or yellow and feed mostly on aphids. Adults fly at night and are rarely seen during the day. They are active from mid to late summer. Their eggs are minute (less than 0.3mm), oval and orange, laid in clusters or singly around aphid colonies. The larvae are very successful predators of aphids and mites. In its lifetime one larva can kill from 10 to 30 aphids. They are widely sold in the U.S. as an important part of biological control programs in greenhouse crops.



Predatory midge. Photo by A. Eaton.



Hover Flies (*Diptera: Syrphidae*) (also known as Syrphid Flies or Flower Flies) are often found hovering over various flowers for nectar and pollen. Adult flies resemble bees to ward off predators. Their bodies are black or brown with distinct stripes or dots of white or yellow on their abdomen

Syrphid fly larva. Photo by M. Spellman

and/or thorax. Hover fly larvae are predators of aphids. They are green, pink or brown in color with long tapered bodies towards the head. The life cycle varies among species and depends on the environmental conditions and availability of food. Single, white eggs are laid onto a leaf near a food source. The eggs hatch within 3 days and the larvae pass through several instars (molts) in a period of 1 to 3 weeks. They'll turn into tan-brown, teardrop-shaped pupa, either on the host plant or the soil. Larvae are voracious predators of soft bodied insects, mainly aphids. They are found throughout North America and are often found on crops and plants attacked by aphids and other pests. Adults intentionally lay their eggs next to colonies of aphids to ensure the success of their offspring. The adults are also prominent pollinators, and are attracted to flowering plants, especially weedy borders and garden plantings. They prefer small, flat or umbelliferous flowers like wild carrot, herbs, horseradish, and wild mustard. Each larva can consume up to 400 aphids during development. When hover fly larvae are abundant, the aphid population can be reduced by 70 to 100%.

Spined Soldier Bug (*Podisus maculiventris*) is the most common species of Podisus, a kind of stink bug, and is found throughout the United States. Adults are pale brown to tan and about 8.5 to 13mm long. They are shield-shaped with noticeable spurs on their "shoulders" immediately behind the head. What separates the soldier bug from other similar looking insects is the distinctive dark line on the tip of each forewing. Young nymphs are red and black; older nymphs have marks with red, black, yellow-orange and cream bands and patches. The nymphs are round rather than shield-shaped. Females lay hundreds of gray, cream, or gold, barrel-shaped eggs in clusters of 20 to 30 eggs, on leaves or twigs. Eggs hatch in 5 to 9 days. Growth from egg to adult lasts about 30 to 35 days and adults live from 1 to 4 months. Their prey includes over 100 different species including: European corn borer, diamondback moth, corn earworm, beet armyworm, fall armyworm, cabbage looper, imported cabbageworm, Colorado potato beetle, Mexican bean beetle. They'll target primarily immature insects with their piercing sucking mouth parts. They are recorded to have consumed over 100 late instar fall armyworm larvae during a season.



Spined soldier bug

12-Spotted Lady Beetles (*Coleomegilla maculata*) are pink to red in color, oval, 5-6 mm long, and have six black spots on each forewing. The oval-shaped pronotum behind their black heads is usually pink or yellowish with two big black markings on it. The larvae of this beetle grow to about 5mm in length and are long, dark, and alligator-like. The eggs are ellipsoid and 1mm long. Twelve-spotted lady beetles overwinter in large groups at field edges beneath leaf litter or stones. They come out in early spring to disperse and find sites to lay eggs and feed on pollen, insect eggs, and small larvae. Females lay their eggs (200 to 1000 in number) near aphids or other prey



12-spotted ladybeetle. Photo by M. Spellman.

(continued on page 19)

VEGETABLE PRODUCTION

Identifying Beneficial... (continued from page 18)

from spring to summer. Larvae emerge from the eggs and feed on prey until they attach themselves to leaf surfaces to pupate. The pupal stage lasts 3 to 12 days, then, adults emerge and live for close to a year. Two to five generations of these lady beetles may occur each year. Twelve-spotted lady beetles are most important as predators of aphids, but they feed on mites, insect eggs, and small larvae as well. Plant pollen makes up a larger part of their diet than it does for other lady beetles, which allows their populations to build up in high pollen crops such as corn. Their searching ability for prey egg masses is excellent and they can contribute significantly to mortality of Colorado potato beetle eggs and small larva in potato.

