President’s Message

As I start to write this message the outside temperature is 5°. It’s not abnormal, but it has been a long time since we have seen that temperature in March.

The farm bill has passed Congress and it appears that the fruit and vegetable industry came out looking good. This legislation reinstates the funding for specialty crop research incentive.

With the final financial figures in for the 2014 SHAP Apple Booth at the Farm Show, we were able to increase money for research. SHAP Extension Advisory Committee funding for 2014 will be $25,000.00, and an additional $15,000.00 will be funded to the Research Committee budget. I would like to thank Phil Baugher, Dave Wenk and their committees for funding the 2014 research projects. Also, the Endowment Committee was able to fund a $9,000.00 research project this year. Thank you to everyone who helped make this happen.

Immigration Reform: I hope Congress will make a concerted effort in 2014 to resolve all the problems and differences and come to an agreement so that all of us as a nation can move forward in agriculture and many other businesses can build a strong industry.

We have had a long winter and spring WILL come. Hopefully we can get our trimming and early spring chores done! Bud-break and bloom will come fast and let’s hope for good pollination weather. Our blueberry bushes are changing color and that is my first sign dormancy is ending since they are shallow rooted.

I would like to welcome Steve Johnston to the SHAP Board of Directors. Steve represents western Pennsylvania.

Tim Weiser

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The Digital Production Guide

Last month the majority of the PA Fruit News issue was devoted to the reports of grower funded research projects. The Pennsylvania industry is truly a forward thinking group to place so much emphasis and support behind the research scientists in the Mid-Atlantic region. The announcement that the Knouse Board of Directors is also doubling its contribution to the check-off program for processing apples also shows a strong commitment to the industry. This month there are reports in this issue from the projects funded by the SHAP Extension Advisory committee. Sometimes I think growers may not see the fine line between Extension and Research activities, but there are differences. One of the major differences is that Extension is the primary educational arm of a University. It provides information in the form of newsletters, fact sheets, educational meetings and production guides.

Penn State has been revising and updating the Tree Fruit Production Guide, or TFPG as we often refer to it, for many years. The oldest copy I have in the files I inherited is from 1971 when it was titled “Agricultural Chemicals for Tree Fruit Production.” The Horticulture section authors on that guide were Tony Hatch, Frank Heweston and Marshall Ritter. The Pathologist authors were Fred Lewis and Don Petersen and there were 6 entomologists listed as authors. Even then the entomologists outnumbered the horticulturists. The “Guide” had a total of 78 pages of which 37 pages were totally devoted to what chemicals to spray. Contrast that with the most recent version which has 83 pages just on cultural information in the first section.

In the intervening years, the TFPG has grown considerably and has become much more than a listing of chemicals. Our philosophy was to make the guide a ‘one-stop’ reference tool that was as comprehensive as possible. We maintain cultural information, that while it might not change frequently, still provides our latest information on rootstocks, growth regulators, plant nutrition, nurseries, pruning systems and other items. Part two is largely devoted to helping growers understand the biology and life cycle of insects, diseases, mammals, and nematodes. Part three talks about safe handling and application of pesticides, pesticides labeled for use in orchards, and strategies to avoid development of resistance to pesticides. Part four is a quick reference section for information on labeled pesticides. Part five is the nuts and bolts of IPM recommendations for the tree fruit crops. Part six revolves around harvest and postharvest handling of fruit. Part seven covers the manufacture of fresh apple cider. Part eight lists food safety practices. Part nine covers farm management topics including production budget costs and farm labor regulations. Part ten is the newest addition and covers marketing including customer segmentation, retail layout and using social media to attract customers. A hard copy version of the guide is available for purchase through the Agriculture Publications office at University Park.

We also have an electronic version in a pdf format that is available for purchase at a slightly lower cost. You may remember that in past years the electronic guide was available for free; however, with rising costs and shrinking budgets we needed to begin charging a fee. This new electronic guide has a few more features than the old one. The table of contents are hot linked to the appropriate sections in the guide and all the URL’s to additional reference material are also hot linked. For example, on page 79 of the electronic guide at the bottom of the page are two links to additional information on Gisela cherries (giselacherry.com). This year we are trying an experiment to see what the demand is for an enhanced electronic version.

This is not something new. PSU was the first institution in the country to put its production guide up on line back in the mid-1990’s. This was followed by the PSU Agronomy Guide and other PSU publications. Internet capabilities have certainly improved since the first guide was uploaded and they are continuing to expand. In future years we intend to expand the “bells & whistles” of the electronic version. In order to do that however, we need to know what the demand will be and we will need to charge for the electronic version to cover the enhancement costs.

Is this electronic version everything we had hoped or wanted to have? No, we are still in the experimental stage. University regulations and requirements restricted all that we wanted to add to this year’s electronic format. Some of our future goals will be the addition of more color images, something that would be cost prohibitive in a hard copy. We hope to utilize more extended links, database information, and videos to access within the electronic version. We are also looking at the potential for a subscription type service where we could provide updates to the versions much like you receive notifications for aps for your mobile devices. For this year’s version we are going to offer the option of purchasers to opt into an electronic notification system of update emails. I see this electronic format becoming the ultimate “go to” web site for tree fruit production information.

