

Growers Vote to Continue Vegetable Marketing and Research Program

Nearly 85% of the vegetable growers voting in the review referendum on the Pennsylvania Vegetable Marketing and Research Program voted "Yes" to continue the Program for another five-year period. A total of 466 valid ballots were received with 396 voting "Yes" to continue the Program and 70 voting "No". Eight ballots were ruled to be ineligible or spoiled. Over 1,900 ballots were mailed to growers. The Vegetable Marketing and Research Program Board greatly appreciates this vote of confidence in the work of the Program.

The Vegetable Marketing and Research Program has been consistently supported by growers in previous review referendums. In 2008, 84% of the growers voted in favor of continuing the Program compared to 78% in 2003, 66% in 1998 and 60% in 1993.

In October 2012, the growers also approved several changes to the Program order by a 78% majority of the growers representing 75% of the production volume. (Change referendums must be approved by a majority of the growers who also represent a majority of the production volume.) The Program now includes any grower who grows and sells \$2,000 worth of vegetables in a calendar year – previously it only included growers who grew an acre or more of field vegetables or 1,000 sq. ft. of greenhouse vegetables. The changes also consider high tunnel production the same as greenhouse vegetable production in recognition of the similarity of the two systems. Thus high tunnel production area is now assessed by the 1,000 sq. ft. basis instead of by the acre.

Growers are required to pay an annual assessment to the Program of \$25 for the first five units of production plus \$1.50 for each additional unit of production. Units of production are acres for field production and 1,000 sq. ft. of greenhouse or high tunnel production area. Growers can elect to pay an assessment of 1.25% of their gross sales, but in most all cases the production area method will result in a lower assessment payment.

The Program was originally established by a grower vote in 1988. Since its establishment, the Program has funded over \$520,000 worth of practical vegetable research by Penn State and other universities and research entities. The Program helped established systems to monitor tomato diseases and sweet corn insect pests so growers can time their fungicide and insecticide applications to be more effective. Various weed and root rot control methods for snap beans and other crops have been evaluated by the Program's research efforts. Variety trials for several different crops have been supported as well as herbicide, plasticulture and high tunnel studies.

In addition, over \$490,000 grower assessment dollars have been supplemented by \$330,000 in state and federal grants to promote Pennsylvania-grown vegetables. The Program has



New banner introduced in 2012 by the Pennsylvania Vegetable Marketing and Research Program.

distributed thousands and thousands of price cards, price paddles, stickers, recipe cards, brochures, banners, posters, and signs to growers and markets across the state, enabling them to promote Pennsylvania vegetables with professional looking point-of-purchase materials. In addition, the Program has touted Pennsylvania vegetables to millions of consumers on the radio airwaves, on billboards and in newspapers across the state. The annual "August is Pennsylvania Produce Month" promotion and Pennsylvania Vegetable Recipe Contest are both successful efforts organized by the Program.

The Program is controlled by a Board consisting of the Secretary of Agriculture (or his designee), 12 growers appointed by the Secretary with four growers being appointed from each of the western, central and eastern regions of the Commonwealth, and a representative collecting sales agents (auctions, cooperatives, packinghouses and processors). Board members serve without compensation other than travel expenses to attend meetings.

Agriculture Labor Reform Included in Immigration Reform Proposal

United Fresh Produce Association CEO Tom Stenzel, fellow industry CEOs and the United Farm Workers (UFW) voiced support for the agriculture labor provisions included in the Border Security, Economic Opportunity, and Immigration Modernization Act at a press event on April 17. The landmark legislation was introduced in the Senate on the same day and includes provisions based on agreements made by the Agriculture Workforce Coalition (AWC), United Farm Workers, and key lawmakers.

(continued on page 2)

NEWS



**Pennsylvania
Vegetable Growers
Association**

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

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Agriculture Labor Reform... *(continued from page 1)*

"This is an important step forward in our fight to achieve meaningful immigration reform to provide a legal and stable workforce for fruit and vegetable growers," said United CEO Tom Stenzel.

"The introduction of this historic immigration reform bill is due in large part to the perseverance of Senators Feinstein, Rubio, Hatch, and Bennet," noted Stenzel. "We extend our sincere appreciation for their tireless work to bring compromise to the table to shape a workable labor solution for all of American agriculture."

United Fresh will continue to advance agriculture labor reform as part of the broader immigration reform package to ensure a stable workforce for our members and the broader fresh produce industry through grassroots efforts and continued cooperation with AWC and other stakeholders.

From Inside United Fresh, United Fresh Produce Ass'n., April 18, 2013.

The following is an outline of some of the basic provisions of the agriculture labor components of the immigration reform bill as currently understood:

Title I: Blue Card Program for Experienced Farm Workers

Current undocumented farm workers would be eligible to obtain legal status through a Blue Card Program. Agricultural workers who can document working in U.S. agriculture for a minimum of 100 workdays or 575 hours in the two years prior to December 31, 2012, are eligible to adjust. Agricultural workers who fulfill future Blue Card work requirements in U.S. agriculture, show that they have paid all taxes, have not been convicted of any felony or violent misdemeanor, and pay a \$400 fine are eligible for a Green Card.

To be eligible for a Green Card the workers must have performed at least five years of agricultural employment for at least 100 work days per year during the eight-year period beginning from the date of enactment or must have performed at least three years of agricultural employment for at least 150 workdays per year during the five-year period beginning from the date of enactment.

Title II: Agricultural Worker Program - Establishes a new program with two work options 1) a portable, at will employment based visa, and 2) a contract based visa program. The H-2A program would sunset one year after the new visa program is enacted. There will be a three year visa term which will be renewable once. After 6 years, a visa holder would have to return home for 3 months before reapplying. The new visa program will be administered by USDA and petitions for workers will be filed with the Department of Homeland Security. Employers must register with the USDA as a Designated Agricultural Employer (DAE).

Workers would lose status and must depart the U.S. if they were unemployed for more than 60 consecutive days. Contract workers who breach their employment contract must depart the U.S. before accepting another job with a U.S. employer.

For the first five years, there will be a visa cap of 112,333 per year. The cap is compounding. Therefore, in year one there will be 112,333 visas, in year two 224,666, and in year three 337,000. The cap cannot exceed 337,000 in the five year period. The Secretary of Agriculture can increase the number of visas in an emergency. After five years, Secretary of Agriculture will determine the cap on an annual basis using established criteria.

For 2016, the established wage rates for some of the occupational categories are:

- Farmworkers and Laborers – Crop, Nursery, and Greenhouse - \$9.64/hour
- Graders and Sorters - \$9.84/hour
- Agricultural Equipment Operators - \$11.87/hour

Each base wage will increase annually by at least 1.5 percent but no more than 2.5 percent as established by the Employment Cost Index (ECI). The AEW for the H-2A program will be frozen for 3 years after enactment (or one year after the new program is operational).

All DAEs must provide housing or a housing allowance during the term of employment. The housing allowance will be based on HUD fair market rental rates for a two bedroom dwelling occupied for four individuals. At-will employers will always be able to pay a housing allowance instead of providing housing. For a contract worker, an employer will only be able to provide a housing allowance if the

(continued on page 8)

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

Our Mission:

The Pennsylvania Vegetable Growers Association serves Pennsylvania's commercial vegetable, potato and berry growers through education, research, advocacy and promotion.

Our Vision:

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

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

Game Commission Adopts New Seasons and License Allocations

The Board of Pennsylvania Game Commissioners has adopted seasons, bag limits, and antlerless deer license allocations for the 2013-14 license year, which begins July 1. The Board also finalized the subdivision of Wildlife Management Unit (WMU) 2G into WMU 2G and WMU 2H during its quarterly meeting.

Commissioners increased or maintained the antlerless allocations in only six Wildlife Management Units compared to last year (this considers the allocation for WMU 2G and 2H together as compared to 2G's allocation last year.) In all the rest of the WMUs, allocations were cut, in some cases rather significantly.

Unit	2013	2012	2011
WMU 1A	49,000	42,000	42,000
WMU 1B	31,000	33,000	30,000
WMU 2A	49,000	59,000	65,000
WMU 2B	62,000	67,000	71,000
WMU 2C	43,000	50,000	58,000
WMU 2D	61,000	62,000	60,000
WMU 2E	22,000	21,000	25,000
WMU 2F	29,000	27,000	34,000
WMU 2G	28,000	33,000	23,000
WMU 2H	6,000		
WMU 3A	23,000	26,000	26,000
WMU 3B	39,000	40,000	40,000
WMU 3C	35,000	35,000	29,000
WMU 3D	32,000	39,000	39,000
WMU 4A	28,000	29,000	28,000
WMU 4B	24,000	26,000	23,000
WMU 4C	27,000	35,000	35,000
WMU 4D	35,000	36,000	37,000
WMU 4E	26,000	28,000	29,000
WMU 5A	19,000	19,000	19,000
WMU 5B	50,000	51,000	50,000
WMU 5C	103,000	111,000	117,000
WMU 5D	18,000	19,000	22,000

Other highlights of the new slate of seasons and bag limits included allowing qualified adult mentors to transfer one Deer Management Assistance Program antlerless deer permit to a youth they are mentoring as part of the Mentored Youth Hunting Program. Another change eliminates the extended regular firearms season in WMUs 2B, 5C and 5D, except in Special Regulations Area counties – Allegheny, Bucks, Chester, Delaware, Montgomery and Philadelphia counties, which will retain the extended regular firearms season in these WMUs.

A listing of 2013-2014 deer seasons and daily bag limits is as follows:

ARCHERY (Antlerless Only) WMUs 2B, 5C and 5D: Sept. 21-Oct. 4, and Nov. 18-30. One antlerless deer with each required antlerless license.

ARCHERY (Antlered and Antlerless) WMUs 2B, 5C and 5D: Jan. 13-25. One antlered deer per hunting license year. One antlerless deer with each required antlerless license.

ARCHERY (Antlered and Antlerless) Statewide: Oct. 5-Nov. 16 and Dec. 26-Jan. 11. One antlered deer per hunting license year. One antlerless deer with each required antlerless license.

(Antlered and Antlerless) WMUs 1A, 1B, 2B, 3A, 3D, 4A, 4C, 5A, 5B, 5C and 5D: Dec. 2-14. One antlered deer per hunt-

ing license year. An antlerless deer with each required antlerless license.