Multi-colored Asian Lady Beetles (*Harmonia axyridis*) are convex in shape and somewhat larger than native lady beetles at 7 mm long and 5.5mm wide. Their wings are colored yellow, orange, or red and may or may not have black spots on them. They can have up to 19 spots, but their appearance is quite variable throughout the species. A disk-shaped pronotum



Multi-colored Asian lady beetles.

covers their head. The pronotum is cream or yellow in color and has a distinctive black design on it that is shaped like an 'M'. The larvae of these beetles are long, flat, and black with orange markings and black spines. Eggs are ellipsoid and yellow and found in clusters of twenty or so. Asian lady beetles cycle from egg to adult in about a month and multiple generations of these beetles occur every year. Eggs are laid underneath leaves of various plants. In three or more days they hatch and the larvae thrive on aphids for about two weeks. The beetle then enters the pupal stage, from which adults emerge after several days and live for about a year. Adults overwinter in sheltered locations (including indoors) and

mate in the spring. These beetles prey on aphids and scale insects especially. They are not native and are considered both beneficial (for their predation on pest insects) and a nuisance (because they often overwinter in large groups in houses, and because they can be a pest in grapes).



Lady beetle pupa – sometimes mistaken for CPB larva! Photo by J. Boucher.

These beetles prey on aphids and scale insects especially. They are not native and are considered both beneficial (for their predation on pest insects) and a nuisance (because they often overwinter in large groups in houses, and because they can be a pest in grapes).

Green lacewing (*Chrysopa* and *Chrysoperla* spp) adults are pale green, with a slender soft body, about 1/2" long, and four delicately veined wings. Eggs are laid on filamentous stalks attached to plant tissues. Eggs hatch about 4 days after being laid. Larvae are alligator-like, with a flattened body that tapers at one end, have long, curved mandibles, and are usually pale with darker markings. They meas-

ure from 1/8 to 4/5 of an inch. Larvae develop through three instars, and then pupate in silken cocoons attached to plants. The adults of most species are not predaceous, feeding mostly on nectar and pollen. The larvae, however, are voracious predators, and will consume large numbers of a wide range of soft-bodied insects, including other lacewing larvae. Lacewings are found naturally in New England, and are also available commercially, as they are very effective at cleaning up outbreaks of aphids and other pests in greenhouses.



Lacewing eggs. Photo by L. McKeag.

Aphidoletes aphidimyza is a parasitic wasp often released in greenhouses to control aphids. Photo by J. Gross.



Parasitoids

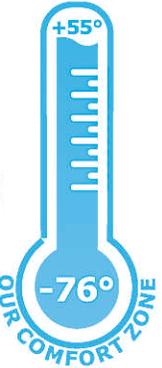
The beneficial parasitoids that are important in vegetable crops aren't often seen as most of them are tiny wasps. There are thousands of species of parasitic wasps, most of which are highly specialized to use a particular species or family as a host. Several species are naturally occurring in New England, or have been successfully introduced, and others are commercially available for release. These wasps lay their eggs in either the eggs or larvae of their hosts, where the wasp larvae feed on the insides of the host, and pupate in or on the host before emerging as adult wasps. Often what will be visible in crops to indicate parasitoid activity will be either the parasitized host or the pupating parasite.

Caterpillars are commonly parasitized by braconid and ichneumonid wasps. The braconid wasp, *Cotesia rubecula*, was introduced to New England from China in 1988, and is now established in Massachusetts. This wasp parasitizes imported cabbageworm larvae. You may see their small white cocoons on brassica leaves. Diamondback moth eggs are parasitized by

(continued on page 20)



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VEGETABLE PRODUCTION

Tomatoes and the Viruses That Love Them

Angela Madeiras

Tomatoes are susceptible to several viruses, many of which can devastate a crop. Viral outbreaks are often difficult to predict because they are sporadic in nature: an epidemic in one year may be followed by several years in which the virus is not reported at all.

There are no anti-viral products for control of viruses in vegetable crops. Viral diseases are best prevented by using clean seed and controlling weeds that may harbor viruses. It is also important to understand the specific ways in which a virus is transmitted. Viruses travel from plant to plant in one of three ways:

- **Mechanical:** Some viruses such as tobacco mosaic virus (TMV) are spread mechanically by machinery, tools, or the hands of farm workers. They may also be carried on the bodies of insects or animals. As people, animals, and insects move among plants, leaf hairs are frequently broken. Sap from an infected plant is picked up on hands and bodies and can be carried to uninfected plants, where the virus can enter through small wounds such as broken leaf hairs.
- **Propagation:** Other viruses, such as cucumber mosaic virus (CMV) can be transmitted through infected seed. Viruses may also be spread by grafting or vegetative propagation of infected mother plants.

Identifying Beneficial...

