

PENNSYLVANIA
VEGETABLE GROWERS

NEWS

for the commercial vegetable, potato and berry grower



July 2014 / Volume 37 Number 7

Wanted: Pictures from Your Farm



Lettuce and arugula are growing in troughs on the ground and suspended in air at Twin Springs Fruit Farm in Orrtanna. Photos courtesy Penn State Extension.

To add interest and consumer education value to the PVGA Farm Show Food Booth, last year Nancy Grace was able to put together a slide presentation of scenes from Pennsylvania vegetable farms using pictures submitted by PVGA members. We would like to expand and improve that presentation that is displayed on a large screen for customers at the PVGA Booth.

But we need your help. Pictures from your farm of your crops and your planting, harvesting or packing operations as well as your market are needed. We could also potentially include video clips of your farm. So get out your camera and take a couple dozen pictures for PVGA during August and September. Then send them to us on a CD (PVGA, 815 Middle Road, Richfield, PA 17086) or by email (pvga@pvga.org). If you already have some pictures from earlier this summer or previous years, send them as well.



Mothersbaugh Farm in Spring Mills uses this market truck for their farmer's markets. Photos courtesy Penn State Extension.



Greenhouses at New Morning Farm in Hustontown.

NEWS



**Pennsylvania
Vegetable Growers
Association**

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

President

Robert Shenot '16
Wexford

First Vice President

David Miller '17
York

Second Vice President

Jonathan Strite '16
Harrisburg

Secretary-Treasurer

William Reynolds '16
Waynesboro

Past President

Brian Campbell '15
Berwick

Directors

Fred Dymond III '17
Dallas

Christopher Harner '17

State College

Curtis Kaelin '15

Wexford

David King '16

Bakerstown

Lois Klinger '16

Catawissa

Kenneth Martin '17

New Berlin

Ernest Mast '15

Morgantown

Hilary Schramm '15

Jeannette

Jeffrey Stoltzfus '17

Atglen

John Shenk '17

Lititz

Thomas Strzelecki '15

Wapwalopen

Thomas Styer '15

Muncy

Timothy Weiser '16

York Springs

Executive Secretary

William Troxell
Richfield

Roush Named New Ag Dean at Pennsylvania

Penn State announced July 2 that Richard Roush will be the new dean of the College of Agricultural Sciences, pending approval by the University Board of Trustees at its July 11 meeting. His appointment is effective Oct. 1, 2014. Roush is currently the dean and a professor at University of Melbourne's Melbourne School of Land and Environment in Australia.

Roush replaces Bruce McPheron who left Penn State in November 2012 to become vice president for agricultural administration and dean of the College of Food, Agricultural and Environmental Sciences at Ohio State University, his undergraduate alma mater. Since McPheron's departure, Christ, senior associate dean and professor, has served as interim dean of the college.

"There are global challenges facing agriculture, including feeding a projected 9 billion people without further damaging the environment and opportunities for greater export income," said Roush. "The breadth and depth of Penn State puts us in a great place to help meet these challenges and opportunities, for the benefit of the state, nation and the planet. I very much look forward to joining the team."

Roush has served in his current position at the University of Melbourne since 2006, leading an academic staff of 95 that generates between \$20 million and \$22 million in annual research income.

Roush received his Bachelor of Science degree in entomology from the University of California, Davis, in 1976, and his doctorate in entomology from the University of California, Berkeley, in 1979.

From 1981 to 1986, he was a faculty member and researcher at Mississippi State University; an associate professor at Cornell University until 1995; and associate professor at Australia's University of Adelaide (1995-2003). From 1998 to 2003, he was CEO of Australia's Cooperative Research Centre for Weed Management. For three years from 2003 to 2006, he directed the Statewide Integrated Pest Management Program at the University of California, also serving as interim director of the school's Sustainable Agricultural Research and Education Program from 2004-06.

Since 1987, Roush has consulted for corporations such as Eli Lilly, DuPont, Monsanto and Dow on the management and prevention of resistance to conventional and biological pesticides, and genetically transformed plants.

A member of the Entomological Society of America since 1979, he also was a founding member of the Australian Council of Deans of Agriculture, which was established in 2007. Roush has written nearly 100 articles in refereed journals and contributed to more than 30 books. He's been a reviewer for multiple journals, including *Evolution*, *Science*, *Proceedings of the National Academy of Sciences* and the *Journal of Economic Entomology*.

In his role as dean of Penn State's College of Agricultural Sciences, Roush will oversee one of the largest integrated academic and outreach units of its kind in American higher education. With research expenditures approaching \$97 million annually, the college is one of the most research active among its peer institutions, and serves 3,000 undergraduate student, as well as 580 graduate students through its nine academic departments.

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.

National News Briefs

United Fresh Urges Congress to Act on Immigration Reform

The United Fresh Produce Association urged the House of Representatives to take up immigration reform, rather than cede all action to the Obama Administration. In response to a White House last Friday that there will not be further action in Congress this year on immigration reform, United Fresh President & CEO Tom Stenzel issued the following statement.

"We appreciate President Obama's commitment to try to address our broken immigration policy through executive action, but urge the House of Representatives not to abandon their responsibility to address this serious issue. The House needs only to bring reform proposals to the floor for members to debate, revise and pass as they see fit. This would allow the House and Senate to work out their differences and craft a compromise, which is the way Congress is supposed to work. If the House continues to disregard its responsibility to address this issue, the produce industry has no choice but to work with the Administration on short-term administrative patches that will be appreciated, but are ultimately unsatisfactory. Our industry is committed to providing Americans with an abundant supply of nutritious, healthy produce essential to their physical well-being. But it is a basic fact that we face a declining and inadequate workforce to harvest and distribute U.S. grown fruits and vegetables. Congressional inaction on immigration reform is driving fruit and vegetable production out of the United State, costing U.S. consumers and farmers millions of dollars, and eliminating jobs across the produce supply chain. United Fresh remains committed to working with any member of Congress – and the Administration – to drive meaningful immigration reform."

From *Inside United Fresh*, United Fresh Produce Association, July 3, 2014.

New Consumer Food Safety Education Materials Available

The Partnership for Food Safety Education has introduced **ProducePro**, a new campaign intended to support consumers with important home practices for the safe preparation and enjoyment of fresh fruits and vegetables. The campaign delivers tools designed for retailers and health educators to effectively educate consumers on Six *Smart ProducePro Practices*.

United Fresh supports the Partnership for Food Safety Education and encourages members to take advantage of the educational materials available to help consumers understand the importance of practicing food safety in the home. Free downloads of brochures and educational graphics are available on the PFSE website at <http://www.fightbac.org/campaigns/produce-handling/460-produce-bac-fighters>.

From *Inside United Fresh*, United Fresh Produce Association, July 3, 2014.

United Fresh Works to Increase Sales of Produce at Convenience Stores

The United Fresh Produce Association and the National Association of Convenience Stores (NACS) have announced a new partnership to significantly increase the sales of fresh produce in convenience stores. A new task force of members of both groups met during the United Fresh 2014 convention on June 12.

As the leading associations representing produce suppliers and their convenience store customers, United Fresh and NACS have formed the partnership to identify best practices that can be shared across the industry to assist convenience store operators in developing their own fresh produce supply chains and in-store management. With more than 151,000 locations across the country, convenience stores are increasingly seen as a convenient destination for consumers to buy fruit and vegetables. In 2013, produce sales at convenience stores were up 16.7 percent, more than doubling the overall 7.3 percent growth rate of produce in the United States. Convenience store sales of produce reached \$328 million in 2013, and the groups believe that sales can increase dramatically over the next five years from this task force's efforts.

"The business opportunities for convenience stores that manage fresh produce well are vast, for direct sales as well as enhancing the image of stores as a provider of fresh and healthy food options. Fresh-cut fruit and vegetables, ready-to-eat meals and snack products, and even whole commodities can deliver attractive margins and new customer segments to retailers," said Tom Stenzel, United Fresh president and CEO.

"Consumers are increasingly seeking grab-and-go, convenient options for their produce needs. Convenience stores present a tremendously underdeveloped source of produce sales in communities," said NACS President and CEO Henry Armour. "We are excited to work with United Fresh to give retailers the tools to affordably acquire merchandise and sell produce in their communities as part of our broader nutrition initiative."

At its initial meeting in Chicago, the task force reviewed current challenges in supply chain management, in-store handling and merchandising, and other barriers to produce success for convenience retailers. The task force also began identifying best practices in meeting each of these challenges, learning from those retailers and produce suppliers who are finding the greatest success today. The associations plan to develop tools and services to share best practices and successes with the broader memberships of NACS and United Fresh.

From *Inside United Fresh*, United Fresh Produce Association, June 26, 2014.

Produce Industry Connects with School Nutrition Leaders at United Fresh Produce Pavilion

Hundreds of school nutrition officials from across the country welcomed the first-ever Fresh Produce Pavilion at the School Nutrition Association (SNA) Annual National Conference in Boston in mid-July. By any measure, the pavilion was a resounding success, with United Fresh Produce Association staff, produce distributors, growers, fresh-cut processors, and school nutrition directors sharing ideas and information in one-on-one exchanges at the SNA annual conference.

"We forged new relationships with so many school nutrition directors from around the country, all of them excited about serving more fresh fruits and vegetables in school meals," said Dr. Lorelei DiSogra, vice president, nutrition & health. "The Fresh Produce Fit Pick vending machine was an instant star. School nutrition directors, USDA officials and advocates were snapping photos of it and uploading to twitter and other social media as an example of an easy way to meet new Smart Snacks in Schools nutrition standards. Schools wanted to know

(continued on page 4)

NEWS

National News Briefs... *(continued from page 3)*

how they could get a fresh produce vending machine loaded with a wide variety of single serve fresh produce snacks.”

United's Fresh Produce Pavilion included exhibits by many United Fresh member companies and a “Ask the Experts: Produce Solutions Center” for school foodservice directors. The “Ask the Experts” area was co-sponsored by PRO*ACT, which brought a number of produce distribution experts from around the country to serve as consultants for schools to answer all their produce-related questions, share guidance and tips for writing produce RFPs, and talk about the wide variety of fresh and fresh-cut fruits and vegetables that are ideal for school foodservice.

*From **Inside United Fresh**, United Fresh Produce Association, July 17, 2014.*

PFB Continues to Push on “Waters of the U.S.” Rule

Farm Bureau is continuing its push to have two federal agencies “Ditch the Rule” over their proposal to regulate nearly every drop of water.

The Environmental Protection Agency and the Army Corps of Engineers are looking to expand their authority under the Clean Water Act, which would result in federal jurisdiction over a number of water bodies, including small creeks, streams and rain-dependent ditches.

Recently, Pennsylvania Farm Bureau member Andy Fabin testified before a House subcommittee that a proposed expansion of federal jurisdiction under the Clean Water Act will cause farmers to slow their adoption of conservation practices.

Fabin, who testified before the House Agriculture Subcommittee on Conservation, Energy, Commerce and Forestry, said the proposed regulatory overreach by the Environmental Protection Agency and the Army Corps of Engineers is troubling.

“As a farmer, my willingness to implement voluntary conservation practices has been greatly diminished, despite my desire to improve and protect the waters on my farm,” said Fabin, who lives in Indiana County and serves on PFB's Young Farmer and Rancher Committee. “If the interpretive rule remains in place, farmers and ranchers across the country will slow their adoption of conservation practices.”

The EPA and Army Corps have released a proposed rule that would expand their authority under the Clean Water Act. If left unchanged, the agencies could regulate dry land as if it were “navigable water,” a power grab that Congress has flatly rejected and which two U.S. Supreme Court decisions have prevented. This proposal would give the EPA and Army Corps extensive regulatory authority, beyond what the Clean Water Act allows. That could include the need for farmers to obtain federal permits to farm major portions of their land. It could also provide new avenues for activist groups to take farmers to court.

Agriculture's voice needs to be heard on this issue. Visit www.pfb.com and click on the ‘Act Now’ link to send a message to the EPA and Army Corps telling them to “Ditch the Rule!”

*From the **Pennsylvania Agricultural Alliance Issues Update**, Penna. Farm Bureau, July 2014.*

Farm Bureau Looking For Congressional Action on Taxes

Farm Bureau is looking to Congress to come to an agreement on several expired tax provisions that help farmers' better plan for the swings in their business.

Members of the House Ways and Means Committee have approved several pieces of legislation that would address tax provisions that expired in 2013. Among them is legislation that would permanently extend an increase in Section 179, which farmers use to deduct the purchase of equipment. Under H.R. 4457, the maximum Section 179 deduction would be set at \$500,000. The current maximum deduction is \$25,000.

Farm Bureau is putting a priority on tax code provisions that give farmers the ability to deduct expenses immediately instead of having to depreciate them over time so they can improve cash flow and better match income and expenses, said AFBF President Bob Stallman. The current practice of having Congress extend small business tax provisions for a year or two makes it difficult for farmers to make long term business planning, he said.