(Antlered Only) WMUs 2A, 2C, 2D, 2E, 2F, 2G, 2H, 3B, 3C, 4B, 4D and 4E: Dec. 2-6. One antlered deer per hunting license year. (Holders of valid DMAP antlerless deer permits may harvest antlerless deer on DMAP properties during this period.)

(Antlered and Antlerless) WMUs 2A, 2C, 2D, 2E, 2F, 2G, 2H, 3B, 3C, 4B, 4D and 4E: Dec. 7-14. One antlered deer per hunting license year. An antlerless deer with each required antlerless license.

ANTLERLESS (Statewide): Oct. 24-26. Junior and Senior License Holders, Disabled Person Permit (to use a vehicle) Holders, and Pennsylvania residents serving on active duty in U.S. Armed Services or in the U.S. Coast Guard only, with required antlerless license.

ANTLERLESS MUZZLELOADER (Statewide): Oct. 19-26. One antlerless deer with each required antlerless license.

ANTLERED OR ANTLERLESS FLINTLOCK (Statewide): Dec. 26-Jan. 11. One antlered deer per hunting license year, or one antlerless deer and an additional antlerless deer with each required antlerless license.

ANTLERED OR ANTLERLESS FLINTLOCK (WMUs 2B, 5C and 5D): Dec. 26-Jan. 25. One antlered deer per hunting license year, or one antlerless deer and an additional antlerless deer with each required antlerless license.

ANTLERLESS EXTENDED REGULAR FIREARMS: (Allegheny, Bucks, Chester, Delaware, Montgomery and Philadelphia counties): Dec. 26-Jan. 25. One antlerless deer with each required antlerless license.

Act Now to Enroll in DMAP, Red Tag

The Pennsylvania Game Commission has several options available for landowners who are facing problems with crop loss due to an abundance of deer.

The DMAP (Deer Management Assistance Program) and Red Tag agriculture deer control program are both available for landowners. But, you need to act soon in order to enroll in time for to meet the upcoming deadlines.

For every five acres of cultivated land, qualified landowners can receive one DMAP coupon. The coupons can be distributed to hunters to hunt antlerless deer on the property during any deer hunting season. The deadline for DMAP enrollment is June 1.

The Red Tag program allows farmers to enlist the help of hunters to remove antlerless deer during off-season periods.

"Talk to your Game Commission Regional Office now," said Pennsylvania Farm Bureau Local Affairs Director Jeff Grove. "They will assist you in enrolling and understanding details on both programs.

From the Pennsylvania Game Commission and the Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, April 2013.

NEWS

National News Briefs

United Testifies on Industry Priorities at House Farm Bill Hearing

United Fresh Produce Association members spoke up for specialty crop priorities in the 2013 Farm Bill at a hearing held by the Subcommittee on Horticulture, Research, Biotechnology and Foreign Agriculture of the House Agriculture Committee. Bill Brim, co-owner of Lewis Taylor Farms, and Sarah Frey-Talley, president and CEO of Frey Farms, both members of United's Government Relations Council and Grower-Shipper Board, outlined the critical importance of preserving funding for research, block grants, pest and disease programs, nutrition initiatives, and international market access programs.

"From a produce grower's perspective, we continue to be driven and experience tremendous challenges in our business environment," said Brim. "We have worked hard to remain profitable, satisfy consumer demands, conform to and develop new technology, and compete in an increasingly global market place. Our markets are highly volatile, yet we have never relied on traditional farm programs to sustain our industry. Instead, we look to each other to promote efficiency and reward market competition that so marks our industry."

The April 24 hearing by the subcommittee marked the first Farm Bill hearing of the 113th Congress and an important opportunity to preserve the specialty crop investments made in the 2008 Farm Bill.

Lawmakers at the hearing also asked about the need for immigration reform to ensure the viability of fresh fruit and vegetable crops, even though farm labor is not in the jurisdiction of the Agriculture Committee. Frey-Talley explained the challenges producers face with using H-2A, and that many have found the program to be unresponsive and expensive. "The produce industry's continued growth and the creation of domestic jobs

FDA Grants Extension for Proposed FSMA Rules Comment Period

In response to a request by United and other industry groups to extend the comment period for the FSMA proposed rules, FDA Commissioner Margaret Hamburg today announced that FDA intends to extend the comment period by another 120 days. The comment period was originally set to end May 16. Commissioner Hamburg's remarks about the extension were made in response to a question from Senator Roy Blunt (R-MO), who made the inquiry at the request of United Fresh, during a hearing of the Senate Agriculture Appropriations Subcommittee. United expresses its appreciation to Sen. Blunt for his support of the industry.

The extension comes only days after United Fresh and other industry organizations sent a [joint letter](#) to FDA.

From the April 11 letter to FDA:

"Based on our current analysis, it would be impossible for any interested party to meaningfully comment on these two proposed rules by the current deadline of May 16, 2013 given they propose such a substantial overhaul of the structure of food safety regulation; the sheer size of the regulations lengthens the time necessary for analysis."

United Fresh appreciates FDA's willingness to provide more time for review of the proposed FSMA rules and looks forward to working with industry stakeholders and FDA during the deliberative review process.

From *Inside United Fresh*, United Fresh Produce Ass'n., April 18, 2013.

such as facility managers, shipping and receiving clerks, and administration personal is directly affected by our ability to obtain a sufficient number of harvest employees. It is imperative for Congress to address overdue reform policies affecting the availability of ag workers," she said.

United will continue to advocate for the priorities outlined at the hearing, through member engagement and the Specialty Crop Farm Bill Alliance (SCFBA), of which United is a founding member. The Alliance is a coalition of nearly 120 organizations that spearheaded a concentrated effort to ensure that specialty crops received dedicated funding and policy focus in the 2008 Farm Bill.

From *Inside United Fresh*, United Fresh Produce Association, April 25, 2013.

AFBF Urges Congress to Repeal Medicare Contribution Tax

New taxes associated with health insurance could cause significant harm to the nation's farm families, the American Farm Bureau Federation told Congress.

The new Medicare Contribution Tax, which is a tax on unearned income such as capital gains, will burden farm families more than many other taxpayers because farming is capital intensive, AFBF said in written comments sent to the House Subcommittee on Oversight of the Ways and Means Committee.

That tax could amount to a retirement tax if it is imposed when a farm is sold, AFBF said.

Adding this tax on top of capital gains tax could make it more difficult for new farmers to get started. Farm Bureau supports repealing the 3.8 percent Medicare Contribution Tax and the 0.9 percent tax imposed on wages and self-employment income above the established threshold for high-income individuals.

Farm Bureau also supports the repeal of the Health Insurance Tax because it makes it more difficult for farmers and their families to afford coverage.

From *Pennsylvania Agricultural Alliance Issues Update*, Penna. Farm Bureau, April 2013.

Employers Required to Use New I-9 Form

The U.S. Customs and Immigration Service (USCIS) is requiring a new I-9 Form to verify the identity and employment authorization of individuals hired in the United States. New forms were released earlier this year.

All employers must insure proper completion of the form for every new person they hire, including citizens and non-citizens. New forms, along with an employer handbook, are available at the USCIS website at www.uscis.gov.

The handbook gives comprehensive explanations of the rules for filling out the form and the documents used by an employee to prove work eligibility.

From *Pennsylvania Agricultural Alliance Issues Update*, Penna. Farm Bureau, April 2013.

Four Seasons' Carkoski Nominated as United Chairman-Elect

United Fresh Past Chairman Reggie Griffin, Reggie Griffin Strategies, has announced the slate of new officers and directors nominated to serve on the United Fresh Produce Association Board of Directors, effective at its May 14, 2013 meeting in San Diego.

(continued on page 6)



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NEWS

National News Briefs *(continued from page 4)*

Nominated as Chairman-Elect is Ron Carkoski, President & CEO, Four Seasons Family of Companies, Ephrata, PA. Ron joined Four Seasons in 1994 as director of procurement, after almost 20 years in the produce business with Gateway Foods/Scrivner, Carpenter Cook Company, and Gamble Robinson Co. He progressed to vice president at Four Seasons, and was named President & CEO in 2001. He was nominated to his second term on the United Fresh Board in 2010, previously serving from 2003-2007 and most recently served as Chairman of the United Fresh Wholesaler-Distributor Board. He is a past member of the Board of Directors of the Produce for Better Health Foundation, recently completed his term as a member of the Board of Directors of the Make-A-Wish Foundation of Philadelphia and the Susquehanna Valley, and served as a member of the Board of Advisors for Graystone Bank in Pennsylvania. Ron received his bachelor's degree in music education from St. Norbert College, De Pere, WI. He has spoken several times at the Mid-Atlantic Fruit and Vegetable Convention in Hershey.

Ascending to Chairman of the Board is Ron Midyett, CEO of Apio Inc., Guadalupe, CA. Ron currently serves as Chairman-Elect of the Board. Nominated as Secretary-Treasurer is Lorri A. Koster, Chairman and CEO, Mann Packing Company
*From **Inside United Fresh**, United Fresh Produce Association, April 25, 2013.*

Farm Bureau Urges Congressional Support to Repeal Mandate on Health Insurance

Pennsylvania Farm Bureau has written to Pennsylvania's Congressional delegation asking for their support of the American Job Protection Act, which would repeal the federal mandate on employers providing health insurance to their employees.

Under health care legislation adopted by Congress, businesses with 50 or more "full-time equivalent" employees must provide a minimum level of health insurance, or pay a penalty.

The regulations are complex, confusing and require time-consumer record keeping classifying and defining employees, PFB said in written comments.

The result will be terminations, layoffs and reduced working hours for employees, PFB said. "Healthy insurance costs are an ongoing and significant express for farmers who buy coverage for themselves and their families, and for the agriculture workers they employ," PFB said.

Farm Bureau opposes mandates for health care coverage, believing it is the responsibility of individuals.

*From **Pennsylvania Agricultural Alliance Issues Update**, Penna. Farm Bureau, April 2013.*

\$165 Million Allocated for Fresh Fruit and Vegetable Program

USDA has announced that \$165 million is available to fund the Fresh Fruit and Vegetable Program (FFVP) next school year and provided a [table with funding allocations](#) for all 50 states, the District of Columbia, Guam, Puerto Rico and the Virgin Islands. More than 4 million low-income elementary school students will benefit by having a fresh fruit or vegetable snack every day at school. The \$165 million is a \$1.5 million increase above this year's funding.