(continued from page 19)

the ichneumonid wasp, *Diadegma insulare*, which occurs naturally in Eastern North America. *D. insulare* females require sources of nectar to be effective DBM parasitoids, so maintain wildflower stands near brassica fields to encourage their activity. You may be more familiar with the pupae of another parasitic wasp, *Cotesia congregatus*, which lays its eggs under the skin of the tomato and tobacco hornworms. The larvae feed within, then emerge to pupate on the surface, eventually killing the host. If you see a hornworm in your tomato crop with many white cocoons on its back, don't kill it – either leave it be, or move it to another area where it can't continue feeding, to allow the wasps to develop.

Aphids also have many parasitic wasps that rely on the aphids' bodies to produce and feed their young. If you see puffy, tan or golden aphids among an aphid colony, these are aphids with one of these wasps pupating within, and are called aphid "mummies". Sometimes you



Aphid mummies.

will see a small hole in the mummy, indicating that the adult wasp has emerged. The braconid wasp *Diaeretiella rapae*, parasitizes many species of aphid, but is particularly fond of cabbage aphids. Keep an eye out for these mummies when scouting for aphid colonies to get an idea of the level of the biological control you're getting.

Adapted by Lisa McKeag from original article by Kristina Fahey and Ayana LaSalle, Stockbridge School of Agriculture Students. From **Vegetable Notes for Vegetable Farmers in Massachusetts**, Univ. of Mass. Extension, Vol. 29, No. 18, August 10, 2017.

- **Vectors:** Most viruses are transmitted by vectors, organisms that transfer the virus to the host plant in the process of feeding on it. These viruses have specialized relationships with their vectors and are harbored for some time in the vectors' bodies. Insects are the most common type of vector. Plant viruses may be transmitted by insect vectors in a persistent or non-persistent manner.

- In persistent transmission, the virus becomes systemic inside of the insect. The insect therefore becomes a lifelong carrier of the virus.

- In non-persistent transmission, the virus does not become systemic within the insect, and the insect is only capable of transmitting the virus for a short time (a few hours).

In the past, impatiens necrotic spot virus (INSV) was one of the most common viral pathogens on tomato, but it is seldom seen today. Listed below are some other noteworthy tomato viruses.

Tobacco Mosaic Virus (TMV) is a tobamovirus with a wide host range. Its primary mode of transmission is mechanical, but in tomatoes it is occasionally seed borne. It is very stable and can survive for decades in dried plant material. Symptoms include light green or yellow mosaic, leaf distortion, and reduction of fruit number and/or size. Brown streaks may be observed on leaves and petioles when TMV and another virus are present in the same plant.



Leaf deformity caused by tobacco mosaic virus

Cucumber Mosaic Virus (CMV) is a cucumovirus non-persistently transmitted by aphids. It has a wide host range and is

Cucumber mosaic virus symptoms on tomato

capable of overwintering in several common weed species. It is not believed to be seed borne in tomato.



©T.A. Zitter



Tomato spotted wilt virus symptoms on tomato

The most characteristic symptom of CMV on tomato is a severe narrowing of the leaflets, commonly called "shoestring." There may also be yellow mottling on the leaves.

(continued on page 21)

VEGETABLE PRODUCTION

Tomatoes and the... (continued from page 20)

Tomato spotted wilt virus (TSWV) is perhaps the most common tomato virus in the northeastern U.S. today. It has one of the largest host ranges of any plant virus, including approximately 800 plant species. Symptoms include dark necrotic tissue, particularly near the petiole end of the leaf and extending along leaf veins. Leaf deformation, tip dieback, yellowing, mottling, ringspots, stunting, and wilting may also occur. Mottle and ringspot may also be observed on fruit. TSWV is a tospovirus spread persistently by several species of thrips. Thrips can only acquire the virus during the larval stage, but the virus remains in the insect throughout its life. The insect is capable of transmitting the virus within 3-10 days of acquisition. TSWV is not known to be seed borne.

Tomato chlorotic spot virus (TCSV) is also a tospovirus transmitted persistently by thrips. First detected in South America, TCSV was diagnosed in Florida in 2012 and in Ohio in 2013. It has since been found in a number of Caribbean nations. Symptoms are similar to its relative TSWV: dark necrotic tissue, sometimes yellow spots, ringspots, mottling, deformed leaves, stunting, and wilting. Ringspots may appear on fruit. Pepper, lettuce and long bean are also hosts, along with some weeds (black nightshade, jimsonweed) and a number of ornamental plants. Several other plants have been infected experimentally, indicating that the host range of this virus may be broad. Serological tests for TSWV also come up positive for TCSV, leading some to believe this virus may be more widespread than originally thought.