In the meantime, if you have any suggestions for features that you would like to see in an electronic version, please send them to me and I will see how many features we can add in future editions.
EPA ANNOUNCES NEW RULE PROPOSALS FOR AGRICULTURAL WORKER PROTECTION

The Environmental Protection Agency (EPA) has proposed revisions to its Worker Protection Standard (WPS) for farm workers who regularly deal with pesticides. The revised rules are meant to “increase protections from pesticide exposure for the nation’s 2 million agricultural workers and their families,” the agency said in a release.

This is the first significant change to the WPS since 1982. Changes proposed in EPA’s rule revision affecting employers include, among other points:

- Increased frequency of mandatory training (from once every five years to annually) to inform farm workers about the protections they are afforded under the law;
- Expanded mandatory posting of no-entry signs for the most hazardous pesticides;
- First time-ever minimum age requirement: Children under 16 will be prohibited from handling pesticides. EPA has included an exemption for farm owners immediate families;
- Make available to farm workers or their advocates (including medical personnel) information specific to the pesticide application, including the pesticide label and Safety Data Sheets;
- Record keeping requirement - records must be retained and made available for a period of two years.

EPA estimates that the changes would cost industry between $67 million and $87 million to implement and maintain. The proposed rule will be published in the Federal Register in early March. Stakeholders will have 90 days from the date of Federal Register publication to comment on the revisions.

USApple will be working with allied industry organizations including the Minor Crop Farmer Alliance (MCFA) and the Pesticide Policy Coalition (PPC) to analyze the proposals and develop comments to the EPA. Additional information on the proposed rule revisions, including information on how to submit comments may be found on the EPA website. (Apple Bites, 2/24/2014)

NEW FARM BILL SIGNED INTO LAW

After three years of negotiation, Congress finally passed a new Farm Bill and President Obama signed it into law on February 7 at Michigan State University in East Lansing. Agriculture Chairwoman Debbie Stabenow (D-Mich.) as well as a number of apple leaders are alumni of the school which boasts a strong agricultural program.

The legislation maintains or expands funding for our priority programs including the Market Access Program (MAP), Specialty Crop Block Grants and Fresh Fruit and Vegetable Program. Importantly, the legislation restores funding for the Specialty Crop Research Initiative (SCRI) and Clean Plant Network which lost funding under the 2008 extension.

Earlier versions of the legislation put new restrictions on crop insurance but the final package will not have any negative impact on funding of the apple crop insurance program. With the new Farm Bill signed into law, USApple and our coalition partners in the Specialty Crop Farm Bill Alliance (SCFBA) are focusing on implementation issues. They will be to ensure the programs are properly implemented and to fight any efforts to cut or make negative changes to them.

FARM BILL HIGHLIGHTS

- $200 million per year for the Market Access Program (MAP).
- $80 million per year for the Specialty Crop Research Initiative to fund important research programs.
- $150 million per year for the Fresh Fruit and Vegetable Program, to provide a fresh fruit or vegetable snack every day to low-income school children.
- $85 million per year for the Specialty Crop Block Grant program to help producers make their operations

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AG ISSUES continued from page 5

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- $75 million per year for pest and disease mitigation to remove threats to producers’ ability to harvest a healthy and abundant crop.

- A Stronger Crop Insurance program available to producers in 2015.

FDA RELEASES LATEST RESULTS OF FOOD RESIDUE TESTING
The latest food residue testing data from the Food and Drug Administration (FDA) reports that 98.4 percent of domestic food samples collected and analyzed by the FDA in 2011 complied with pesticide tolerances. As part of the market basket testing, the FDA gathered and tested 89 individual samples of fresh apples and reported that 39.5 percent of the samples showed no detectable pesticide residue, with the remaining 60.5 percent having residues well within established EPA tolerances.

The agency concluded that “Results in these reports continue to demonstrate that levels of pesticide residues in the U.S. food supply are well below established safety standards.” The FDA program is separate from USDA’s Pesticide Data Program (PDP) that has been issuing annual reports on residue testing in foods since 1991.

In addition to the domestic testing program, the FDA tested imported food from 99 countries. Analysis of 4,897 imported food samples found that 64.5 percent had no detectable residues and 28.4 percent contained residues within tolerance limits. Illegal residues were found in 7.1 percent of samples. Of the 346 imported samples with illegal residues, 331 had residues for which no tolerance was established and 15 were above tolerance limits. The majority of imported samples came from Mexico (1,964), which had a violation rate of 6.9 percent. Countries with the highest violation rates were India (22.9 percent), Vietnam (11.9 percent), China (8.5 percent) and Guatemala (7.1 percent).

In a separate report of residue testing conducted during 2012, the California Department of Pesticide Regulation tested 662 fresh apple samples gathered from throughout the state and found that 59 percent of the samples showed no detectable pesticide residues, while the balance of 41 percent had residues averaging just seven percent of (or 93 percent under) the EPA established tolerance for the residues detected. (Apple Bites, 2/24/2014)

NEW ARS ADMINISTRATOR ANNOUNCED
Dr. Chavonda Jacobs-Young was named the Administrator for the Agricultural Research Service (ARS) by USDA Chief Scientist and REE Under Secretary, Dr. Catherine Woteki. Dr. Jacobs-Young previously led ARS’ Office of National Programs, which manages the research objectives of the Agency. She also led the Office of International Research Programs which is responsible for ARS’ liaison with its international partners. Dr. Jacobs-Young assumed her new duties effective February 23, 2014. (Apple Bites, 2/24/2014)

FARM BUREAU RENEWS THE FIGHT FOR IMMIGRATION REFORM
Farm Bureau and other agriculture organizations recently hosted a briefing on Capital Hill to outline farmers need for immigration reform. The session was organized by the Agriculture Workforce Coalition, of which the American Farm Bureau Federation is affiliated, is part of renewed effort to see immigration reform enacted by Congress this year.

