PENNSYLVANIA
VEGETABLE GROWERS

NEWS

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for the commercial vegetable, potato and berry grower

"Are You Crazy?" Farm Market Tour Set for July

The 18th annual "Are You Crazy?" Tour of retail farm markets will be held July 22 & 23, 2014. The tour will feature seven premiere retail farm markets and one food manufacturer — with plenty of ideas, education, food, and fun for all. This year we are exploring what Maryland has to offer. These farms and markets are major providers of fruits, berries, vegetables, prepared foods, and agri-tourism.

A new feature for the tour is that each stop will be sharing information on a specialty topic – an area where they have experience and can pass some tips on to others.

We have something for everyone — seasonal, year-round, produce, food, tourism, value-added, pick-your-own, entertainment, and educational farm direct-to-consumer marketing at its finest! Not to mention the "classroom-on-wheels" as we travel between markets with opportunities to network and learn from each other. New this year! Each business we visit will share info on a "Specialty Topic".

The tour is designed for any farm market owner, manager, or other personnel interested in seeing and learning from a variety of retail farm market and agri-tourism entrepreneurs.

We will tour each operation and focus on what has made it a success. The emphasis is on seeing what others are doing, peer networking, sharing, and learning.

We will be touring:

Catoctin Mountain Orchard, Thurmont, MD

Catoctin Mountain Orchard is a four-generation farm with a diversified orchard operation growing fruit, berries, and vegetables on 125 acres. Their tomatoes, cantaloupes, squash, peppers, eggplant, kale, and cabbage are grown on black plastic using a high-bedder to apply fertilizer and lay miles of tubing for trickle or drip irrigation. Each year they plant new variety test trees looking for the best tasting fruit! A half-acre of kiwi berries are their newest venture. They offer fruit, vegetables, a bakery, pick-your-own fruit, cut-your-own flowers, farm market, and farm tours.

*Specialty Topic: A visit to the top of the Orchard for an breath taking view of the farm discussing the "diversity" of crops including the varieties of plums, continuing to the retail market to explore the market, cold storages, freezer, and bakery.

www.catoctinmountainorchard.com/

Baugher Farm, Westminster, MD

Celebrating over 100 years in Carroll County, Baugher's Orchard has been a working fruit and vegetable farm since 1904. This 600 acre operation is one of the largest orchards in Westminster, Maryland. Their operation includes a family restaurant, two markets, pick-your-own, a bakery (featuring over 20 varieties of pies, breads, and pastries), their own apple cider, a fall pumpkin patch and hayrides, playgrounds, and a petting zoo.

*Specialty Topic: Management of large crowds during the busy season. In October they employ 130 people and serve up to 5,000 visitors each day.

www.baughers.com/

McCutcheon's Apple Products, Inc., Frederick, MD

McCutcheon's Apple Products is a four-generation family owned company geared toward serving small businesses. They produce all natural gourmet fruit preserves and butters, jellies, juices, condiments, sodas, and much more. Since 1938, they have worked to create a broad line of outstanding products and build exceptional relationships with customers and supporters. In an effort to bring more green practices into their business, they are going solar by installing an array of solar panels which will fully power the factory operation.

*Specialty Topic: Explore a large scale food manufacturer with a tour of the factory.

www.mccutcheons.com/

Butler's Orchard, Germantown, MD

Butler's Orchard is a family farm providing good green fun and local produce for over 60 years. They operate a farm mar-

(continued on page 2)

NEWS

"Are You Crazy?"... *(continued from page 1)*

ket, pick-your-own, bakery, field trips and events such as group hayrides and bonfires, strawberry blossom tours, group pick-your-own outings, Bunnyland, and Pumpkin Harvest Days. Butler's is an Integrated Pest Management Farm with a professional scout who consults with them weekly to check their crops for insects and disease pressures, allowing them to reduce applications and move toward more sustainable production systems.

*Specialty Topic: Pick-Your-Own: reducing theft, while improving the customer experience.
www.butlersorchard.com/

Larriland Farm, Woodbine, MD

Larriland Farm is family owned and operated by Larry and Polly Moore. They have a farm market, but they are recognized as a pick-your-own farming operation which started in 1973. They grow tart and sweet cherries, strawberries, thornless blackberries, black, red, and purple raspberries, blueberries, peaches, apples, and vegetables including spinach, tomatoes, beets, broccoli, and pumpkins.

*Specialty Topic: How they manage a large Pick-Your-Own operation.
www.pickyourown.com/

Richardson Farms of White Marsh, White Marsh, MD

There are three generations of the Richardson family involved in the day-to-day operations. Not only have they managed the largest farm stand in the Northeast Market in Baltimore, Maryland since 1930, in 2010 the new On-Farm Market was opened. Under the supervision of their Executive Chef, the kitchen and deli prepares whole, carryout meals, or your choice of delicious food items such as rotisserie chickens, slow-smoked barbeque, cheese, deli meats, fantastic desserts, and more. Richardson Farms grows more than 300 acres of fresh produce and provides locally grown fresh vegetables to area wholesalers.

*Specialty Topic: "Chefing" and how to incorporate foods from the farm into restaurant menus.
http://richardsonfarms.net/

Weber Cider Mill Farm, Baltimore, MD

Since 1908, over four generations of the Weber family have been market gardeners and fruit growers. Weber's Cider Mill Farm is Maryland's oldest cider mill in continuous use. Their farm includes a farm market, bakery, and gift shop. The farm market features summer fruits and vegetables, including 45 varieties of peaches and continues into fall harvest with over 20 varieties of apples, their cider, and fall fruits and vegetables. The bakery produces over 20 different types of pies, cider donuts, hand-dipped ice cream, fudge, apple cider, and fruit slush. Their gift shop offers baskets, children's books, soy candles, and home décor.

*Specialty Topic: Cider processing and varietal ciders.
www.weberscidermillfarm.com/

Milburn Orchards, Elkton, MD

Family owned and operated since 1902 Milburn Orchards is now run by the fourth generation of the Milburn family. Milburn Orchards provides families with high quality farm fresh fruits and vegetables, available in their farm market or wholesale. For more than 100 years, families have been driving from Pennsylvania, New Jersey, Delaware, Maryland and points beyond to visit the Milburn Orchards. Two years ago they built an addition onto the original building, which more than doubled the size of the market.

*Specialty Topic: Transitioning into a new market facility.
www.milburnorchards.com/

Lunch on Tuesday & Wednesday & supper on Tuesday will be at the markets we are visiting.

Registration

Pre-registration is necessary because of bus and lodging reservation requirements and will be honored on a "first-come, first-served" basis. Registration deadline is June 30, 2014. All major credit

(continued on page 12)

*The **Pennsylvania Vegetable Growers News** is the official monthly publication of the Pennsylvania Vegetable Growers Association, Inc., 815 Middle Road, Richfield, PA 17086-9205*
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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 furture 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.

NEWS

EPA Announces Proposed Changes to Farm Worker Protection Standard

In the March 19, 2014 Federal Register the Environmental Protection Agency issued proposed changes to the Agricultural Worker Protection Standard (WPS). The intent of these changes is increase protections from pesticide exposure for the nation's two million agricultural workers and their families.

The proposed changes (see http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2011-0184-0119) aim to strengthen the protections provided to agricultural workers and handlers under the worker protection standard by improving elements of the existing regulation, such as training, notification, communication materials, use of personal protective equipment, and decontamination supplies.

Summary of proposed changes

Annual mandatory trainings (rather than once every 5 years) 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.

New no-entry 25-100 foot buffer areas surrounding pesticide-treated fields will protect workers and others from exposure from pesticide overspray and fumes.

Mandatory record-keeping to improve states' ability to follow-up on pesticide violations and enforce compliance. Records of application-specific pesticide information as well as farm worker training and early-entry notification must be kept for two years.

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

Employers will be required to 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.

Additional changes make the rule more practical and easier to comply with for farmers.

They continue the exemptions for family farms and broadens the definition of immediate family members which are exempt from many of the aspects of the Worker Protection Standards.

A comparison of the current regulations with the proposed standards is available on line at http://www.epa.gov/oppfead1/safety/workers/proposed/comparisons-current-proposed-wps.pdf.

Comments regarding these proposed regulatory changes must be received on or before June 15, 2014 and should be identified by document identification number EPA-HQ-OPP-2011-0184.

Pennsylvania growers with questions regarding the proposed WPS changes should contact Jim Harvey at jdh18@ psu.edu or 814-863 8214.

From Penn State Univ. as reported in ***Pennsylvania Agricultural Alliance Issues Update,*** *Penna. Farm Bureau, May 2014.*

New Farm Bill Expands Crop Insurance Options

Agriculture Secretary Tom Vilsack recently announced a new risk management option that will be available for fruit and vegetable growers and producers with diversified farms. The policy, called Whole-Farm Revenue Protection, will provide flexible coverage options for specialty crop, organic and diversified crop producers. The program will be implemented in counties across the country and will expand in availability over the next several years.

Whole-Farm insurance allows farmers to insure all crops on their farm at once, rather than insuring commodity by commodity. Traditionally, many fruit and vegetable crops have not had crop insurance programs designed for them—making it less attractive for a farmer that primarily planted a commodity crop like wheat or corn to use another part of his or her land for growing fruits and vegetables or other specialty crops. This allows farmers greater flexibility to make planting decisions on their land.

"Crop insurance has been the linchpin of the farm safety net for years and continues to grow as the single most important factor in protecting producers of all sizes from the effects of unpredictable weather," said Vilsack. "Providing farmers the option to insure their whole farm at once gives farmers more flexibility, promotes crop diversity, and helps support the production of healthy fruits and vegetables. More flexibility also empowers farmers and ranchers to make a broader range of decisions with their land, helping them succeed and strengthening our agriculture economy."

The 2014 Farm Bill requires a whole-farm crop insurance policy option, and paves the way for the Risk Management Agency (RMA) to make it broadly available to specialty crop, organic, and diversified growers. The Federal Crop Insurance Corporation Board of Directors (FCIC Board) approved the Whole-Farm Revenue Protection pilot policy for RMA to offer it through the federal crop insurance program in 2015.

USDA has taken many steps to provide effective insurance coverage for diversified, organic and specialty crops. The whole-farm crop insurance policy provides flexibility to meet the needs of specialty crop growers, organic producers and those with diversified farms, and who have farm production and revenue history, including five years of historic farm tax records. This policy is also part of USDA's commitment to small and mid-sized producers managing diversified operations, www.usda.gov/wps/portal/usda/usdahome?contentidonly=true&contentid=small-midsized-farmer-resour ces.xml.

USDA has been strengthening crop insurance by providing more risk management options for farmers and ranchers. The policy offers coverage levels from 50 to 85 percent; recognizes farm diversification through qualification for the highest coverage levels along with premium rate discounts for multiple crop diversification. The Market Readiness Feature, as outlined in the Farm Bill, simplifies insurance coverage for producers under the Whole-Farm Revenue Protection pilot policy by allowing the costs such as washing, trimming, and packaging to be left in the

(continued on page 4)

NEWS

National News Briefs

United Pushes Back on Attempt to Roll Back School Meal Standards

When the House and Senate develop their Agricultural Appropriations bills each year, the debates usually have to do with funding levels for various programs. These budget bills are supposed to allocate funding to implement laws and programs already in force. But this year a handful of Congressional members on the Appropriations committees have tried an end run around 2012 child nutrition standards for school meals, seeking to roll back provisions that require meals to contain at least one half-cup of fruits or vegetables.

Seeing this surprise attack coming, the United Fresh Produce Association delivered letters, accompanied by half-cup measuring spoons, to both the House and Senate appropriators urging them to oppose any attempts to gut these very modest fruit and vegetable requirements for school meals. United has been actively working with public health partners and major national media to bring a spotlight to this attack. We've made a difference, leading to an editorial in the Washington Post and many stories hitting the desks of members of Congress.

Despite strong support for preserving nutrition standards from Ranking Member Sam Farr (D-CA) and several other members, the House Agriculture Appropriations Subcommittee passed a provision Tuesday allowing schools a waiver to opt-out of all requirements if they were having trouble financially.