Tomato chlorosis virus (ToCV) was diagnosed in Maryland in March of this year. It is distributed worldwide but is not

believed to be seed-borne. ToCV is closely related to tomato infectious chlorosis virus (TICV). Both are criniviruses transmitted in a non-persistent manner by whiteflies. Symptoms of these two viruses are identical and include reduced vigor, interveinal chlorosis, mottling, red or brown flecks, bronzing, brittleness, and rolling and/or thickening of leaves, especially older leaves. Symptoms can resemble those caused by nutrient deficiency or other abiotic factors. It can be 3 to 4 weeks before an infected plant develops symptoms.

Pepino Mosaic Virus (PepMV) was first identified in Peru in 1974. It was reported for the first time on tomatoes in the Netherlands in 1999 and has since been detected in several countries in Europe and the Americas, as well as China and South Africa. It is a potexvirus and is spread mechanically. PepMV is more common in greenhouses than in the field. Symptoms include yellow mosaic, leaf distortion, necrotic lesions on stems and petioles, and mottling of fruit. It may be transmitted by seed.

Begomoviruses are a genus of viruses in the family *Geminiviridae*. These viruses are transmitted by whiteflies. They have grown in importance in recent decades due to the emergence of new viruses and new insecticide-resistant biotypes of whitefly. Tomato yellow leaf curl virus (TYLCV) is a member of this group. TYLCV has been reported in California and in several southern states in the past 15 years. It may be transmitted by seed.

Disease Diagnosis - Viruses are far too small to be seen with a light microscope, although some will form clusters that

(continued on page 27)

HEALTHY PREDATORS, PARASITES ON PATROL

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VEGETABLE PRODUCTION

Spring Biofumigants for Late Spring Planted Vegetables?

Gordon Johnson

In fields with heavy vegetable rotations that have built up diseases (including nematodes), or fields known to have soil borne pest problems in the past, use of a biofumigant mustard or rapeseed crop planted in March ahead of late spring planted vegetables can help to reduce disease levels.

Mustard family plants produce chemicals called glucosinolates in plant tissue (roots and foliage). These glucosinolates are released from plant tissue when cut or chopped and then are further broken down by enzymes to form chemicals that behave like fumigants. The most common of these breakdown products are isothiocyanates. These are the same chemicals that are released from metam-sodium (Vapam) and metam-potassium (K-Pam), commonly used as chemical fumigants.

You should plant biofumigant rapeseed or mustard as soon as the ground is fit in March. They take 50 days to produce full biomass. Planting rates are 15 lbs/ A for most biofumigant mustards and 7-10 lbs/a for rapeseed. Add 60-80 lbs of nitrogen per A to grow the crop (the higher N level on sandy soils). Mustards are not winter hardy; however, biofumigant rapeseed is and can be fall or spring planted.

The goal is to produce as much biomass of the biofumigant crop as possible. This requires that you have a good stand, fertility, and sufficient growing time. The more biomass that is produced and that is incorporated, the more chemical is released.

The plant material must be thoroughly damaged so that enzymes can convert glucosinolates into isothiocyanates. This means that you need to chop the material as much as possible and work it into the soil as quickly as possible, so as not to lose the active compounds to the air. A delay of several hours can cause significant reductions in biofumigant activity. The finer the chop, the more biofumigant is released. A flail mower is ideal.

The material should be incorporated as thoroughly as practical to release the biofumigant chemical throughout the root zone of the area that is to be later planted to vegetables. Poor distribution of the biofumigant crop pieces in the soil will lead to reduced effectiveness.

Sealing with water (or plastic for smaller areas) after incorporation will improve the efficiency (as with all fumigants). Soil conditions should not be overly dry or excessively wet.

Allow 10-14 days after incorporation before planting the next crop.

A March 15 planting will be ready to incorporate in mid-May and can be planted with the vegetable crop in late May (around Memorial Day). April 1 plantings be ready 2 weeks later.



Pacific Gold biofumigant mustard ready to incorporate



Caliente biofumigant mustard ready to incorporate



Dwarf Essex rapeseed a biofumigant option for fall or spring (it will overwinter)



Kodiak biofumigant mustard ready to incorporate.

*Dr. Johnson is the Extension Vegetable and Fruit Specialist at the Univ. of Delaware. From the **Weekly Crop Update**, Univ. of Delaware Extension, Vol. 25, Issue 10, June. 2, 2017.*

The Other Blights of Tomato

Bess Dicklow and Susan Scheufele

While late blight has become the dominant force in tomato disease management, it is certainly not the only foliar leaf blight around. In fact, there was not a single confirmation of late blight in Massachusetts last year. We have not seen any late blight so far this year, but recent weather has been conducive for this oomycete disease to thrive if inoculum were present. There are several fungi and a few bacteria that cause leaf spots and defoliation as well (some of these have been reported in greenhouse and high tunnel production already this year). A few key fungal diseases are described below.