“Because farming requires large investments in machinery, equipment and other depreciable capital, farmers and ranchers place great value on tax code provisions that allow them to write off capital expenditures in the year that purchases are made,” American Farm Bureau Federation President Bob Stallman wrote in a letter to the committee, urging members to pass the bills. “Tax provisions that accelerate expensing and depreciation allow farmers and ranchers to better manage cash flow, minimize tax liabilities and reduce borrowing. The ability to immediately expense capital purchases also offers the benefit of reducing the record keeping burden associated with the depreciation.”

Along with addressing Section 179, the House Ways and Means Committee also approved several bills to make permanent several expired tax codes. They include: H.R. 4718 would make 50 percent bonus depreciation permanent. H.R. 2807, which would make permanent the expanded deduction for donated conservation easements. Through 2013, farmers could receive an enhanced deduction of up to 100 percent of income, and the deduction could be carried forward for 16 years. That deduction is now limited to 30 percent and can only be carried forward for six years. H.R. 4719 which would extend and expand the charitable deduction for food contributions.

Farmers who used the accrual accounting method were able to take advantage of tax incentives for charitable donations of food. The expanded deduction would allow all farmers, not just those using accrual accounting, to use the provision.

In the Senate, members of the Finance Committee has already approved the EXPIRE Act, to expand all expired provisions for two years. However, this piecemeal approach with the tax code, and uncertainty over whether expired provisions will be made permanent, makes business planning difficult, said Pat Wolff, tax specialist at the American Farm Bureau Federation.

“It's just really difficult to deal with a tax code that changes every year or every two years, but the Senate is dug in on their two-year extension, and how they're going to figure it out, no one knows,” she said. “They need to get together and work out the differences so that we can have these important tax provisions now rather than later.”

*From the **Pennsylvania Agricultural Alliance Issues Update**, Penna. Farm Bureau, July 2014.*

Farm Bureau Opposes EPA Natural Gas Plan

Farm Bureau is concerned that new regulations by the Environmental Protection Agency to reduce carbon emissions will harm farm families.

(continued on page 6)

CROPCARE®

Produce Sprayers

High Pressure single-sided Boom Sprayers
are uniquely engineered for use on crops
ranging from pumpkins to mature sweet corn.

Available in trailer and three point hitch models with tank sizes ranging from 110-750 gallons.



*See your local Pennsylvania
dealer today...*



Many other sprayer models available.
Ask your dealer for more information.

- B&R Farm Equipment Inc.** 570-658-8175
Beavertown
- Cedar Grove Farm Store**..... 717-532-7571
Shippensburg
- Hetrick Farm Supply Inc.** 814-275-3507
New Bethlehem
- Longeneckers, Inc.**..... 814-793-3731
Williamsburg
- Rovendale Ag & Barn Equipment**..... 570-538-9564
Watsonstown
- Sandy Lake Imp Co, Inc.** 724-376-2489
Sandy Lake
- Zimmerman Farm Service**..... 717-933-4114
Bethel
- Martin's Repair Shop, LLC** 717-733-3015
Ephrata

CROPCARE®

CropCareEquipment.com
Lititz, PA 17543 | Ph: 717-738-7365
Manufactured by PBZ LLC, a Paul B. Zimmerman, Inc. company

NEWS

State News Briefs

State Budget

The Pennsylvania General Assembly delivered a \$29.1 billion budget to Gov. Tom Corbett that does not contain tax increases, and also largely addresses the needs of agriculture. The Governor signed the budget, but vetoed several line items.

The budget does contain mostly positive news for agriculture. The Pennsylvania Department of Agriculture's general operating budget will see a \$2.5 million increase and Ag Excellence received a \$500,000 bump in spending. However, Penn State Extension and Research received flat funding. PVGA and Pennsylvania Farm Bureau were advocating for an increase in funding for Extension, due to previous cuts in funding.

From the Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, July 2014.

Pennsylvania Hosts National Ag in the Classroom Conference

More than 400 teachers from across the United States and Canada spent time in Pennsylvania in late June while attending the National Agriculture in the Classroom Conference hosted by Pennsylvania Farm Bureau (PFB) and its charitable organization, the Pennsylvania Friends of Agriculture Foundation.

"Agriculture plays a major role in the lives of all Americans, yet many people are not familiar with the role farmers play in

producing food from the field to the dinner table. The national conference provides teachers with valuable information through materials, interactive workshops and unique farm tours," said PFB President Carl T. Shaffer.

The mission of the National Agriculture in the Classroom (NAITC) program is to provide educators a wealth of resources for integrating agriculture, nutrition and natural resource education into the K-12 curriculum. Ag in the Classroom (AITC) programs improve student achievement by utilizing innovative and hands-on lessons that intrigue students while teaching core curriculum concepts in science, social studies, language arts, math and nutrition. During their week in Hershey, educators participated in a number of hands-on workshops and also toured numerous farms around the state.

"Life on a farm is very high-tech. It can include testing soil samples, determining the precise amount of nutrients for a specific crop, carefully developing animal feed rations and using satellite technology for planting and harvesting," Shaffer said. "Aspects of science, technology, engineering and math are occurring every day on farms across the nation."

Farm Bureau notes that agriculture education is more important now than ever with fewer Americans having first-hand knowledge of how food is raised and grown, yet the appetite of consumers for that information is at an all-time high.

(continued on page 8)

National News Briefs... *(continued from page 4)*

The EPA has proposed that the United States reduce carbon dioxide from the nation's power plants by 30 percent. However there are concerns the EPA will look to other sectors, including agriculture, to impose new greenhouse gas regulations.

States will be required to find their own solutions to reach greenhouse gas reductions. Under the EPA plan, Pennsylvania would be required to reduce emissions by 31 percent by 2030.

Much of the reduction in emissions will come by targeting coal-fired power plants. Many rural electrical cooperatives rely heavily on coal plants for power generation. The result is that families will likely pay more for electricity generation at their homes and farm.

The EPA has already made a budgetary request to perform an analysis as to whether regulations of animal feeding operations is necessary in order to curb greenhouse gas emissions.

"The greenhouse gas proposal is yet another expensive and expansive overreach by EPA into the daily lives of America's farmers and ranchers," said AFBF President Bob Stallman. "Our farmers and ranchers need a climate that fosters innovation, not unilateral regulations that cap our future."

Farm Bureau argues the EPA's regulations will result in the closure of more power plants. Also, the greenhouse gas regulations effectively ban the construction of new coal-fired power plants because new plants must be equipped with a technology known as carbon capture. However, no commercial-scale power plant is currently using that technology.

The resulting shutdown of existing plants, and effective ban on new coal power plants, will drive up the cost of electricity for every American, the Partnership for a Better Energy Future said. It's also likely there will not be enough power to meet current electricity demands.

"U.S. agriculture will pay more for energy and fertilizer under this plan, but the harm won't stop there," Stallman said.

"Effects will especially hit home in rural America."

Farm Bureau is reviewing the regulations and will submit comments on the proposed regulations.

From Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, July 2014.

Ag Exports Could Set Record

Federal officials are forecasting that 2014 will break records for agriculture exports.

The U.S. Department of Agriculture recently released their trade report for Fiscal Year 2014, and is estimating agriculture exports will reach \$149.5 billion. If realized, that amount will be a record for agriculture exports.

The \$149.5 billion number is nearly \$7 billion higher than previous estimates. Exports are projected to grow by 31 percent from the last fiscal year.

"American farmers and ranchers are on track for another year of record exports, which builds on the past five years of the strongest agricultural trade in our history. This report indicates that the volume of U.S. agricultural exports has increased, which demonstrates an increasing global appetite for high-quality, American-grown products," said USDA Secretary Tom Vilsack.

Vilsack said the export forecast for America's farmers is continuing to look promising.

"USDA will continue to focus its efforts on tapping into new markets for what is grown and made in rural America. Today, only one percent of U.S. companies export, and yet 95 percent of the world's consumers live outside the borders of the United States, creating significant opportunities for U.S. food and agriculture," he said.

From the Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, July 2014.

New Bird Gard with Wireless Speakers



Wireless transmitter Wireless Speaker
 The new Bird Gard Super PRO transmitter broadcasts distress calls 1000 ft in all directions to Wireless Speakers. Protects up to 6 acres. No wires to mess with. One transmitter can drive up to 8 speaker boxes which can protect up to 48 acres. The Bird Gard Super PRO with Wireless Speakers has the same features as the current Super PRO. A Transmitter/controller and Speaker/Receiver **\$799**. Each extra Speaker/Receiver **\$399**
Bird Gard/JWB Marketing
(800) 555-9634
birddamage.com

The Connecticut Dept of Horticulture did a study with Bobbex and 9 other deer repellents (including Hinder). The result: Bobbex scored the highest at 93%

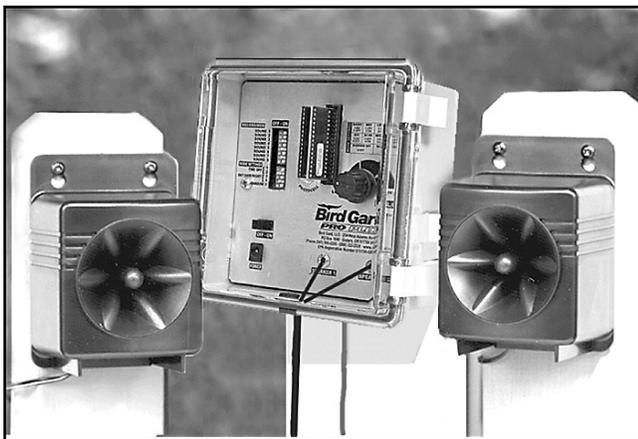


- * Prevents late season damage to sweet corn, pumpkins, and melons
- * Ideal for tomatoes, peppers & strawberries at transplant time
- * All natural...made from fish, beef, garlic, etc
- * Long lasting (up to 2 months with one application)
- * Bobbex does not burn the foliage
- * Concentrated...5 gal.makes 55 gal.

\$198 plus shipping.
 5 gallon pail
 Makes 55 gallons

Bobbex
JWB Marketing
(800) 555-9634
deerdamage.com

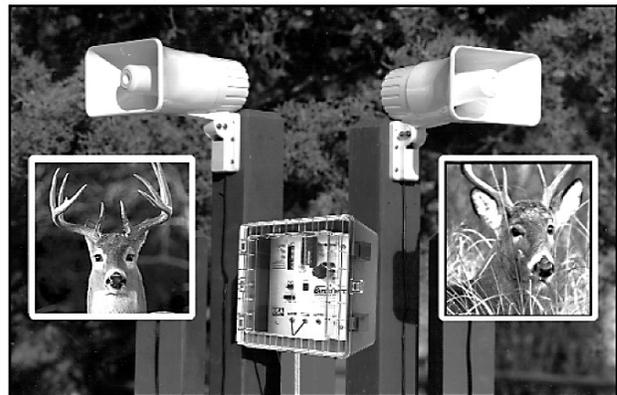
Bird Gard helps prevent bird damage in cherries, blueberries, grapes and sweet corn



3 acre PRO Plus: \$365
 *PRO Plus with 2 speakers-covers up to 3 acres.
 *Ideal for red-winged blackbirds in sweet corn
 *Combo chip with distress calls & harassment sounds

JWB Marketing
(800) 555-9634
birddamage.com

Deer Shield[®]
SUPER PRO



New from Bird Gard. Electronic deer control in orchards, small fruit, & vineyards.

Actual recordings of deer snorts & fawn bleats. Tested by the Univ. of Nebraska

Discounted:
\$519 (with 2 spks)

JWB Marketing
(800) 555-9634
DeerShieldPRO.com

NEWS

State News Briefs... *(continued from page 6)*

"Teachers have plenty of opportunities to incorporate agriculture into their classrooms and the conference provides them with more tools to enhance the learning experience. More importantly, the conference inspires and motivates teachers to bring the real life interactions they experienced back to their students," Shaffer said.

PVGA helped sponsor some of the materials for this national conference and has supported the AITC programs annually for many years.

From the Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, July 2014.

HUSH Lawsuit Hushed

The group Hunters United for Sunday Hunting (HUSH) were shot down in their attempt to convince a judge to overturn Pennsylvania's longstanding prohibition of Sunday hunting.

The group was attempting, through the courts, to expand the number of species that can be hunted on Sunday. HUSH tried to argue that Pennsylvania's Sunday hunting prohibition was unconstitutional.

Members of the Pennsylvania General Assembly, over the years, have repeatedly shot down attempts by activists to expand Sunday hunting, and have sided with Pennsylvania Farm Bureau on the issue. Pennsylvania farmers have long opposed Sunday hunting because they want to be able to enjoy their land without fear of interfering with hunters.

Many outdoor enthusiasts, and hunters, have also opposed attempts to expand Sunday hunting. More than 80 percent of all hunting in Pennsylvania takes place on private property, including farm fields.

From the Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, July 2014.