Fortunately, the Senate Appropriations Committee took wiser action Thursday morning, passing provisions to help schools deal with stringent requirements for sodium and whole grains, without gutting the basic requirement that schools serve at least one half-cup of fruits and vegetables in meals. United issued a press release commending the Senate action, and called on all parties to now turn our attention to helping schools meet the fruit and vegetable standards, rather than opting out of serving even a half-cup.

However, the battle may not be over, as the full House Appropriations Committee takes this up again next Thursday, and a conference committee between the House and Senate will eventually have to resolve differences. United and its allies will keep up the pressure to put kids' health first, preserving the modest gains made in bringing more fruits and vegetables to the nation's schoolchildren in this important learning environment

*From **Inside United Fresh,** United Fresh Produce Assn., http://iuf.unitedfresh.org , May 22, 2014.*

FDA Extends Comment Period on Proposed Rule on Sanitary Transportation of Human and Animal Food

The U.S. Food and Drug Administration is extending the comment period 60 days on its proposed rule "Sanitary Transportation of Human and Animal Food." The comment period was scheduled to end May 31, 2014. FDA's action comes following a request by the United Fresh Produce Association and 21 other organizations to extend the comment period.

The extension also applies to the associated information collection provisions. The proposed rule appeared in the February 5, 2014 issue of the Federal Register. FDA is taking this action in response to requests for additional time to submit comments.

The proposed rule, which is required by the FDA Food Safety Modernization Act (FSMA), would require certain shippers, receivers, and carriers who transport food by motor or rail vehicles to take steps to prevent the contamination of human and animal food during transportation. It would establish criteria for sanitary transportation practices, such as properly refrigerating food, adequately cleaning vehicles between loads, and properly protecting food during transportation.

*From **Inside United Fresh,** United Fresh Produce Assn., http://iuf.unitedfresh.org , May 22, 2014.*

Explain the Myth vs. Reality about Agricultural Labor

A new toolkit document is now available on the website of the Agricultural Workforce Coalition (AWC) that examines the myths vs. realities of farm labor needs and immigration reform. The document looks at eight prominent misconceptions about agricultural labor and immigration reform, including farm wages, amnesty, mechanization and border security.

The document can be used as a reference for members as they discuss the need for immigration reform with policymakers and other audiences. The United Fresh Produce Association is a founding member of the AWC.

*From **Inside United Fresh,** United Fresh Produce Assn., http://iuf.unitedfresh.org , May 22, 2014.*

New e-Learning Tools Available for Traceability & Produce Identification

The United Fresh Produce Association, along with the Canadian Produce Marketing Association (CPMA), Produce Marketing Association (PMA), GS1 Canada and GS1 US have launched two e-Learning modules designed to assist produce industry stakeholders to learn how to identify their products along the supply chain and implement traceability processes for their businesses.

The modules are developed for all industry participants to gain foundational knowledge and can be used as training tools for new employees or as a refresher for industry veterans seeking a clearer understanding of these key concepts for their day-to-day operations.

Improving supply chain efficiencies from the field to the consumer helps ensure that the right product gets to the right place at the right time. As industry associations with mandates

(continued on page 6)

New Farm Bill... *(continued from page 3)*

insured revenue instead of having to adjust those amounts out of the insured amount.

The new Whole-Farm Revenue Protection policy combines Adjusted Gross Revenue (AGR) and AGR-Lite along with several improvements to target diversified farms and farms selling two to five commodities, including specialty crops to wholesale markets. The new policy is also designed to meet the risk management needs of diversified crop or livestock producers including those growing specialty crops and/or selling to local and regional markets, farm identity preserved markets, or direct markets.

As part of the pilot, Whole-Farm Revenue Protection will be available where AGR and AGR-Lite are currently offered, and will expand to other counties as data are available for underwriting and actuarial ratemaking. RMA will release information on the policy later this summer when it becomes available. This information will be announced on the RMA website at www.rma.usda.gov.

NEWS

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

to provide valuable information to our members and enable their success, we are constantly striving to support that effort via a collaborative approach – these modules are the latest tools created in that spirit.

"The Produce Traceability Initiative has a laser focus on case level traceability to ensure the industry is enabled to accurately and quickly identify where specific cases of product are in the supply chain," said Dan Vaché , United's vice president, supply chain management. "These two new learning modules provide an easy way to understand the different levels of collecting product data and help avoid confusion between tracking at the pallet level, case level, and item level. They are an excellent introduction to for those wanting to learn the basic concepts of traceability and a great way for those wanting to revisit the basics in a clear and concise manner."

The modules are available in English and French and can be accessed online via the links below:

Product Identification in the Fresh Produce Industry at http://elearning.cpma.ca/moodle/repository/modules/produceidentification/index.html

Traceability in the Fresh Produce Industry at http://elearning.cpma.ca/moodle/repository/modules/traceability/index.html

*From **Inside United Fresh,** United Fresh Produce Assn., http://iuf.unitedfresh.org , May 1, 2014.*

Farm Bureau Pushes for Federal Tax Reform

The American Farm Bureau Federation is pushing for reforms in the federal tax code to allow farmers to thrive economically.

AFBF President Bob Stallman recently testified during a Congressional hearing on tax reform and the adjustments necessary that will keep agriculture producers competitive.

"One of the major goals of tax reform should be to provide stable, predictable rules for businesses so that they can grow and create jobs," Stallman said. "Farm Bureau believes that Congress should end its practice of extending important business tax provisions for one or two years at a time. This practice makes it very difficult for farmers and ranchers to plan and adds immense confusion and complexity."

Recently, Rep. Dave Camp, a Michigan Republican who chairs the House Ways and Means Committee, released a tax reform proposal. His proposal, which has not been drafted into a bill, would lower both the top corporate income tax rate and the top individual tax rate to 25 percent from the current 35 percent for corporations and 39.6 for individuals.

However, several provisions in Camp's proposal would be troubling to agriculture, including changes to Section 179, which farmers use to deduct equipment expenses. Under Camp's proposal, Section 179 deduction limit would be permanently set at $250,000. Farm Bureau supports reinstating the 2013 level of $500,000 with a $2 million phase out level.

In written testimony Stallman told members of the Ways and Means Committee that several now-expired deductions are critical to agriculture success. They include:

Setting the Section 179 expensing limit at $500,000.

Allowing for bonus depreciation, which is an additional 50 percent bonus depreciation for the purchase of new capital assets including agriculture equipment.

Keeping the Cellulosic Biofuel Producer Tax Credit, which is a $1.01 per gallon tax credit for cellulosic biofuel sold for fuel.

Continuing the $1 per gallon tax credit for the production of biodiesel and renewable diesel fuels.

Keeping provisions that encourage donations of conservation easements.

Stallman said farmers rely on programs like Section 179 to even out their income from one year to the next and keep their tax burden consistent from one year to the next.

"Farming and ranching is a capital intensive business. In order to remain profitable and be competitive, farm equipment, buildings, and storage facilities must be continually upgraded and replaced," he said. "This provision allows agricultural producers to reduce maintenance costs, take advantage of labor-saving advances, become more energy efficient and adopt technology that is environmentally friendly."

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

Farm Bureau Supports Voluntary GMO Labeling Bill

Farm Bureau is supporting a federal effort that would prevent consumer confusion over separate state-based initiatives on the labeling of genetically modified ingredients.

The Safe and Accurate Food Labeling Act will also ensure that farmers have access to emerging agriculture technology they need to meet the demands of a growing nation, along with operating on a reduced environmental footprint.

The act would also direct the Food and Drug Administration to establish standards if companies want to label their products for the absence or presence of GMO ingredients.

If the bill passes, the FDA would be required to conduct a review of all new GMO traits before they are used by farmers— and gives the agency the option to mandate labeling of GMO ingredients if the FDA finds a health or nutrition issue with the technology.

"The diversity of innovative options farmers and ranchers have in regard to how they grow our food is one of the reasons U.S. consumers enjoy a wide variety of foods that are also among the most affordable in the world," American Farm Bureau Federation President Bob Stallman said in a statement. "Farm Bureau supports all production practices— and common sense, science-based regulations— that ensure consumers are receiving safe and healthy food. But we will stand adamantly opposed to those who want to take tools and technologies away from America's farmers and affordable choices away from consumers."

Stallman said Farm Bureau is thankful for the bipartisan support of the legislation and will work with Congress to ensure its passage.

"With the introduction of this legislation and the leadership of the bill's sponsors, Farm Bureau looks forward to a national-level discussion that will affirm FDA's role in assuring consumers about GMO safety and reduce the confusion that would result from a patchwork of state labeling initiatives," Stallman said.

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

Unmanned Aerial Vehicles Provide Value to Agriculture

Unmanned aerial vehicles (UAV) may become more commonplace on agricultural operations in the near future as producers realize the potential for early detection of fertilizer prob-

(continued on page 8)

NEWS

State News Briefs

Penn State Studying Pollinator Decline

Researchers at Penn State are utilizing three grants from the U.S. Department of Agriculture and National Science Foundation to look at what is causing declines in pollinator populations.

Pollinators—particularly honeybees—have been in decline due to a variety of factors including poor nutrition, genetics, invasive species and other factors. Scientists have said those elements are contributing to Colony Collapse Disorder which causes bee die offs in winter months.

Current Penn State research is focusing on three areas that could be impacting pollinators:

Scientists have identified a parasite that is linked to Colony Collapse Disorder. Research will look at the gene characteristics of this particular parasite and how it is able to affect honeybee health. Researchers hope to develop specific therapeutics to reduce the parasite's virulence.

Penn State scientists are also looking at the role pesticides may play in affecting pollinator health. Some current research has found that honeybees are sensitive to some formulas used in certain pesticide mixtures, including inert materials. Penn State will use grant money to study formulas and make recommendations on which mixtures may minimize impacts on pollinators.

Lastly a grant from the National Science Foundation will examine the impact of invasive species on pollinator colonies. Researchers will look at ecosystem structure and the role it plays on pollinator health.

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

PFB Joins Organizations Over Act 13 Concerns

Pennsylvania Farm Bureau has joined other business organizations expressing concern over a recent State Supreme Court ruling that could have far reaching effects on economic development projects.

Act 13—adopted by state lawmakers several years ago—intended to provide clarity for the development of natural gas by providing for statewide environmental standards, regardless of their location. The act was designed to give a cohesive set of standards, instead of developers being subjected to various regulations, depending on the county or municipality.

Act 13 also created provisions for the collection of impact fees during drilling—with those funds turned over to local governments dealing with the effects of gas drilling in their area.

A Pennsylvania municipality challenged the law, and in late 2013, the Supreme Court overturned the law, effectively removing the statewide standards.

Pennsylvania Farm Bureau is concerned that the ruling could have effects beyond natural gas development to include farming operations. The uncertainty of the Act 13 decision may potentially encourage opponents of agriculture to consider a legal challenge to Pennsylvania's ACRE law—which gives the Attorney General the authority to overturn local regulations that are harmful to agriculture development. However, there are several legal distinctions between the state's environmental laws, and the ACRE law.

Pennsylvania Farm Bureau has joined with the Pennsylvania Chamber of Business and Industry, and other trade groups, to express concern to Governor Tom Corbett of the troubling precedent the ruling could have on economic development.

The court decision in Robinson Township V. Commonwealth of Pennsylvania, and the interpretation of the Environmental Rights Amendment, undermines the authority of the General Assembly to balance the state's environmental and economic interests. The court's decision has created a system where development projects could be subject to different environmental and natural resource management rules, depending on the municipality.

"There are clear ties between the strength of Pennsylvania's economy and the effectiveness in managing and improving the Commonwealth's environmental resources," said Sam Kieffer, Director of Government Affairs and Communications for Pennsylvania Farm Bureau. "Farm Bureau strongly believes that the Robinson Township case does not stand for the proposition that the General Assembly must ignore consideration of economic impacts in meeting any constitutional obligation that may directly or indirectly relate to our environment."

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

Court Rules in "Right to Farm" Case

The Pennsylvania Superior Court has issued a decision on an appeal challenging the interpretation of the state's Right to Farm Law, which was mostly positive for agriculture.