Efforts to establish a new system for agriculture labor enjoyed some success last year in Congress with the Senate adopting a comprehensive reform package but the effort stalled in the House. Recently, the World Agriculture Economic and Environmental Services released a report on the potential impact to food prices if immigration reform focuses solely on enforcement. Food prices would increase by 5 to 6 percent over the next five years, and production would decline by roughly $60 billion, if that scenario was to play out.

The study, called “Gauging the Farm Sector’s Sensitivity to Immigration Reform,” was commissioned by AFBF and done in conjunction with the #ifarminmigration grassroots campaign, which seeks to promote immigration reform. Instead of focusing exclusively on enforcement, Farm Bureau is encouraging Congress to embrace a comprehensive plan that includes a redesigned guest worker program and the chance for skilled agriculture employees to earn an adjustment of status.

“Status quo is not a viable option for anyone involved in this issue, and as a nation, we expect better,” said AFBF President Bob Stallman. “Farmers and ranchers recognize there are costs to ensuring they have a legal, stable workforce. And we are willing to step up to the plate.”

Fruit and vegetable production stands to suffer the greatest risk under an enforcement-only scenario. “Over five years, an enforcement-only approach would lead to losses in farm income large enough to trigger large scale restructuring of the sector, higher food prices, and greater dependence on imported products.” Stallman said.

LOCAL FOODS HAVE ECONOMIC IMPACT
Farms that sell their products locally can boost economic activity in their communities, according to a Penn State study. “There has been a lot of hope, but little evidence, that local food systems can be an engine of economic growth in communities,” said Stephan Goetz, a professor of agriculture economics at Penn State. “Our findings show that, at least in certain regions of the country, community-focused agriculture has had a measurable effect on economic growth.”

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Goetz focused his work on looking at the impacts of community-focused agriculture on local economic growth, rather than simply examining agriculture sales. In the Mid-Atlantic region, which includes Pennsylvania, a $1 increase in the level of direct farm sales resulted in a $9 increase in overall farm sales.

“We found that for every $1 increase in agricultural sales, personal income rose by 22 cents over the course of five years,” said Goetz. “Considering the relatively small size of just the farming sector within the national economy, with less than 2 percent of the workforce engaged in farming, it’s impressive that these sales actually move income growth in this way.”

FARM BUREAU FILES FOOD SAFETY COMMENTS FOR IMPORTED FOODS
Pennsylvania Farm Bureau is calling on the Federal Drug Administration to hold imported foods to the same safety standards as domestic produce under proposed food safety guidelines. Pennsylvania Farm Bureau and the American Farm Bureau Federation filed comments with the FDA encouraging the agency to hold a second comment period on the rules for imported food, due to the scope and complexity of the proposal. Additionally Pennsylvania Farm Bureau asked the FDA to maintain the same standards and exemptions for domestic and imported produce.

More than half of the fresh fruits eaten in the United States are grown outside of the country. Food is imported from more than 150 countries and through more than 300 ports.

The FDA has proposed making a regulatory exemption for growers with farm sales of $25,000 or less per year. Few domestic growers would qualify for these exemptions, but that threshold would be vastly different for foreign farmers, PFB said in comments.

For instance, China leads the world in apple production, but most farmers there make less than $25,000 a year, Farm Bureau said. Under the small farm exemption, the vast majority of apples imported from China would be exempt from food safety rules.

“That puts United States producers at a significant competitive disadvantage in their own domestic markets, creating widely divergent and unpredictable levels of food safety regulation for United States consumers,” Farm Bureau said. If food safety rules are not applied similarly to both domestic and imported foods, those regulations could constitute a trade barrier that would be open to a World Trade Organization challenge, PFB said.

It is also critical that FDA must have adequate resources to implement new regulations, along with sufficient personnel to inspect imported food. “Without robust enforcement, the content of the food safety rules for imported produce are meaningless from a food safety perspective,” PFB said.

GLENN “GT” THOMPSON WINS GOLDEN PLOW AWARD
Congressman Glenn “GT” Thompson has received the “Golden Plow” Award, the highest distinction Farm Bureau bestows on a member of Congress.

Thompson, a Republican from Centre County, has become a staunch advocate for agriculture during his tenure with Congress. Thompson, who represents Pennsylvania’s 5th Congressional district, received his award during Pennsylvania Farm Bureau’s National Legislative Conference in Washington D.C.

The Golden Plow, given by the American Farm Bureau Federation, recognizes up to two members of Congress who show broad support for Farm Bureau and agriculture through their votes and interactions with members. Thompson, who was nominated by Pennsylvania Farm Bureau, was the sole recipient of this year’s award.