Another Vehicle Code Bill Advances

The state House of Representatives has given approval to a bill that would exempt drivers of farm-registered trucks from federal commercial driver's license requirements.

House Bill 2092, introduced by Rep. Mark Keller, would apply to farm-registered trucks that are driven anywhere in Pennsylvania, or within a 150-mile radius of the farm when crossing state lines. That would make state law consistent with federal law. House Bill 2092 is now facing action in the Senate.

"Under my bill, farm drivers will be relieved of the excessive regulatory burdens that were primarily developed for commercial truck drivers," said Keller. "It expands the farm vehicle driver CDL exemption to be consistent with federal law and minimizes the potential for confusion among law enforcement officers."

The bill is part of a Pennsylvania Farm Bureau-led effort to make reforms to the state Vehicle Code.

Recently, the Senate passed a bill that would restore exemptions to registration-exempt farm trucks and drivers that were in place prior to 2010. Senate Bill 1301 is now facing action in the House.

Farm Bureau is also working with state lawmakers on a third bill that would exempt the transportation of products during harvest from

the Vehicle Code's strict rules that prohibit any materials from escaping the vehicle as long as the load is not higher than the side of the truck, and the vehicle is kept at speeds below 45 mph.

From the Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, July 2014.

Pennsylvania Congressmen Support PFB's Lawsuit

Several members of Pennsylvania's Congressional delegation have joined 35 members of Congress in filing a brief in support of Farm Bureau's lawsuit against the Environmental Protection Agency.

Senator Pat Toomey, along with Reps. Glenn "GT" Thompson, Scott Perry, Lou Barletta and Bill Shuster, have filed the court brief in support of Pennsylvania Farm Bureau's lawsuit against the agency's Chesapeake Bay Cleanup plan.

PFB's lawsuit, which is supported by the American Farm Bureau Federation and several outside organizations, contends the EPA overstepped its authority when developing its Chesapeake Bay Cleanup plan. The EPA's plan goes far beyond its authority contained in the Clean Water Act and has taken away the ability of state governments to determine their own solutions for clean water milestones.

PFB also believes the EPA used incomplete data to craft their bay cleanup plan and did not accurately count the number of best management practices used by Pennsylvania farmers to reduce nutrient and sediment loss.

In their brief, the Senator and Congressmen are asking the federal appeals court to reject the EPA's and the lower court's interpretation of the Clean Water Act, which gives blind deference to EPA in restricting land use activities of local communities and landowners under claim of water quality.

From the Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, July 2014.

(continued on page 9)

Black Rock Repair LLC

Manufacturer of *farm and home sprayer*

sprayer pumps parts & service | pressure washer sales & service

LEROY or LEVI • 717.529.6553

hydraulic hoses | general welding & repair
produce equip | UPS service | sprayer manufacturing



Call for prices

858 Pumping Station Rd | Kirkwood, PA 17536

State News Briefs... (continued from page 8)**Census of Ag Profiles Show Lancaster, Chester Counties Nationally Ranked**

Lancaster and Chester counties have taken top spots in national rankings, according to data released by the U.S. Department of Agriculture's 2012 Census of Agriculture.

Lancaster County leads the nation in inventory of egg laying chickens with 10.7 million birds, while Chester County continues to be the national leader in mushroom sales. Chester County's mushroom sales topped out at \$396.8 million in 2012.

The census data reaffirms the important role that mushroom production plays in the economy of Chester County, said Dan Miller, president of the Chester/Delaware County Farm Bureau. "Every time that we go to an event, we try to publicize how important the industry is to the county," he said.

Lancaster County continues to lead the state in the largest market value of livestock and agriculture products. Lancaster County has several large-scale egg production companies, with several smaller companies filling out niche-markets, such as cage-free eggs, said Steve Hershey, who has several egg laying houses in the county.

Growth in the county has come from larger firms retiring older facilities and placing new caging systems and in the popularity of the niche markets, Hershey said. Still, he was surprised to see the county take the top spot in terms of egg laying birds.

The 2012 Ag Census also collected data on conservation practices in Pennsylvania. The census found that more than 1.3 million acres are planted following no-till methods, while another 500,000 are planted using conservation tillage.

"The 2012 Census of Agriculture provides a wide range of demographic, economic, land, and crop and livestock production information as well as first-time or expanded data," said King Whetstone, Director of the Northeastern Regional Office in Harrisburg.

Nationally, the value of agriculture products is increasing. In 2012, the total value was \$394.6 billion, a 33 percent increase from 2007. For more information about the census visit: www.agcensus.usda.gov

From the Penna. Agricultural Alliance Issues Update, Penna. Farm Bureau, June 2014.

Australian Official Tours Pennsylvania Farms

Kyam Maher, who is the parliamentary secretary to the South Australia State Minister for Agriculture, toured two Pennsylvania farms during a visit.

Maher, who serves as an elected official in Australian government, toured Brubaker Farms in Lancaster County along with Flinchbaugh's Farm Market and Orchard in York County. The visit was organized by Pennsylvania Farm Bureau.

Maher was interested in learning about several aspects of Pennsylvania agriculture, including how farms are utilizing clean energy, marketing programs including the PA Preferred program and state and federal farm loan programs. During his visit, Maher also had the chance to interact with Department of Agriculture Secretary George Greig.

From the Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, July 2014.

(continued on page 10)

ROBERT MARVEL PLASTIC MULCH, LLC

PLASTIC MULCH FILM

Embossed, Smooth and Biodegradable.

EQUIPMENT

Plastic Mulch Layers, Plastic Mulch Lifters, Trans Planters.

DRIP IRRIGATION

Carrying a Full Line Of Drip Irrigation Tapes, Filters, Pressure Regulators, Fittings, In-Line Drip Tube and More.

SOLAROF GREENHOUSE COVER

Next Generation Woven Greenhouse Cover.

FLOATING ROW COVERS

Earlier Harvest, Insect Protection and Frost Protection. Also Available in Custom Made Sizes to Fit your Fields.

To Learn More About The Products We Offer OR
to Download a Complete Catalog Go To
www.robertmarvel.com OR Call Toll Free 1-800-478-2214.

We accept Visa, Mastercard, Discover and American Express

NEWS

High Tunnel Legal and Taxation Issues

Governor Tom Corbett recently signed two pieces of legislation regarding the taxation of High Tunnels in Pennsylvania. While this simplified the property tax issue, there remains substantial confusion among growers as to what is required in order to legally construct high tunnels in their local municipality. In addition, what constitutes a high tunnel, greenhouse and sales facility as they relate to other agricultural production facilities varies from township to township and borough to borough. This article seeks to answer some of the questions that growers have and provide some guidance in the building permit process. To that end, a series of questions were submitted to Secretary of Agriculture George Greig.

1) Explain the two pieces of high tunnel property tax legislation that Governor Corbett signed recently and how they impact growers.

Two bills amended two separate laws authorizing local property taxation. HB 1439 amended the Consolidated County Assessment Law which applies to counties of the second class and smaller. It was signed by the Governor on December 18, 2013 as Act No. 114 to take effect in 60 days.

The second bill was SB 638, which amended the General County Assessment Law which applies to counties of the first

class, i.e. Pittsburgh and Philadelphia. It was signed into law on December 23 as Act No. 130 and also took effect in 60 days.

Both exempt from local property taxation the following defined structures:

"High tunnel." A structure which meets the following:

Is used for the production, processing, keeping, storing, sale or shelter of an agricultural commodity as defined in section 2 of the act of December 19, 1974 (P.L.973, No.319), known as the Pennsylvania Farmland and Forest Land Assessment Act of 1974 (Clean and Green), or for the storage of agricultural equipment or supplies.

Is constructed consistent with all of the following:

Has a metal, wood or plastic frame.

When covered, has a plastic, woven textile or other flexible covering.

Has a floor made of soil, crushed stone, matting, pavers or a floating concrete slab.

Growers realize the benefit of high tunnel houses in expanding the growing season at a relatively low cost. Taxation of these structures as real estate made this practice cost prohibitive and a disincentive for new structures. Acts 114 and 130 assure the high tunnels will not subject growers to burdensome property tax increases.

(continued on page 11)

State News Briefs... *(continued from page 9)*

Penn State Partners With Other Colleges for Farm Bill Education

Penn State is one of more than a dozen land grant institutions that will use federal dollars to develop education tools for new Farm Bill programs.

The U.S. Department of Agriculture recently awarded \$6 million to the colleges and related extension services to develop online decision tools that can help educate producers about Farm Bill programs. Pennsylvania Farm Bureau joined other state Farm Bureaus in signing a letter of support for this program.

"Helping farmers and ranchers understand new Farm Bill programs and what the programs mean for their families is one of USDA's top priorities," said USDA Secretary Tom Vilsack. "With the resources we're providing, university experts will help ensure farmers and ranchers are highly educated as they make critical decisions about new programs that impact their livelihoods. The new tools that will be developed will empower farmers and ranchers to select the plan that best fits their unique needs."

Penn State will work with several other land grant institutions to develop new online tools to train extension agents, who will in turn help educate farmers.

The USDA is also providing funding directly to cooperative extension services to conduct outreach on Farm Bill programs. Money will be used for public education meetings, where producers can meet with Farm Service Agency staff. Those meetings are expected to start later this summer.

Producers will be given information that will help them make choices between the new Agriculture Risk Coverage (ARC) program and the Price Loss Coverage (PLC) program. Online tools will also be developed that farmers can use that will help them look at a host of local factors, such as soil and weather, to help them choose between the two programs. Once a producer enrolls in a particular program, they must remain in that program through the 2018 crop year.

Online tools will also be developed for the Margin Protection Program for Dairy and the Noninsured Crop Disaster Assistance Program.

From the Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, July 2014.

(continued on page 17)

KOOLJET®

Reliable Refrigeration Systems



1-866-748-7786 www.kooljet.com

One-Piece and Portable Skid-Mount Systems; Hydro-Coolers; Medical and Process Chillers; Blast Freezers, Vacuum Coolers, Refrigerated Dehumidifiers.

Custom Built Designs - Domestic and International Markets



Visit our website to view our complete line

High Tunnel Legal... (continued from page 10)

2) This property tax legislation seems to be a step forward in the status of high tunnels and their taxation, what farm group or groups advocated for this change?

Pennsylvania Farm Bureau, Pennsylvania Landscape and Nurserymen's Association, Pennsylvania Association for Sustainable Agriculture (PASA) and Pennsylvania Vegetable Growers Association were instrumental in passage of this legislation.

3) How does the specific language used in the property tax legislation noted in #1 & 2 help to define high tunnels as they relate to other agricultural facilities?

The definition in the laws clearly distinguishes high tunnels from other permanent structures and enables the exemption. For example, floors are required to be made of soil, crushed stone, matting, pavers or floating concrete—none of which are deemed to be permanent improvements. The structures are considered equipment rather than taxable real estate. By design, the structures may be moved elsewhere on the farm at any time.

4) High tunnels are somewhat different from other more permanent farm structures. When a grower is communicating with their local municipality how can the seasonal nature, and ag production status versus a sales facility such as a farm market greenhouse best be described?

Seasonal direct marketing of agricultural commodities may occur from the high tunnel; however the structures are unlikely to operate throughout the year as a farm market greenhouse. The County Assessment laws include "sales" as an eligible use

for exemption but this does not pre-empt local Uniform Construction Code standards that may apply. Landowners may opt to move the facilities as needed or to not engage in direct marketing from the facilities in order to demonstrate the temporary nature of the structures.

5) Many municipalities are requiring not only a building permit, but also a storm water management plan, and land development plan. Are there resources such as standardized templates and engineering firms that are familiar with these structures for growers use as an aid in the development of such plans?

County conservation districts and local USDA Natural Resources Conservation Service (NRCS) provide technical assistance related to storm water management plans. Storm water management is regulated at the local level under the authority of the Municipalities Planning Code (MPC). Private engineering firms will assist in design and planning. Land Development Plans are also authorized under the MPC for any physical improvements to the land, including excavation. Interpretation of this requirement varies by township and may be specific to each individual project. Requests for exemption should be directed to municipal officials.

6) What is the role of the PA Dept. of Agriculture in regulating high tunnels and the production therein?

PA Department of Agriculture strongly supports this new legislation and is available for outreach and education
 From the **Vegetable, Small Fruit and Mushroom Production News**, Penn State Extension, <http://extension.psu.edu/plants/vegetable-fruit/news/2014>, July 21, 2014.

ProducePackaging.com[®]
 for all your produce packaging needs

1-800-644-8729
 Kurt Zuhlke & Assoc., Inc.
 P.O. Box 609, Bangor, PA 18013



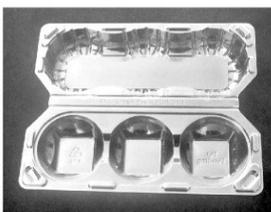
Over 45 Years In The Industry

For over 45 years, Kurt Zuhlke & Assoc., Inc. has been a part of the many innovative packaging concepts utilized by the produce industry.