"The FFVP is very popular and very effective. It increases children's fruit and vegetable consumption, introduces them to a wide variety of fresh fruits and vegetables, and is very popular with schools, parents and students," said Dr. Lorelei

DiSogra, United Fresh vice president of nutrition & health. "The recently published [evaluation results](#) demonstrated the effectiveness of the FFVP as a school-based public health intervention that positively impacts children's fruit and vegetable consumption. And, parents who took part in the evaluation study noted that the FFVP resulted in their child eating more fruits and vegetables at school and at home."

The FFVP has been one of United's top public policy priorities for the last decade. It is a win for children, a win for produce, and a win for public health. As Congress begins to debate the 2013 Farm Bill, the FFVP will be one of the key nutrition policy issues discussed. "The evidence that the FFVP is effective will be very helpful on Capitol Hill over the next few months as United Fresh leads advocacy efforts to protect the FFVP in the 2013 Farm Bill," noted Dr. DiSogra.

For more information about the FFVP and how to support advocacy efforts, please contact Dr. Lorelei DiSogra or Andrew Marshall, United's policy & grassroots manager, at 202-303-3400.

*From **Inside United Fresh**, United Fresh Produce Ass'n., April 11, 2013.*

CDC Joins the Discussion on Produce Washing

Managing wash water was the topic of discussion this week in a meeting organized by Taco Bell/Yum! Brands and Taylor Farms at the Taylor Farms facility in Smyrna, TN. Dr. David Gombas, United Fresh senior vice president food safety and technology was joined by water specialists Dr. Michael Beach and Dr. Vincent Hill from the Centers for Disease Control and Prevention (CDC) to explore more effective practices to control contamination spread through wash water.

"The fresh-cut industry is working on multiple fronts to better understand the right approach to manage and validate wash water systems to control the potential for cross-contamination," said Gombas. "Our understanding of the importance, objectives and potential risks when washing produce has changed dramatically over the past decade, so how we design and control wash systems is likely to change, too. Drs. Beach and Hill from CDC brought a unique perspective to the discussion and helped generate several ideas that the industry can follow up on."

The group concluded that out-of-the-box thinking may be necessary, without restriction to existing equipment or processes. As described by Sean Picquelle, produce and beverage product quality and food safety manager for Taco Bell, and vice chair of the United Fresh Retail-Foodservice Board, "We need to take a blank sheet approach to produce washing and wash system design."

*From **Inside United Fresh**, United Fresh Produce Ass'n., April 18, 2013.*

Access to Land Continues to Concern Young Farmers

A survey conducted during the American Farm Bureau Federation's Young Farmers & Ranchers national conference showed that access to land continues to be a challenge for beginning farmers.

Young farmers were also concerned about economic challenges, water availability, along with government taxation and regulation.

However, those same farmers are optimistic about the future with 83 percent saying they are better off than they were five years ago. The vast majority consider themselves lifetime

(continued on page 9)

State News Briefs

Farm Bureau Expresses Concerns over Proposed Water Withdrawal Rules

Pennsylvania Farm Bureau has submitted comments to the Susquehanna River Basin Commission (SRBC) expressing concerns that new rules for water withdrawals could hamper agricultural production during dry spells.

SRBC has developed a Low Flow Protection Policy (LFPP), which it may use to approve or deny applications for water withdrawals. Those regulations would apply to water withdrawals of surface or groundwater in drainage areas equal to or less than 10 square miles, referred to as headwater areas. All watersheds within the Susquehanna basin are impacted by the Low Flow Protection Plan (LFPP).

Under the low flow plan, the SRBC will rely on passby flows, where a certain amount of water must pass the withdrawal point. Agriculture operations located in headwater areas could be denied critical access to water, especially during dry periods.

"We strongly recommend that the regulations expressly provide that LFPP not be applied to impose restrictions in water use necessary to sustain existing livestock or regularly attained yields of food or feed crop production," PFB said in its comments.

More than three-quarters of all stream miles throughout the Susquehanna River Basin are made up of headwaters consisting of drainage areas less than 10 square miles.

From Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, April 2013.

Initiative Underway to Put More Mushrooms in School Lunches

At the start of the next school year, students at a few Pennsylvania schools will be sampling more mushrooms.

The American Mushroom Institute has partnered with the Culinary Institute of America to develop several kid-friendly dishes that use mushrooms. Those meals, like cheeseburgers and sloppy Joes, can help schools meet the federal dietary guidelines for school meals, yet not leave kids feeling hungry.

By adding diced mushrooms to a cheeseburger, for instance, schools can add more bulk to a meal but not increase the fat content, said Laura Phelps, president of the American Mushroom Institute.

"It adds a vegetable to a meal, and you can also make a bigger burger," she said. "It is a perfect solution for schools trying to keep within the guidelines, but also keeping kids happy."

been developing recipes and testing the nutritional standards of those meals, Phelps said. The next step will be to identify schools that can serve as a pilot program for the new meals, she said.

The American Mushroom Institute is also working with the Pennsylvania Department of Agriculture and the Mushroom Council on the project.

Once the Pennsylvania school trial is completed, the project will be rolled out nationally, Phelps said.

From Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, April 2013.

(continued on page 8)

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NEWS

State News Briefs (continued from page 7)**Krancer Steps Down from Pennsylvania Department of Environmental Protection**

Pennsylvania Department of Environmental Protection Secretary Mike Krancer is stepping down from his job to return to his law practice.

"Secretary Krancer has been an invaluable member of our team and I am grateful for his service," said Gov. Tom Corbett. Krancer was appointed to the post in 2011, and oversaw a number of initiatives including agency reorganization, improved consistency in enforcing environmental regulations and streamlining permit review process.

Krancer also worked with gas drillers to find alternatives to treating frack water at wastewater treatment plants.

Prior to his appointment, Krancer made his career in the legal field. He will return to his private practice with the Philadelphia-based Blank Rome LLP. E. Christopher Abruzzo will serve as acting secretary.

From *Pennsylvania Agricultural Alliance Issues Update*,
Penna. Farm Bureau, April 2013.

PDA Seeks Growers for Turnpike Markets

The Pennsylvania Department of Agriculture is seeking agriculture producers who are interested in selling produce at three Pennsylvania Turnpike Service Plazas.

The markets will be located at the Allentown, Sideling Hill and New Station service plazas. Markets will be open at 10 a.m. on Saturdays, Mondays and holiday weekends. They will open at 11 a.m. on Fridays and Sundays. At least half of all gross sales must be products grown or produced in Pennsylvania.

For more information contact: Samantha Snyder at samasnyder@pa.gov or call 717-787-1429.

From *Pennsylvania Agricultural Alliance Issues Update*,
Penna. Farm Bureau, April 2013.

Corbett Urges Support for Immigration Reform for Agriculture Workers

Gov. Tom Corbett has sent a letter asking Congress to reform the federal guest worker program for agriculture employers.

In a letter to Pennsylvania's Congressional delegation, Corbett outlined principles for reform that would ensure agriculture producers have a reliable and predictable workforce. Among Corbett's recommendations is to scrap the H-2A program, and move to a system that is streamlined, but also does not cap the number of workers available to the agriculture sector.

Corbett also said the system must recognize the year-round needs of industries like dairy, which need a constant supply of labor. "Farmers requiring guest workers should not be hamstrung by federal rules and regulations that make acquiring these workers next to impossible," Corbett wrote.

From *Pennsylvania Agricultural Alliance Issues Update*, Penna. Farm Bureau,
April 2013.

Agriculture Labor Reform...

(continued from page 2)

Governor certifies that there is available housing in the geographical area.

Contract and at-will workers must receive inbound transportation from their home country to the first initial place of employment. Contract workers will receive outbound transportation if they work for the same employer 3/4 of the three-year visa term.

A contract employer is required to guarantee work for 3/4 of the contract period with an exception for natural disasters such as freeze, flood and other weather related destruction of crops or where the worker breaches the contract.

An employer will be able to give preference to an H-2A worker over a domestic worker if the H-2A worker has worked for the employer three out of the past four years. The employer will be required to pay the H-2A worker the frozen AEWR, which shall be indexed for inflation.

DAEs shall be required to post notice with the state workforce agency 60 days before the date of the need and shall advertise the position for 45 days. DAEs shall hire qualified, ready, willing and able U.S. workers up to 15 days before the date of need. Job description is required to include basic information about the job. Employer must hire eligible and qualified U.S. workers before filling any shortage of workers through the visa program up to 15 days before date of need.

DAEs shall attest that they will follow all rules of the program. DAEs are subject to administrative enforcement by the Department of Labor if they violate the terms of the program.

Workers are covered under the Migrant and Seasonal Agricultural Worker Protection Act (MSPA). The mediation of a complaint is required, if any party requests it, before a lawsuit may proceed. If a worker elects to file an administrative claim, which is resolved either through settlement or adjudication, they shall not maintain a civil action under MSPA for the same violation.

Employers must provide U.S. workers equal wages, working conditions and benefits as guest workers in an occupational category. Benefits do not include housing or housing allowance. Similarly situated is defined as spending 75 percent of work time performing tasks defined under the applicable occupational category on a semi-annual basis.

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NEWS

Tillage Radish Wins National Award

The Tillage Radish®, a cover crop used by farmers as a foundation for cover cropping programs aimed at reducing soil compaction and improving soil health, has won No-Till Product of the Year at the National No-Tillage Conference held in Indianapolis. The product is produced by Cover Crop Solutions, a Pennsylvania corporation located in Robesonia.

As the category winner in Cover Crop Seeds, Tillage Radish® then was voted Product of The Year, top vote getter of all 13 product categories. Runners up included products of companies including Dow, Bayer Crop Science, John Deere, BASF, Syngenta and other companies supplying North American agricultural markets.

The contest is based on direct feedback by farmers responding to an open invitation to vote for best product in 13 categories by No-Till Farmer, produced by Lessiter Publications.

“The readers of No-Till Farmer are some of the most discerning and knowledgeable farmers in the industry. They understand the value of each nominated product,” says Darrell Bruggink, executive editor and publisher of No-Till Farmer.

Steve Groff has practiced no-till farming in Pennsylvania for over 30 years. He is a cover crop innovator and partner in Cover Crop Solutions, producer of Tillage Radish®. “To be the top in the Cover Crop Seed category is wonderful; to be voted Product of the Year is even more gratifying. Our team works very hard to conduct research that farmers can put to good use,” Groff says.