Pennsylvania Farm Bureau filed a "friend of the court" brief over concerns with extremely unfavorable interpretations of the law being offered by residents trying to sue a neighboring farm.

The case originated in York County after neighbors complained about the use of biosolids on a farm. If adopted by the court, the neighbors' interpretation of the law would have virtually eliminated any meaningful protection from nuisance lawsuits.

(continued on page 9)

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

lems, monitoring moisture stress, mapping tile lines, measuring residue on the field and producing plant population counts.

Sophistication levels of the planes vary but more expensive models can be uploaded with a flight plan, take aerial photos by itself, determine wind direction and land automatically within two feet of a predetermined site. The planes use a global positioning system to locate any field on the farm and will scout entire fields quickly and efficiently. The Federal Aviation Administration (FAA) has provided guidelines for UAVs such as establishing a maximum plane weight of under four pounds, flying at a maximum altitude of 400 feet, restricting flights near airports and prohibiting flying at night.

The FAA is planning to issue final regulations on UAVs by the fall of 2015. Agricultural producers are projected to comprise a major segment of the unmanned plane market utilizing its capabilities to scout fields to enable better agronomic decisions.

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

Control Measures Needed to Minimize Spray Drift

Spray drift from pesticide and liquid fertilizer applications needs to be considered this planting season to avoid off-target damage to neighboring crops. Liability risks are very high when those crops consist of high value specialty crops or organic production.

Nozzle selection can greatly reduce the risk of spray drift onto a neighbor's property by utilizing a coarser droplet. Some nozzles are designed to mix air with the spray droplet creating

(continued on page 11)

State News Briefs (continued from page 8)

"The extreme interpretations of the Right to Farm Law advocated by the neighbors would have made the law's protections of farms from nuisance suits meaningless," said John Bell, PFB's government affairs counsel. "We are thankful the court rejected these interpretations and kept the Right to Farm Law's intended goals and protections from nuisance suits intact."

At issue in the case was the interpretation of the Right to Farm Law's provision that protects farms making a "substantial change."

The court favorably ruled the law's protection continuously reoccurs after each change is made, and the time period for determining reestablishment of the protection is strictly one year from the date the farmer first makes the change, not a year after neighbors may be "affected" by the change.

Superior Court did, however, reverse the lower court's ruling outright that the use of biosolids is part of "normal agricultural operation," and sent the case back for the court to hear additional testimony on the issue. PFB's friend of the court brief focused on the possible negative interpretation of the Right to Farm Law and did not address the use of biosolids.

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

Stream Cleaning Solution Stymied By Bureaucracy

Two years after massive flooding destroyed homes and fields around Bradford County, county officials thought they had found a creative and effective solution to the perennial problem.

Because of the soil and topography around the Northern Tier county, rocks and soil end up washing down and choking stream channels. During heavy rains, streams jump their banks, cutting new paths through farm fields, or undercutting foundations of homes and businesses.

Over time, silt and sediment has built up in streams around the county. But because of burdensome regulations and permitting requirements, landowners have been unable to get into streams and remove debris that threaten their property.

Following the devastating flooding that struck the region in the fall of 2011, the Bradford County Conservation District devised a solution that would allow homeowners and municipalities to address the problem, while meeting environmental concerns.

Their solutions, based on a successful program in New York, would create a general county permit for stream cleaning. If a landowner found problems with stream debris clogging a nearby waterway, staff from the conservation district would examine the stream and compare it against a template that looks for proper stream flow.

Once the problem was verified, the landowner would be able to move ahead and clean the stream—by using the county permit—provided the landowner or contractor had gone through a county led, three-day, training session on the proper way to clean stream debris.

The Bradford County Conservation District was set to hold a training session and demonstration plot when officials from the U.S. Army Corps of Engineers raised concerns. A year later, the program is no closer to moving forward.

"It has gotten lost in the bureaucracy," said Mike Lovegreen, district operations specialist for the Bradford County Conservation District. "This project has languished. Everything is ready to roll. We are just in a holding pattern."

(continued on page 10)

NEWS

State News Briefs *(continued from page 9)*

Like many surrounding counties, Bradford County has loose and shallow soils. During rains, soil and rocks are knocked out and end up collecting in stream beds. In 2011, those clogged stream beds contributed to heavy flooding that inundated the region following Hurricane Sandy. Many landowners looking to correct the problem were stymied by a cumbersome permitting process that would have required engineering studies.

Stream cleaning is regulated by the state Department of Environmental Protection and, depending on the extent of the project, the US Army Corps of Engineers.

When a project involves going into a streambed to remove gravel bars and other debris, both the DEP and Army Corps must approve the project, which would also require studies of hydrology and stream flows, Lovegreen said. That type of engineering work is often too complicated for landowners and municipalities, he said.

Using a grant from the Pennsylvania Department of Agriculture, the Bradford County Conservation District established a pilot program and began performing the work of establishing stream templates.

The district was set to move ahead with a training session—that would have involved a hands-on lesson for property owners and municipalities to learn proper stream cleaning techniques. However, the U.S. Army Corps of Engineers wanted the county to obtain permits and perform stream flow and hydrology studies, Lovegreen said. Now, there's uncertainty the Army Corps would approve a county-level permit, or still require engineering studies for when a landowner wants to clean streams on their property, Lovegreen said. If so, that would defeat the purpose of a county-level permit, he said. Lovegreen suspects this program may need approval from senior level staff at the state and federal levels to move forward.

"It's enough out of the box that some folks don't want to sign off on it," he said.

But Lovegreen is worried that the project is losing steam, given the amount of time that has passed since the last flood.

"We are two years away from the last major flood," he said. "I think the momentum may have shifted."

Do Your Part to Control Mosquitoes

Pennsylvania will award $2.1 million to 26 counties this year to conduct preventive programs to thwart the spread of West Nile Virus.

Funding will be used to pay for the county costs of surveying and controlling mosquitoes that can carry the virus. In 2013, the Pennsylvania Department of Environmental Protection found more than 1,200 mosquitoes and two horses infected with West Nile.

There were 11 human cases reported last year. The West Nile Virus can cause an infection resulting in inflammation of the brain and death. However, most people bitten by an infected mosquito will not develop symptoms.

Landowners are reminded to take steps that will prevent mosquitos from breeding on their property. Some tips, from the DEP, include:

Pay attention to discarded tires, which is the most common place where mosquitoes breed.

Clear clogs from roof gutters. Roof gutters can produce millions of mosquitoes a year.

Don't allow water to stagnate in wheelbarrows.

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

USDA Announces Two Grant Programs

USDA has announced two conservation grant programs totaling $386 million for wetlands, agricultural land protections, and outdoor recrecreational programs in rural America. These are the Agricultural Conservation Easements Program (ACEP) and Voluntary Public Access and Habitat Incentive Program (VPA-HIP). Information and applications are available at www.nrcs.usda.gov/GetStarted. A link to the USDA announcement appears below.

http://content.govdelivery.com/accounts/USDAOC/bulletins/b4df68

The US Forest Service is seeking proposals that expand wood energy use and support responsible forest management that reduce consumption of fossil fuels. There are two programs. Haxardous Fuels Wood-to-Energy Grant program has $2.8 million and the Statewide Wood Energy Team cooperative agreement invites public-private teams to seek funding to advance wood energy. For more information on both programs, go to www.na.fs.fed.us/werc.

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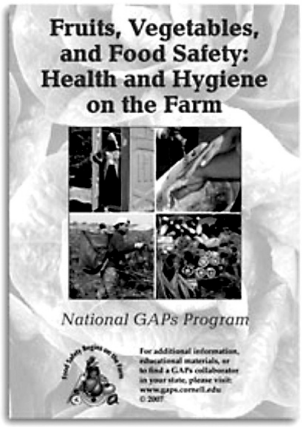
NEWS

Food Safety Worker Training Resources Available

Worker health and hygiene training for farm workers, including family members, is an important step in reducing the risk for human pathogen spread on farms. Training of workers does not need to be complicated, but does need to be specific to your operation and your farm food safety plan (everyone should have one).

Worker health and hygiene training is required for passing a third party audit. Documentation must be kept regarding what workers were trained, when they were trained and what materials were used for the training.



A 15 minute training DVD produced by Cornell is available for $20.

Fruits, Vegetables, and Food Safety: Health and Hygiene on the Farm is available in English/Spanish, English/Hmong and English/Creole versions. ©2004 Designed to be part of a comprehensive worker training program, this 15-minute video offers guidance to workers on proper handwashing and toilet use, with emphasis on how their health affects the safety of fresh fruits and vegetables. Hygiene topics discussed in this video are reinforced in the Field Hygiene Poster Series. Available in DVD and VHS formats, each video contains both the English/Spanish version. 'English/Hmong' and 'English/Creole' versions are available on DVD only. To purchase for $20, visit http://nysaes-bookstore.myshopify.com/collections/gaps/products/fruits-vegetables-and-food-safety-health-and-hygiene-on-the-farm or call 315-787-2248.

Adapted from Meredith Melendez with Rutgers Coop. Ext. in the Plant and Pest Advisory, Rutgers Coop. Ext., http://plant-pest-advisory.rutgers.edu/?p=9468, April 30, 2014, and from Cornell Univ. NY State Ag. Exp. Station Bookstore.

National News Briefs... *(continued from page 8)*

fewer fine water particles subject to drift. A low drift nozzle design must be adaptable to variable rate spray controllers that adjust spray pressure on-the-go to accommodate faster ground speeds while continuously maintaining the accuracy of the rate per acre.

It should be emphasized that drift-reducing nozzles do not eliminate drift and agricultural operators will need to decide on factors like wind speed and direction to minimize adverse impacts to neighboring crops.

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

Farm Bureau Asks For Crop Insurance Adjustments

Pennsylvania Farm Bureau, joined by other Farm Bureaus in the Northeast, asked the U.S. Department of Agriculture to remove barriers to farmers receiving competitive crop insurance benefits.

In many eastern states, including Pennsylvania, some counties are not approved for crop insurance coverage avail-

(continued on page 14)

MARKETING

Plants Merchants Must Be Licensed this Growing Season

As part of PDA's work to safeguard PA's plants against pests and diseases, all plant growers and merchants must be certified and licensed. Under Pennsylvania's Plant Pest Act nursery stock is defined as: All trees, shrubs, brambles, woody vines, woody florist stock, herbaceous perennials, vegetable plants, bedding and other annual herbaceous plants, their roots, cuttings, grafts, scions, buds, fruit pits, seeds and their parts for propagation, except bulbs, field crop seeds, vegetable seeds, flower seeds, regardless of where the material may have been grown or is growing.

Persons engaged primarily as growers of nursery stock are considered nurseries. This definition includes many Pennsylvania greenhouse operations, in addition to traditional nurseries.

Persons that are engaged in buying and selling nursery stock, but are not primarily growers, are considered nursery dealers. It is within this diverse group of nursery dealers that most of the confusion over certification requirements has arisen. Nursery dealers include landscape contractors, chain stores, garden centers, plant distributors, mail order firms, collectors, conservation districts conducting plant sales and any other individual who receives plants for the purposes of reselling or reshipping. By applying for certification, a nursery dealer verifies that he will buy and sell only plants that have been inspected and certified. A certificate of inspection must always accompany all wholesale lots or out-of-state shipments

There are two ways to apply for certification as a new nursery, dealer, or greenhouse:

• Complete a paper application form available from a Plant Inspector or download a copy from Forms: Nursery Greenhouse and Dealer Registration . Submit the application along with the $40.00 registration fee via mail. All checks should be made payable to the "Commonwealth of Pennsylvania".

• "Apply for a New License" online at www.paplants.state.pa.us. To complete the online registration, you will need a credit card at the time of the application.

Nursery stock offered for sale is subject to inspection for injurious plant pests. If an inspection reveals harmful insects or plant diseases, stop-sale orders may be issued. Samples are frequently submitted to one of the Bureau of Plant Industry laboratories in Harrisburg for diagnosis. If practical controls exist, a recommendation is made. Controls range from biological agents, chemical agents, and cultural practices to the destruction of plants in some cases.