High Quality Products And Services

Our packaging is designed to protect produce, provide excellent visibility to the consumer, reduce shrinkage and enhance the product. We also offer professional labeling design and application.



From Farmers To Repackers

Whether you are ordering a case or a truck load, you can rest assured that we have the ability and capacity to service your orders quickly.



NEWS

Use of Bleach as a Disinfectant in Post-Harvest Washing Systems

USDA has recently noticed that some growers are using bleach (Clorox™) as a disinfectant in post-harvest washing systems. Disinfectants are regulated the same way as pesticides and unless the label on the bottle indicates EPA approval for washing fruits and vegetables, it is against federal law to use it for that purpose.

USDA has indicated that if an auditor observes a grower using an unapproved disinfectant for washing produce or food contact surfaces, that grower will fail the audit.

Instead, growers should contact a reputable chemical supply company that sells sodium or calcium hypochlorite labeled for that purpose. The Penn State fact sheet "Using Chlorine Sanitizers in Produce Wash Tanks" provides further details on the different types of chlorine sanitizers, as well as factors that influence their effectiveness. (To request a copy of this fact-sheet, contact Lee Stivers at ljs32@psu.edu.)

Question: Didn't there used to be a formulation of Clorox that was registered with EPA for use as a sanitizer for fruits and vegetables? **Answer:** Clorox Brand Ultra Regular Bleach appears to have been registered for this use, but it is no longer manufactured by Clorox. However, recently Clorox registered "Chlorox Germicidal Bleach" (EPA Reg. No 5813-100) for washing fruits and vegetables at 25 ppm or less.

Question: Are there other hypochlorite products on the market that are currently registered for washing fruits and vegetables? **Answer:** Yes, there are products that are legal alternatives for non-labeled bleach. For example, AFCO Chemical Company sells a 12% sodium hypochlorite labeled for this use. There are other manufacturers as well.

Question: Many organic growers use hydrogen peroxide as a disinfectant. Must hydrogen peroxide products used for disinfecting wash water also be registered with EPA? **Answer:** Although it is listed on the USDA Organic website as approved for use, hydrogen peroxide must also be EPA registered for use as a disinfectant.

Question: Are there other alternatives? **Answer:** Yes. SaniDate 5 or 12 are alternatives that have EPA approval and are sold by BioSafe Systems. These consist of peroxyacetic (PAA) acid and hydrogen peroxide, and break down to acetic acid (vinegar), water and oxygen. They are less affected by organic matter and pH than hypochlorite products. SaniDate 5 complies with USDA organic standards because the formulation PAA level is below 6%.

Question: How can I find products approved for fruit and vegetable washing or for other uses? **Answer:** Search the National Pesticide Information Retrieval System at <http://npirspublic.ceris.purdue.edu/state/Default.aspx> for EPA registered products.

From the *Vegetable, Small Fruit and Mushroom Production News*, Penn State Extension, <http://extension.psu.edu/plants/vegetable-fruit/news/2014>, July 14, 2014.

Insect Scouting, ID and Management Workshop Set for August 19

Join Penn State Extension on August 19th from 3:30 to 6:30 PM at Pennypack Farm in Horsham PA to learn about insect management for vegetable production.

The event will start with a tour of Pennypack Farm where Manager Andy Andrews will explain how they use farmscaping to enhance beneficial insect populations. Andy will go over his management strategies for key pests. Then it is time to get out in the field. You will scout for insect pests and practice identification. Multiple resources will be available. Become familiar with where to find effective management strategies for key insect pests.

At Pennypack farm in Horsham PA, Andy and his crew grow thirteen acres of produce using no synthetic fertilizers or pesticides. The farm feeds 350 CSA members during the spring-summer and 150 CSA members during the winter. They also provide many educational programs for the community.

This workshop is part of the Introduction to Organic Vegetable Production series. No pre-registration is necessary. Walk-in fee is \$15 (\$5 for apprentices). For more information visit Introduction to Organic Vegetable Production at <http://www.cvent.com/events/introduction-to-organic-vegetable-production/event-summary-5e7f0a468bb6487da3e6f2e199ffb5b.aspx> or call Tianna DuPont 610-746-1970.

From the *Vegetable, Small Fruit and Mushroom Production News*, Penn State Extension, <http://extension.psu.edu/plants/vegetable-fruit/news/2014>, July 14, 2014.









American Made

We offer a complete line of low volume mist blowers.



Excellent for spraying:
VEGETABLES, vineyards,
orchards, nurseries, Christmas
trees, mosquitoes, cattle,
chicken houses, etc.



For free brochure contact:
Swihart Sales Co.
7240 County Road AA, Quinter, KS 67752

785-754-3513 or 800-864-4595
www.swihart-sales.com

PA Preferred™ Recognizes Member #885: Windy Hill Farm

Windy Hill Farm in Brockway, Jefferson County, developed in the mid 1990's when Sherry Trunzo and husband, Rich, purchased the farm to stable their horses which were being boarded at the time. An enthusiastic gardener, Sherry saw the space as perfect for beginning a large garden.



"When we moved I put in huge, organically-grown gardens," Sherry said. "My husband grew up with chickens and wanted some, so now we also market free-range brown eggs." Homemade lotions and soaps round out the farm's offerings alongside its herbs and vegetables and eggs from Rich's chickens. Top sellers are six varieties of tomatoes and Bodacious Hybrid sweet corn, which customers start to ask for around Memorial Day.

"My heirloom tomato seeds are ones that I saved from my grandmother, who brought them over from Italy," she said. She also grows a Wins All tomato with seeds that were given to her by a customer. The variety was developed from the Ponderosa Pink in the 1920s for improved consistency and flavor. Sherry describes them as "the best, sweetest tomatoes around."

"My favorite part about farming is bringing people to the farm and showing them around," she said. Sherry enjoys educating people, introducing them to new foods and different ways to enjoy them. She brings her less common vegetables to the Brockway Farmers' Market accompanied by recipes and vegetable samples, bringing awareness of uncommon ingredients to more consumers. Find Sherry and Rich at the farm or the Brockway Farmers' Market Fridays from 9-11:30 a.m.

BUY PENNSYLVANIA PRODUCTS FOR PENNSYLVANIA



Our family has been growing quality fruits and vegetables for more than five decades. We're PA Preferred.

Hollabaugh Brothers
Fruit Farm and Market
Biglerville, Adams County



Grown in PA. It makes a difference.

When you buy PA Preferred products, you help local farmers and keep jobs and money in Pennsylvania.

It really does make a difference.

Find local products at PAPreferred.com.



Tom Corbett, Governor

George Greig, Agriculture Secretary

NEWS

Proposed Agricultural Worker Protection Standard Change: Comment Period Closes August 18, 2014!

Richard Bonanno

The EPA is proposing changes to the Worker protection Standards. Please take a look at the following which is provided by EPA through their web site (<http://www.epa.gov/oppfead1/safety/workers/proposed/>). Overall, the rule will take more time to comply with including requiring annual training of all employees.

This is a reformatted version of the above website. Please check the website for any updates.

On February 20, 2014, the Environmental Protection Agency announced proposed changes to the agricultural Worker Protection Standard (WPS) to increase protections from pesticide exposure for the nation's 2 million agricultural workers and their families. This is an important milestone for the farm workers who plant, tend, and harvest the food that we put on our tables each day. EPA is seeking input on the proposed changes and rationale in the **Notice of Proposed Rulemaking, which published in the Federal Register on March 19, 2014.** Comments must be received on or before August 18, 2014.

Comments must be submitted to <http://www.regulations.gov> identified by docket number EPA-HQ-OPP-2011-0184. Your comments will help EPA determine the final version of this regulation.

Proposed changes to the Agricultural Worker Protection Standard (WPS) include:

- Increased frequency of mandatory trainings (from once every five years to annually) to inform farm workers about the protections they are afforded under the law, including restrictions on entering pesticide-treated fields and surrounding areas, decontamination supplies, access to information and use of personal protective equipment. Expanded trainings will include instructions to reduce take-home exposure from pesticides on work clothing and other safety topics.

- Expanded mandatory posting of no-entry signs for the most hazardous pesticides; the signs prohibit entry into pesticide-treated fields until residues decline to a safe level.

- First time-ever minimum age requirement: Children under 16 will be prohibited from handling pesticides, with an exemption for family farms.

- No-entry buffer areas surrounding pesticide-treated fields will protect workers and others from exposure from pesticide overspray and fumes.

- Measures to improve the states' ability to enforce compliance including requiring employers to keep records of application-specific pesticide information as well as farmworker training and early-entry notification for 2 years.

- Personal Protection Equipment (respirator use) must be consistent with the Occupational Safety & Health Administration standards for ensuring respirators are providing protection, including fit test, medical evaluation, and training.

- Make available to farm workers or their advocates (including medical personnel) information specific to the pesticide application, including the pesticide label and Safety Data Sheets.

- Continues the exemptions for family farms.

Questions for Your Consideration on Major Areas of Change

Given the length of the proposal we want to make it easier for you to locate specific sections that you are interested in and comment on them. The major sections of the proposal are identified below and follow the format in the Federal Register notice. Under each section, we have posed specific questions that we

are seeking your input on:

- Training for Workers and Handlers (p.15459)
- Notifications to Workers and Handlers (p.15472)
- Hazard Communication (p.15476)
- Information Exchange between Handler Employers and Agricultural Employers (p.15482)
- Handler Restrictions (Minimum Age for Handlers) (p.15483)
- Restrictions for Worker Entry into Treated Areas (p.15484)
- Display of Basic Pesticide Safety Information (p.15490)
- Decontamination and Emergency Assistance (p.15492 and p.15494)
- Personal Protective Equipment (p.15496)
- Monitoring Handler Exposure to Cholinesterase Inhibiting Pesticides (p.15500)
- Exemptions and Exceptions (p.15502)
- General Revisions to the WPS and Implementation of this Proposal (p.15507)

Tips for preparing comments

We invite you to share your views with us on the proposed changes. Your thoughts on these proposed changes are very important! Your comments will help guide our final decision-making. First, read about the major areas of change under "Questions for Your Consideration on Major Areas of Change". Then open the Notice of Proposed Rulemaking for full explanations of the changes, our rationale for the proposals, and discussions of alternative considered. Finally, using the tips below, submit your comments.

When submitting comments, remember to:

- Identify the document you're discussing (ex. NPRM or Economic Analysis) by the docket number (EPA-HQOPP- 2011-0184) and other identifying information like the subject heading (ex. Handler Restrictions), Federal Register date (March 19, 2014) and page number.

- In some places in the proposal we ask you to respond to specific questions and to organize comments by referencing the Code of Federal Regulations (CFR) part and section number (ex. 40 CFR part 170.111)

- Explain why you agree or disagree; suggest alternatives and substitute language for your requested changes.

- Present any data or information that should be considered by EPA during the development of the final rule.

- Provide specific examples to illustrate your concerns and suggest alternatives.

- Explain your views as clearly as possible, avoiding the use of profanity or personal threats.

- Describe any assumptions and provide any technical information and/or data that you used.

- If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.

- Commenters are reminded that the submission of data derived from human research should include information concerning the ethical conduct of such research, in compliance with the requirements at 40 CFR 26.1303.

- Make sure to submit your comments by the date specified in the Federal Register notice expected to publish within 10 days.

Overall, please provide input on the:

- need for a change, value of any changes, and any alternatives to the proposed changes.

(continued on page 15)

NEWS

Proposed Agricultural... (continued from page 14)

- studies and scientific articles used as the basis of this proposed rule.
- clarity of the proposed revisions.
- ability to effectively enforce the proposed regulation.
- economic analysis of the proposed rule, including its underlying assumptions, economic data, high- and low-cost options and alternatives, and benefits.

Comments may be submitted by one of the following methods:

Submit your comments, identified by docket identification (ID) number EPA-HQ-OPP-2011-0184, by one of the following methods:

- Federal eRulemaking Portal: <http://www.regulations.gov>. Follow the online instructions for submitting comments. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute.

- Mail: OPP Docket, Environmental Protection Agency Docket Center (EPA/DC), Mail code: 28221T, 1200 Pennsylvania Ave., NW, Washington, DC 20460. In addition, please mail a copy of your comments on the information collection provisions to the Office of Information and Regulatory Affairs, Office of Management and Budget, Attn: Desk Officer for EPA, 725 17th St., NW, Washington, DC 20503.

- Hand Delivery: To make special arrangements for hand delivery or delivery of boxed information, please follow the instructions at <http://www.epa.gov/dockets/contacts.html>.

Dr. Bonanno is with the Univ. of Massachusetts Extension.