“Soil health is a rapidly growing theme in agriculture,” says David Weaver, CEO of Cover Crop Solutions. “Tillage Radish® helps bring focus to the issue because of its distinguishing features. Farmers can’t always see soil health, but they can see the tubers and tap root that typically penetrates over three feet.

Tillage Radish® is a dramatic looking product. It starts the conversation that leads to the importance of soil health.”

Tillage Radish® is generally drilled, broadcast and precision planted, or is incorporated as part of seed mixes produced by Cover Crop Solutions. Growing multiple species in cover crop applications has been found in ongoing research to produce synergistic effects that mimic how nature functions in the soil, where myriad organisms work to create healthy soil conditions where less input is required to achieve yields that equal or in many cases surpass those of crops grown under traditional farming practices.

More information at CoverCropSolutions.com, and TillageRadish.com. Phone 800-767-9441.

National News Briefs *(continued from page 6)*

farmers and want to see their children follow in their footsteps.

The informal survey was taken during AFBF’s YF&R Leadership Conference in Phoenix, Arizona, which was attended by several hundred farmers from across the country.

From Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, April 2013.

Several FSA Programs Now Open for Enrollment

Enrollment in the 2013 Direct and Counter-cyclical Program and the Average Crop Revenue Election program began recently at local Farm Service Agency (FSA) offices. ACRE sign-up ends June 3 and DCP sign-up ends August 2.

New contracts are required annually for each program. For more information, contact your local FSA office or visit www.fsa.usda.gov.

From Pennsylvania Agricultural Alliance Issues Update, Penna. Farm Bureau, March 2013.

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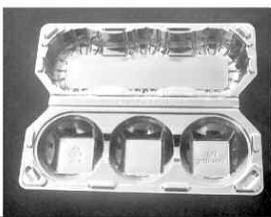
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GENERAL

Vegetable Recipes

We need your input!! Are you (or perhaps your wife) interested in seeing recipes in future issues of the newsletter? If so we would like to publish your favorite recipes. Below are two recipes for spring crops from past Vegetable Recipe contests the Pennsylvania Marketing & Research Program has sponsored. If you would like to submit a recipe we would be glad to receive it. Although we cannot promise to use all recipes we may receive, if we do use yours we will give you credit with your name, farm name and town. If you would like to include a photo of your dish or your family we may include that also if it is clear enough for publication.

For the May issue of the newsletter we would like to publish recipes for Strawberries or Peas (Sugar or Shell).

If you would like to submit any recipes for these categories please e-mail them to us by May 18th to pvga@pvga.org or mail them to PVGA, 815 Middle Road, Richfield, PA 17086.

Spinach - Chicken Farfalla

- 8 ounces Farfalla Pasta
- 1 Chicken Breast - or 2 cups white meat chicken chopped into bite sized pieces
- 3 tablespoons Olive Oil
- 2 cloves Garlic - chopped fine
- 1/2 cup sliced Mushrooms
- Salt and Pepper to taste
- 1/4 cup Chicken Broth
- 6 ounces fresh Spinach (or 3 cups) – washed and drained
- 4 ounces Feta Cheese
- Parmesan Cheese - grated, to taste

Cook farfalla according to box directions to al dente stage. Drain and set aside. Saute chicken in oil until cooked through and juices run clear. Remove chicken from pan. If using whole breast; cut into bite sized pieces when cooked. Add garlic and sliced mushrooms to pan used to cook chicken. Saute lightly being careful not to brown garlic. Add a small amount of oil if necessary to keep from sticking. When mushrooms are soft and golden, add washed spinach, salt and pepper. Return chicken and pasta to pan. Add 1/4 c. broth. Cover and cook on medium heat until spinach is wilted, about 3 to 4 minutes. Pour any remaining olive oil over hot pasta. Add feta cheese over top and serve. (cheese will soften and melt in) If desired sprinkle with Parmesan cheese.

Serves 4

Submitted by Kay Kahle, Seneca, First Place 2009 Pennsylvania "Simply Delicious, Simply Nutritious" Vegetable Recipe Contest

Asparagus Sesame Roll Ups

- 12 fresh Asparagus Spears
- 12 Crescent Rolls - refrigerated unbaked dough
- 8 ounces Cream Cheese
- 1/2 cup crumbled Blue Cheese,
- 6 tablespoons Butter
- 1 tablespoon Sesame Seeds, toasted

Trim asparagus spears to 6". Unroll crescents. In a small bowl, beat the cream cheese and blue cheese until combined. Spread over the unrolled roll. Top with asparagus spear and roll up. Roll in butter. Place on baking sheet.

Sprinkle with sesame seeds. Bake at 375 degrees F for 14 to 16 minutes or until crescents are golden brown.

Serves 12

Recipe by: Dorothy Martin, Conestoga, 2004 Pennsylvania "Simply Delicious, Simply Nutritious" Vegetable Recipe Contest finalist



Tillsonburg Tube Buys Tunnel Tech

Tillsonburg Tube announces the acquisition of Tunnel Tech, the Ontario based manufacturer of three season Multi Bay high tunnels. The popular agricultural phenomenon has quickly become the tunnel of choice for revenue minded growers and has shown to be effective in extending season production, producing higher grades, higher yields and prevention against weather losses.

According to Keith Prince of Tillsonburg Tube, the new acting President of Tunnel Tech, "The customization of each installation to meet the needs of individual growers reflects our commitment to customer service and satisfaction. We also provide planning, site measurements, installation, venting, and management services, with our entire product line made in North America." Since Tillsonburg Tube manufactures the steel components themselves, they are able to greatly reduce costs to customers and are able to ship orders with very little lead time.

Tunnel Tech has 7+ years of experience with installations across Canada, the United States, as well as in the Caribbean, You may contact the company direct at:

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Using Financial and Production Records to Make Decisions

Craig Chase

The ultimate goal for using any recordkeeping system is to help make better management decisions. In particular, farm records should allow the owners to compare their operation to others or itself historically. Secondly, farm records should allow the owners to plan and evaluate proposed projects. For example, if a variety of projects are proposed, each project should be evaluated on how it would affect the current financial condition of the farming operation. Lastly, owners should understand how to interpret financial and enterprise records in order to determine when the farming operation strays off-course. With good financial information owners will be able to determine how the farming operation got off-course and develop a corrective course of action.

Whole-Farm Analysis

Recordkeeping systems should consist of a series of financial statements that provide an overview of the whole farming operation and enterprise (or production) records that focus on the particular components of the farming operation. Most whole-farm financial statement analyses are derived from a balance sheet (or net worth statement) and income statement. There are five key measures of financial performance that are commonly analyzed: liquidity, solvency, profitability, financial efficiency, and repayment capacity (see Edwards, 2000, for a detailed look at financial measures). Together, these criteria measure both financial condition and performance allowing the owner, as well as a lender or other outside reader, to better understand how well the business is currently doing.

Example Farm

An example farm can be used to illustrate how financial ratios and enterprise records are used for decision making. The example farm produces vegetables on 5 acres in central Iowa. A total of 15 different vegetables are produced, but the owner focuses on the four vegetables customers associate with the farm; heirloom tomatoes, carrots, sweet potatoes, and snow peas. The farm channels products through a variety of institutional and farmers markets. Excerpts from the farm's balance sheet and income statement are provided in Table 1.

Whole Farm Ratios

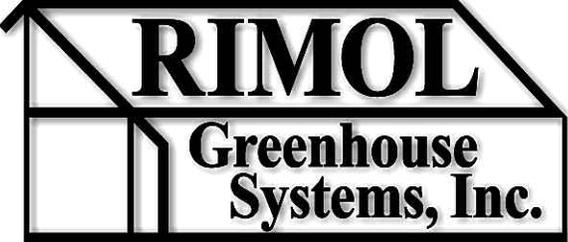
There are fourteen financial measures described in Edwards (2000). This paper will focus on six of those ratios. The first is the current ratio (current assets/current liabilities) which measures the farming operation's ability to meet its short term financial obligations. The example farm's current ratio is 2.02 (8,500/4,200) and normally indicates a farm that can easily pay off its short term debt with cash and other current assets that can be converted to cash.

The second ratio is the debt-to-asset ratio (total liabilities/total assets) and measures how much of the farm's assets are financed and how much are owned outright. The debt-to-asset ratio for the example farm is .60 (or 60%) indicating that 60 percent of the farm's assets would have to be sold to pay off all debt obligations. This number is higher compared to most agricultural industry benchmarks. Most lenders would

(continued on page 12)

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GENERAL

Using Financial and Production... (continued from page 11)

like the debt-to-asset ratio to be below .50 and approach .40. The example farm may have a high debt-to-asset ratio because land and/or equipment were recently purchased and a relatively small down payment was made.

Table 1. Balance Sheet and Income Statement Highlights
Financial Measures 12/31/2007

Balance Sheet		Income Statement	
Current assets	8,500	Gross revenue	60,000
Current liabilities	4,200	Operating expenses	16,250
Total assets	70,000	Labor (paid)	12,500
Total liabilities	42,000	Interest expense	3,750
		Depreciation expense	2,000
		Net farm income	25,500

Net farm income is critical to pay off debt and provide dollars to cover family living expenses such as medical and other home operating expenses. However, net farm income is a difficult measure to benchmark and compare since it is often directly related to the size of farming operation. So, instead this paper will focus on two other profitability measures; rate of return on farm assets and operating profit margin. Rate of return on farm assets is a more complicated measure and takes into consideration the value of unpaid labor (see Edwards 2000 for specific formulas). To calculate rate of return you need the numbers in Table 1 in addition to the dollar amount of unpaid labor provided by the owner/operator. For this example, assume the owner/operator provided 520,000 in unpaid labor. The rate of return on farm assets for this example would be 13.2% ($25,500 + 3,750 - 20,000 = 9,250 / 70,000 = 13.2$), which is typically higher than other agricultural enterprises. However, without comparable benchmarks for other vegetable growers it is difficult to determine whether this farm is efficiently using its assets for vegetable production. An alternative evaluation would compare the rate of return on farm assets to other returns that could be made if the farm assets were sold for its current value (in this case \$70,000) and invested in a variety of markets. The 13.2% return is clearly above low risk alternatives such as certificate of deposits and money-market funds and in many cases above mid-risk alternatives such as blue-chip stock indexes.

There are two primary methods for increasing profitability in any business. The first is to increase the profit received per unit while maintaining the number of units produced. The second is to maintain the profit received per unit and increase the number of units produced. The operating profit margin focuses primarily on the former consideration whereas the asset turnover ratio focuses primarily on the latter. The two measures multiplied together result in the rate of return on farm assets. The operating profit margin for the example farm is 15.4% ($9,250 / 60,000$).