“Congressman Thompson has been a strong and consistent supporter of Pennsylvania agriculture. From his first day in office, he has demonstrated a keen interest in issues impacting agriculture and rural communities,” said PFB President Carl T. Shaffer. “GT continually tours Pennsylvania farms and sits down with farm families to hear about their concerns and dreams. He then takes that knowledge back to Washington in order to protect farmers from onerous regulations and champions legislative efforts to help agriculture and rural areas prosper.”

Thompson, who serves on the House Agriculture Committee, played a key role in securing a new Farm Bill, serving on a conference committee that hammered out differences between the House and Senate versions. As chair of the Subcommittee on Conservation, Energy & Forestry, Thompson ensured the state’s forest products industry was represented in the 2014 Farm Bill. Thompson has co-sponsored legislation to alter how education dollars are allocated to schools so that more populous districts are not given an advantage, and also a bill that clarifies rules farmers need to follow with pesticide permits.

Thompson said he was honored to receive the award, and thanked Farm Bureau members for their continued support and interaction. “It has been a distinct privilege to work on behalf of our family farms to promote a robust agricultural sector, which is fundamentally important to Pennsylvania and the economic well-being of the country,” he said. “I greatly appreciate this recognition and also want to thank the American Farm Bureau and the Pennsylvania Farm Bureau for their advocacy on behalf of agriculture.”

continued on page 8
Pennsylvania Farm Bureau is pleased with the state's budget proposal by Gov. Tom Corbett. His $29.4 billion spending plan makes commitments to funding agriculture programs, while holding the line on taxes. Overall, Pennsylvania Farm Bureau is pleased with the state’s budget mostly positive for agriculture. Funding agencies like Penn State Cooperative Extension and the Department of Agriculture helps the state’s farmers improve their operations.

Gov. Corbett has proposed spending an additional $1.5 million on agriculture research and Cooperative Extension programs administered by Penn State and providing more resources for the Department of Agriculture. Corbett has proposed a 9 percent increase in the general government operations budget for the Department of Agriculture from $22.6 million to $24.7 million. That funding supports jobs and services within the department.

In prior budget years, Cooperative Extension and research has seen budget cuts and level funding. As a result, Penn State has consolidated services and not filled some vacant positions in order to meet the new fiscal realities. That’s why Farm Bureau is thankful that Corbett has proposed additional funding for Extension.

**NEW PENN STATE RESEARCH CENTER TO FOCUS ON WATER QUALITY**

Penn State will use a $2.2 million grant from the Environmental Protection Agency to launch a new research center aimed at improving water quality.

The Penn State Center, called the Center for Nutrient Solutions, will be comprised of seven research teams that will look at existing research and new studies to find solutions for nutrient runoff. The three-year project will look at nutrients coming from multiple sources, including farms and municipal systems, and determine ways to mitigate the problem. Best management practices used by farms have reduced nutrient runoff, said James Shortle, a Penn State researcher who is directing the center.

“We need more science to be sure we select the right practices that can be implemented in the right places in a cost-effective manner,” he said. The center will focus its research on four Chesapeake Bay tributaries: Conewago Creek, Mahantango Creek and Spring Creek in Pennsylvania, along with the Manokin River in Maryland.

Once the project is completed, Penn State expects to have decision making tools available that can be used by farmers, government planners and municipal authorities to make changes that will provide the largest benefit to nutrient reduction, while addressing economic challenges, Shortle said.

**HIGH TUNNEL GROWERS SCHOOL OFFERED**

Penn State is hosting the Bio-Intensive High Tunnel Growers School. The program will be held on March 31 and April 1, 2014 at the Penn State Bucks County offices in the Neshaminy Manor Center, Doylestown, PA. The 2014 High Tunnel Growers School will teach new growers the latest techniques to produce high quality, high tunnel-grown vegetables. While the focus is on high tunnel production to meet the increasing demand for locally-
grown vegetables over a longer season, greenhouse growers will find this program very useful.

Marketing tomatoes and other high tunnel produce in the 4-6 weeks before and after the traditional outdoor production season has the opportunity to yield enterprising producers substantial profits. This school will include advanced topics on biocontrol of insects and diseases. Pest management and fertilization presentations in this program will cover both conventional and organic methods. PDA pesticide credits will be awarded to licensed applicators.

Early registration fee for the program is $145.00 and includes all program materials, lunch, morning and afternoon breaks and a CD or DVD of all presentations, handouts, and some too large to print publications. After March 25, 2014 the fee for any remaining seats is $175.00. Preregistration is required. Space is very limited, so register early.

For additional information please call Steve Bogash at the Penn State Extension Cumberland County office at 717-240-6500 ext. 6507 or by email at smb13@psu.edu. Online registration, the complete agenda, and more information can be found on the registration website. To register by phone, contact Alicia Cramer at 717-240-6500. Source: Penn State Cooperative Extension

**VEGETABLE GUIDE AVAILABLE FROM PENN STATE**

The 2014 edition of the Commercial Vegetable Production Recommendations guide is now available on-line. The Commercial Vegetable Production Recommendations guide for Pennsylvania contains detailed information on growing vegetables based on research results as well as the knowledge and experience of growers, extension educators and specialists and industry personnel. It is intended to help commercial vegetable growers make informed decisions about which farming practices to use.