*From **Vegetable Notes for Vegetable Farmers in Massachusetts**, Univ. of Massachusetts, vol. 26, No. 14, July 17, 2014.*

Introduction to Organic Veg Production Workshops Set

Insect Scouting, ID and Management

When: August 19, 2014, 3:30 PM - 6:30 PM

Where: Pennypack Farm, 685 Mann Road, Horsham PA

Join Penn State Extension August 19th from 3:30-6:30 PM at Pennypack Farm in Horsham PA to learn about insect management for vegetable production. The event will start with a tour of Pennypack Farm where Manager Andy Andrews will explain how they use farmscaping to enhance beneficial insect populations. Andy will go over his management strategies for key pests. Then it is time to get out in the field. You will scout for insect pests and practice identification. Multiple resources will be available. Become familiar with where to find effective management strategies for key insect pests.

At Pennypack farm in Horsham PA Andy and his crew grow thirteen acres of produce using no synthetic fertilizers or pesticides. The farm feeds 350 CSA members during the spring-summer and 150 CSA members during the winter. They also provide many educational programs for the community.

No pre-registration is necessary. Walk-in fee is \$15 (\$5 for apprentices). For more information visit extension.psu.edu/start-farming or call Tianna DuPont (610) 746-1970.

Manage your Soils for High Soil Quality

When: Saturday September 15, 3:30 PM - 6:30 PM

Where: Great Bend Farm, 417 Broad St. Port Clinton, PA 19549

High quality soil is the basis of health crop production. Learn from farmer Sara Runkel, Great Bend Farm and Tianna DuPont, (continued on page 27)

MONOSEM VACUUM PLANTER

Meters to Perfection - Plants with Precision

- Low maintenance
- Durable
- Cast aluminum metering box
- Easy access to seed disc and quickly changed - plants most row crops
- 2-12 row mounted and pull type

SEED DISCS

- Corn
- Beets/Pickles
- Cole Crops
- Sweet Corn
- Edible Beans
- Sorghum
- (Super)
- Soybeans
- Peanuts
- Sunflower
- Peas
- Squash
- Melons/Cucumbers
- Onions/Tomatoes
- Pumpkins

The New Generation of Planters

DOUBLE DISC OPENERS • QUICK ADJUST

Depth Gauge Wheels • V-Closing Wheels

NOW is the time to order your 2014 Planter!

\$ ORDER NOW AND SAVE \$

WITH PRESEASON DISCOUNTS.

Check Out Our Selection of Used Units!

Binkley & Hurst LP

800-414-4705

133 Rothsville Station Road
Lititz, PA 17543
binkleyhurst.com

Equipping for Growth ...

Refrigerated and Ventilated Cooling Systems for Fruit and Vegetable Storages

- COMMERCIAL REFRIGERATION
- DESIGN, SALES AND SERVICE
- SERVING AGRICULTURE FOR OVER 60 YEARS

Free Consultation and Quote

Call Mike Mager at 585-343-2678

ARCTIC

REFRIGERATION CO. OF BATAVIA

26 Cedar Street, Batavia, NY 14020

www.arcticrefrigeration.com

GENERAL

On the Road at Mothersbaugh Farm

Elsa Sanchez, William Lamont, and Thomas Butzler

Mothersbaugh Farm is a 4 acre farm in Spring Mills, Pennsylvania established in 1977. Vegetables and cut flowers are marketed primarily through the Downtown State College Farmers Market, the North Atherton Farmers Market in State College and the Boalsburg Farmers Market. On July 17th farmers Chuck Mothersbaugh and Marie Hornbein gave us a tour.



Curing onions recently harvested from the plasticulture system to the right.

In the field sweet Spanish onions, yellow summer squash, green zucchini and blue-green broccoli grow in a plasticulture system with black embossed plastic, raised beds and drip irrigation.

Chuck and Marie prepare the soil, form beds, and lay plastic in the fall - in early October. This allows for planting early in the spring, this year crops were planted in early April.

Crops including eggplant, lettuces, kabocha squash, mini pumpkins and gladioli grow in a modified plasticulture system using the biodegradable mulch BioTelo in place of conventional black plastic.

These beds are prepared in May. Chuck mentioned that the mulch doesn't keep well, so when he has more than he can use in a single season he donates it to others rather than storing it for use the following year.



Gladiolias planted in a biodegradable mulch system.



A Checchi & Magli transplanter is used to plant most transplants.

Most crops are planted as transplants using a Checchi & Magli transplanter.

A greenhouse grower grows early season transplants and later season transplants are grown on the farm. Some crops, including sunflowers, are planted by seed and gladioli are planted by corms.

Several plantings of sunflowers with yellow or black/brown centers grow in a bare-ground system.

They are sold as single stems or by the half dozen at the farmers markets.

Red slicing tomatoes, red, yellow and orange bell peppers, prickly Asian cucumbers and muskmelons grow in three high tunnels and a greenhouse on the farm.



Bell peppers and cucumbers growing in a high tunnel.

(continued on page 17)

On the Road... (continued from page 16)

Transplants are planted directly in the ground in a plasticulture system. An early tomato crop grows in the greenhouse with bumble bees brought in for pollination. A later tomato crop grows in a high tunnel. Wild pollinators pollinate crops in high tunnels.



Weeds in the row aisles are managed with a flame weeder.

Pests on the farm are managed using Integrated Pest Management (IPM) techniques. Biocontrols are typically released to manage insect pests, but have not been needed this year. Weeds are managed using a flame weeder and mechanical cultivation.

We would like to thank Chuck and Marie for showing us around their farm.

The authors are with Penn State University and Extension. From the **Vegetable, Small Fruit and Mushroom Production News**, Penn State Extension, <http://extension.psu.edu/plants/vegetable-fruit/news/2014>, July 28, 2014.

State News Briefs... (continued from page 10)**New Slate of FFA Officers Selected**

Pennsylvania FFA has selected a new slate of State Officers for the 2014-2015 school year.

The new officers are:

State President—Katie McLaughlin, Juniata County

State Vice President—Tony Rice, Snyder County

State Secretary—Victoria Herr, Lancaster County

State Treasurer—Lisa Boltz, Lebanon County

State Reporter—Matt Brake, Franklin County

State Sentinel—Mara Tate, Bradford County

State Chaplain—Grant Carlton, Perry County

The new officers were chosen during the 85th PA FFA Convention held recently in State College. Officers give up a year of their post-high school career to travel the state promoting agriculture. State officers represent Pennsylvania agriculture at events, and frequently speak to businesses throughout the state about Commonwealth's leading industry. They also visit chapters to help with leadership development among FFA members. State officer candidates go through an intensive interview process, and are chosen during Pennsylvania FFA Association's summer convention by a committee of their peers.

From the **Pennsylvania Agricultural Alliance Issues Update**, Penna. Farm Bureau, July 2014.

TEW MANUFACTURING CORP.

**Fruit & Vegetable Cleaning & Sizing
Equipment**

**Quality Latex & Poly Sponge
Drying Donuts**

Tuff Foam® Protective Padding

Brushes, Bearings, Sizing Chains

Scrubber Rubber Plain & Fabric Back

Stanhay, Tew Jr.™, Tew Mx™

Vegetable Seed Planters & Parts

FOR MORE INFORMATION CALL

1-800-380-5839

TEW MFG. CORP.

P.O. BOX 87

PENFIELD, NY 14526

585-586-6120

FAX: 585-586-6083

www.tewmfg.com

**Saylor's Farm Products**

**Builders Of All Kinds Of
Small Boxes and Bins**



Manufacturers of Agricultural Containers.

www.saylorfarm.com

**Saylor's Farm Products**

17319 Route 68, Sligo, PA 16255

Phone 814-745-2306

john@saylorfarm.com

VEGETABLE PRODUCTION

Frequently Asked Questions About Bacterial Canker on Tomato

Interview with Beth Gugino, Vegetable Pathologist on managing Bacterial Canker in Tomato.



Bacterial canker marginal necrosis

The disease Bacterial Canker is caused by the bacteria, *Clavibacter michiganensis* pv. *michiganensis* (Cmm). This disease is about the worst news that a tomato grower can receive. 2014 seems to be an especially bad year for the disease in spite of increased grower awareness, increased use of hot water seed treatment, and growers planting tomatoes in fields that do not have a recent history of tomatoes. As one of our top tomato challenges, the questions below were posed to Beth Gugino, Penn State Vegetable Extension Pathologist. They sum up the kinds of questions that growers have been asking Extension Educators.

I've had several years where I've had no problems with Bacterial Canker, now it's back in my fields and other growers that I know, what is different about this season?

Although the weather and environmental conditions can play a role in spreading Cmm, in order to spread, the bacteria must have initially come from somewhere whether it was from infected seed, weed hosts/reservoirs, crop residue, re-used stakes, etc.



Bacterial Canker on Immature Fruit (Beth K. Gugino)

How do I know if I'm dealing with Bacterial Canker and not something else?

Bacterial canker is characterized by yellowing and necrosis around the leaf edges often referred to as marginal leaf necrosis. In comparison, bacterial spot and speck develop initially as

small circular spots in the center of the leaf. When the stems and petioles of Cmm infected plants are cut open, the vascular system is discolored; tan/light brown rather than creamy white. Severely infected plants resulting from systemic infection will wilt. On the fruit, spots will be dark in the center and surrounded by a white halo often referred to as a "birds-eye" spot. Fruit infections result from the bacteria being splashed onto the fruit surface from the leaves during rain events or while working in the field when the plants are wet. The plants are susceptible at any stage of growth. The younger the plants (i.e. transplant stage) are infected, the less likely they are to yield a crop.

I know that this disease is often seed-borne, but I've been getting plants from a source that heat treats their seed. How much can we count on seed treatment to prevent the disease?

When done correctly, heat treatment can be very effective at eliminating bacteria associated with the surface of the seed as well as under the seed coat where bleach and other surface disinfecting treatments cannot reach. However, keep in mind that this is only one component of an integrated management program for bacterial canker and there are other potential sources of the bacteria besides the seed including tomato volunteers, Solanaceous weeds like night shade, crop residue, re-used wooden stakes, etc. that can cause an outbreak.



Bacterial Canker Marginal Necrosis and Fruit Symptoms (Beth K. Gugino)

Is a proactive bactericide program, assuming that canker could be present, a good practice or is this just throwing money, chemicals and time away?

Copper-based bactericide programs will only protect the plant and fruit surface from water-splash dispersed bacteria before they infect through natural openings or wounds. Once inside the plant, bactericides will not have any effect. In some cases, the use of high pressure sprayers could actually increase disease severity by creating small micro-wounds/damage (similar to after a severe storm) that the bacteria can use to enter the plant.

Is there a place in canker management for biological materials? I've seen articles and product labels that support the use of materials that increase the production of Jasmonic and Salicylic acids for general bacterial disease control.

There is some research-based data from Dr. Mary Hausbeck at Michigan State and Dr. Chris Smart at Cornell that

(continued on page 19)

VEGETABLE PRODUCTION

Frequently Asked Questions... (continued from page 18)

suggest that the use of Actigard in combination with copper hydroxide can potentially reduce the spread of bacterial canker symptoms in the field. However, the majority of the research supports their use for helping to manage bacterial spot and speck. But I cannot emphasize enough the importance of having a proactive management plan in place before planting in the field.

What would be a good proactive canker management program?

Bacterial canker management is best targeted prior to planting in the field and starts with the purchase of high quality seed from a reputable seed company. Consider heat treating your seed. With funding from the NE-IPM Center and PVGA/PVMRP, we have purchased equipment that growers can use to heat treat seed. If interested please contact me or your local Penn State Horticulture Extension Educator, if interested. Greenhouse sanitation is critical along with regular scouting during transplant production. The warm, humid and wet environment during transplant production is ideal for bacteria. If purchasing transplants, talk with your transplant producer to make sure he/she has good sanitation practices in place for the management of bacterial pathogens as well as a fungicide program. Practice good crop rotation allowing at least three years between Solanaceous crops as well as weed management especially Solanaceous weeds like night shade that could harbor the bacteria. Use new stakes, avoid working the plants when they are wet and work in the fields from youngest to oldest if you have successive plantings. Make it a practice to disinfect tools regularly like at the end of rows so if present you minimize potential spread throughout the planting.

Since canker can be moved on clothing, tools and equipment, if I only have canker in one area, what practices can help me to keep from moving this disease to other areas?

The best option would be to rogue out the infected plants and several adjacent plants and dispose of them. It can take several days to weeks for symptoms to become visible so it is likely that adjacent plants are already infected but not yet showing symptoms. If you are going to try to manage disease spread, always work in the diseased area of the field last and when the plants are dry. The bacteria need leaf wetness to infect either natural openings or wounds in the plant surface also disinfect all tools (clippers, knives, etc.) to prevent the movement of the bacteria between individual plants or at the end of a row (or section of row). Consider using your hands rather than tools for pruning and suckering practices, this reduces the risk of transferring bacteria to the cut surface.

If I do bring canker into my field, high tunnel, or greenhouse, how long do I need to keep tomatoes out of that area to be sure that no canker inoculum is present?