The last two financial indicators measure the financial efficiency of the farming operation. The asset turnover ratio is a measure indicating how efficient the business is in using its assets to generate revenue. The asset turnover ratio for this farm is .86 or 86% ($60,000$ value of farm production / $70,000$ in assets). This figure is much higher than typical commodity agricultural enterprises which have a larger asset base to

develop revenues. The last measure is the operating expense ratio which indicates the percentage of gross revenue that is used to cover operating expenses of the business. Gross revenue needs to cover operating expenses, depreciation, interest, and keep some left over for net income. The operating expense ratio for the example vegetable farm is 27% ($16,250 / 60,000$), which is low compared to commodity agricultural enterprises. However, keep in mind that vegetable production is highly labor intensive and unpaid operator labor is not included in operating expenses. If the unpaid operator labor of \$20,000 would have been included in operating expenses, then the operating expense ratio would have been 60% which is a more common result in agriculture.

Limitations of Whole-Farm Measures

There are several limitations to financial measures. First, they do not give answers to problems. Rather, they point to potential problems that need to be addressed by management. It is easier to determine potential problem areas when industry benchmarks are available, which is the case with commodity agriculture. When benchmarks are nonexistent, problem areas may be illustrated when a set of financial benchmarks are measured over time. Growth in liquidation, solvency, or income measurements should be viewed as positive.

Second, the interaction among financial measures should be analyzed in addition to the individual measures themselves. A combination of measures may lead to different conclusions than looking at one measure by itself. For example let's assume two farms have a rate of return on farm assets of 12%. Farm A has an operating profit margin of 40% and an asset turnover ratio of 30%. Farm B has an operating profit margin of 15% and a turnover ratio of 80%. Let's further assume that the two farms are the same size and have the same labor costs. If you were the financial consultant for each farm, would your recommendations be the same for each farm even though the rate of return on farm assets is the same? The answer is no. Farm A needs to look at ways to increase production while maintaining profit per

(continued on page 13)





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GENERAL

Using Financial and Production... (continued from page 12)

unit whereas Farm B needs to determine if it can produce units with a higher profit margin per unit.

Third, the financial condition and performance measures are only as good as the data used to calculate them. The standard saying "garbage in garbage out" applies here. Any management decisions based on inaccurate or incomplete financial information can lead the business down the wrong path. Fourth, the results of the financial analysis should be used as a means to an end, not the end in itself. For example, a farming operation may have several options before them to explore. Even though one of the options may be the "best" financially, it may not fit with the business or personal goals of the owner.

Enterprise Analysis

An enterprise budget is an estimate of the costs and returns to produce a product (enterprise). For example, an Iowa corn and soybean producer would be interested in developing both a corn and soybean enterprise budget. Farmers who grow or raise a large variety of products may wish to develop budgets only for their key products (those products that they believe contribute the most to attaining their goals).

Types of Decisions

There are numerous decisions that can be made with the help of an enterprise budget. In this publication we will focus on three; pricing, changing production practices and product mix.

Pricing products is difficult, but can be based on one of three approaches; customer based, competition based, or cost based. Although no one pricing strategy works without the consideration of the other two, pricing products without knowing costs to produce could lead to business failure. Therefore, it

makes sense to start with costs and then consider both the customers and the competition. Enterprise budgets can be compared to other producers' costs or industry averages to determine if the individual farm's costs are high or low in comparison. If costs are high, then the budget will point to specific areas that need to be analyzed further. Budgets also indicate where key costs occur. If key cost items appear too high, changes in production practices should be made to lower per unit costs. Enterprise budgets should be developed and compared for each product that contributes significantly to annual returns or other business goals. The budgets will indicate how land, labor and capital are being used for each enterprise and an appropriate mix of enterprises can be developed to meet business goals. If a new enterprise is being considered, then a budget can be developed while the product is being produced on a small scale. If the new enterprise compares favorably, then it can be added to the existing product mix.

The case farm for this publication raises a variety of vegetables including carrots. Let's assume production records are kept on carrots similar to Chase (2006) and total costs per bed were determined to be \$81.98. Cost per lb of carrots sold was \$.48. Producers should use the \$.48 per lb figure to compare to other producers to determine if their individual costs are high or low in comparison. If costs are high, then the budget should be evaluated in detail to determine where costs are different and why.

A second reason for a detailed analysis of the budget is that it allows the producer to determine where key costs occur. For the carrot example, \$43.10(53 percent) of the total cost of

(continued on page 14)



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GENERAL

Using Financial and Production... (continued from page 13)

\$81.98 is in the harvesting activities. Another way to look at the details is that \$54.46 (66 percent) of the costs is labor. As a key expense, the producer can reevaluate labor requirements to determine if there are changes that can be made to become more labor efficient. If the same yield can be maintained with less labor, costs per unit should decrease. In the same way, small expenses such as supplies (\$11.85 per bed or 14 percent of the total) don't need to be analyzed in as much detail because a 10 to 20 percent reduction in supplies does not affect the total production costs significantly.

Limitations

As is the case with whole-farm records, the ability to benchmark to other producers is solely based on the availability or access to summaries of enterprise records. If benchmarking to industry standards is not available, enterprise records should be kept over time to see how costs change. In addition, changes in production practices should be made to determine if efficiencies can be gained.

Benchmarking

One of the limitations to benchmarking to other businesses or industry standards is that the formulas for the benchmarking measurements may not be the same from one business to the next. For example, let's assume Farm A has gross income from farming operations of \$250,000 and total farm assets of \$300,000. The asset turnover ratio for this farm would be .83 ($\$250,000 / \$300,000$). Farm B calculates asset turnover ratio as value of farm production divided by farm assets. Value of farm production is calculated as gross income minus feeder livestock purchases and/or value of purchased feed. If Farm B purchases any feeder livestock or feed, then the value of farm production will be less than gross income. If the value of farm production for Farm B is \$120,000, then the asset turnover ratio is .40 ($\$120,000 / \$300,000$).

The problem becomes when you compare a ratio using the second formula to a benchmark using the first. The initial impression for Farm B would be that the asset turnover ratio was 50% of the benchmark and dramatic changes such as firing existing labor, liquidating enterprises, or other action needed to be made quickly to obtain a competitive asset turnover ratio. The bottom line is none of the benchmarks are better or worse than the others. Rather, they simply point out the importance of fully-understanding the formulas behind the benchmarks before interpreting and recommending possible courses of action.

The same is true for general financial guidelines used by agricultural lenders or other credit sources. The calculation of the financial measures may differ as well as the categorization into broad categories of good, average and poor. So prior to using guidelines like those presented in Table 2., understand fully the formulas used for the measurement calculations.

Table 2. General Financial Guidelines

Financial Measure	Good	Average	Poor
Current Ratio	>1.5	1.0 - 1.5	<1.0
Debt-To-Asset Ratio	<.30	.30 - .60	>.60
Return on Assets	>.10	.05 - .10	<.05
Operating Profit Margin	>.15	.05 - .15	<.05
Operating Expense Ratio	<.65	.65 - .80	>.80
Asset Turnover	>.40	.25 - .40	<.25

Assuming the case farm calculates measurements the same way, how does the farm match up? The current ratio of 2.02 is

good, whereas the debt-to-asset ratio of .60 is borderline poor. The return on assets .132 and operating profit margin of .152 are both classified as good. The operating expense ratio of .27 and asset turnover of .86 are classified as good also. Keep in mind that the financial guidelines are generally used for benchmarking larger-scale commodity agriculture and a discussion with your lender on appropriate measures for a smaller scale vegetable farm or other alternative enterprise may be warranted.

Limitations

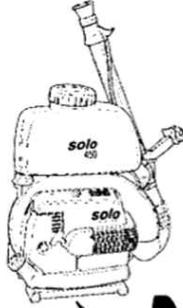
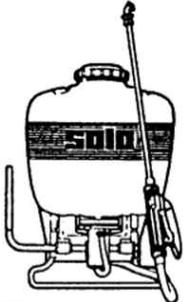
As pointed out earlier, comparing the business financial performance to other businesses within the industry or industry benchmarks may be misleading unless the ratios or performance measures are calculated in exactly the same manner. If the farming operation calculates asset turnover based on value of farm production and compares the result to an industry benchmark of asset turnover using gross revenues in the equation, the manager would get the wrong impression that his farming operation's asset turnover ratio is much below the industry standard. The opposite could also occur where the manager could get the mistaken impression his/her farming operation is doing much better than the industry standard. Bottom line is to compare an existing operation to an industry benchmark; the two formulas must be identical. Otherwise the wrong impression and possibly wrong course of action could be implemented. Other potential flaws in comparing the business to other businesses are the timing of the income statement and balance sheet. This is particularly critical with businesses incurring sea-

(continued on page 15)

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Using Financial and Production... (continued from page 14)

sonal production and income streams. Another problem comparing income statements is making sure both statements were prepared on either a pre or after tax basis. Another concern is whether the balance sheets were prepared on a market or cost basis. A balance sheet prepared on a cost basis may give substantially different results than one prepared on a market basis. Secondly, did the balance sheets include only farming information or were non-farm and personal items included? Many other inconsistencies can occur between the business financial statements and those within the industry.

Making Better Decisions

Whole-farm and enterprise records should be kept in order to make better decisions. Enterprise records allow the owner of a business to analyze how efficiently the enterprise is operating and point to areas where enterprise profitability could improve. Enterprise records by their very nature are tied to production units. As was pointed out previously, operating profit margin, asset turnover ratio, rate of return on farm assets, and operating expense ratio all include gross revenue, net farm income, or other income statement components into their formulas. Therefore if producers wish to increase operating profit margin for example, they should look at their enterprise budgets to determine where profits per unit produced could be increased. Could planting rates increase or weed management techniques be changed to increase yields and/or reduce labor requirements?

With a better understanding of how the various measurements are determined, producers should be able to see how a

change in pricing, production practices, or product mix would affect not only the enterprise that is being directly affected, but how the overall farming financial measures are likely to change. It is the overall farming measures that are used by agricultural lenders and others to judge how the overall business is doing. For example, let's assume that all of the overall financial measures are satisfactory except for debt-to-asset ratio. Because debt is typically paid off through profits or returns on assets owned, profitability should be examined; particularly rate of return on farm assets. Remember that rate of return on farm assets has two components, operating profit margin and asset turnover ratio.