The 2014 version of the Commercial Vegetable Production Recommendations guide for Pennsylvania is now available on the web at [http://extension.psu.edu/plants/vegetable-fruit/production-guides](http://extension.psu.edu/plants/vegetable-fruit/production-guides).

Source: Penn State Cooperative Extension

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**Penn State Offering Farm Safety Courses In April**

**How to Write a Harmonized GAP Farm Food Safety Plan**

**When:** Offered twice;
April 10 in Ephrata, PA at the Four Seasons Produce conference room, and
April 14 in University Park, PA in the Food Science Building.
Both sessions are from 9:30 am to 3:30 pm

**Fee:** $50.00

**Course description:** This course is designed to assist produce growers who are writing a Harmonized Good Agricultural Practices (GAP) food safety plan and who are considering or required to submit a USDA third party audit. It is helpful but not necessary to have attended Keeping Fresh Produce Safe Using Good Agricultural Practices, the 5 hour certificate program that covers farm practices and food safety risks.

This emphasis for this course is what it takes to comply with the documentation requirements in the Harmonized GAP standards. Resource materials provided include a copy of the standards, a farm food safety plan template, fact sheets, and an example of a completed plan. Forms and logs necessary for documentation of GAP practices are also provided. Lunch is included.

For more information on the course contents contact Dr. Luke LaBorde, Penn State Department of Food Science, 814-863-2298 or lfl5@psu.edu

**How to register:** Please register for either course session on-line. To register, go to the Penn State farm food safety web site at [http://extension.psu.edu/food/safety/farm](http://extension.psu.edu/food/safety/farm) and click on Developing a Farm Food Safety Plan in the Courses and Workshops section. Click on the location/date of the session you wish to attend. The direct link is [http://extension.psu.edu/food/safety/courses/developing-a-farm-food-safety-plan](http://extension.psu.edu/food/safety/courses/developing-a-farm-food-safety-plan). For those without computer access, call 877-489-1398.

**Seating is limited.**
Special Thanks To All Who Helped With the 2014 PA Farm Show Fruit Exhibits, Apple Tasting. “Meet the Grower,” Apple Sales and Food Court
By Matt Strite, SHAP Farm Show Committee Chairperson, and Tara Baugher, Fruit Exhibit Coordinator

The fruit exhibit area of the Pennsylvania Farm Show took on a new look this year, thanks to the efforts of a joint committee of representatives from the SHAP fruit exhibit, PA Apple Marketing, YGA fruit sales, SHAP food court and Adams County Fruit Grower exhibit committees. Julie Bancroft pulled everyone’s ideas together for a new and attractive layout that showcased our fruit industry. We thank our exhibitors and numerous volunteers who helped in the apple exhibit area and also in the food court!

The Food Court again raised funds for the SHAP Research and Extension Committees. The county representatives and volunteers worked hard, with some individuals coming in multiple days. For the second year, the Young Grower Alliance, PA Apple Marketing Board and SHAP worked together to staff an apple sales area near the fruit exhibits. Farm Show participants had the opportunity to “meet the grower” and taste apples sliced by PA Apple Marketing Board volunteers. They then only had to walk a few steps to purchase the varieties being sampled on a given day. Thank you, Ben Wenk, Catherine Lara, Alana Anderson, Julie Bancroft and Patty Wertz for being volunteer coordinators for the fruit tasting and YGA sales booth.

The Fruit Exhibit area also accommodates a Farm Show Learning Station sponsored by young growers and industry exhibits by the Adams County Fruit Grower Association and Knouse Foods Cooperative. The theme of the educational exhibit was “Innovative Thinning in Pennsylvania Orchards.” Thank you, Ellie Vranich, for providing SHAP leadership for the fruit exhibit area and Patty Wertz, for being a liaison with the Farm Show carpenters.
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The peach breeding program of the University of Arkansas is a mature program which concluding its 50th year of work in 2013. The program begun in 1964 under the direction of Dr. James N. Moore and since then a total of 11 peach and five nectarine varieties have been released.

The first varieties were yellow, non-melting peaches destined for the processing industry and baby food, such as ‘Goldnine’, ‘Goldilocks’, ‘Allgold’, ‘GoldJim’, and ‘Roygold’. In the mid-1980s and early 1990s some of the selections within the program were observed to have different flesh types than simply melting and non-melting, and these often had superior firmness and sometimes crispy texture. It was not sure what these flesh types were, but later were described as “slow-melting” and “non-softening”.

In the mid-’90s, the program had a shift in its objectives, ending the processing peach focus and breeding only for the fresh market industry. Therefore, hybridizing peaches and nectarines was emphasized, focusing mostly on firm, melting and non-melting-flesh material, white and yellow flesh color, different flavors, varying acidity and sweetness levels, and a range of ripening dates. The varieties White River (melting), White County and White Diamond (slow melting), White Cloud (non-melting), and ‘White Rock’ (non-melting, but with a different type of non-melting flesh, possibly non-softening) were all white-flesh, and were released between 2002 and 2009. The first fresh-market yellow-flesh variety Souvenirs was released in 2012. Nectarines released include ‘Westbrook’ (melting, yellow), ‘Bradley’ and ‘Arrington’ (yellow and considered non-melting as the flesh type was derived from processing peach genetic material), all released in 2000, followed by the recently released ‘Bowden’ (white and likely non-melting or non-softening) and ‘Amoore Sweet’ (yellow and non-melting or non-softening). Among this group are low-acid flavors along with more standard-acid types.