Like many other bacterial pathogens, Cmm can survive associated with crop residue so the more quickly the crop residue decomposes, reduces the survivability of Cmm. Rotating out of Solanaceous crops including pepper for at least 3 years is recommended and managing Solanaceous weeds like night shade and volunteers which are potential overwintering sources of the pathogen. The bacteria can also survive in the tomato stems which take longer to decompose than the

(continued on page 20)

International Paper offers Innovated Solutions to Vegetable Growers & Packers

International Paper is a packaging leader in the Produce Industry due to our diverse product line, excellent customer service, strategic locations and knowledgeable sales team.

We offer a complete packaging line for Tomatoes, Cukes, Peppers and more.

Our One-Stop-Shopping Line includes:

- Vegetable/Tomato cartons
- Berry shippers
- Bulk Melon bins
- Pint/Quart tills
- Paper/Poly bags
- Staples and accessories



Progressive Packaging for the Agri-Industry



342 East York Street
Biglerville, Pennsylvania 17307
Phone 717.677.6111 800.222.8984
Fax 717.677.4394

Be Prepared When The Weeds Start To Grow



Hillside Cultivator Model CS
← The best cultivator for strawberries and between plastic mulch.

The best cultivator for in row weed removal. →

Eco Weeder



Hillside Cultivator Co. LLC

911 Disston View Dr., Lititz, PA 17543
717-626-6194 www.hillsidecultivator.com

VEGETABLE PRODUCTION

Late Blight Continues to Spread Across Pennsylvania

Beth Gugino

As of July 25, late blight has been confirmed in ten counties in Pennsylvania on tomato and/or potato and is continuing to spread quickly.

Within the past few days, late blight has been confirmed on tomato in Centre, Northumberland, Snyder and Columbia Co. It has previously been reported in Clinton, Lackawanna, Berks, Chester, Lancaster and Cambria Co. The samples genotyped thus far have been determined to be US-23.



Foliar late blight symptoms on tomato.

Conditions last week were very favorable for late blight to develop with the cooler temperature and longer dew periods so I am not surprised there is an increasing number of confirmed reports. However there are a number of non-weather related scenarios that are also contributing to the continued spread across Pennsylvania including:

Growers are unaware of the disease and therefore are not scouting and applying fungicides;

Plants are receiving inadequate spray coverage in corners and drive/spray rows of the field that are being regularly sprayed with late blight specific fungicides (this indicates that the spray program is working to manage late blight and coverage is an issue);

Growers are delaying fungicide applications until late blight is confirmed on their farm or neighboring farm before starting a fungicide program (this can be devastating because management is most effective before the disease is observed in the field);

The selected fungicides are not effective. Many commercially available products are being marketed for the management of late blight but have very little to no efficacy data to support this claim. The 2014 Commercial Vegetable Production Recommendations includes a list of recommended late blight specific products for both tomato and potato available for non-certified organic production. In my fungicide trials, these products have been effective even under relatively high disease pressure. For certified organic production, copper-based products are the most effective crop protection tool when applied before symptoms are observed. Copper tank mixed with Actinovate and alternated with copper tank mixed with Regalia would be one suggested organic program. It is important to include copper with your tank mix.

Keep in mind that continuing to try to manage a field that is overwhelmed by late blight can be a losing battle and you could be a source of the pathogen for neighboring farms - late blight is a community disease. If the disease appears to have developed in a hot spot, consider selectively destroying those plants by either placing them in garbage bags and removing them from the field or burning them down with either a herbicide or a flame torch. If you are not certified organic, manage the remainder of the field rotating among late blight specific products like Tanos, Curzate, Raman, Previcur Flex, Zampro, etc.

If you suspect late blight on your farm, please contact your local Penn State Extension Office or let me know. We are interested in collecting samples so we can better understand how the pathogen population is changing both within and across growing seasons. For the information regarding where the latest confirmed outbreaks have been reported and to receive email or text alerts about when late blight has been confirmed with a personally defined radius from your location visit the USAblight website at <http://usablight.org/>.

*Dr. Gugino is with the Department of Plant Pathology at Penn State University. From the **Vegetable, Small Fruit and Mushroom Production News**, Penn State Extension, <http://extension.psu.edu/plants/vegetable-fruit/news/2014>, July 25, 2014.*

Frequently Asked Questions...

(continued from page 19)

leaves and petioles so disking under the crop as soon as possible after harvest will begin this process. For high tunnel and greenhouse production, removing as much of the crop residue as possible and sanitizing structure surfaces is important. Cmm can be found in the root as well as all above ground portions of the plant.

Can I reuse wooden stakes from an area that had bacterial diseases this year if I disinfect them?

The reuse of stakes especially from a field that had any evidence of bacterial diseases is highly discouraged. Bacteria can easily survive in all the "nooks and crannies" on wooden stakes and even a very thorough disinfecting treatment may not eliminate all the bacteria and be the source of an outbreak the next season. The minimal input cost of new stakes relative to the value of the crop makes the purchase of new stakes each season a worthwhile investment.

If I have an area that had canker this year, will steam fumigation or the use of biofumigants containing mustards reduce inoculum to any extent?

Little to no research has been conducted on the use of steam sterilization or biofumigation to reduce Cmm populations in the soil. Since, Cmm does not survive long in the soil in the absence of host residue and when associated with the residue, the bacteria are likely protected from the volatiles produced by biofumigants and steam, these methods are not as effective as other practices. Field sanitation and efforts to increase decomposition of the crop residue would likely be more effective at reducing Cmm inoculum.

It seems as though the best long term answer to solving the challenge of Bacterial Canker is in using varieties that are tolerant or resistant. Are there any varieties in the pipeline with tolerance or resistance?

Identifying genetic resistance to bacterial canker has been challenging for a number of reasons including the genetic diversity of the Cmm pathogen population and not understanding the genetic basis or mechanisms of resistance within the tomato host. Unfortunately, I am unaware of any resistant varieties currently in the pipeline.

*From the **Vegetable, Small Fruit and Mushroom Production News**, Penn State Extension, <http://extension.psu.edu/plants/vegetable-fruit/news/2014>, July 28, 2014.*

Leaf Mold on Tomato: A Common Sight in High Tunnels

Beth Gugino

Reduced air circulation and high relative humidity means an increased likelihood of seeing leaf mold in high tunnels.



Yellow chlorotic lesions on the upper leaf surface.

The high relative humidity that has prevailed this season in many regions has led to an increase in leaf mold in high tunnels. Leaf mold is a disease caused by the fungal pathogen *Fulvia fulva*. It generally only affects the foliage first starting on the older leaves. The initial symptoms are pale green or yellowish spots first noticeable on the upper leaf surface which eventually turn a more distinct yellow with undefined margins. The fungal sporulation that develops on the underside of the leaf is olive green in color and tends to be more dense and darker in color towards the center of the lesion. The pathogen does not affect the fruit but reduces overall photosynthesis and can lead to defoliation reducing fruit quality and quantity.

This disease is very dependent on high relative humidity greater than 85% and therefore is often considered more of a problem in high tunnels that have inadequate air circulation. However, under very humid conditions we have increasingly seen it in field grown tomatoes.

Implementing cultural practices that maximize air circulation around the plant will greatly aid in disease management. Protectant type fungicides such as mancozeb or Catamaran (chlorothalonil plus potassium phosphite) and can be used to help manage the disease during the season. Products like Scala (pyrimethanil), Revus Top (mandipropamid plus difenoconazole), and Quadris Top (axozystrobin plus difenoconazole) and are also options but later two need to be applied with the

sides of the high tunnel are rolled up. See the 2014 Commercial Vegetable Production Recommendations for a list of additional products and rates.

In the future consider planting less susceptible/resistant cultivars such as Primo Red, Red Deuce, Red Mountain, Geronimo or Panzer to name a few.



Olive green to gray sporulation characteristic of leaf mold on the underside of a tomato leaf.

Dr. Gugino is with the Department of Plant Pathology at Penn State University. From the **Vegetable, Small Fruit and Mushroom Production News**, Penn State Extension, <http://extension.psu.edu/plants/vegetable-fruit/news/2014>, July 25, 2014.

Since 1932



80
YEARS

The
Best
Berry
Plants

- Strawberries, raspberries, blueberries, blackberries, asparagus and more!
- Where the pros go for plans and plants.
- Call for a free catalog and plasticulture guide!

41 River Road
South Deerfield
Massachusetts 01373



www.noursefarms.com 413.665.2658

Strawberry Plants

Over 20 Leading Varieties • Fall Dug
State Inspected - Grown on Fumigated Sand

Asparagus Crowns

Leading Varieties • Male Hybrids • Superior Root Systems

Krohne
Plant Farms, Inc. 

e-mail: info@krohneplantfarms.com

Over 20 Years Experience
All Available In Our Free
Illustrated Price List

Krohne Plant Farms
65295 CR 342, Hartford, MI 49057

Ph: (269) 424-5423

Fax: (269) 424-3126

www.krohneplantfarms.com

VEGETABLE PRODUCTION

Be Ready for Cucurbit Powdery Mildew*Beth Gugino*

Now this the time of year that we start seeing powdery mildew on cucurbits. Now is the time to be scouting your crops!



Powdery mildew on the underside of a pumpkin leaf.

The first sign of the pathogen is small white powdery spots on both the upper and/or lower leaf surface of the older leaves. It is common to first see it on the underside of a leaf or within the plant canopy so when scouting it is important to through look over the entire plant. If protectant fungicides are being used, sometimes the spots on the upper leaf surface are yellow in color and it is not until you look at the underside of the leaf that you see the white powdery colony. It is also important to scout by cultivar since they can vary in their resistance to powdery mildew. The only reports so far have been on summer squash.

No Confirmed Cucurbit Downy Mildew in PA...Yet*Beth Gugino*

Cucurbit downy mildew has not been confirmed yet in PA but was just confirmed on cucumber in Salem Co. in southern New Jersey yesterday.



Typical angular lesions caused by downy mildew on cucumber. The lesions are initially water soaked before becoming chlorotic then necrotic with the centers falling out giving the leaf a shot-hole appearance.

There continue to be no confirmed reports of downy mildew on cucumber or any other cucurbit in Pennsylvania. However, downy mildew was just confirmed on cucumber in Salem Co.,

Keep in mind, if left unmanaged, severely infected leaves can die leading to reduced fruit size, quality and sunburn. Although powdery mildew does not infect the fruit, it can infect pumpkin handles thus reducing the overall marketability.

There is considerable concern over the development of fungicide resistance with powdery mildew. For resistance management, it is best to start applying the most effective products when you first start seeing symptoms (1 lesion on 50 leaves) and then later in the season switch to a protectant spray program rather than the reverse. In the long-run this will reduce the selection pressure for powdery mildew spores that are resistant to the fungicide because fewer spores are exposed to the active ingredient when disease severity is low. See the [2014 Commercial Vegetable Production Recommendations](#) for a list of recommended products and rates as well as the [2013 Fungicide Resistance Management Guidelines for Cucurbit Downy and Powdery Mildew Control in the Northeast United States](#).

Fortunately, there are a number of organic options for helping to manage powdery mildew on cucurbits including copper, sulfur, oils like Eco E-rase (jojoba oil), JMS Stylet oil (paraffinic oil), Trilogy (neem oil) and Organocide (sesame oil), as well as potassium bicarbonate based products (Kaligreen and MilStop) to name a few.

*Dr. Gugino is with the Department of Plant Pathology at Penn State University. From the **Vegetable, Small Fruit and Mushroom Production News**, Penn State Extension, <http://extension.psu.edu/plants/vegetable-fruit/news/2014>, July 25, 2014.*

NJ yesterday and there have been reports on an increasing number of cucurbit hosts in North Carolina including cucumber, yellow, butternut and acorn squash, cantaloupe, and giant pumpkin. The closest sources remain in Maryland and Michigan on cucumber. Fortunately, the upper level weather patterns from known sources continue to be less favorable for spread of the pathogen to cucurbit fields in PA but local conditions later this week will turn more favorable again so continued scouting is important.

If you suspect downy mildew on your farm please let me know or contact your local Penn State Extension Office. For the latest information on outbreaks and to receive email or text alerts please visit the [Cucurbit Downy Mildew Forecasting website](#). Updates will also be made to the 1-800-PENN-IPM hotline weekly or more frequently if needed to provide growers with information that can be used to help make timely management decisions.

*Dr. Gugino is with the Department of Plant Pathology at Penn State University. From the **Vegetable, Small Fruit and Mushroom Production News**, Penn State Extension, <http://extension.psu.edu/plants/vegetable-fruit/news/2014>, July 25, 2014.*

Cercospora Leaf Spot of Swiss Chard, Beets and Spinach

Bess Dicklow, Rob Wick and Ruth Hazzard

This disease caused by *Cercospora beticola* occurs wherever table beets, Swiss Chard, sugar beet, and spinach are grown, and is one of the most important diseases affecting the Chenopodium group. It can result in significant losses, particularly in late summer when conditions are favorable (high temperatures, high humidity, and long leaf wetness periods at night) and inoculum builds up. Leafy greens become unmarketable, and beet roots fail to grow to full size when disease is severe.