Septoria leaf spot (*Septoria lycopersici*) is one of the most destructive diseases of tomato foliage, resulting in considerable leaf drop that can cause sunscald, failure of fruit to mature properly, and reduced yields. Once infections begin, the disease can spread rapidly from lower leaves to the upper tomato canopy.



Septoria photo: S. Scheufele

Symptoms consist of circular, tan to grey lesions with a dark brown margin that appear on lower leaves first, after the first fruit set. If conditions are favorable, lesions can enlarge rapidly, turning infected leaves yellow, then brown. *S. lycopersici* forms pycnidia (structures where asexual spores are formed) in the center of expanding lesions which can be seen with a 10X hand lens as tiny black dots. The presence of pycnidia, plus the generally smaller size of the lesions and the absence of target-like circular bands within the lesion, distinguish this disease from early blight.

The pathogen overwinters on infected tomato debris or infected solanaceous weed hosts (jimsonweed, horsenettle, groundcherry and black nightshade), and can also survive on stakes and other equipment. Tomato seed may be coated in spores. Once established, Septoria is spread by splashing water, insects, workers, and equipment. High humidity, long periods of leaf wetness, and temperatures of 60- 80°F are conducive to disease development.

Early blight (*Alternaria solani*) occurs on the foliage, stem, and fruit of tomato as well as potato. In tomato, the disease first appears as small brown to black lesions with yellow haloes on older foliage. Under conducive conditions, numerous lesions may occur on each leaf causing entire leaves to become chlorotic (yellow). As the lesions enlarge, they often develop concentric rings giving them a 'bull's eye' or 'target-spot' appearance. As the disease progresses, plants can become defoliated, reducing both fruit quantity and quality. Fruit can become

infected either in the green or ripe stage. Infections usually occur through the stem attachment. Fruit lesions appear leathery and may have the same characteristic concentric rings as the foliage. Fruit lesions can become quite large, encompassing the whole fruit.



Early Blight photo: IPM images

On potato, foliar symptoms are quite similar, though complete defoliation rarely results. Tuber lesions are dark, sunken, and circular often bordered by a purple to gray raised tissue. The underlying flesh is dry, leathery, and brown. Lesions can increase in size during storage and tubers become shriveled.

The fungus overwinters on infected crop debris in the soil and can survive there several years. High humidity and warm temperatures (75-85°F) favor infection and disease development. Production of spores requires long periods of leaf wetness but can occur during alternating periods of wet and dry. Spores are dispersed mainly by wind but also by splashing water or overhead irrigation.

Septoria and Early Blight Management. Some tomato and potato varieties with early blight resistance or tolerance are available, however, most tomato cultivars are susceptible to Septoria leaf spot. Adequate nitrogen fertility throughout the season can help delay onset of early blight; lower leaves become more susceptible as the nitrogen demand increases with fruit production and nitrogen is pulled from older leaves. Preventative fungicide sprays at regular intervals (depending on weather conditions and disease pressure) will delay onset.

(continued on page 24)

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The Other Blights... (continued from page 23)

Rotate out of tomato crops for at least two years, control susceptible weeds, and incorporate debris after harvest. Reduce the length of time that tomato foliage is wet by using drip irrigation, using wider plant spacing, and staking. Keep workers and equipment out of wet fields where possible.

Many fungicides are registered and effective against both early blight and Septoria, please see the New England Vegetable Guide for recommendations. Use the NEWA Tomato forecasting model to help with the timing of fungicide applications for early blight and Septoria.

Botrytis Grey Mold & Ghost Spot (*Botrytis cinerea*). *Botrytis cinerea* causes leaf spots, stem cankers, fruit rot, and ghost spot on fruit. The pathogen thrives in the greenhouse where humidity is very high, but it has been observed in field tomatoes as well. Leaf lesions are dark gray and have no yellow halo, and therefore are often mistaken for late blight lesions. Under conditions of alternating heat and humidity, the pathogen grows in such a way as to form concentric rings, and for this reason can be confused with early blight. The way to tell it apart is by its characteristic fuzzy brownish-gray sporulation. If you hold the leaf up and look across the lesion you will see fine mycelia sticking up with little tuftlets on the end that resemble grape clusters. *B. cinerea* primarily feeds on dead tissue and is only weakly pathogenic, therefore, you will likely see this sporulation on senescent tissue including flowers or leaf tips and margins where nutritional disorders have caused tip burn. Spores that land on fruit cause ghost spot, which appears as pale white haloes or ring spots on the green tomato fruit. On ripe fruit, the ringspots may be yellow. Ghost spot develops when the fungus initiates infection, but disease progress is stopped by dry environmental conditions. This spotting may adversely affect market quality. Under favorable conditions ghost spot may lead to fruit rot.