Every state in the United States has a nursery inspection and certification program. However, not all states are involved in the inspection of greenhouse crops. More than 40 states have a fee for certification that varies from a few dollars to over $1,000. Pennsylvania's annual $40 fee is the result of a bill passed by the legislature as Act 67 of 1990 which established fees for some 440 licenses and permits statewide. Funds collected under this bill have been used to create a special restricted account called the Plant Pest Management Account to be used to improve and enhance plant inspection and certification programs in Pennsylvania. This is a direct benefit to the state's horticulture industry.

For more information on plant merchant registration, contact Anita Ashe at 717-705-0814 extension 5231 or aashe@state.pa.us.

"Are You Crazy?"... *(continued from page 1)*

cards and checks accepted. No refunds after June 30, 2014. To register, go online to: http://tinyurl.com/AYCTrip. For assistance with registration: 610-391-9840, Monday – Friday, 8:00 a.m. to 4:30 p.m.

The registration fee covers the tour bus transportation, one night at a hotel (breakfast on your own), reference materials, refreshments, dinner on Tuesday, and lunch on both days.

Your registration fee depends on how many you have sleeping in your hotel room:

One person/room tour fee: $320.00
Two people/room tour fee: $255.00 each
Three people/room tour fee: $235.00 each
Four people/room tour fee: $225.00 each

We will be boarding our tour bus at three locations:

6:00 a.m. at the Lehigh County Ag Center parking lot: 4184 Dorney Park Road, Allentown, PA 18104-5798

7:15 a.m. at Penn State Extension Lancaster County Farm & Home Center parking lot: 1383 Arcadia Road, Lancaster, PA 17601-3184 *Park in the west corner, near Route 30.*

8:45 a.m. at Penn State Extension Adams County parking lot: 670 Old Harrisburg Road, Gettysburg, PA 17325-3404

NOTE: The bus will depart promptly. Please be prepared to be on time, or better, a little early.

Expected to arrive back Wednesday, July 23rd in:

Lancaster around 5:55 p.m.
Gettysburg around 6:55 p.m.
Allentown around 7:25 p.m.

The tour is sponsored by the Pennsylvania Retail Farm Market Association, Penn State Extension, PVGA, Pennsylvania Department of Agriculture, USDA and Risk Management Agency.

Is your Greenhouse or High Tunnel Heating System Damaging your Plants?

Steven Bogash

Extension colleagues and I have recently visited a number of heated high tunnels and greenhouses where air pollution from the heating system was damaging the crop. Tomatoes are very sensitive to ethylene, sulfur dioxide and nitrogen oxides. All of these chemicals are part of the brew that is generated in the combustion chamber of our heating systems through burning coal, heating oil, propane, natural gas, or wood. Our prolonged cold period this spring is starting to wear crops down in situations where either the heating system is poorly vented, not vented at all or poorly engineered. This is especially so in high tunnels where heaters are often a second thought and only used to prevent temperatures from dropping below 45F at night. Diagnosing plant injury based on heater-generated pollutants can be confusing as the damage can mimic other symptoms and the pollutants are gases that can pool in areas of reduced air circulation.

Damage caused by heating system malfunction.

Plants vary substantially in their sensitivity to air pollution and to their sensitivity to specific gases. There are variations between varieties and certainly among species. Light intensity, age of plants, time of day, humidity, watering and nutrient status all impact how a plant reacts to pollutants. High humidity in well-watered plants increases the likelihood of damage as the plants stomata are open allowing pollutant gases to enter.

Although there are many pollutants generated by heater combustion; Ethylene, Sulfur Dioxide and Nitrogen Oxides are the most common problems. Ethylene at very low concentrations will cause epinasty or the twisting and bending (generally downward) of stems. As the level of ethylene increases, the damage looks more and more like broadleaf herbicide damage with twisted and distorted stems. Ethylene can also cause flower abortion. Sulfur dioxide causes leaf and fruit burns. At lower levels, the damage may be chlorosis or flecking on leaves and fruit. Moderate levels may cause leaves to drop off. Nitrogen oxides cause similar damage to sulfur dioxide at higher levels. At lower levels, the leaves may simply appear darker or have downward curving leaf margins or both.

Take the time to inspect your heating system regularly. This is especially important with older systems (6-8 years +). In propane or natural gas fueled heaters, carefully inspect the heat exchanger for pinholes using a bright flashlight. Higher efficiency units may have a blower to help remove exhaust gases, is this functioning properly. Does your exhaust pipe leak? Is your chimney high enough to prevent downdrafts? Your chimney should extend 3' over the peak of your greenhouse. The high humidity in a greenhouse is hard on heaters and even the best made heater ages in this environment. Used heaters may not be of any value. This is especially so if they were not carefully stored. Even though propane and natural gas are considered 'cleaner' fuels, burning them generates plenty of pollutants. Non-vented, free standing temporary heaters may provide temporary heat, but at what cost to your plants? Smaller heating oil fueled systems are very similar to propane and natural gas. Larger systems typically run central boilers that distribute hot water, so generally are of little concern.

The safest way to run wood and coal fueled heaters is to have them outside of the growing area and use hot water from

(continued on page 14)

VEGETABLE PRODUCTION NEWS

Is your Greenhouse... *(continued from page 13)*

the boiler pumped through fin tubes and radiators to heat the planting area. It is very challenging to properly run a wood or coal stove inside of a growing area. Make sure that the stove gaskets are in perfect condition, the chimney is leak-free, and that the stack extends at least 3' above the peak of the growing area. Manually fueled wood and coal stoves require frequent refilling to maintain a constant flow of exhaust gases up and out of the growing area. These heaters are especially likely to be pollution challenges when starting up and refueling due to the potential for downdrafts.

Prevent crop damage before it occurs. Inspect your heaters regularly, follow manufacturers maintenance instructions, keep your chimneys in good condition and avoid the use of temporary, free-standing heaters such as salamanders.

*Mr. Bogash is with Penn State Extension in Cumberland County. From the **Vegetable, Small Fruit and Mushroom Production News,** Penn State Extension, http://extension.psu.edu/plants/vegetable-fruit/news/2014, May 1, 2014.*

National News Briefs... *(continued from page 11)*

able through the Risk Management Agency. Those situations can be corrected through a written agreement, but many crop insurance agents are hesitant to do so. Farm Bureau asked the Department of Agriculture to consider an alternative to written agreements that would make agents more willing to write policies.

In addition, Farm Bureau expressed concerns over a Farm Bill provision that would require producers to choose either the Agriculture Risk Coverage (ARC) or the Price Loss Program (PLP). Selecting the ARC coverage would prevent farmers from adding Supplemental Coverage Options (SCO) at a later date during the five-year Farm Bill. Farm Bureau believes farmers should have the flexibility to make changes to their insurance profiles until the rules are written for all programs.

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

Penn State Announces a Tool to Track Pest Development in the State

Penn State College of Agricultural Sciences offers a web-based tool enabling agricultural producers to track temperatures and crop, weed and insect pest development throughout the state. The Pennsylvania Pest Information Platform for Extension and Education (PA-PIPE) utilizes maps on their website which is currently tracking the development of the alfalfa weevil activity in the southern portions of the state. The maps provide an early warning system to producers to begin scouting their alfalfa fields for insect damage in areas where large populations of alfalfa weevils are projected to develop.

Other useful information on the PA-PIPE website tracks the soil temperature to aid with planting decisions, monitors plant diseases, weather data and weed germination to help with control measures. The PA-PIPE program may be accessed at http://extension.psu.edu/pa-pipe.

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

COME ONE, COME ALL TO TALLMAN FAMILY FARMS
LARGE FARM, POTATO, IRRIGATION EQUIPMENT AUCTION!!!
Thursday, July 31st, 2014, 9:00 AM
Tower City, PA

FARM EQUIPMENT *including Tractors, Two JD 7810, JD 7320, JD 6400, Deutz 7110w loader, All MFWD, JD 9500 COMBINE, JD 693 6 Row Corn Header, JD 920 20 Ft. Grain Platform, JD 750 15 ft.. No Till Drill, JD 1750 6 Row No Till Corn Planter, JD 1508 Bat Wing Mower, JD HX15 Bat Wing Mower, Willmar 8500 Eagle 84 Ft. Boom 4WD Self Propelled Sprayer, Willmar 745, 60 Ft. Boom 4WD Self Propelled Sprayer, FMC Boom Sprayer, FMC Air Blast Sprayer, 2 Stolzfus Fertilizer Spreaders, Unververth Gravity Wagon, NH 575 Baler with Thrower, NH 488 Haybine, NH 256 Side Delivery Rake, 4 Hefty Hay Wagons, IH 5100 12ft. Grain Drill, IH 100 Sickle Mower, Woods Model 121 10 Ft. Rotary Mower, Discs, Case Chisel, Case Field cultivator, plows and much more!!*

TRUCKS & TRAILERS, REEFER AND DRY VAN/STORAGE TRAILERS *including 3 Western Star Truck Tractors, 1 Mack Truck Tractor, 5 Utility Reefer 48' X 102" Trailers, 1 Great Dane Reefer Trailer, 2 Strick 48' X 102" Dry Trailers, 1 Dorsey 53' x 102" Dry Trailer, Sterling 10 Wheeler with 24' Morgan Reefer Van, 2, Ford LN 8000 10 Wheelers with 24' Morgan Vans, 3 Single Axle Ford Delivery Vans, 2 Aluminum Dump Trailers, 2 Ford Stake Body Trucks, 1 GMC Dual Wheel Box Van, 12 Storage Trailers*

POTATO FARM EQUIPMENT *including Lockwood 4620 2 Row Potato Air Harvester, Lockwood 4500 2 Row Potato Air Harvester, Lockwood XL 2 Row Potato Harvester, 2 Row McConnell Windrower, 4 Row McConnell Pick Type Potato Planter, 4 Row Lockwood Pick Type Potato Planter, 2, Harriston 4 Row Hiller/Cultivators, 9, 10 Wheeler Potato Trucks with Self Unloading Bodies, 2 Potato Seed Conveyors, Haines Potato Seed Cutter, Haines Bulk Bin Loader with 45 Ft. boom, roller table and sizer, Double L Model 824-02 Dirt Eliminator, Schulte Rock Rake, Vermeer Rock Picker, Haines Rock Picker, Lockwood Rock Picker and Much More!*

POTATO/VEGETABLE GRADING & PACKAGING EQUIPMENT *including 3 complete grading lines with Roller Sorting Tables, Milestone Sizers, Distribution Tables, Haines and Walthambury 50lb. Weigher Baggers, Fischbein Sewing Machines w Conveyors, 3 Kwik Loks w Stands/Printers. Corrigan TaterScan X Ray, Hagan 2 Lane Sizer with 6 Lane Carton Filler, 2010 NEWTEC 3013 w/ Ag PAC AP 6000 Bagger with Kwik Loks and 2 Squid Ink Printers, DAUMAR PA 25 Weigher Bagger with Kwik Loks, 2 Lockwood Weigher Baggers with Elevators and Carousels, Conveyors, Round Tables, Skate Tables, Electronic Scales, approximately 900 wooden pallet boxes and Much More!*

IRRIGATION EQUIPMENT *including 4 Marlow PTO Pumps, 2 Hale Pumps with Chrysler Engines, Gorman Rupp w Deutz Diesel Engine, Thousands of Feet of 6" AND 8" TICO, Anderson- Miller, Flex O Seal, and Rain Control Irrigation Pipe, Acres and Acres of 3" AND 4" TICO and Anderson Miller SOLID SET w IMPACT SPRINKLERS, large selection of 3", 4", 6" AND 8" Tee's, Elbows, Gun Stations, In line Valves, Reducers, Adapters, Full and Part Circle Guns, Pipe Wagons*

FORKLIFTS/CONSTRUCTION EQUIPMENT *including 2008 Clark 36 V Electric and Charger, Nissan 3500 Propane, TCM801 Propane, Oliver Model 552 Gasoline Field Forklift, D650-E6 Komatsu Bulldozer, 1954 Caterpillar D-8 with Scraper, Eager Beaver 35 T Low-Boy, Hughes 20 T Low-Boy.*

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Directions: Interstate 81 to Exit 107, Route 209 South, 4 miles, Turn left On Keystone Street, Follow 1 mile to Tallman Family Farms.