Until 2010, the program continued breeding, crossing, and selecting new individuals and releasing new varieties utilizing the flesh types in the program’s germplasm. The knowledge accumulated about these flesh textures (and a range of other traits) was gathered by evaluating fruits through observation and physical measurements. No molecular characterization had been used. The Arkansas peach breeding program did not have any type of postharvest evaluations, however, the new releases were suggested to be firmer in handling due to having improved textures and noticeably increased firmness. In 2010 the first postharvest work was implemented with the objective to study the postharvest potential of named varieties and selections with different textures.

With the beginning of the peach genome characterization and working together with Dr. Cameron Peace at Washington State University and along with the Specialty Crop Research Initiative grant RosBREED, attention was placed on more precise flesh characterization of the Arkansas peaches and nectarines. This work has allowed some differences between the textures to be more clearly and distinctly defined using more objective and precise firmness measurements in conjunction with the molecular characterization of genes controlling texture.

One of the reasons ‘White County’, a freestone and ultimately melting-flesh peach, was released as a variety is because it’s texture is different from most traditional melting-flesh peaches. It maintains its firmness for a longer period on the tree than the standard melting flesh types, but when mature its flesh melts completely; we refer to this as a slow-melting flesh type.

‘White Rock’ also has a flesh type that is not fully understood. It maintains its firmness for a long period on the tree as well as after harvest, but it never fully melts and was observed to stay firmer than non-melting flesh. Since it was judged to be different from non-melting, it was thought that this flesh type was non-softening, a newer name and flesh type than known to occur in the Arkansas program. However, after the first molecular study it was determined that it had non-melting flesh. The particular flesh of ‘White Rock’ suggests that more than one gene could affect its texture, opening new ideas about genetic characterization of flesh types.

After the application of the endopolygalacturonase (EndoPG) DNA test (the enzyme involved in the internal flesh softening process of peach/nectarine at maturity) was used across a range of Arkansas varieties and selections, more questions were arose. According to endoPG molecular marker, the new varieties Bowden and Amoore Sweet are non-softening, as well as the older processing variety Roygold. All three of these had been thought to be non-melting. This causes one to scratch one’s head, or possibly question the entire molecular characterization approach.

EndoPG is only able to differentiate between melting, non-melting, and non-softening flesh types. The slow-melting trait cannot be identified by this molecular marker. To resolve this, work is currently being done to identify the slow-melting gene and to better understand it in varieties such as ‘White County’, ‘White Diamond’ and ‘Souvenirs’.

The combination of molecular techniques and postharvest evaluations has increased the knowledge of peach texture

continued on page 13
Performance of Sweet Cherry Rootstocks in the 1998 NC-140 Regional Trial in Western North America  
By F. Kappel et al.

A regional trial evaluating the performance of rootstocks for sweet cherries in western North America was planted in the spring of 1998 at six locations in the states of Washington, Oregon, Colorado, and Utah, and in the province of British Columbia, Canada. The rootstocks included: Mazzard seedling (Prunus avium), P. mahaleb seedling, Gisela® (G) 3, G5, G6, G7, Giessen (Gi) 195/20, Gi 318/17, Gi 473/10, Tabel® Edabriz, Weiroot (W) 10, W13, W72, W53, W154, and W158. The scion cultivar was ‘Bing’. Rootstocks significantly affected tree size, yield and fruit quality, and these effects were not consistent across all locations. However, Mazzard and Mahaleb consistently produced among the largest trees and W72, G3 and W53 among the smallest. Root suckers tended to be most numerous for Tabel® Edabriz and the Weiroot series. Mazzard and Mahaleb usually had the lowest yield and yield efficiency. G3, G5, G7, W53 and W72 were fivefold or more as yield-efficient as Mazzard.

(From J. Amer. Pomol. Soc. 67:186)
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Nicaragua Ag Extension Project—Start with the Soil! By Alana Anderson, Penn State Extension Young Grower Alliance

The soil was dark, moist, and smelled...rich. If the dirt before us could be likened to a gourmet meal, it would be a hearty beef and vegetable stew. Stews are super soups: incredibly tasty; they nourish the body and feed the soul during the darkest months. The soil we held in our hands that day was the equivalent of beef stew for the seedlings cradled in the repurposed tire beds; this super soil was laboriously and lovingly prepared by our host, Frank Tondeur, who believes that feeding the world starts with gourmet soil.

December 2013 marked the 4th trip to Nicaragua for several members of the Young Grower Alliance (YGA), a coalition of specialty crop growers that has quickly spread beyond Adams County, and even PA. Ben Wenk, Carla Snyder, and Mike Colleges had previously traveled to Nicaragua in January of 2013, and were so inspired that they eagerly returned the following December. They joined Dr. Tara A. Baugher and Alana Anderson, who had visited in 2012, and Amy Baugher, who had yet been to Nicaragua.

The annual trips only appear simple in scope: to visit Javier Espinosa and review his progress at school and in his home village of Talolinga, as well as support our newest extensionist, Marvin, as he begins his for veterinary studies in January 2014. While we maintain contact with Javier and Marvin through the internet and the Project Gettysburg-Leon (PGL) Coordinator in Nicaragua, witnessing the developments in person is more meaningful to YGA members and the Talolingans.