Identification. Initial symptoms occur as numerous, small, circular leaf spots with a pale brown to off-white center and a purple-red margin. Lesions expand in size, coalesce, and turn gray as the fungus sporulates, and can result in extensive loss of foliage. Younger leaves at the center of the plant are often less severely affected. The pathogen produces sclerotia or stromata which can be seen with a hand lens as small, black dots in the center of lesions. Lesions may also occur on petioles, flower bracts, seed pods, and seeds. Leaf symptoms are similar to those caused by Phoma leaf spot (*Phoma betae*), except that Phoma will have more obvious tiny fruiting bodies in the lesions and can also affect the roots.

Source and survival. *C. beticola* survives between crop cycles in residues from infected crops (as stromata), in weed hosts, and on seed. It can survive in the soil for up to two years. High levels of disease can result from just a few infected plants, since each lesion produces numerous spores. Several cycles of infection and spore production may occur with favorable environmental conditions. Spores can penetrate the leaf directly through open stomates. The pathogen is favored by high relative humidity and temperatures between 75-85° F and is spread by rain splash, wind, irrigation water, insects, workers, and equipment. Leaf wetness during the night, even with dry conditions during the day, encourages disease. Successive plantings close to each

other can allow disease to move from one planting into the next.

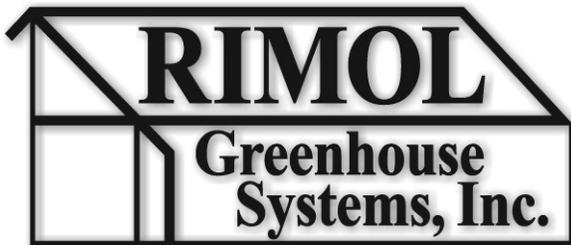
Cultural management. Bury infected crop residues and destroy volunteer plants and weed hosts such as *Chenopodium album*, *Amaranthus retroflexus*, *Malva rotundifolia*, *Plantago major*, *Arctium lappa* and *Lactuca sativa*. Start with certified, disease-free seed or treat seed with hot water or fungicides. Rotate to non-host crops (not in the Chenopodium family) for 2-3 years. Avoid planting succession crops close together. Overhead irrigation will result in prolonged leaf wetness periods (eg, through the night) so irrigate during mid-day when leaves will dry fully or use drip irrigation.

Chemical controls. For optimum results use protectant fungicides as a preventive treatment prior to infection and symptom development. Pathogen populations resistant to sterol demethylation-inhibiting (FRAC Group 3) fungicides have been reported, so although these products are labeled, fungicides with other modes of action should be used. These include azoxystrobin (Quadris) (Group 11), basic copper sulfate (Basic Copper 50W HB and other copper products) (Group M1), pyraclostrobin (Cabrio) (Group 11), trifloxystrobin (Flint) (Group 11), and penthiopyrad (Fontelis) (Group 7). Do not alternate Group 11 strobilurin fungicides with each other (Cabrio, Quadris and Flint). Products that simply kill spores on contact will not prevent the continuing production of spores nor protect leaves from new infections. For more details check the Beets and Chard section of the New England Vegetable Management Guide, www.nevegetable.org

The authors are with the University of Massachusetts Extension. From *Vegetable Notes for Vegetable Farmers in Massachusetts*, Univ. of Massachusetts Extension, Vol. 26, No. 9, June 12, 2014.

Your Source for . . .

HIGH TUNNELS



Call Bob Rimol @ 603.494.5775

or Email: rrimol@rimol.com

HEALTHY PREDATORS, PARASITES ON PATROL

Use Biocontrol To Stamp Out:

- Aphids
- Whiteflies
- Fungus Gnats
- Spider Mites
- Thrips

References available in your area.

"I was REALLY pleased! I didn't see aphids [on the tomatoes] during the whole growing season."

Vernon Weaver
McAlisterville, PA

Hearty Beneficials **GUARANTEED**
Call 315.497.2063



IPM Laboratories, Inc.
ipminfo@ipmlabs.com

Since 1981

www.ipmlabs.com

VEGETABLE PRODUCTION

Causes of Irregular Growth in Plasticulture Vegetables

Gordon Johnson

Each year we see fields where vegetable growth in drip irrigated plastic mulched beds is irregular. While root diseases, nematodes, or soil insect feeding can cause variable growth, the following other potential causes due to water quality problems, cultural practices, or irrigation system issues.

Plugged Emitters - Drip emitters can become plugged with fine particles, mineral deposits, or biofilms. When emitters become clogged, the plants nearest the clogs will receive less water and have more water stress and grow less or be stunted. This is seen most commonly in higher density planted crops such as peppers.

A common cause of plugged emitters is water containing high levels of dissolved iron. This often causes a proliferation of iron utilizing bacteria. These bacteria can form heavy biofilms on the inside of the drip tube. They also oxidize the iron in the water (as part of their metabolism) and leave behind iron precipitates that can plug emitters. Chlorination of drip lines is needed to control iron bacteria.

Another common problem in some aquifers, is well water with high levels of calcium and magnesium ("hard water"). In high water pH conditions, these can precipitate out as calcium or magnesium carbonates that will clog emitters. If you look inside the drip tubing you will see a white or chalky film. In addition, if soluble phosphorus fertilizers are put into water with high levels of dissolved calcium or magnesium salts, they can precipitate out as calcium or magnesium phosphates, also plugging emitters. Acidification of water can reduce or eliminate this problem. Also, avoid running phosphorus through the drip if you have hard water.

Inadequate filtering is another possible cause of plugged emitters. While this is most common when using surface water

Interest in Fall Greens Grows

Gordon Johnson

Produce buyers in the region have expressed an interest in buying more fresh greens demonstrating the potential for expanding fresh market production for local and regional distribution. In particular, there has been an increased consumption of kale. There are also increased opportunities for oriental greens for ethnic markets. Research was conducted from 2010-2012 at the University of Delaware Carvel Research and Education Center near Georgetown, DE on spring, fall and overwintered production of kale, collards, mustard, turnip, and Asian greens. Research in 2012 included spring and fall lettuce trials. The following are summaries of the results from these trials.

Fresh Market Greens Variety Trials

Fresh market greens trials were conducted on the University of Delaware Research Farm near Georgetown, DE in 2011 and 2012 on loamy sand soils. Plots were one row wide rows with 30 inches between rows. Plots were seeded with a push planter at a seeding rate to give a target spacing of 3 inches between plants except or were transplanted at a spacing of 12 inches between plants. Fall planting dates were August 23 in 2011 and August 9 in 2012 for direct seeding and August 15 in 2012 for transplants (kale and collards only).

In Fall 2011, with the hybrid kales, Reflex was the most productive, with over double the yields of other varieties. However, the open pollinated Siberian was far more productive with over

from ponds, ditches or streams it can also occur in wells that have fine particles in the water.

Improperly Designed or Maintained Drip Systems - Improperly designed drip systems can lead to over-watering or under-watering portions of the bed and cause variable crop growth. This most commonly occurs when systems are in too large of zones or have too small of supply lines where pressure and volume is too low or where length of run is too long. In these cases, the ends of the drip line will have much less water than the beginning of the run and will lead to a gradient of plant growth. Leaks in drip lines will also cause lower water delivery past the leak, leading to reduced plant growth.

Variable Depth of Planting and Transplant Handling - Many transplanted crops will show variability due to depth of planting. This is most common when the root ball is left partially exposed and dries out. If these plants survive they often will be stunted or will have reduced growth compared to plants around them. Planting too deep can also lead to variability in some plants. Rough handling or root ball disturbance can slow establishment of sensitive transplants leading to variability.

Variable Bed Formation - Variability in bed density and plastic laying can cause differences in plant growth. This is most common when plastic is laid in cloddy soils. This results in variable bed densities affecting root growth and water movement and variability in plastic contact with the soil surface leading to warm and cool spots thus slowing or speeding plant growth.

*Dr. Johnson is the Extension Fruit and Vegetable Specialist with the Univ. of Delaware. From the **Weekly Crop Update**, Univ. of Delaware, Vol. 22, Issue 19, August 1, 2014.*

21,000 lbs. compared to 8223 lbs/a for Reflex. If packaged greens are the market, Siberian would be the best choice. If fancy curled greens for garnish are desired then Reflex would be the best choice. Hi Crop collards out-yielded all other hybrid collards and had over 3 times the yield of the open pollinated Champion. With turnips, the highest yielding varieties were Southern Green and Alamo with 29,900 and 27,000 lbs/a respectively. This compared to 22,000 lbs/a for Seven Top. Mustard yields were highest with Savannah (28,400 lbs/a) but were not significantly different from Tendergreen (26,100 lbs/a).

Fall 2012 trials with fresh market greens showed that All Top and Southern Green turnips performed the best and Tendergreen and Savannah mustards have the highest yields. For Kale, Winterbor and Green Curled have the best yields for stripping leaves on green types and Red Russian has the highest yields for a red type. Collard yields were similar across varieties; however, Hi Crop Collard had the highest yields. Asian greens trials showed that Mizuna varieties had the highest yields along with Tokyo Bekana Chinese leaf cabbage and Vitamin Green mustard with over 20 ton per acre yields with harvests from August through December in unprotected field conditions.

For lettuce, only a few varieties maintained good flavor and did not bolt or had minimal bolting in all trials: Forlina, (Butterhead); Acropolis and Spartacus (Iceberg); Starfighter

(continued on page 26)

VEGETABLE PRODUCTION

Reducing E. coli Levels in Leafy Greens Wash Water

Lynn Zanardi Blevins and Vern Grubinge

Reducing levels of bacteria in wash water is one way to reduce the risk of cross-contamination where one contaminated item can lead to the spread of microbes to other items being washed in the same water.

What we did: We sampled wash water from several leafy green wash systems on Vermont farms during the 2012 and 2013 growing season. An organic-approved sanitizer (SaniDate® 5.0) was added to some of the washes, with water collection before and after each addition. All water samples were tested for the presence of generic E. coli, a species of bacteria found in the mammalian gut which is used as an indicator for fecal contamination. To estimate the effectiveness of multiple washings and/or the addition of organic sanitizer, we calculated the percent reduction of generic E. coli after various treatments compared with a single wash without sanitizer.

Why it's important: Leafy greens are most commonly associated with foodborne outbreaks related to consumption of fresh produce, as they grow close to the soil and are typically eaten raw. A range of leafy greens wash systems exists on small diversified vegetable farms that characterize Vermont vegetable production; however, the effectiveness of such wash systems is not as well studied as large processing systems.

Take-home message: The data in Figure 1 represent the E. coli levels in the wash water in the first vessel, reflecting the incoming bacterial load. Seasonal trends were observed during both the 2012 and 2013 seasons, with spikes of E. coli more

common in mid summer. E. coli levels were moderately correlated with the high temperature of the day(s) before harvest.

Percent Reduction of E. coli by Wash and/or Sanitizer Treatment Compared to Single Wash

	Double Wash	Triple Wash	Full Rate in First Wash	Full Rate in Second Wash	Half Rate Second Wash
Minimum	56.6	89.6	55.3	98.1	94.6
Average (mean)	90.6	98.0	99.1	99.6	99.5
Maximum	100	100	100	100.0	100

What is a full dose? We considered a full dose of sanitizer to be 0.5oz / 10 gallons of wash water, based on label at the time the study began. The label recommendations have since changed to 0.6-2.0 oz (18-60ml) / 10 gallons of water. <http://www.biosafesystems.com/assets/sanidate-5.0-specimen-label.pdf>

Take-home message:

- All washing methods greatly reduce bacterial loads as compared to a single rinse without sanitizer.
- A full rate of SaniDate® 5.0 is effective when added to a single, double, or triple rinse system.
- A half rate of SaniDate® 5.0 should only be using in combination with multiple rinses.
- Extra precautions, such as multiple rinses or the addition of a sanitizer, are warranted during the summer months and/or during warm weather when bacteria multiply quickly.

What this means: Bacterial loads can be greatly reduced with the addition of a full-dose of sanitizer (SaniDate® 5.0, or similar product) if washing in a single vessel. This method requires less infrastructure and water.

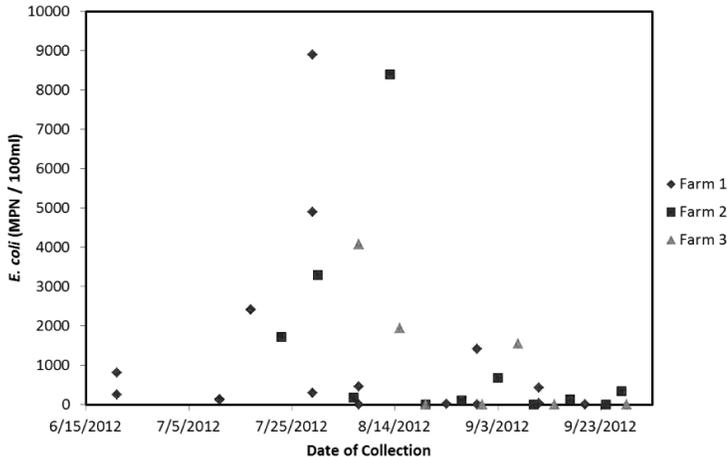
Two rinses with the addition of a half or full dose of sanitizer to the second wash is an effective system when multiple rinses are desired to reduce grit but if there is a reduction in quality of greens from a third wash.