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VEGETABLE PRODUCTION

Late Blight Effectively Managed with Resistant Tomatoes on Long Island in 2012

Margaret McGrath and Sandra Menasha summarized by Tianna DuPont

A replicated experiment was conducted at the Long Island Horticultural Research and Extension Center in 2012 to evaluate new varieties and experimental hybrids that have resistance to late blight in terms of horticultural traits and susceptibility to diseases.



Late blight resistant Defiant (left) and susceptible variety Mountain Fresh Plus (right).

Resistant varieties are a valuable tool for managing diseases, particularly late blight, because it can be very difficult to control with fungicide applications started after onset and it cannot be 'tolerated'. Left unmanaged, late blight is much more likely than other diseases to completely destroy a crop and also to have devastating impact on other tomato plantings in a region due to the quantity of pathogen spores that can be produced and easily dispersed by wind.

Mt Fresh Plus was included as the industry standard for comparison. Most varieties evaluated produce standard red, round, slicer (beefsteak) type fruit. Plum, cherry, and campari (large cherry) types were also tested. All named varieties tested are commercially available. Experimentals from the Cornell Breeding Program also have resistance to early blight and Septoria leaf spot, common foliar diseases occurring in the northeastern USA.

Very good resistance of foliar symptoms of late blight was exhibited by all tomato varieties and experimental hybrids evaluated that have the Ph2 and/or Ph3 major genes for resistance: which were Plum Regal (homozygous Ph3), JTO-545 (heterozygous Ph3), Legend OP (Ph2), Matt's Wild Cherry (undetermined resistance, possibly Ph3), Jasper (undetermined resistance, likely Ph2 and/or Ph3), and Defiant PHR, Mountain Magic, Mountain Merit, and three experimentals from the Cornell University Dept of Plant Breeding (all heterozygous Ph2 + Ph3). Heterozygous means the hybrid has one copy of the resistance gene; homozygous means it has a copy from both parents which is expected to impart a higher level of resistance. Iron Lady is a new variety developed at Cornell that is homozygous Ph2 + Ph3. It is expected to have even better resistance than the others. High Mowing Organic Seeds is marketing it. The other resistant varieties are available from Johnny's Selected Seeds and Seedway.

Late blight became severe in New Yorker (Ph1). Severity of symptoms was similar to the varieties without major resistance genes, which were Mountain Fresh Plus, Juliet and Brandywine. The late blight pathogen genotype present in this experiment, US-23, was the dominant genotype present in 2012 in the USA and thus most likely will dominate in 2013. The Ph1 gene is also not effective for other genotypes of the pathogen

that have occurred in recent years. Thus varieties with only this gene are not recommended.

Legend, the only entry with just the Ph2 gene, was numerically, but not significantly, more severely affected by late blight than the other resistant entries, except at the last assessment when extensive defoliation may have affected ratings.

Plum Regal and JTO-545, the two entries with just the Ph3 gene, were numerically more severely affected by late blight than the other resistant entries at all assessments. The difference was significant at the last assessment (12 October), which was 35 days after the last fungicide application for late blight. Fungicides applied may have suppressed late blight, especially on resistant varieties, but the late onset of treatment compromised efficacy.

In conclusion, best suppression of the US-23 genotype of the pathogen was achieved with tomato possessing both the Ph2 and Ph3 resistance genes. Only a few fruit with symptoms of late blight were observed on these entries.

Mountain Magic, Jasper, and Matt's Wild Cherry were the three resistant varieties receiving the highest overall rating in the 10 fruit evaluations (taste and color) conducted by public groups.

For methods, fruit descriptions, and tables with blight severity please see the report posted at <http://extension.psu.edu/plants/vegetable-fruit/news/pdfs/late-blight-effectively-managed-with-resistant-tomatoes-on-long-island-in-2012-1> or request from Dr. Meg McGrath mtm3@cornell.edu or from Tianna DuPont 610-746-1970.

Acknowledgments: This project was funded by the Agriculture and Food Research Initiative Competitive Grants Program Grant 2011-68004-30154 from the USDA National Institute of Food and Agriculture.

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Dr. McGrath and Ms. Senasha are with Cornell Univ. and Cornell Cooperative Extension respectively. Ms. DuPont is with Penn State Extension in Northampton Co. From the Vegetable, Small Fruit and Mushroom Production News blog, Penn State Extension, March 30, 2013.

VEGETABLE PRODUCTION

Vetica Insecticide: Practical IPM tool in Pest Management

Steven Bogash

A new contact insecticide (IRAC Group 28 + 16) is now available to help manage Lepidopteran insects like the Yellowstriped armyworms which was problematic in 2012.

Last season, the folks at Nichino America provided us with a sample container of their latest insecticide, Vetica, for on research farm trials. Vetica is primarily labeled as a Lepidoptera (caterpillars) management material. Vetica is a tank mix of flubendiamide and buprofezin, which are insecticides in IRAC Group 28 and Group 16. The timing of this trial could not have been better as our Pennsylvania Vegetable Marketing Board funded tomato trials became infested with Yellowstriped armyworms for the first time ever in 2012 at both the Penn State Southeast Agriculture Research and Extension Center (Landisville Farm) and at the Franklin County Horticulture Education Center, Chambersburg. Our trials were not alone as many growers reported this 'new' pest as well. We had them in both the high tunnels and in field grown grape and cherry tomatoes. See the archives of the Penn State Vegetable Gazette for more on Yellowstriped armyworms.

Armyworms in general are tough to control as compared to many others in the Lepidoptera family, so we went with the highest labeled rate of 17 fluid ounces per acre. As the trials are primarily (but not exclusively) in high tunnels with substantial vegetation we dispersed this material in 120 gallons of water per acre in order to get complete penetration of the canopy. Vetica was very effective in controlling this pest at both sites and in both the high tunnel and field applications.

One feature of Vetica that really meshes well with other farm activities is the 1-day preharvest interval (PHI) for fruiting vegetables and brassicas. Short PHI materials are particularly

important in high tunnel production for tomatoes and peppers. Longer PHI's reduce growers' ability to balance pest management with crop maintenance and harvesting.

Vetica Insecticide, from Nichino America, Inc. is a highly active foliar insecticide that rapidly controls the most damaging larvae. Vetica has an excellent fit in Integrated Pest Management programs and is considered nontoxic to beneficial insects. Vetica will not flare secondary pests such as aphids or mites. Vetica can be used on cucurbit vegetables (pumpkin, cantaloupe, watermelon); fruiting vegetables (tomato, pepper, eggplant); succulent beans (snap bean, lima bean, wax bean, PHI 14 days); brassicas (cole crops); and leafy vegetables (PHI 7 days).

Vetica acts fast to stop insects from feeding and deliver long residual control. Because Vetica is a contact insecticide, good spray coverage is essential for optimal control. Nichino recommends 16 fluid ounces of Vetica per acre, and no less than 20 gallons of water per acre. Vetica can be applied 2 to 3 times per crop cycle, depending on the crop. Please refer to the Vetica label for specific instructions.

Vetica starts working immediately on target pests, resulting in rapid feeding cessation, paralysis and death. Vetica provides outstanding efficacy on all important Lepidopteran insects including armyworms, loopers, and diamondback moth. When used in well-timed, consecutive applications, Vetica is also labeled for the control of whiteflies, leafhoppers, and planthoppers.

*Mr. Bogash is with Penn Extension in Franklin Co. From the **Vegetable, Small Fruit and Mushroom Production News** blog, Penn State Extension, March 30, 2013.*

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VEGETABLE PRODUCTION

Crop Yields for Vegetables and Small Fruits Grown on Raised Beds with Plastic Mulch and Drip Irrigation

Michael Orzolek and William Lamont

Use of raised beds with plastic mulch and drip irrigation for the production of vegetable and small fruit crops will result in higher crop yields and quality compared to bare ground culture. Yield as determined by variety, production system, mulch color, environment, soil type and location will vary; the reason why a range of marketable yields are presented in the Table below.

Crop	Marketable Yield (unit/A)	Marketable Yield (T/A)
Cantaloupe, eastern type	5,000-7,000 fruit	10 - 15
Cantaloupe, western type	12,000-16,000 fruit	
Cucumber, slicing (32lb bu)	1,000-1,400 bu	16 - 22
Bell pepper (32lb bu)	1,200-1,800 bu	18 - 28
Tomato, fresh market (25lb carton)	2,200-2,800 boxes	32 - 40
Summer squash (24lb 5/9 bushel)	600-1,000 bu	8 - 12
Watermelon	2,500-5,500 fruit	10 - 12
Acorn squash (20lb carton)	800-1,000 carton	8 - 10
Butternut squash (40lb carton)	900-1,200 carton	18 - 24
Eggplant (22lb carton)	900-1,300 carton	10 - 14
Sweet Spanish onions (40lb carton)	1,000-1,400 carton	22 - 28
Pumpkin		
Early sweet corn under plastic	1,200-1,600 doz	
Strawberries - plasticulture	8,000-16,000 quarts	

Dr. Orzolek and Dr. Lamont are with the Department of Plant Science at Penn State Univ. From the *Vegetable, Small Fruit and Mushroom Production News* blog, Penn State Extension, March 30, 2013.

New Supplemental Label for Priaxor

Beth Gugino

A supplemental label was approved reducing the PHI from 7 to 0 days on fruiting vegetables.

BASF Corporation recently received a supplemental label for Priaxor allowing for a 0 day PHI for fruiting vegetables in all states except New York and California. Priaxor contains the active ingredients fluxapyroxad (FRAC code 7) and pyraclostrobin (FRAC code 11) and is labeled for the management of early blight, Septoria leaf spot, anthracnose as well as several other diseases of fruiting vegetables. The supplemental label expires on September 30, 2016.

Dr. Gugino is with the Department of Plant Pathology and Microbiology at Penn State Univ. From the *Vegetable, Small Fruit and Mushroom Production News* blog, Penn State Extension, March 30, 2013.

New Edition of Resource Guide for Organic Insect and Disease Management Now Available

Beth Gugino

This is an excellent resource for any grower interested in learning more about how selected organic materials such as spinosad and *Streptomyces lydicus* work against pests and their efficacy based on published university trials.