The YGA partnered with PGL to establish an agricultural initiative to provide a native Nicaraguan with education and trainings to become an extension agent for his village and neighboring communities. Since the initiative’s inception two years ago, the YGA has been so impressed with Javier’s progress in Talolinga that we celebrated the addition of Marvin, Javier’s neighbor, when he expressed the desire to pursue veterinary schooling. We believe in a future team of extensionists, a team who can split duties according to their skillsets, and address a wider range of clients geographically.

The YGA is adamant in sustaining our support of Javier, including communicating information via Skype or email, mailing material on pests and organic sprays, or hosting him on YGA-affiliated farms during his first U.S. trip in October 2013. This year, however, the YGA delegates asked more of themselves and the proposed itinerary; we wanted to leave Nicaragua with a better understanding of Javier’s country: agriculturally, culturally, and topographically. The result was a whirlwind week of travel, to sites familiar and unfamiliar, although the majority of experiences were fresh and so thrilling that we will be hard pressed to forget them.

Meaningful relationships were built on farms and buses, in front and backyards, and even a cow patch. Yet, the highlight of the trip was traveling and attending a workshop with 7 Talolingans; an event that had never previously occurred, but was so roundly endorsed that it shall be a staple for all future delegations. The bus left Santa Rosa, a small village situated below Talolina, and drove straight to Esteli, located two hours north-east toward the Honduran border. In terms of Nicaragua’s agricultural landscape, we were leaving the 150,000 plus hectares of sugarcane country and entering coffee country.

Esteli is a crossroads of commerce and education in northwest Nicaragua, and both Javier and Marvin attend universities there. Their commute is laborious: roughly two hours walking to catch a two hour bus ride, and as they must farm to feed their families, they chose a 5 year university program with self-guided learning and a weekend review session with professors at the university. They pointed out their schools to us as we continued past Esteli to our destination: the biointensive (B.I.) farm of Franck Tondeur, a Belgian who studied sustainable agriculture in Europe before relocating to Nicaragua. Franck and his wife bought six acres, and, upon assessing the soil quality of his farm, decided to amend their soil using B.I. practices. In order to be certified in B.I. agriculture, one must uphold eight essential tenets: Double-Dug, Raised Beds; Composting; Intensive Planting; Companion Planting; Carbon Farming; Calorie Farming; The Use of Open-Pollinated Seeds; and A Whole-System Farming Method. During our six hour tour of Frank’s farm, we were shown how he incorporates all of these tenets into his daily routine, and how important they are to the survival of his plantings, thus feeding his family without relying on outside food sources.

The emphasis on self-reliance is the genius of B.I. agriculture, especially for small farms in developing nations as the B.I. method asks that you conscientiously and efficiently plant on a small plot of land, while returning as many nutrients to the soil as you are harvesting from it. Most Talolingans inherit small family plots often stripped of nutrients from repetitive plantings of corn. Not only does the B.I. method teach how to companion crop and intensively plant, it stresses a varied diet, thus increasing access to more vitamins and minerals.

Franck has divided his farm into several plots: seedling continued on page 16
beds, herbs, composting, an “Edible Forest,” and multiple bean beds. At every plot, he stressed the importance of his carefully crafted soil. Without his “gourmet” soil, the plants would die, the moisture would dwindle, and his family would starve. Franck, by way of the B.I. system, teaches that healthy gardens and people start at the ground level.

Franck’s story of perseverance, his enthusiasm, and his success using the B.I. method was exciting, but it was the Talolinguas’ reactions that exhilarated us. Franck’s double-dug beds, ten varieties of beans, three types of compost piles, and seedling treatment captivated them because the plants were thriving, and the idea that they could achieve similar success was tantalizing. The Talolinguas asked detailed questions and listened attentively for all six hours. Even on the bus ride after the tour, the entire group continued to talk about what we had seen and heard.

The B.I. method satisfied many of the YGA’s concerns for Javier’s project: it follows Javier’s choice of an organic method; it capitalizes on the use of small plots; it encourages a more diverse diet with more vitamins and minerals; and most importantly, it emphasizes self-reliant farming techniques. Techniques that reduce your need for sprays and off-farm fertilizers; techniques that yield enough produce to feed a family without supplementing from a store; and techniques that teach families how to grow enough food to then sell for a profit. Javier is exposing his community to cost-saving methods that simultaneously nourish families, and his demonstration plot in his backyard serves as evidence of its efficacy. He is fulfilling his personal goals, and challenging himself to exceed those goals. In 2013, he improved his leadership skills through attending and giving workshops, as well as planting an organic garden at the village school. Javier and Marvin can mentor and support each other as they do the same for their community. In 2014, the YGA plans to coordinate with them to expand their support beyond Talolinga; and as we learned, we’ll start with the soil.