VEGETABLE PRODUCTION

A Good Spring for Maggots – Can a New Lure Help?

Shelby Fleischer and Tianna DuPont

Cool, wet, slow-growing spring weather is great for maggot pest problems. Plants are less able to outgrow the maggot feeding. Planting in warm soils is the best management option, but that may prove difficult this year. If you have to plant in cool soils, avoid planting into an abundance of decaying organic matter. Incorporate organic matter well, several weeks prior to planting. Be prepared to replant if you have significant stand loss. Check if the maggots are young (less than 3/8 inch), and if they are, wait another week or two for them to pupate before replanting.

Seedcorn maggot is typically our most significant problem. They have a very wide host range, and sweet corn, beans, and muskmelons (from seed or transplant) have had significant damage in the past. Cabbage maggot and onion maggot have also caused problems to the crops that carry their name. Sometimes we get other species from the same genus (Delia) causing the damage. The biology of these species, reproduced from the Extension publication "Vegetable Gardening: Recommendations for Home Gardeners" (see http://pubs.cas.psu.edu/freepubs/pdfs/agrs115.pdf), is a good overview:

Maggots pupate inside a dark brown, capsule-like puparium that resembles a grain of wheat. Seed corn maggot puparia can be found in soil throughout the year, and maggots overwinter in these puparia. The adult flies emerge from the puparia [in] late April and early May. The adults are brownish gray flies that closely resemble common houseflies, except that they are about half the size. Tiny, white, elongated eggs are deposited among debris and around plant stems near the soil surface. Eggs hatch in a few days and the maggots work their way into the soil in search of food. Maggots (the immature larval stage) are dirty white with a yellowish tinge, legless, cylindrical, and tapered; full-grown maggots reach 1/5 to 1/4 inch in length. Maggots feed in the seed or on the underground parts of seedlings. Damaged seed may germinate, but there may be too few food reserves left in the seed for the plant to survive. The time required to grow from egg to adult is between three and four weeks. There are three to five generations each year in Pennsylvania. Populations tend to decline during the dry months of summer.

Some experts can distinguish among maggot species with the larger larval stages, using the tubuercles on the rear of the larvae. Adults are better for determining which species is present.

Seed treatments (neonicotinoids, or chlorpyrifos), and pre- or at-plant soil treatments (organophosphates or pyrethoroids) are registered for sweet corn, and can provide effective control, and each crop will have different registered options. Neonicotinoids used at planting for other pests also provide some control of root maggots. Rescue treatments that occur after the maggots are feeding inside a developing seed, however, tend to not be effective.

- Can we monitor with traps?
- Could we increase the number of traps to provide control?

Research (Kuhar et al. 2006) suggests opportunities - They combined the traditional white or yellow sticky traps (Great Lakes IPM, or Gemplers) with a slow-release attractants ("Adult Maggot lure", from AgBio Inc., 9915 Raleigh St. Westminster, CO 80031; 303-469-9221; agbio@agbio-inc.com). Trap catch was increased significantly, and sex ratio more resembled what we'd expect from a field population. Kuhar et al. 2006 suggested that a high enough density of these traps might actually control the population in smaller production areas, providing one option for organic growers, and anecdotal evidence suggest that this might be helpful. The concept makes sense: researchers have used olfactory attractants (blood meal, fish meal, onion pulp, yeasts, etc.) to increase infestation rates when running efficacy trials.

Degree Days - Tianna Dupont summarized how to use growing degree days (GDD) to estimate when flight begins and reaches a peak. The Northeast Network for Environment and Weather Applications(NEWA) has recently expanded to multiple sites in PA. Note the onion maggot model http://newa.cornell.edu/index.php?page=onion-maggot). To calculate local growing degree dayshttp://www.weather.com/outdoors/agriculture/growing-degree-days/), select Jan 1 to current date and base 40 F for seed corn maggot (50 for cabbage and onion). You can also see a map of base 50 GDD in Pennsylvania at http://papipe.zedxinc.com/map/. Compare your local GDD to projected flights (NEWA). Peak flight for seed corn maggot is 360 GDD (base 40 F)", 450-540 for onion maggot, and 450 for cabbage maggot.

Nematodes for biological control - Tianna Dupont also summarized using Steinernema feltiae [Chen et al. 2003, Schroeder et al 1996]. As stated in her earlier report: "Steinernema feltiae are "cruzer foragers" says UC Davis nematologist Amanda Hodson. They forage right at or below the surface, unlike other nematodes that will stay on the soil surface. Hodson recommends applying infective juveniles in the irrigation (drip or microsprinklers). "Apply them in the morning and evening when it is not too hot and irrigate to keep soil moist," she says. Another common method is application to transplants before

(continued on page 18)

Summer Nitrogen Management

Routine soil tests are not good predictors of nitrogen (N) availability because plant available N fluctuates greatly throughout the season. Sandy soils low in organic matter can leach nitrogen quickly with spring rains. On the other hand, slowly decomposing organic matter, such as a freshly turned-in cover crop, may temporarily tie up nitrogen as it is involved in the decomposition of residual plant material. The Pre-sidedress Soil Nitrate Test can help you determine how much N is available for a crop at critical periods of plant growth. Sidedresses should be made soon after results are received to be sure the plant gets any needed additional nitrogen at the time in its growth when it would be most responsive to it. Consult Table 1 to determine at which crop stage to take a PSNT sample. Sampling instructions can be found at http://agsci.psu.edu/aasl/soil-testing/pre-sidedress-nitrate-test-for-corn-psnt or by obtaining PSNT information sheet at your county Penn State Extension office.

Having received your PSNT test results, you are now left with questions about how much N to apply and in what form.

Interpreting PSNT results: The PSNT is a tool growers can use to optimize N management, matching crop nitrogen needs to the time of greatest crop growth. The PSNT measures the current level of nitrate-N in the soil to predict the amount of N available for the remaining period of crop growth. The test helps growers avoid the use of excess nitrogen fertilizers, thus eliminating potential run-off and providing higher returns to labor and fertilizer investment.

Broadcast and preplant nitrogen applications can be reduced or avoided entirely if nitrogen is supplied to plants at key periods of growth. The test is especially useful for soils that are high in organic matter or have had a cover crop or manure turned under before planting since microbes will be mineralizing organic nitrogen into a plant available form throughout the season. This test has been used successfully with corn, potatoes, peppers, cucurbits and some brassicas.

Research conducted by the University of Massachusetts and Connecticut indicates that an appropriate threshold for most vegetable crops is about 30 ppm nitrate-N (NO3-N), and is 25ppm for sweet corn. Above this level, sidedressing or top-dress- ing supplemental N would be of no value and may even decrease yields. As a tool, the PSNT should be used along with a grower's experience and knowledge of their fields. For example, a field high in organic matter will continue to release nitrogen for crop growth throughout the season.

Research indicates that for each 1% organic matter, we can expect 20 to 40 lb of N per acre per year to be mineralized when conditions are favorable. The PSNT should reflect the nitrogen release coming from organic matter. Interpretation of PSNT results should be made with regard to weather conditions such as recent leaching rains that reduce available N, or high soil temperatures that increase mineralization and therefore increase available N. Weather conditions should also be considered before making N applications to avoid runoff, leaching and volatilization.

How much should I sidedress based on PSNT results? If soils have 0-25 ppm nitrate, apply the full sidedress amount recommended by the New England Vegetable Management Guide for most vegetable crops except for sweetcorn. At 25-30

(continued on page 18)

Summer Nitrogen Management (continued from page 17)

ppm nitrate you can cut the sidedress rate in half. Above 30 ppm no additional N is needed and could hurt yields. Consult Table 1 for sidedress rates of specific crops.

What form of nitrogen should I use? Nitrogen is available in a number of forms; consult page B8 of the Commerecial Vegetable Production Recommendations for Pennsylvania for nitrogen sources. Common sources of fertilizer N include urea, ammonium nitrate, monoammonium phosphate, diammonium phosphate, calcium nitrate and potassium nitrate.

Sulphur coated urea is a material which releases N more slowly over a period of several weeks. In the soil, urea is converted by hydrolysis to ammonium, which in turn is converted through nitrification to nitrate, the form of N most available to plants. In warm soils these reactions usually happen fairly quickly if soil pH is over 6.0 and soil moisture and aeration are adequate. For organic growers N sources include: manure, meals and fish and seaweed emulsions, or animal byproducts such as dried blood and feather meal. Not all of these forms are readily available to the crop, and selecting rapidly available forms of nitrogen may be preferable for sidedressing. Nitrate is the predominant form of N taken up by most plants, but any of these fertilizers can be used because they will be converted to nitrate eventually. Many growers use calcium nitrate and sometimes potassium nitrate for topdressing or sidedressing N on crops subject to calcium related disorders, such as tomato and lettuce. When a slow release form of urea is used, only a small amount of ammonium is present at a given time and is unlikely to cause a problem with calcium nutrition, but N may not be available quickly enough to meet the demands of a rapidly growing crop.

Table 1. Appropriate crop stages of various vegetables for PSNT sampling and sidedressing with plant available nitrogen.

Crop	Soil sampling time for PSNT	Sidedress N in Lbs/A[y]
Sweet corn	When plants are 6-10" tall	**60-90**
Cabbage Cauli- Flower, Broccoli Brusselsprouts	2 weeks after transplanting	cabbage, broccoli, brusselsprouts: **60** cauliflower: **30**
Celery	2 weeks after transplanting. Sample again in 3-4 weeks	**40** twice 3-4 weeks apart
Lettuce Endive Escarole	2 weeks after transplanting or after thinning (2-4 leaves)	**30-50**
Beets	After thinning (2-4 leaves)	**30**
Pumpkin Winter Squash Cucumber Muskmelon	Before vines are 6" long	pumpkin and winter squash: **40-50** cucumber and melon: **40**
Spinach	2- 4 leaves. Sample again after first cutting.	**30**
Potato	Before plants are 6" tall	**40-60**[z]
Pepper Tomato Eggplant	3-4 weeks after planting. Sample again 3-4 weeks later.	pepper: **50**, and **40** later at fruit set tomato: **30** twice 3-4 weeks apart eggplant: **30-50**

[y] If soils have 0-25 ppm nitrate, apply the full sidedress amount recommended by the New England Vegetable Management Guide. For crops other than sweet corn, at 25-30 ppm nitrate you can cut the sidedress rate in half. Above 30 ppm no additional N is needed and could hurt yields.

[z] Potatoes also need 50-125lbs/A Potassium depending on soil test results.

Adapted from: Rutgers Cooperative Extension Bulletin by J. Heckman, "Soil Nitrate Testing as a Guide to Nitrogen Management for Vegetable Crops" and The New England Vegetable Management Guide.

How much will the nitrogen cost me? Nitrogen materials vary considerably in price. Be sure to compare materials on a cost per pound of N basis, not per ton of material. Be sure to account for %N content of the product. The way to do this is as follows: Price per lb N = (price per ton material) divided by (lbs of N in a ton of material). For example, one ton of urea costs $598 and contains 920 lbs N (2000 x 46%N) Therefore cost per lb N = ($598) ÷ 920 lbs N = $0.65/ lb N.

In summary: Nitrogen applications should be timed to meet crop demands. A PSNT should be used to determine the need, if any, for additional N during the growing season. If needed, additional N can be applied by topdressing, sidedressing or injection into a trickle irrigation system. Nitrogen is easily leached from the soil. If this happens, money is wasted and ground water may be contaminated. Large pre-plant broadcast N applications should be avoided.

*Adapted by K. Campbell-Nelson, UMass Vegetable Extension from J. Howell, UMass Extension and Joseph R. Heckman, Ph.D., Extension Specialist in Soil Fertility. From **Vegetable Notes for Vegetable Farmers in Massachusetts,** Univ. of Massachusetts Extension, Vol. 26, No. 6, May 15, 2014.*

A Good Spring... (continued from page 16)

planting or in the water wheel transplanter. Carol Glenister at IPM Laboratories cautions that "the nematodes die in sunlight within 30 minutes, so need to be trenched or washed down into the soil." They have hand over a a decade of satisfaction using Steinernema feltiae on cabbage maggot. Due to similar biology corn seed maggot may also be controlled. But her customers have not had success on onion maggot. They recommend 25 million infective juveniles for a transplant dip (@200 trays) with perhaps another 25 million in the water wheel transplanter. Rates of 100,000 to 125,000 infective juveniles per transplant have been shown to be needed to achieve reduction in damage."