Leaf Mold (*Fulvia fulva*). This disease can occur in the field, but is most common in greenhouses, in both soilless and hydro-



Botrytis photo: D. Ingram



Leaf Mold top and bottom of leaf. Photos: Cornell Extension



Powdery Mildew photo: S. Scheufele

ponic systems. Leaf mold infections begin on older leaves and cause pale-green to yellow spots visible on the upper leaf surface, with olive-green to grayish-purple fuzzy growth on the underside of the leaf where the fungus is producing spores. Heavily infected leaves turn yellow, then brown and may wither and drop. Occasionally petioles, stems, and fruit may be affected. Infected flowers wither without setting fruit and infected fruit has leathery, black, irregularly shaped lesions.

The fungus overwinters in soil on crop residue and as sclerotia (hard, black, longlived resting structures) and may be introduced on infested seed. Disease development is favored by warm, moist conditions with relative humidity over 85%. The fungus can survive and reproduce between 50-95°F, with optimal infection and growth between 71-75°F. The disease can spread rapidly as spores disperse throughout a greenhouse on air currents, water, rainsplash, insects, and workers.

Powdery mildew (*Oidium neolycopersici*) of tomato has emerged as an important disease of greenhouse and high-tunnel tomatoes, and is occasionally seen in field tomatoes. Look for white, powdery, circular lesions on the upper and lower leaf surfaces. Unlike other powdery mildews, affected leaves may rapidly wither and die, but remain attached to the stem. There are no symptoms on fruit or stems, but loss of foliage may result in sunscald. The pathogen does not require free water to germinate and cause disease but it does thrive under humid conditions and a range of temperatures (50-86°F). This pathogen can be very aggressive and lead to reduced yield and poor fruit flavor if untreated.

Botrytis, Leaf Mold and Powdery Mildew Management:

These are primarily diseases in greenhouses because of environment, so reducing humidity and improving airflow are key. Control weeds and remove plant debris. Space plants and sucker them or remove lower leaves to allow good air circulation, reduce humidity within the canopy, and minimize leaf wetness by watering with drip irrigation or early in the day. In the greenhouse, improve horizontal air flow with fans, and reduce humidity by a combination of heating and venting in the evening, particularly when warm days are followed by cool nights. Avoid excessive nitrogen fertilization. Remove all diseased plant residues and destroy them; disinfest the entire greenhouse after harvest. Practice hot water seed treatment for tomatoes as a general rule. For *Fulvia* in particular there are a few products labeled for use on indoor tomato to control this disease. Choose resistant varieties. See this fact sheet from Cornell for a list of resistant varieties.

Please see the [Mid-Atlantic Commercial Vegetable Production Recommendations] for current management recommendations. Always alternate fungicide applications between materials with different modes of action to prevent resistance development.

Dr. Dicklow and Dr. Scheufele, are with the Univ. of Massachusetts Extension. From the Vegetable Notes for Vegetable Farmers in Massachusetts, Univ. of Mass., Vol. 29, No. 8, June 1, 2017.

BERRY PRODUCTION

Anthracnose in Raspberries

Kathleen Demchak

Anthracnose, commonly called “cane spot” or “gray bark,” occurs in several species of *Rubus*. It is considered an extremely serious disease of black, purple, and susceptible varieties of red raspberry. Severe yield loss can result due to defoliation, wilting of lateral shoots, death of fruiting canes, and reduction in fruit size and quality.

Symptoms

Anthracnose symptoms are most conspicuous on canes but can also occur on leaves, petioles, flower buds, and fruit. In the spring, reddish-purple spots appear on young canes. As the disease progresses, the spots enlarge and the centers become sunken. These early lesions on the cane are called pit lesions. By late summer or early fall, the typical “gray bark” symptom can be observed, especially on the red raspberry. Within these lesions, spores are produced and then are spread by running water, splashing rain, and wind. Canes weakened by anthracnose are more susceptible to winter injury and eventually may die. Cankered canes also might produce abnormal fruiting branches with malformed fruit, especially in seasons of drought. Fruit infections are not common unless there is a high level of anthracnose in the plantings. Infected fruit is typically dry and seedy. Most economic loss results from defoliation, reduction in fruit size and quality, and death of canes, either directly from the disease or from winter injury.



Photo: Penn State Extension

Disease Cycle

Anthracnose is caused by the fungus *Elsinoe veneta*, which overwinters on canes infected the previous season. In the spring, fungal spores are produced on these diseased canes. These spores are spread to very young green tissue, and infection takes place. The primary damage to plants is caused by these early infections. Black and purple raspberries are more susceptible than red raspberries.