First published in 2005, this guide has been recently updated to include information on four additional crop families and four additional materials. The guide is divided into three sections. The first section provides cultural information and management practices for key pests in nine crop groups. The second section contains generic information about specific materials that can be used in organic systems in addition to efficacy data based on published trial results. The third section is a series of appendices with useful information on host resistance, beneficial insects, trap cropping, pesticide regulations, etc. Information on downloading the pdf or ordering a hardcopy can be found at: <http://web.pppmb.cals.cornell.edu/resourceguide/> or by contacting Gemma Osborne at 315-787-2248.

Dr. Gugino is with the Department of Plant Pathology and Microbiology at Penn State Univ. From the *Vegetable, Small Fruit and Mushroom Production News* blog, Penn State Extension, March 30, 2013.

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BERRY PRODUCTION

Strawberry Viruses Found in Pennsylvania Fields

Kathleen Demchak

Below is an article (shortened just a tad) from Dr. Chuck Johnson, extension plant pathologist at Virginia Tech, regarding two strawberry viruses that, in combination, have been documented to be causing problems for Eastern strawberry growers. He presents the history of the issue and his recommendations at the end of the article are excellent. What is the situation in Pennsylvania? Unfortunately, the viruses described (strawberry mottle virus, abbreviated SMOV; and strawberry mild yellow edge virus, abbreviated SMYEV) are present in Pennsylvania, having been found together in plants propagated from runner tips obtained from the Nova Scotia nursery mentioned in the article below. We had been watching the situation, hoping that because plants on Pennsylvania farms looked relatively vigorous, timing of runner tip procurement allowed us to squeak through without the viruses being present in plant material to any great extent. However, that wasn't the case. Robert Rouse (formerly with the Univ. of Maryland, now a consultant) sent samples from Pennsylvania to Dr. Robert Martin, USDA-ARS virologist, for testing and as of April 19, 2013, we found out for certain that the viruses are present together here. If not already contacted, you may wish to contact the nursery from which you obtained plug plants to find out whether your plants were grown from runner tips in question – at least two plug producers that provide plants to Pennsylvania growers have obtained tips from this source. Following Dr. Johnson's article are some additional points that I want growers to be aware of, so please read the entire article.

Virus Infections in 2012-2013 Strawberry Crop

Chuck Johnson

Within 4 to 6 weeks of planting last fall, a number of strawberry producers in Virginia (and other growers in the Southeastern and Mid-Atlantic US) began noticing poor growth in their fields, sometimes in spots within fields, sometimes in virtually the entire field. Older leaves sometimes turned bright red in color, while the edges of leaves around the crowns of plants, and/or emerging leaves, showed a distinct yellowing, which sometimes developed into patterns of marginal necrosis (i.e., dead tissue along the margins of leaves). Roots and crowns of most of these plants showed no sign of fungal infection. Initially, the cause of these problems was thought to perhaps involve soil and/or fertility conditions, such as low soil moisture and/or pH, boron toxicity, or fertilizer burn, perhaps associated with weather and/or errors in custom-blended fertilizers. However, similar problems were observed in Florida, North Carolina, and other southern states, including Virginia. The images below were taken from strawberry fields in Virginia Beach and Chesapeake that Roy Flanagan, Watson Lawrence, and I visited on December 19th:

Because of the widespread nature of these symptoms, and an apparent association with bare-root plants or tips from the Great Village area of Nova Scotia, Dr. Barclay Poling of NCSU travelled to the area in early December to visit with Canadian strawberry plant growers and Extension staff. While there, Barclay was told that apparent strawberry virus symptoms had

(continued on page 20)

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BERRY PRODUCTION

Strawberry Viruses... *(continued from page 19)*

started showing up in fields of some strawberry cultivars in Great Valley in October (about the same time we started getting reports of problems). The Canadians had not had this problem



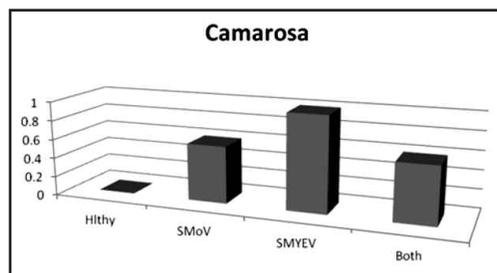
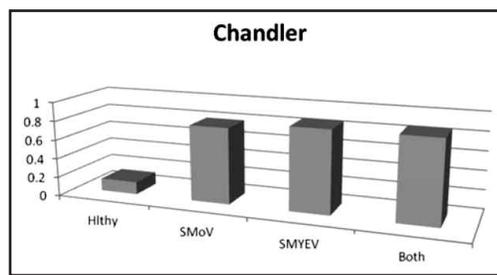
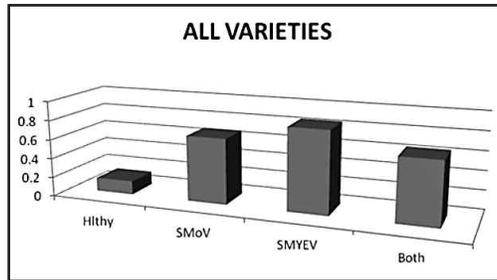
before, and brought Dr. Bob Martin, a USDA-ARS small fruit virologist located at Oregon State University, in to help determine the cause. Dr. Martin is the top expert, as far as I know, on small fruit/strawberry viruses. He collected plant samples in early November to take back to Oregon for laboratory testing, and his results were received while Barclay was in Canada.

Dr. Martin found Strawberry Mild Yellow Edge Virus (SMYEV) and Strawberry Mottle Virus (SMoV) in samples from several matted row varieties. Barclay noted that he had never before seen strawberry viruses to be a problem. Barclay also noted that Chandler plants in Canada looked healthier than other varieties he saw, such as Camarosa and Winter Star. Upon returning to NC, Barclay collected and submitted 7 plant samples to Dr. Martin's lab, and found one with SMoV and five with SMYEV. All infected plants were plug plants produced from tips grown by one nursery in the Great Valley area. Although four of Barclay's samples were Chandlers, one such plant that looked "good" tested negative for both viruses, while another "good" plant tested positive for SMYEV only. Dr. Martin also

tested 20 strawberry samples from Florida and found SMYEV and SMoV in 15 (75%).

As many may already know, Roy Flanagan, Keith Starke, and Watson Lawrence had been monitoring this situation in the Virginia Beach/Chesapeake area. With (very) little help from me, they collected plant samples from strawberry growers in their area and sent the samples off to Dr. Martin just before Christmas. Most of the samples (15 or 43%) were the Chandler variety, but other varieties that were tested included Albion, Camarosa, Camino Real, Festival, San Andreas, and Sweet Charlie. Of the 35 samples sent, 86% were infected by SMYEV, 69% with SMoV, and 66% with both viruses. Only 17% were non-infected. All of the infected plants were originally sourced from the one nursery in the Great Valley area of Nova Scotia, but four different vendors grew-out tips from that same nursery. Whenever there were 3 or more samples of a particular variety, at least one was either not infected or only infected by SMYEV. The following graphs illustrate these results for all samples and for the varieties with larger sample sizes (15 samples of Chandler, 7 of Camarosa):

Based on all this information, Virginia strawberry producers with plants originally sourced from anywhere but the one nursery in the Great Valley area of Nova Scotia should not worry about possible virus infection, because, as far as I know now,



no 2012-2013 plants produced from any other source have tested positive for a strawberry virus. Unfortunately, most of the plants tested so far that "traced back" to the one nursery have been infected by SMYEV, and usually SMoV as well. Growers with plug plants may not know where their plant supplier purchased the strawberry "tips" that were grown-out into plugs, and should check with their supplier.

Although this is our first experience with virus problems on strawberry, SMYEV and SMoV are very common around the world, and often occur together and with other viruses. In

fact, it may be that they only cause significant problems to strawberry growers when they occur together. Yield losses (probably when 100% of plants are infected) can be expected to range from 0% to 30%, and can differ among strawberry cultivars and also depending on which "strain" of each virus may be present. These viruses are usually only a problem in matted-row strawberry production, where plants are in the field for a much longer period of time and plantings are not destroyed at the end of each growing season. Heat treatment combined with meristem tip culture usually eliminate viruses from strawberry genet-

(continued on page 21)

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BERRY PRODUCTION

Strawberry Viruses... (continued from page 20)

ic material before tips are grown-out for plugs or bare root transplants.

All of the virus-infected plants diagnosed this year had SMYEV, which is a “persistent, circulatively-transmitted” virus spread by some (but not all) aphids – *Chaetosiphon fraegolii* (the strawberry aphid), *C. thomasi*, and *C. jacobii*. “Persistent” means that these aphids need to feed for hours or days in order to “get” and spread the virus. However, “persistent” and “circulative” mean that a virus spreads through the body of an insect once the virus has been acquired, and once an aphid has the virus, the virus remains in the aphid through most or all of its life. If a grower only has a small percentage of infected plants in fields with low to moderate aphid populations, promptly spraying an insecticide that kills aphids quickly should be more likely to kill the insects before they can acquire and transmit viruses like SMYEV. Some more “good news” about SMYEV is:

1 – It infects no weeds or crop plants other than strawberry (wild and cultivated).

2 – It is only supposed to be a problem when other viruses are also present.

Most of the virus-infected plants diagnosed so far also had SMOV, which is also aphid-transmitted (*C. fraegaefolii*, several other *Chaetosiphon* species, and the melon aphid, *Aphis gossypii*). However, SMOV is “semi-persistently” transmitted, which means that aphids can “get” and transmit the virus within only a few minutes as they probe infected plants and then move to nearby healthy plants. However, aphids also “lose” the virus within a few hours as they probe plants, potentially slowing the initial rate of virus spread if most of the plants that aphids probe are healthy, such as when only a low percentage of plants in a field are infected. In addition to wild and cultivated strawberry, SMOV also infects several species of *Chenopodium*, including common lambsquarters. Aphid control programs are also supposed to be effective in reducing SMOV spread in strawberry fields.

So, **what are we in Virginia to do about this situation? I have the following suggestions:**

1 – Growers with fields that “look good” and contain plants that weren’t sourced from the one nursery in the Great Valley area of Nova Scotia should NOT be “at risk”. One cautionary note: because these viruses are both transmitted by aphids, it is possible that active aphid populations in Virginia strawberry fields could cause “secondary spread” from infected to non-infected plants in the same field or in nearby fields (I doubt anyone knows exactly how close “nearby” is). However, given the

time of year we’re in, I think this situation should be rare.