Chen, S.L., X.Y. Han, and M. Moens, 2003. Biological control of Delia ra

*Dr. Fleischer is with the Department of Entomology at Penn State Univ. and Ms. DuPont is with Penn State Extension in Lehigh and Northampton Counties. From the **Vegetable, Small Fruit and Mushroom Production News,** Penn State Extension, http://extension.psu.edu/plants/vegetable-fruit/news/2014, May 2, 2014.*

The Complex Issue of Ornamental Gourd Pollination

Thomas Butzler

While pumpkins and ornamental gourds require many of the same inputs throughout the growing season, some gourds require a nighttime visitor to produce.

A bumblebee visits a pumpkin flower (surrounded by spotted cucumber beetles)

During the year, I give many talks on pollination issues, especially the role of insects in the Hymenoptera order; honey bees, bumblebees, orchard mason bees, and squash bees. But I do point out to the audience that there are other organisms that can move pollen from one flower to another such as flies, beetles, and moths.

I usually don't give these 'other' pollinators too much thought in vegetable production but that changed with a talk this past January at the pumpkin session at the Mid-Atlantic Fruit and Vegetable Conference in Hershey, Pennsylvania. The pumpkin session usually covers insect and disease issues that farmers face throughout the growing season. Tucked into the session schedule was a presentation by Darren Hartstock on 'Meadowbrooke Gourds: Turning a Raw Product into a Handcrafted Gem'.

The typical pumpkin (*Cucurbit sp.*), once properly cured, can last for a few months before collapsing and turning to mush. The ornamental gourds (*Lagenaria siceraria*) used by Meadowbrooke and others, once properly cured, can last for many years. While both species have some similar requirements such as nutrient needs, space, and pest control; pollination is very different.

Yellow pumpkin flowers open during the day and host a range of foraging insects that move pollen from one flower to the next. The white flowers of the ornamental gourds open in late evening and remain so during most of the night. This nighttime display eliminates many of the daytime foragers such as honey and squash bees and pollination is done by the night flying moths.

Just to add a twist to the pollination story, Meadowbrooke has a crew that walks throughout the fields in the evening with small paintbrushes; dipping it into a male flower and then placing that pollen loaded brush into a female flower. This method of pollination allowed them to decrease their gourd acreage by half, yet obtain the same gourd yield. It appears that the human pollinators are a bit more efficient than the night flying moths.

Mr. Butzler is with Penn State Extension in Clinton County. From the ***Vegetable, Small Fruit and Mushroom Production News,*** *Penn State Extension, http://extension.psu.edu/plants/vegetable-fruit/news/2014, April 30, 2014.*

VEGETABLE PRODUCTION

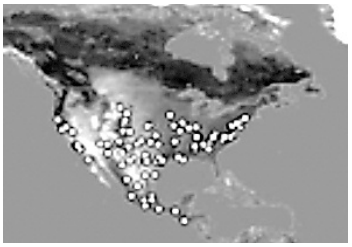
Harlequin Bug Update

Tianna DuPont

Do you have this pesky type of stink bug on your farm? Here are some notes about this pest and an update on some new research on its biology and control.

Harlequin bug. Russ Ottens, University of Georgia.

The harlequin bug is an important insect pest of crucifers such as cabbage, cauliflower, collards, mustard, brussel sprouts, turnips, kohlrabi and radishes in the southern half of the United States [1]. Its northern limit is often around the Mason Dixon line, but this depends on severity of winter temperatures, and "changing winter climates may allow it to establish further north if extreme winter climates become less frequent," explains Anthony Dimeglio, USDA ARS researcher.



Recently harlequins have been reported more frequently in Pennsylvania. The majority of organic vegetable farms in Southeast Pennsylvania reported significant pressure in 2013. Sixty-four percent of 39 growers surveyed rated harlequin pest damage as significant. Figure 1 shows harlequin bug distribution including two sites in Emmaus and Cochranville PA where farmers and scientists worked together to track populations in 2013.

Harlequin bugs can destroy the entire crop when they are not controlled. [Figure 2] They inject salivary secretions into plants, liquefying plant tissue so they can ingest it, and causing crops to wilt, brown and die [1].

Know your pests. Know their biology. Outsmart them.

Early in the season populations and damage are often low and you may be tempted to ignore them. But, with two to three generations in a season, by the time fall crops begin to mature their numbers may be one hundred times as high, causing serious damage. Harlequin bugs reproduce quickly, developing from an egg to an adult in about 48 days. Adult males may live up to 25 days and females up to 41 days. During their adulthood they can mate repeatedly laying multiple egg masses of 12 eggs every 3 days. That means a single female can produce 164 eggs [2]. My advice – don't ignore harlequins bugs; put together a plan to keep their numbers low.

You may wonder why you find harlequins clustered in certain parts of the field. This is because male harlequin bugs produce an aggregation pheromone [3]. Some growers have noted that this clustering allows them to identify which areas of the field to scout. They do spot management in these areas to keep them from spreading across the farm. Scientists are currently researching how to use the aggregation pheromone against them [4]. Weber, DiMeglio, and coworkers at ARS combined a newly discovered, synthesized version of the aggregation pheromone with mustard-family potted plants to monitor and trap harlequin bugs on farms this year, successfully attracting many harlequin bugs. An important next step is to figure the best spatial arrangement for traps or trap plants relative to the growers' crops, so as to divert the bugs away from, not attract them to, valuable plantings [4]. Dimeglio and Dr. Weber of USDA-ARS Beltsville hope to have a trap available soon to help lower populations on the farm.

One of the questions researchers worked to answer this season was, "Where do harlequins come from?" Are they migrating north from Southern states every season or overwintering in the Mid-Atlantic? They found that adults overwinter here, burying themselves in dry plant residue, which acts like insulation. "They (harlequin bugs) continue to feed late into the fall and even in the winter, when it's sufficiently warm, on mustard family plants including forage radish, and rapeseed cover crops. In our region only the adults overwinter. But they are vulnerable to severe winter temperatures," says Dr. Don Weber, Research Entomologist at USDA-ARS Beltsville, Maryland.

Did harlequins survive the polar vortex?

Like many invasive species harlequin bugs originate in a warmer climate and are not adapted for extreme cold or large fluctuations in temperature. DiMeglio and Weber found that, in Maryland, the polar vortex took its toll on harlequin pest populations on January 6 and 8, 2014. Sub-freezing temperatures (6.8 F air, 24.8 F soil) killed 88% of harlequin bug adults in the field compared to inside the protected space of a greenhouse [5]. Hopefully the repeated cold temperatures this season will reduce the pest pressure on farms in 2015.

Controls

To control harlequin bug start with cultural controls. Host free periods without brassicas can help limit the population. Remember brassica cover crops like forage radish are known hosts [5]. Harlequin can also feed and reproduce on wild weedy mustards (Sheppards purse, wild mustard, pepperweed). Keeping these weeds under control in fields and on field edges will limit habitat. Left-over crop residue in the field provides a protected host area for over-wintering adult harlequins. Remove or disk in residue to destroy overwintering sites.

Trap crops have been recommended, but they may only work at low populations and should be combined with other strategies if tried. Trap cropping works by planting a preferred crop earlier before the main crop, in strips or surrounding the main crop. Pests moving into the area are likely to be attracted to the trap crop plants they prefer and leave your main crop alone. By concentrating the pest species in an area away from the main crop, you can destroy the pest by plowing it under, flaming or treated with insecticides.

In one study researchers found that a border row of mustards reduced the harlequin in the main crop significantly. Without a trap crop 80% of the main crop plants had harlequin and with it only 30% in one site. In the other site 55% had harlequin with no trap crop and 15% when protected by a border of

(continued on page 21)

Harlequin Bug... (continued from page 20)

mustard. It made no difference if the trap rows were sprayed or not [6].

In another study in Virginia trap cropping with mustard was only effective when harlequin bug densities were low. When densities were high harlequin moved from the main crop into the primary broccoli crop [7]. Although the harlequin stayed on the trap plants for six weeks they eventually moved into the main broccoli crop. The researchers suggest that if a trap crop is used it should be monitored frequently and if the harlequin population is increasing and the trap crop is senescing, the trap crop and associated harlequin bugs should be destroyed. One grower has successfully controlled harlequin by frequent vacuuming. At this farm they have a designated person to scout for harlequin frequently in hot spots where the harlequin congregate. Then they use a back pack insect vac to remove adults and nymphs and keep populations low. (See http://www.bioquip.com/search/DispProduct.asp?pid=2846)

Another farmer suggested a leaf vacuum which has worked well for Colorado potato beetle.

Insecticide controls include pyrethroids and/or neonicotinoids. See The Pennsylvania Commercial Vegetable Guide here for insecticide options. Pyrethrins are allowable in organic production. According to Dr. Shelby Fleischer, Penn State Extension, starting early in the season with up to three applications within a two week window at the highest labeled rate and continuing until the problem is gone is likely to control harlequin. However, he notes this option would be expensive and labor intensive.

Footnotes

Harlequin Bug. Florida Institute of Food and Agricultural Sciences.

Zahn, D.K., et al., Biology and Reproductive Behavior of <I>Murgantia histrionica</I> (Heteroptera: Pentatomidae). Annals of the Entomological Society of America, 2008. 101(1): p. 215-228.

Zahn, D.K., J.A. Moreira, and J.G. Millar, Identification, synthesis, and bioassay of a male-specific aggregation pheromone from the harlequin bug, Murgantia histrionica. Journal of chemical ecology, 2008. 34(2): p. 238-251.

Weber, Donald C., Guillermo Cabrera Walsh, Tracy Leskey, Anthony S. DiMeglio, Michael Athanas, Kamlesh Chauhan, Megan Herlihy, and Ashot Khrimian. "Attraction of harlequin bug (Hemiptera: Pentatomidae) to male-produced pheromone and host plants in the field." Presentation at Eastern Branch Entomological Society of America meeting, Williamsburg, Virginia, March 2014.

DiMeglio, Anthony S. , Brennan Bathauer, and Donald C. Weber. "Lethal low temperature in harlequin bug (Hemiptera: Pentatomidae): the Polar Vortex takes its toll." Presentation at Eastern Branch Entomological Society of America meeting, Williamsburg, Virginia, March 2014.

Wallingford, A.K., et al., Host plant preference of harlequin bug (Hemiptera: Pentatomidae), and evaluation of a trap cropping strategy for its control in collard. Journal of economic entomology, 2013. 106(1): p. 283-288.

(continued on page 25)

VEGETABLE PRODUCTION

Summer Soil Improving Crops for Vegetable Rotations

Gordon Johnson

Where possible, vegetable growers should consider the use of summer soil building crops. This can be between spring and fall crops, prior to mid-season plantings or anytime there is about 6-8 weeks of fallow time. Use of these summer soil improving crops can help maintain or increase organic matter levels, address certain soil disease issues (fungal pathogens, nematodes), add nitrogen to the soil in the case of legumes, reduce weed pressure, and improve soil physical characteristics.

The following are some soil building crops for summer use that I recommend for the Delmarva area.

Legumes

Cowpea (*Vigna unguiculata*) - Also known as blackeye or southern pea, this crop is underutilized in our area. It is fast growing with peak biomass often in 60 days. Cowpeas can fix up to 100 lbs of N per acre with biomass of 3000-4000 lbs/a. Cowpeas grow well in poor soils and can handle droughty conditions. Drill at 40-50 lbs per acre. Certain varieties such as California Blackeye #5 and Mississippi Silver are poor nematode hosts and will be beneficial in systems where root knot nematode is a problem. See this site for nematode ratings of different cowpea varieties http://edis.ifas.ufl.edu/in516#TABLE_1. Cowpeas also can be harvested in the immature pod stage as a fresh legume so can serve dual purpose in small farms.