Disease Management

Infections that take place early in the growing season cause the most damage, so controls should be instituted early in the season. Anthracnose can be managed by sanitation and spraying. Although sanitation is labor intensive, it is an effective management practice for the control of anthracnose. Planting clean, disease-free nursery stock is important. Cut out all diseased canes, cane “handles,” and any infections observed on new plants. Good air movement through the planting should be provided by the removal of weeds and spindly canes. If possible, all noncultivated brambles within the vicinity should be rouged because these wild plants will also harbor the pathogen. If fungicides are necessary, a dormant to delayed-dormant application of lime sulfur is the most effective method of reducing the incidence of this disease. Refer to Table 7.5 for pesticide recommendations.

The important insects and diseases to be controlled, except for viruses, are listed in the right-hand column of this spray schedule. Always consult the label before making pesticide applications. Labels vary greatly among commercial products of the same material. It is important to refer to the label for the best timing and application rates when applying pesticides. Also read the text for information on cultural practices to minimize the application of pesticides. Due to a wide array of various products containing the same active ingredient, for insecticide recommendations, when appropriate, the active ingredient is listed instead of the name of the formulated product.

(continued on page 26)

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BERRY PRODUCTION

Anthracnose... (continued from page 25)

Table 7.5. Pesticide recommendations for brambles. (Follow all instructions and application rates listed on pesticide labels.)

Time to Spray	Suggested Materials	Pests to be Controlled
Dormant (blackberries) - before buds open	Lime sulfur	Anthracnose, cane blight, powdery mildew, rust
Delayed Dormant - just as buds begin to open	Lime sulfur	Anthracnose; spur blight on raspberries; powdery mildew, rust, and cane blight on blackberries
New shoots 8 inches long	Sulfur; Malathion; Esvenvalerate	Anthracnose; Botrytis, cane blight, and spur blight on raspberries; fruit worms; plant bugs
Petal Fall	Sulfur; Carbaryl <i>plus</i> Rotenone or Pyrethrum	Anthracnose; Botrytis, cane blight, and spur blight on raspberries; fruit worms; rose chafer; aphids; mites; plant bugs
Preharvest	Sulfur	Fruit rots
Midharvest	Sulfur	Fruit rots
Postharvest	Malathion <i>plus</i> Carbaryl	Aphids, if present; Japanese beetles

Ms. Demchak is with the Dept. of Plant Science at Penn State Univ. From Penn State Extension, <https://extension.psu.edu/raspberry-disease-anthracnose>, October 20, 2017.

Black Raspberry Streak

Kathleen Demchak

During warm periods, inconspicuous purple streaks less than 1 inch long form on the lower part of infected canes.

Infected plants usually are vigorous, sometimes with no symptoms of virus infection. The fruit, however, display diagnos-



Photo – Penn State Extension

tic characteristics—they lack a glossy appearance, have drupelets that ripen unevenly, and are sometimes small, blotchy, and seedy. The vector of this virus is not known.

This virus is very unevenly distributed in plants, which makes detection difficult. Use of planting stock from virus-free indexed mother plants and isolation from plants that could be sources of this virus are recommended control measures.

Ms. Demchak is with the Dept. of Plant Science at Penn State Univ. From Penn State Extension, <https://extension.psu.edu/black-raspberry-streak>, October 17, 2017.

VEGETABLE PRODUCTION

Pumpkin Fruit Set and Fruit Retention

Gordon Johnson

Each year we see pumpkin fields with poor fruit set or fruit retention. In larger pumpkin sizes, each plant will normally carry 1-2 fruits. The large vining plants also need considerable space – 25 to 50 square feet per plant. While planting jack-o'-lantern types at higher densities might at first seem to be a way to achieve higher yields, interplant competition will increase and you can decrease fruit retention because of this competition. Matching pumpkin types with space requirements is very important to optimize fruit set.

A major reason for poor fruit set is high temperatures during flowering in July. Day temperatures in the 90s or night temperatures in the high 70s will cause flower and small fruit abortion. For pumpkin growers that do wholesale and start shipping right after Labor Day, this will limit early pumpkin availability. Varieties vary considerably in their ability to tolerate heat and to set under hot conditions. Inadequate irrigation and excessive water stress can also reduce fruit set, increase abortions, and reduce fruit retention. High temperatures and water stress reduce photosynthesis and the ability of the plant to carry fruits. Drought can also cause a higher than normal male/female flower ratio, thus affecting the amount of fruit per plant.

Another major factor that will reduce fruit set is poor pollination. Misshapen fruit can also result from inadequate pollination. A pumpkin plant has both male and female flowers and the first female flower opens one week after the first male opens. The flowers only last a few hours, blooming at dawn and closing later in the morning but well before noon. Pollinators need to be active during this short period.