2 – Plants that were sourced from the one nursery of concern are likely to be infected by one or both viruses. Plants traced back to other, nearby sources in Nova Scotia could also be involved, but not as far as we know at this time. However, it’s very important to remember that apparent symptoms of plant virus infection can be very misleading. Sick plants may have similar symptoms, yet can be suffering from very different causes, none of which may involve virus infection. *My experience with viruses in another crop (tobacco) suggests that factors such as production practices and weather conditions could have a major impact on apparent damage and yield loss.* Even if a grower knows that their plants are infected, ensuring that they are *doing everything that they possibly can to minimize stress on their crop could significantly improve their outcome this growing season.* The factors that come to my mind for strawberry are frost protection, fertility, and irrigation/moisture stress.

3 – There is no cure for plant virus infection. Once infected, plants are infected for life, and every cell in an infected plant will eventually contain virus. There are no “silver bullets” or miracle cures, despite what some may claim. Infected plants can’t be saved, although growers could see some improvement in their appearance and growth between now and harvest. We don’t know why that is, so we don’t know how to promote it. This means that growers with infected plants should focus on preventing spread to healthy plants. Since we can’t test every plant, the safest assumption is that apparently symptomatic

(continued on page 22)

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BERRY PRODUCTION

Strawberry Viruses... *(continued from page 21)*

plants are infected, while those that “look good” aren’t, even though we know this isn’t always true. Therefore:

a – If almost all of the plants in a field are stunted and symptomatic, applying an insecticide will not help them. The only possible benefit from such a spray would be to minimize possible spread to nearby healthy strawberry fields. Treating severely-infected fields that are isolated is extremely unlikely to produce any benefit whatsoever.

b – If there are enough good plants in a field that look to be worth saving, application of a systemic insecticide should be an effective treatment to prevent or minimize spread of these viruses. Scientists disagree to some extent on the effectiveness of this approach, but the plant pathology literature suggests treating can reduce further disease spread. Remember that this only works if there are aphid populations in the field. If there are no aphids, what is an “aphid-killer” going to accomplish? Growers may consider treating to prevent aphid populations from developing this spring as a type of “insurance”, but an alternative approach that should be cheaper and more environmentally friendly would be to scout fields more closely for aphids so that a crop is treated only if when determined necessary. If a grower decides to treat, the systemic insecticides need to be applied at least 14 days before bloom to avoid injuring pollinator populations. Recommended insecticides include imidacloprid (Admire Pro for drip, Provado for foliar applications) and thiamethoxam (Platinum for drip, Actara for foliar spray). There may also be some generics labeled for strawberry that have the same active ingredients, but may be cheaper.

4 – Don’t be too discouraged. This virus situation is yet another plant disease problem in strawberries tied to transplants that look healthy, but aren’t, but should be “containable” to this year. Those involved in strawberry plant production in Nova Scotia are aggressively working to correct their virus situation. Although many growers consider carrying strawberry plants over from one season to another, 2013 looks to be a very poor year for this. If possible, all strawberry plants (*Note from Kathleen Demchak – this means plantings that are known to be infected with the viruses in question, that show symptoms, or that were obtained from the nursery in question*) should be destroyed after this season’s harvest is completed, to avoid potential carry-over of SMYEV and SMoV. *Leaving potentially infected plants in the field this summer risks virus spread into next years’ crop.* Fields in matted-row production should be monitored for potential virus incidence as well. Southern Region strawberry research and extension folks are meeting with national experts and Canadian representatives in late March to plan methods to avoid a repeat of this past fall.

Additional notes from Kathleen Demchak

Regarding the recommendations Dr. Johnson discusses above for Virginia growers, which would apply just as well to Pennsylvania growers, I want to stress a few points.

1) Make sure that you scout for aphids, as aphids are needed for the viruses to be moved around. Don’t just spray without knowing whether you have a reason to do so. Treat plants if you find aphids, but be careful to observe label recommendations to avoid harming pollinators.

2) Carrying over plantings for a second year is NOT a good idea if you suspect or know that your plants are infected.

3) Take care of your plants no matter what. Giving up on them could ensure that infected plants perform more poorly, as well as healthy ones.

4) If you see plants that are stunted and showing symptoms depicted below, an additional option for smaller growers is to rogue plants – probably only practical if a relatively small portion of them appear to be infected and they look noticeably worse than others. Remove the diseased plants from the field.

Regarding the pictures above, I’m guessing that most of you will wonder whether you have seen similar symptoms before. I’m wondering the same thing. Strawberry mild yellow edge virus is said to be the most common strawberry virus, and was first described in 1922, but symptoms only show up when a second virus is present. Much of the work done on strawberry mild yellow edge virus was done on older cultivars grown on the west coast through the 1950’s, 60’s and 70’s. While the current work is finding the serious problems to be caused from strawberry mild yellow edge virus in combination with strawberry mottle virus, similar symptoms have been described when it’s been found in combination with three additional viruses, at least two of which I’m guessing are also around. Our native strawberries are susceptible to these viruses as well. Different strains of strawberry mild yellow edge virus that differed in severity had been documented in the past on the west coast. Further, there’s been some indication that plug plants seem to be healthier than fresh-dug plants planted in Florida even if infected. That might be because northern plantings had an opportunity to become well-established before fruiting begins.

Plug plants originating from other sources (runner tips grown on-site or from tip suppliers other than affected one(s) in Nova Scotia), and dormant plants (as used for matted-row production or for summer-planted plasticulture) appear to be okay, though this does underline the importance of getting plants from nurseries that do virus testing and utilize tissue culture.

For more info on the situation in Canada, you can “Google” the words “Great Village Nova Scotia strawberry virus” for some recent newspaper articles. Note that one source describes the combination of two viruses mentioned above as a new mutant virus, but really, the problem is just that two viruses are present at the same time giving the plants too much to deal with - not that a new virus had formed.

Several of our Pennsylvania extension educators and I will be collecting and sending additional plants from a number of Pennsylvania farms to Dr. Martin to obtain a more complete picture of the situation and will provide updates as they are available. We’re working with nurseries to identify sites that definitely should be tested and that will give us the most information on the situation (some of you reading this article have already been contacted to make arrangements for obtaining samples). Updates on the situation will be published as we gather more info and the season progresses.

Finally, I need to give credit to a number of people for the information above - Robert Rouse, Chuck Johnson, and Robert Martin for sure. Also, information is obtained from ***Virus Diseases of Small Fruits***, USDA-ARS Agricultural Handbook No. 631, published in 1987 (R. H. Converse, Editor) and the journal articles cited within.

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Growing Perennials

Emelie Swackhammer

Thinking about growing a few perennials in containers to sell? Before you get started, there are important things to think about.

Maybe you have a farm market stand and you are contemplating growing a few mums to supplement your fall pumpkin display? Or, maybe you've been approached by a landscaper who would like a local source of ornamental perennials to use in their installation jobs?

Before you make the investment, consider the potential return and your market. Wholesale mums are available every fall. Price per pot often decreases in large-scale production because efficiencies of scale apply. Can you produce these plants for less? Don't forget to figure in the time you will be spending on raising the crop through the growing season. Can you compete with the wholesale price, or would you be better off buying some in? Do you have a good estimate of how many of which kind of perennials your landscaper friend will really use?

Growing container perennials requires space and there are some start-up costs. You will need a flat, weed-free area to grow on. It should be in full sun for most plants, and is best if it is protected from strong winds which can knock the pots over. Many growers prepare a leveled area covered with gravel or sturdy nursery-grade weed mat fabric. The growing area has to be near a source of water for irrigation. Drip irrigation on a timer will work best for keeping containers watered through the heat of the summer. One spaghetti tube in each pot can keep the root zone moist without getting the leaves wet, which will decrease disease problems and result in a higher quality finished plant. Many growers prefer to use two tubes per pot as an insurance policy against one tube becoming clogged and the plant dying from lack of water.

Plants grown in containers often suffer from nutrition problems. Rainfall can leach nutrients from the potting mix and leave the plants deficient. Most growers will use a fertilizer injector to supplement the crop on a regular basis. Get your irrigation water tested to find out if you need to do any pH adjustment and determine the best fertilizer to use.

Propagation of perennials varies. Some popular perennials like *Echinacea purpurea*, *Heuchera* and *Coreopsis grandiflora* are grown from seed. To be successful you need to know that plant's specific requirements for seed germination, and provide those conditions. Seed grown in plug trays where each plant has its own individual growing cell produce small transplants that will tolerate transplanting better with less recovery time. However, seeding the plug trays can be challenging because some seed is just so small. If you want to grow from seed, you would benefit from finding a device that will help you handle the small seeds. Many different types of seeders are available; find one that fits your scale of production and your budget. Alternatively, it might suit your operation better to skip the plug production step and simply buy plugs in from a large-scale grower.

Fall mums are usually grown from rooted cuttings which are ordered from a large-scale producer. Many of the 'latest and greatest' cultivars of perennials are available as small rooted cuttings. They are vegetatively propagated to achieve uniformity and avoid the variability that is found in seed-propagated crops. Vegetatively propagated perennials, especially the newest offerings, are often protected by patents so to grow them you have to buy them in from a legal producer.

One more critical production aspect to think about is how to overwinter any plants that you don't sell during the first year of

production. Fall mums usually will not overwinter well in containers, and do not fill out well their second year in a pot, so you should sell all of them the first year. Many other perennials can be overwintered if you provide them the right amount of protection from cold temperatures, winter desiccation and vole damage.

There are a few important legal considerations in perennial production too. You will need a Pennsylvania Nursery License from the Pennsylvania Department of Agriculture. PDA will inspect your nursery to certify that your plants are free of insects and diseases and cleared for sale. You also have to make sure that the pot size you are actually using is the same as the pot size you are advertising. In the past some growers got into trouble for advertising a bigger pot than they were actually using.

Here are links to two great fact sheets to help you get started. If you would like a hard copy of these fact sheets, call your county's extension office and ask them to send a copy to you.

[Growing Garden Mums for Fall Sales](#) (University of Massachusetts Extension)

[Starting a Nursery Business](#) (University of Kentucky Extension)

[Herbaceous Perennials Production: A Guide from Propagation to Marketing](#), written by Dr. Leonard Perry of the University of Vermont, is an excellent production guide.

*Ms. Swackhammer is with Penn Extension in Lehigh and Northampton Counties. From the **Vegetable, Small Fruit and Mushroom Production News** blog, Penn State Extension, March 30, 2013.*

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