Soybean - Soybean can also be a good cover crop drilled at 60 lbs per acre. Forage-type soybeans produce considerable biomass and make excellent cover crops. For nematode suppression, use of root knot nematode resistant varieties may be beneficial. Edamame types can be harvested and sold in green pod stage and the residue returned to the soil for soil building, again serving a dual purpose on small farms.

Sunnhemp (*Crotalaria juncea*) -I am very interested in having more growers consider planting sunhemp as a summer soilbuilder. This is a tropical legume that is used extensively for soil building in countries such as Brazil and India. Drill 20-30 lbs of seed per acre. Sunhemp can produce very high amounts of biomass (10 ton biomass is not unheard of in Florida – amounts will be lower here on Delmarva, expect 3-4 tons). It is a high nitrogen fixing legume and can contribute over 100 lbs of N to a following crop. Sunhemp grows very fast in the summer, reaching 6 feet or taller in 8 weeks. However, a better way to manage sunnhemp is to let it grow to about 1-3 feet tall, then mow it and let it regrow again. If allowed to get too tall and old the stems will become tough and fibrous and will not decompose rapidly. Sunnhemp is a day length sensitive crop. It will grow any time during the summer, however it will not flower and go to seed until the days start getting shorter in very late summer.

Non Legumes

Sorghum-Sudangrass (*Sorghum bicolor* x *S. sudanense*) - Sorghum-sudangrass is a cross between forage or grain sorghum and sudangrass. It is a warm-season annual grass that grows well in hot conditions and produces a large amount of biomass. Plant at 20-40 lbs per acre drilled. Of all the non-legumes, it is the most useful for soil building. Sorghum sudangrass will often reach 6 ft in height. Like sunnhemp, it can be mowed and allowed to regrow to enhance biomass production and have younger material that decomposes more quickly. Expect 3-4 tons of biomass addition per acre. As a grass, to get the most growth you will need to add nitrogen fertilizer (40-80 lbs/a). If incorporated at a young stage, the nitrogen will be re-released for the following crop. Sorghum-sudangrass is very effective at suppressing weeds and has been shown to have allelopathic and biofumigant properties. Research on nematode suppression by sorghum-sudangrass is mixed with some studies showing that sorgum-sudangrass suppresses nematode levels. Choose finer stemmed, leafy varieties when available. Brown midrib types will decompose more quickly because they have less lignin.

Forage-type Pearl Millet (*Pennisetum glaucum*) - Pearl millet is a tall summer annual grass that grows 4 to 8 ft. tall. It is well adapted to sandy and/or infertile soils and does well in the summer heat. Forage types are better adapted for soil improvement than the grain types. Seed at 20-30 lbs/a drilled. Expect 3-4 tons of biomass addition per acre. Again, as a grass, to get the most growth you will need to add nitrogen fertilizer (40-80 lbs/a). Pearl millet has been shown to suppress some nematodes. Forage pearl millet can make a good mulch for late-summer planted crops no-till or strip till.

All of the crops above can be planted from late May through late July for soil improvement use.

There are many other possibilities for summer soil improving, however the ones listed above are my recommendations for growers on Delmarva to try.

Dr. Johnson is the extension vegetable and fruit specialist with the Univ. of Delaware. From the ***Weekly Crop Update,*** *Univ. of Delaware, http://extension.udel.edu/weeklycropupdate/, Vol. 22, Issue 7, May 9, 2014.*

Weed Management Update for 2014

A. Richard Bonanno

Following are a few weed management updates that are now in the 2014-15 New England Vegetable Management Guide.

Prowl H2O (pendimethalin) is registered in several vegetable crops. It has similar activity as Treflan but does not need to be incorporated. It can be soil surface applied and irrigated in. An advantage over Treflan is that Prowl will control velvetleaf. Registered crops include beans, corn, onions, peas, pepper, and potato.

New sweet corn varieties are on the market that will tolerate either Liberty (Rely, glufosinate) or Roundup (glyphosate). Field corn growers using these technologies have reduced their herbicide use by 33% to 50%. Using a residual herbicide at planting is still a useful option followed by a postemergence application of either Liberty or Roundup depending on variety.

Dual Magnum (metolachlor) has a section 24c registration in Pennsylvania for the following crops: transplanted cabbage, dry bulb onions, transplanted bell pepper, and spinach. Regular section 3 registrations include beans, sweet corn, potato, pumpkin, and tomato. Dual provides excellent control of annual grasses, hairy galinsoga, nightshade, and yellow nutsedge. To access the Section 24c labels, go to www.farmassist.com. Under products, select indemnified labels, select Massachusetts and Dual Magnum, and fill in the required information.

Always read and follow all Worker Protection Standards information on the label. This information can be found in the Agricultural Use Requirements box.

(continued on page 23)

Ethnic Crops Becoming Increasingly Popular

All of the speakers at the 2014 Ethnic Greens and Herbs Workshop brought a vast array of expertise in growing and marketing ethnic produce from around the world. Many of the speakers brought handouts for attendees including Yao Afantchao, Ethnic Crop Development Specialist at the University of the District of Columbia. Mr. Afantchao's handouts included the "Ethnic and Specialty Crops: A Marketing Guide" booklet (available at http://psu.us2.list-manage1.com/track/click?u=f237a6a8066263b93f2303b56&id=bf330bc533&e=4a32f0f4a1). In this booklet, interesting data about the ethnic foods industry is presented. For example: Ethnic food products make up more than 12% of all retail food sales and are experiencing 5% annual growth.

Seventy-five percent of ethnic food consumption in the United States is now supported by the mainstream population, fueling a $75 billion annual industry that accounts for one dollar of every seven dollars spent on groceries.

The Washington Post reported in 2010 that one in five Americans is eating more ethnic food than in 2008. Ethnic ingredients, once known solely as staples for immigrants, are increasingly becoming available to mainstream consumers and may provide profit opportunities for importers, manufacturers, and retailers.

The guide also highlights nine popular African produce products. Each entry includes the common name, genus and species, a picture, type (leafy, grass, eggplant, pepper, etc.), and list of regions where it is grown. As you can see in Example 1, garden egg (sp. Solanum aethiopicum) has multiple other common names including ngogwe and mock tomato. Both the leaves and the fruit are eaten and it is a staple crop for West Africans. This information can certainly help you market your produce to the appropriate consumers.

Example 1. Garden egg photo and description.

Garden Egg (sp. Solanum aethiopicum)

Garden Egg is also known as African eggplant, mock tomato, ngogwe or nyanya chungu. The leaves are eaten as a leaf vegetable and are more nutritious than the fruit. The fruit of the plant is eaten both raw and cooked. Garden Egg is one of the most important vegetable crops grown in West Africa, especially in Ghana.

*From the **Ethnic Greens and Herbs Workshop Newsletter,** Penn State Univ., No. 12, May 6, 2014.*

Weed Management... *(continued from page 22)*

When tank mixing pesticides, mix in the proper order. The order is Wettable Powders (WP), Water Dispersible Granules (WDG), Flowables (F) (DF) (SC), Water-dispersible liquids (AS), Emulsifiable Concentrates (EC), and Solutions (S).

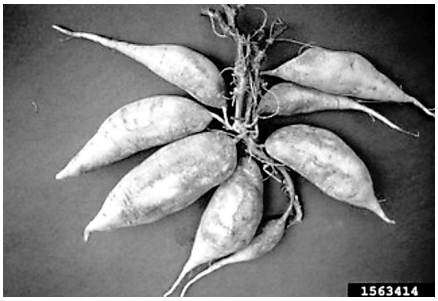
Always follow the pesticide label when using adjuvants such as spreader stickers, surfactants, etc. When suggested, use the right product at the right rate.

*Dr. Bonanno is an extension vegetable specialist with the Univ. of Massachusetts. From Vegetable Notes for **Vegetable Farmers in Massachusetts,** Univ. of Massachusetts Extension, Vol. 26, No. 6, May 15, 2014.*

Preventing Scurf on Sweet Potato

Timothy Elkner

Every fall I receive a few calls regarding scurf on sweet potatoes. While this is a relatively minor vegetable crop in the state, I hear about more people planting this crop each season. Scurf is only a superficial discoloration of the roots and it does not affect eating quality. However, sweet potatoes with scurf are more difficult to market and also loose quality faster in storage. If you plan to grow sweet potatoes this year know that it is easier to try to prevent scurf rather than trying to eradicate it when it infects your crop and fields.



Scurf on sweet potato. Photo by Charles Averre, NC State University through Bugwood.org.

The soil borne fungus Monilochaetes infuscans causes scurf of sweet potato. It only affects the below-ground portion of the sweet potato plant. This fungus has a very limited host range – sweet potato and morning glories. Because scurf will only survive in the soil for one or two years the main cause of the disease is use of infected planting material. The fungus will overwinter on infected roots and will spread to slips produced from these roots. It can also spread from infected to healthy roots during storage.

Scurf can be effectively managed with a few specific production practices. These include:

- Use scurf-free sweet potatoes for slip production.
- Dip seed roots for 1-2 minutes in a fungicide solution (Mertect 340F @ 8.0 fl. oz. per 7.5 gal. water) and plant immediately.
- Use disease-free beds for slip production and maintain soil temperatures at 80-85°F.
- Cut slips at least 1" above the soil line to avoid spreading any disease present to the field.
- Allow 3 to 4 years between sweet potato production in a field whenever possible, especially in fields known to be infected.
- Thoroughly clean and disinfect harvest bins and storage areas before harvest and storage of your new crop
- Avoid bruising roots during harvest and maintain a curing temperature of 80-85°F.
- Do not allow storage temperature to fall below 55°F and maintain the relative humidity at 85-90% during curing and storage

*Dr. Elkner is with Penn State Extension in Lancaster Co. From the **Vegetable, Small Fruit and Mushroom Production News,** Penn State Extension, http://extension.psu.edu/plants/vegetable-fruit/news/2014, May 2, 2014.*

Does a Harsh Winter = No Crop Pests?

Joseph Ingerson-Mahar

It has been in the news, of course, about the severity of the 2013/2014 winter with record breaking low temperatures and higher than normal snow amounts in many locations. So how does all this translate to crop insect pests? As an article that I read last week said, "It's complicated".

There are many factors that affect insect mortality through the winter months. It is not only just the cold, but the amount of snow cover, overall fitness of the insects going into the winter diapause (hibernation), how well protected were they from the cold, what the weather conditions are coming out of winter, and so on.

Local native insects are much more likely to survive the winter than southern migratory insects. Corn earworm, Helicoverpa zea, may be one of those casualties. In mild winters, corn earworm survives the winter further north than normal. With very low temperatures extending deep into the south, repeatedly, there is likely going to be a higher mortality than usual. Does that mean we'll have fewer corn earworm problems this year? Maybe. How well the earworm population rebounds from adverse conditions depends upon another set of factors, such as availability of food sources, how well did predators of the earworm survive and weather conditions across the southern tier of states and Mexico.

How well invasive species, such as brown marmorated stinkbug, emerald ash borer and others survive depends upon the habitat where they originally came from and how well they have been able to adapt to their new surroundings and the natural enemies here.

It isn't possible to make a blanket statement that there will be fewer crop pests this year. It depends upon each species of insect and what requirements they need to survive the winter. Undoubtedly, this was a stressful winter for many species, but it may have been advantageous to some pests.

Anticipate that early season pests, such as aphids and seed corn maggots, will be there. If the aphids survived better than their natural enemies, there could be more aphids than usual. We'll have to wait to see how well cabbage looper, corn earworm, fall armyworm and potato leafhopper survived and how much of a problem they'll be.

So, be happy that we are finally getting some warm temperatures, but don't be lulled into thinking that the crop pests will be fewer, or gone. Maybe they will but don't bet the farm on it.

*Dr. Ingerson-Mahar is with Rutgers Coop. Extension. From the **Plant and Pest Advisory,** Rutgers Coop. Extension, http://plant-pest-advisory.rutgers.edu, March 15, 2014.*

BERRY PRODUCTION

Tim and Nate Nourse Honored With NARBA Award

At its annual meeting the North American Raspberry and Blackberry Association (NARBA) presented Nate and Tim Nourse of Nourse Farms, Inc., with its 2014 Distinguished Service Award. Nourse Farms, based Massachusetts, is a leading nursery supplier of berry plants to the industry.