Triple washing is the best washing method for farms with appropriate infrastructure (e.g., triple bay sink, multiple stock tubs) when the use of sanitizer is not desired.

These practices are affordable, require a small amount of additional management, and reduce risk of cross contamination.

Ms. Zanardi Blevins and Dr. Grubinger are with the University of Vermont Extension. From "Wash Water Study Summary 2012-2013" fact sheet, February 2014. http://www.uvm.edu/vtvegandberry/factsheets/Wash_Water_Study_Summary_2-14.pdf. This material is based on work supported by USDA/NIFA project 2012-49200-20031.

Figure 1. E. coli count (MPN / 100ml) in first wash by date



MPN = Most Probable Number

SPECIALIZING IN ONE SIDE BOOM SPRAYERS FOR THE VEGETABLE AND BERRY GROWER

20 Yrs. Experience

PENNS CREEK MFG.
 1340 Broadway Rd., Winfield, PA 17889
 1-570-837-1197 www.pennscreekwelding.com
Builders of Dependable Economical Vegetable Sprayers

VEGETABLE FARM EQUIPMENT
 AUCTION SPECIALISTS
PIRRUNG AUCTIONEERS, INC.
JAMES P. PIRRUNG
 P.O. Box 607
 2731 East Naple Street • Wayland, New York 14572
www.pirringinc.com
585-728-2520
"Serving the Buying - Selling Needs of Farmers Across America Since 1948"

BERRY PRODUCTION

Blueberry Plants: Few Leaves and Erratic Berry Size

Kathleen Demchak

number of calls have come in this year regarding blueberry plants with few leaves – though some canes often appeared nearly normal – and berries on the same plant that ranged in size from normal to very tiny.



Photo by Thomas Butzler

This problem occurred over the entire state, as well as throughout the Northeastern U.S. and westward to Michigan. The widespread occurrence of this problem is a pretty good indication that this was a weather-related problem.

Laura McDermott authored an article for the last issue of *The New York Berry News* (for those with Internet access, it is available online at <http://www.fruit.cornell.edu/nybn/newsletters/pdfs/2014/nybn1306.pdf>), where Marvin Pritts explained that the problem could have been due to sub-lethal temperatures that occurred from prolonged cold spells last winter. However, some folks have pointed out that we've had colder temperatures than last year's in the past, and that's true – many of us thought that last winter's cold simply felt like a "real winter", which we haven't had in a few years.... What really stood out to me though was the fluctuations, so while I think it's likely that the problem was related to low temperatures, the reason we had damage at these temperatures was the fluctuations.

Plants have various mechanisms for dealing with cold, but they lose hardiness during warm spells. Consider these temperatures from the University Park airport last winter, via the Pennsylvania State Climatologist. Dec. 21-22: Highs of 54 and 63, with overnight lows of 41 and 52, respectively. Dec. 25: High of 26, low of 15. On Jan. 6, the high was 41 but the next day, the high was 4, with a low of -9. Temperatures fluctuations were more normal during most of January and February, though there were two 5 to 10-day stretches with highs in the 40 to 50 degree range quickly followed by lows at or below zero. On March 11 the high was 64 and two days later, the low was 10. April 13 saw a high of 84 and 3 days later, the low was 23. Who knows what was happening in the plants under these conditions. What is more difficult to explain is that not everyone saw these problems, so there could be other factors (field aspect, cultivar) that are complicating the picture.

At any rate, the reason for this article is to let folks who have this problem know that they aren't alone. The next question is what to do with the plants. I expect that some of these plants won't survive, but perhaps with a little tender loving care, some will pull through. You'll be able to tell if they set buds on the wood by later this fall. The plants that were affected but survived will benefit from a good pruning to remove any dead wood and lighten the crop load next year, and of course, avoiding other stresses like nutritional issues and water stress is always a good idea.

A different situation that could be confused with this problem is plant defoliation by yellow-necked caterpillars. Leaves sometimes disappear seemingly overnight, and usually by the time the missing leaves are noticed, the caterpillars have moved to other bushes in the field - so take a look around if you notice plants with leaves that have suddenly gone missing. Physical removal of a branch or two with the caterpillars on them is the best and simplest control.

*Ms. Demchak is with the Department of Plant Science at Penn State University. From the **Vegetable, Small Fruit and Mushroom Production News**, Penn State Extension, <http://extension.psu.edu/plants/vegetable-fruit/news/2014>, July 31, 2014.*

Spotted Wing Drosophila Update

David Biddinger

Spotted winged drosophila (SWD) numbers are up in most Pennsylvania and Maryland locations, except for in fall raspberries which are still largely unripe.

Late blueberry varieties are at increasing risk this week with much higher numbers than last week as are those in blackberries. If you have not yet begun to spray blackberries, do so now. In the past, this is about the time when we start seeing large increases in SWD populations. Being next to cherry blocks that were not harvested this year due a light crop would put adjacent crops at higher risks. Our highest trap catch of 38 flies was in just such a cherry block in Pennsylvania this week.

*Dr. Biddinger is with the Department of Entomology at the Penn State Fruit Research and Extension Center in Biglerville. From the **Vegetable, Small Fruit and Mushroom Production News**, Penn State Extension, <http://extension.psu.edu/plants/vegetable-fruit/news/2014>, July 31, 2014.*

Interest in Fall... (continued from page 24)

(Leaf); and Dov (Romaine). Several other varieties demonstrated some heat tolerance, resistance to bolting and reduced bitterness in either the late spring, or early or late fall trials: Harmony, Hungarina, and Skyphos (Butterhead); Excalibur and Keeper (Iceberg); New Red Fire (Leaf); Rubicon, Camino Verde, Rio Bravo and Musena (Romaine).

A full report on the lettuce trials (with photos of the varieties) is online at: <http://extension.udel.edu/ag/files/2012/03/lettuce2012.pdf>

*Dr. Johnson is the Extension Fruit and Vegetable Specialist with the Univ. of Delaware. From the **Weekly Crop Update**, Univ. of Delaware, Vol. 22, Issue 18, July 25, 2014.*

GREENHOUSE PRODUCTION

New Grower Cut Flower School Set for August 12



Ever want to diversify your production or start a cut flower business? Attendees of this workshop will have the opportunity to learn about starting a cut flower operation from Kate Sparks, owner of Lilies and Lavender. We will also discuss weed, disease and pest management strategies with Steve Bogash, Extension Educator.

The objective of this course is to introduce farmers to growing cut flowers and observe and discuss different management strategies. Farmers interested in starting a cut flower operation or wanting to learn different management techniques should attend. We will take a tour of Lilies and Lavender cut flower farm, discuss plant selection for beginning growers, harvest and

post-harvest handling, and weed, disease and pest management.

The school will be held at Lilies and Lavender Farm, 729 Limekiln Road in Doylestown, from 3:00 to 6:00 p.m. There is a \$25 registration fee. To register see <http://extension.psu.edu/plants/vegetable-fruit/events> or call 610-743-1970. For further information contact Andrew Puglia at ajp5168@psu.edu or 610-743-1970.

CLASSIFIED

Farms

FOR SALE OR LEASE – 160 ACRE PRESERVED BUCKS CO FARM with Class I and II soils. 80 to 100 acres tillable including 2 building envelopes. Act 319 and Forest Management plans in place. Additional 4 BR/3 BA home on 10 acres sit contiguous to farmland. Excellent candidate for CSA start-up. Call Pat @ 267-337-0663.

Remember

Classified Ads Are Free For PVGA Members For Non-commercial Sales

NEWS

Introduction to Organic... (continued from page 15)

Penn State Extension how to assess soil quality on your farm and strategies to improve it. This workshop Saturday, September 15, 2014 from 3:30 PM - 6:30 PM will cover soil texture, aggregate stability, soil biology, cover crops and compost. Don't miss this opportunity to delve into soil quality with hands on assessments. Hear what works on the farm.

Great Bend Farm is a diversified family farm located along the Schuylkill River in Port Clinton, PA. They specialize in sustainably grown vegetables, specialty cut flowers, hay, and heritage pigs. Farmer Sara Runkel has eighteen years of experience farming throughout the region and started Great Bend Farm in 2012, with her husband Andy Dohner. They have a growing winter CSA program filling the important niche for local all winter long. As the prior director of the Seed Farm new farmer training, Sara is an accomplished and inspiring teacher.

No pre-registration is necessary. Location 417 Broad St. Port Clinton, PA 19549. Walk-in fee is \$15 (\$5 for apprentices). For more information visit extension.psu.edu/start-farming or call Tianna DuPont (610) 746-1970.

Plan your Crop Rotation

When: September 23, 2014 5:30 PM - 8:30 PM

Where: Lehigh County Agricultural Center, 4184 Dorney Park Rd, Allentown, PA 18104

Join Penn State Extension September 23rd in Allentown PA for a workshop on rotation planning. A good crop rotation is essential for managing soils, pests and diseases on the farm. Of course things change as the season progresses but part of good rotation planning is understanding how current field choices impact future crop options. Good crop and rotation planning save time during the peak season and allow you to still manage for your long term goals. Integrating cover crops into your rotation can be especially challenging. Laying out your rotations and your goals can facilitate more soil building cover crop acreage on the farm.

This workshop will use real farm examples to lead you through a process for setting and prioritizing goals, creating crop rotation groups and mapping your rotation through time and space. Key will be identifying conditions on your farm that will affect where crops are grown. Hands-on mapping exercises bring this important concept home.

About the presenters: Sara Runkel runs Great Bend Farm, a diversified family farm located along the Schuylkill River in Port Clinton PA. They specialize in sustainably grown vegetables, specialty cut flowers, hay, and heritage pigs. Farmer Sara Runkel has eighteen years of experience farming throughout the region and started Great Bend Farm in 2012, with her husband Andy Dohner. They have a growing winter CSA program filling the important niche for local all winter long. As the prior director of the Seed Farm new farmer training, Sara is an accomplished and inspiring teacher.

Tianna DuPont is a Sustainable Agriculture Educator for Penn State Extension in Northampton and Lehigh Counties working with vegetable production, organics, soil health, cover crops, reduced tillage, and new farmers. Tianna also ran Shooting Star Farms a small market garden CSA operation in Easton PA for four years. She has a B.S. in Environmental Studies from Whitman College of Washington and an M.S. in Integrated Pest Management from the University of California at Davis where she conducted her research using nematodes as indicators of soil health in organic cropping systems. She worked formerly with the Rodale Institute and the Land Institute in Salina, Kansas.

No pre-registration is necessary. Location 417 Broad St. Port Clinton, PA 19549. Walk-in fee is \$15 (\$5 for apprentices). For more information visit extension.psu.edu/start-farming or call Tianna DuPont (610) 746-1970.

Pennsylvania Vegetable Growers Association
815 Middle Road
Richfield, Pennsylvania 17086-9205
717-694-3596
pvga@pvga.org
www.pvga.org

PRESORTED
STANDARD
U.S. POSTAGE
PAID
MIDDLEBURG PA 17842
PERMIT NO. 26

Address Service Requested



**For All Of Your
Produce Chemical & Fertilizer Needs
Come Visit**

Daniel's Farm Store

324 Glenbrook Rd., Leola, PA 17540

**We Carry All Types Of Fertilizer,
For Vegetables & Fruit**

*Nutribalance Dry Broadcast KSC Water Soluble For
Irrigation & Liquid Fertiactyl & Fertileader For Drip & Foliar*



We also can supply all of your chemical needs from the newest on the market to generics to save you money.



syngenta

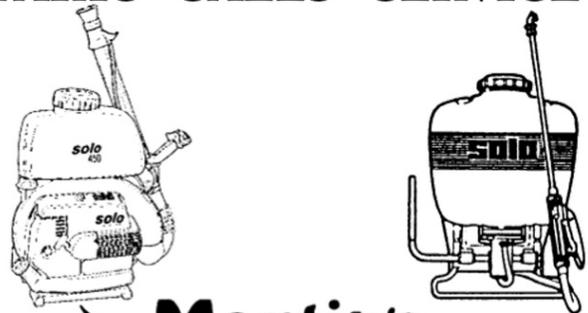
Call 717-656-6982 for a price list or other info.

SOLO SPRAYERS

We carry a full line of Solo Sprayers
from hand pump to engine driven units.
Call us today for your spraying needs.

We ship UPS

PARTS • SALES • SERVICE



28 East Trout Run Road, Ephrata, PA 17522

Phone: 717-733-3015