(continued on page 27)

Fall is the Best Time to Add Lime

Jarrod O. Miller

If you are planning on adding lime to bring your pH up, post-harvest is the best time to do it. Lime can take some time to react with the acidity in your soil, particularly in no-till systems. Following application, your soil pH may be greater than 7 at the surface, only gradually coming down. So if you wait to apply lime in the spring, soil pH may be too high at planting.

Some considerations when liming:

Sandy soils are typically lower in micronutrient concentrations and more sensitive to higher pH, so UD recommends a pH 6.0 for these soils. However, the target pH for clay (finer) soils is 6.5. Watch your fields for nutrient deficiencies so you can pinpoint an ideal pH range in the future.

Tillage usually mixes lime well, but no-till should definitely be applied in the fall.

Does your soil have plenty of magnesium? Find a lime with more calcium this time.

Get a cheap pH test kit and monitor your soil pH over the winter.

*Dr. Miller is the Extension Agronomist with the Univ. of Delaware. From the **Weekly Crop Update**, Univ. of Delaware Extension, Vol. 25, Issue 27, September 29, 2017.*

Tomatoes and the... (continued from page 21)

may be observed by staining plant tissue. Simple laboratory testing methods do not exist for many viruses. There are serological tests for several of the more common viruses, but it is possible for a single plant to be infected with more than one virus. Sometimes a diagnosis can be reached only on the basis of symptoms and by excluding other potential causes of disease. The presence of a viral vector can be an important clue.

Viral Disease Management - In addition to clean seed and weed control, do not grow tomato transplants in the same greenhouse with ornamentals as they may harbor viruses. Consider growing resistant varieties when they are available. For a full list of virus-resistant tomato varieties, see <http://vegetablemndonline.ppath.cornell.edu> and choose 'Resistant Varieties' from the menu.

Since most viruses are transmitted by insect vectors, controlling these vectors is crucial. Traditionally, insecticides are recommended for control of persistently transmitted viruses, but not for those transmitted non-persistently. This is because insects that transmit viruses non-persistently may cease to pass the virus on to plants before they are killed by the insecticide. This recommendation came about in part to discourage insecticide use when insect populations are below threshold levels, and in part because research has demonstrated that insecticides do not mitigate the spread of non-persistently transmitted viruses. If you are growing in a greenhouse or high tunnel, it may be wise to employ biological control organisms to prevent insect pest populations from getting out of hand.

*Ms. Madeiras is with the Univ. of Massachusetts Plant Disease Diagnostic Lab. From **Vegetable Notes for Vegetable Farmers in Massachusetts**, Univ. of Mass. Ext. Vol. 29, No. 4, April 13, 2017.*

Equipment

AGRITOURISM AND VEGETABLE EQUIPMENT SALE, November 16, 2017 - Reynolds Farm, 11129 Gehr Road Waynesboro PA 17268. Retiring after 19 years. Information at prrunginc.com. Contact person- Bill Reynolds 717-377-7856

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VEGETABLE PRODUCTION

Pumpkin Fruit... (continued from page 26)

Native pollinators can be very effective in pollinating pumpkins and some research has shown that most of the fruit set is occurring because of these native pollinators. Bumblebees and squash bees are native bees active in pumpkins. The squash bee is of particular interest because it has evolved along with pumpkins and squash in the Americas and is dependent on pollen from pumpkin and squash plants.

Other research has shown that honeybees do provide additional pollination benefits above what native pollinators are providing. In research from Illinois, Walters and Taylor found that while pumpkin fruit number was not increased with the addition of honeybees, pumpkin weights and size were increased significantly. Research has shown that 10-15 visits by honeybees transferring 1200 pollen grains will result in full fruit set.

Too much available nitrogen can also delay pumpkin fruit set so that many of the pumpkins that are produced do not reach maturity in time. Pumpkins do not normally need more than 80 lbs/acre N to grow a crop. Fertilizing above 100 lbs/acre N may cause the pumpkins to put on excessive vine growth and delay fruiting.

*Dr. Johnson is the Extension Vegetable & Fruit Specialist at the Univ. of Delaware. From the **Weekly Crop Update**, Univ. of Delaware Extension, Vol. 25, Issue 14, July 7, 2017.*

NEWS

Charlie Arnot Will... (continued from page 14)

growers will gather for the annual Fruit and Vegetable Growers Banquet which will include awards and recognitions. On January 31 there will be an Ice Cream Social for all in the evening plus a reception for apple growers.

Registration is required for all persons attending the Convention trade show or educational sessions. Registration with any of the five sponsoring organizations allows one to attend any of the sessions although there are additional charges for some workshops and meals. For further information, go to www.mafvc.org or call 717-677-4184 or 717-694-3596.



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