The award especially honors their leadership in developing the Association's North American Bramble Growers Research Foundation's Nursery Contribution program and their strong support of this program. which since its inception in 2007 has more than doubled the funds available to the Foundation for making grants to research. Nate Nourse, who was there to receive the award, served as NARBA president in 2010 and 2011; both Nate and his father, Tim Nourse, have held many positions of leadership within the berry industry.

Making the award was grower Nathan Milburn of Milburn Orchards, Elkton, Maryland, and 2012-2013 president of NARBA. Said Milburn, "Most of us know Nourse Farms as a leading supplier of plants to the berry industry, but we recognize here the father and son Tim and Nate Nourse, for their contributions specifically to the North American Raspberry & Blackberry Association and the raspberry and blackberry industry….Their commitment to our industry and support of our organization are unrivaled."

Nate Nourse was Region 2 Representative on the NARBA Executive Council, the board of directors, from 2006 through 2010. He served as Vice President in 2009 and as President in 2010 and 2011. He is also a Trustee of the associated North American Bramble Growers Research Foundation.

He serves as Production Committee chair for National Berry Crops Initiative (representing the New England Berry Growers Association). As a grower, and in this leadership role, he has become very active in seeking to find short-term and long-term solutions to SWD for growers, by urging research and regulatory relief to increase the control options available to growers.

He also serves on the board of directors for the National Clean Plant Network Berries section. He is very active as well in strawberries and has held leadership positions in the North American Strawberry Growers Association (NASGA)

Tim Nourse has a very long history in the berry industry. Tim was instrumental in developing NASGA's nursery-supported Research Foundation and encouraged NARBA to do the same. Our North American Bramble Growers Research Foundation's Nursery Contribution program, started in 2007, is modeled on NASGA's and has more than doubled the funds annually available for grants by the Foundation.

The leadership from Nourse Farms has been a crucial catalyst to having other nurseries become involved. They are the largest contributor to this program, as well as a strong and consistent sponsor of NARBA's annual conference. As a nursery, they encourage customers to become involved in berry organizations, and include information about NARBA in their catalogs.

NARBA is a membership organization of blackberry/raspberry growers, researchers, and others with members in more than 35 states, 8 Canadian provinces, and 5 countries. NARBA's 2014 annual meeting and conference were held in Hershey, Pennsylvania, in association with the Mid-Atlantic Fruit and Vegetable Convention. For more information about NARBA, visit www.raspberryblackberry.com. A list of previous winners of this Distinguished Service award may be found at www.raspberryblackberry.com/local.cfm?doc=webdocs/NARBAAwards.htm.

VEGETABLE PRODUCTION

Harlequin Bug... *(continued from page 21)*

Ludwig, S.W. and L.T. Kok, Evaluation of trap crops to manage harlequin bugs, Murgantia histrionica (Hahn) (Hemiptera: Pentatomidae) on broccoli. Crop Protection, 1998. 17(2): p. 123-128.

*Ms. DuPont is with Penn State Extension in Lehigh and Northampton Counties. From the **Vegetable, Small Fruit and Mushroom Production News,** Penn State Extension, http://extension.psu.edu/plants/vegetable-fruit/news/2014, March 27, 2014.*

BERRY PRODUCTION

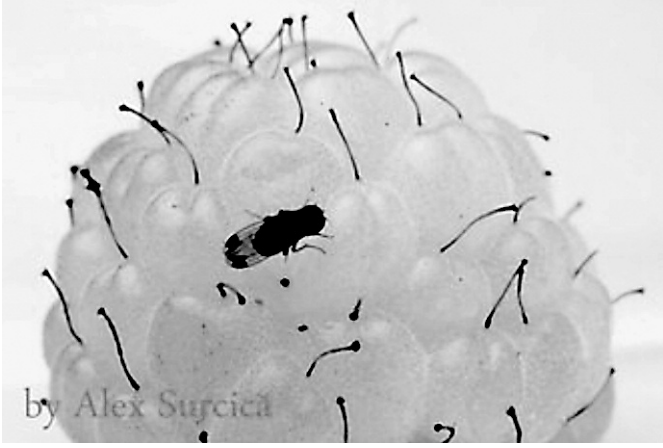
That's A Berry Good Question:
SWD Survivability and Cold Weather

Kathleen Demchak

Q. Can we expect reduced SWD pressure this season due to our extremely cold weather?

A. We didn't have an answer to this one; and we weren't alone on that. Dr. Greg Loeb, grape and small fruit entomologist at Cornell spearheading work on SWD in NY and the NE region, didn't either, but provided the following thoughts on the topic:

"We really do not know. There are a few papers that I am aware of out of Japan looking at cold tolerance of SWD and also a paper out of Oregon. Both of these studies worked with non-adapted or poorly adapted SWD and found that adults were not able to handle temps much below freezing. Several groups are now looking at this question more carefully. We and others are showing that SWD does go into a non-reproductive phase (diapause) later in the fall and it's likely the adults have improved capacity to tolerate cold temps, at least to some extent. Probably not enough to handle the kinds of temperatures we have seen this winter in unprotected places. Of course, we would expect adults to seek out protected places such as in the soil litter or in rotting wood, etc. But we really don't have any data on this yet. We did set up some cages without bottoms outdoors this winter (with leaf litter and with or without logs) and released flies reared from late season fruit. Around January 1 we pulled the cages off and allowed snow, etc. to accumulate. The plan is to put cages back on in March and monitor for emergence. I would guess survival will not be very good but we shall see."



Spotted Wing Drosophila on Raspberry

So, while we're tentatively hopeful that few SWD survived, protected locations such as compost piles, brush piles, or crawl spaces may still have afforded them some protection. We expect that Northern June-bearing strawberry crops will not be affected, or will be only minimally affected by SWD once again. Numbers are still likely to increase sometime next summer, so stay tuned throughout the next growing season for updates.

Ms. Demchak is with the Department of Plant Science at Penn State Univ. From the ***Vegetable, Small Fruit and Mushroom Production News,*** *Penn State Extension, http://extension.psu.edu/plants/vegetable-fruit/news/2014, February 28, 2014.*

What's New for Weed Control in Berry Crops

Douglas Doohan

Weed control in berry crops requires a program of cultural practices and herbicide applications that should start before a plant is placed in the ground. Once established, maintaining weed control will require sequential herbicide applications in spring, summer and fall to control the annual cycles of spring, summer and fall annuals, as well as perennials establishing from seed. Here I summarize some recent product registrations that will be part of a complete herbicide program. None of the herbicides mentioned below will control all weeds, and must be part of a program. Generally speaking, each will be tank-mixed with one or more broad-spectrum burn-down and/ or residual herbicides.

Brambles & Blueberries

Matrix: For improved control of annual and perennial broadleaf weeds and some grasses apply Matrix SG at 4 oz/acre. Matrix controls weeds when applied preemergence, or postemergence. Postemergence applications require addition of a non-ionic surfactant. Matrix can be applied tank-mixed with other herbicides labeled on the crop. Matrix tank-mixed with glyphosate and either Karmex or Princep has provided improved control of perennial weeds in trials conducted at OSU.

In particular, Matrix has provided good suppression of ground ivy, a species that is often a problem in brambles. Applications must be directed to avoid contact with crop stems and foliage. New growth that is sprayed with Matrix will suffer temporary crop injury. 21 day PHI.

Callisto: For improved control of annual and perennial broadleaf weeds apply Callisto at 6 oz/Acre. Include a crop oil concentrate for postemergence applications. Tankmixes with Princep or Karmex may improve perennial weed control. Brambles are less tolerant of Callisto than blueberry and some temporary chlorosis of new growth will occur within several days of application. Callisto should not be applied after the onset of bloom, or illegal residues may occur.

Sandea: The great strength of Sandea is post-emergence control of yellow nutsedge. In addition to nutsedge, post applications can be expected to control ragweed and pigweed. However, emerged lambsquarters and some other broadleaf weeds will not be controlled. Non-ionic surfactant must be used with post sprays. For nutsedge, ? oz/acre is recommended. Care should be taken to not spray primocanes or foliage in general. For blueberry less than 5 years established do not use more than 2/3 oz/acre, and do not apply if established for less than 12 months. Some varieties may be sensitive (eg. Elliott). Generally, temporary chlorosis should be expected if foliage is sprayed. 45 day PHI.

Blueberries Only

Dual Magnum: For control of grasses and broadleaf weeds, apply pre-emergence at 2/3 to 1 1/3 pints/acre in a band on each side of the row. Provides excellent annual grass control and suppresses yellow nutsedge, but will not control emerged weeds. 28 day PHI.

Dr. Doohan is with the Department of Horticulture and Crop Science at The Ohio State Univ. From ***VegNet,*** *Ohio State Univ., http://vegnet.osu.edu, Vol. 21, No. 7, April 23, 2014.*

GREENHOUSE PRODUCTION

Realities of Growing Plants Indoors Short Course Offered

The University of Arizona Controlled Environment Agriculture Center (CEAC) will be hosting a new Short Course on the Realities of Growing Plants Indoors, July 20th - 23rd, 2014 in Tucson, Arizona. The focus of the educational part of the program will be recognizing the environmental challenges to overcome and the challenges for good design to provide the environment that is required. Emphasis will be on the specific plant growth needs, and how they can be provided (or be limited) within indoor production systems of Urban Agriculture. In addition, the investment industry will be prompted to participate and with exposure to the basics of crop production, they can interact with entrepreneurs, growers and topic experts, to enhance business decisions and experience the excitement of this new technology-based food production industry.

The interest in producing plants for food crops has grown from the traditional agriculture of rural commercial farms to the desire for production within controlled environments in greenhouses and closed systems in urban areas. This has been in part market-driven, allowing the grower to provide high quality and variety to the local markets, and particularly with special attributes, such as 'locally grown', 'pesticide-free', 'organic' or others. Production interests have thus developed for urban agriculture where products could be grown and sold locally at sites where there is access to large populations. Many business development solutions are directly related to production agriculture in controlled environments, or CEA. All have the similar challenges of providing an environment for the plants that will ensure their maturation into salable, quality vegetable products that meet the modern market demands.

Fundamentally, protected agriculture includes a Controlled Environment of the atmosphere around the aerial part of the plant, and Hydroponics, a controlled environment procedure providing water and plant nutrients to the plant root zone. When combined, controlled environment and hydroponics technologies offer improved control of the factors, above all other agricultural production systems, which determine the growth, development and production harvest of the crops.

Participants of the Short Course will be presented the most current and innovative strategies used in successfully growing plants indoors. Educators and researchers of the UA-CEAC will be the primary teachers of the short course. Activities will include classroom presentations and discussion and Q&A on July 21st – July 22nd, followed by visits to UA-CEAC to see working closed and open controlled environments producing crops on the electrical grid as well as solar photovoltaic powered on July 23rd. Networking among the unique expected audience of growers, business analysts, entrepreneurs and educators will be optimized both within the classroom sessions and during daily special break times. The conference resort setting will offer pleasant environments for educational and business development interactions.

Lectures will cover a variety of topics including indoor growing structures, lighting strategy, air moisture-temperature control, CO2 enrichment strategy, resources demand vs productivity, case studies, and more. Specific controlled environment crop production demonstrations at the UA-CEAC include naturally lighted greenhouse tomato & lettuce, artificially lighted [LED & High Pressure Sodium lamps] closed indoor chambers for lettuce/greens and for tomatoes. In addition design and operation studies of the 10-years of experience of remote operation of the National Science Foundation (NSF) South Pole Food Growth Chamber, and the NASA Lunar Greenhouse Prototype currently in production will be studied and visited.

More information can be found at the CEAC's website at http://ag.arizona.edu/ceac/public-courses and by clicking on "Indoor Growing Short Course." If you have questions please contact us by phone at 520-626-9566 or email Aaron Tevik at atevik@cals.arizona.edu.

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