To learn more about the YGA and our Nicaragua Agricultural Extension Project, please visit: http://extension.psu.edu/plants/tree-fruit/yga/programs/nicaragua-ag-extension-project-2012.
The effects of various concentrations and number of sprays of Apogee (ProCa) and summer pruning (SP) alone on fruit color and other quality parameters of ‘Cripps Pink’ apple were investigated. The treatments were: (i) no spray as control, (ii) SP, (iii) 250 mg/L with two sprays (3 and 33 days after full bloom (DAFB), (iv) 500 mg/L with two sprays (3 and 33 DAFB), (v) 750 mg/L with two sprays (3 and 33 DAFB), (vi) 250 mg/L with three sprays (3, 33 and 63 DAFB), (vii) 500 mg/L with three sprays (3, 33 and 63 DAFB), and (viii) 750 mg/L with three sprays (3, 33 and 63 DAFB). Spraying was done on fruits of a whole treated tree. The reduction in shoot length was pronounced after the second spray application of ProCa regardless of concentration. The treatment of two sprays of 500 mg/L ProCa and three sprays of 500 and 750 mg/L of ProCa showed the highest reduction in the shoot length as compared to control. The SP alone, and three sprays of 500 and 750 mg/L ProCa at 3, 33 and 63 DAFB, respectively significantly improved percent red blush, percent fruit for export, higher a* value and lower b*, L* and hue angle values on the fruit as compared to control. The treatment of three sprays of 750 mg L⁻¹ ProCa resulted the highest accumulation of cyanidin 3-O-galactoside in apple skin. However, the three sprays of 500 mg L⁻¹ treatment exhibited the comparable concentration of cyanidin 3-O-galactoside with the treatment of three sprays of 750 mg L⁻¹ ProCa. Fruit quality parameters such as fruit firmness, soluble solids concentration (SSC) and titratable acidity (TA) resulted in inconclusive outcomes, but still meet the export requirements. In conclusions, three spray applications of ProCa (500 mg/L) on 3, 33 and 63 DAFB reduced shoot growth, improved fruit colour, accumulation of cyanidin 3-O-galactoside and also maintained other fruit quality attributes in ‘Cripps Pink’ apple.

(From Acta Horticulturae 1012:219)
Spring Orchard Meetings

**Thursday, April 10**, 6:00-7:30 pm  
Penn State Fruit Research & Extension Center, 290 University Dr., Biglerville, PA  
Contact: Tara Baugher, (717) 334-6271, tab36@psu.edu

**Tuesday, May 6** - Lancaster/York County  
Contact Tim Elkner, (717) 394-6851, tec2@psu.edu

**Wednesday, May 7** - Adams County  
Contact: Tara Baugher, (717) 334-6271, tab36@psu.edu

**Thursday, May 8** - Franklin County  
Contact Tara Baugher, (717) 334-6271, tab36@psu.edu

**Wednesday, May 14** - Western Region  
Contact Bob Pollock, (724)465-3880, rcp@psu.edu

**Thursday, May 15** - Eric County  
Contact Andy Muza, (814)825-0900, ajm4@psu.edu

**Tuesday, May 20** - Bedford County  
Contact Tom Ford, (814)940-5989, rgf2@psu.edu

**Wednesday, May 21** - Southeast Region  
Contact Tanner Delvalle, (570)622-4225, tcd125@psu.edu

**Thursday, May 22** - Central Region  
Contact John Esslinger, (570)275-3731, cje2@psu.edu

**Tuesday, June 3** - Mid-Atlantic Meeting  
Chesley Fruit and Vegetable Farm, 23340 Fruit Tree Drive, Smithsburg, MD  
Contact Tara Baugher, (717)334-6271, tab36@psu.edu

There is no fee to attend these events. However, pre-registration is appreciated.

To pre-register, go to:  
http://extension.psu.edu/plants/tree-fruit/events
Preplant soil-incorporated compost, mycorrhizal inoculation (MI) at planting and the combination of the two (compost+MI) were tested over nine years for growth, yield and foliar analysis of ‘Honeycrisp’ apple (Malus xdomestica) trees on two rootstocks, M.26 EMLA and G.16 planted in a site with mild replant disease. Mycorrhizal inoculation, measured in years 1, 5, 7 and 8, had no effect on foliar levels of most nutrients. Foliar Zn was increased by MI in year 5 from 14 to 17 mg•kg⁻¹ in G.16 rootstock, but not with M.26 compared to an untreated control. In year 7, foliar Cu was increased from 7 to 8 mg•kg⁻¹ by MI. Leaf N was higher with compost amended soil in years 2 and 3, lower in year 4, and similar to an untreated control in years 5 to 8. Leaf P and K were generally greater with compost until years 4 to 5 when they were similar to the untreated control. Levels of Ca, Mg, B, Mn and Fe were inconsistently affected by compost from year to year. Compost increased shoot growth in year 2, but not when combined with MI. In years 1 and 3, compost had no effect on shoot growth. MI did not affect shoot growth in years 1 or 2, but increased it in year 3 in G.16 trees, but not M.26. In the first three years, trees produced very sparse bloom. In year 4, compost increased the number of flower clusters in both rootstocks, but not in M.26 rootstock when compost was combined with MI. In year 5, compost did not increase bloom. MI did not affect bloom in years 4 and 5. MI did not affect trunk cross sectional area (TCA) of G.16 in any year when compared to the untreated control. Compost increased TCA of G.16 in years 3 and 5, but not when combined with MI, and this combined treatment reduced TCA in year 4 compared to compost alone. MI increased TCA of M.26 in years 3, 4, 5, 7, 8 and 9. Compost increased TCA of M.26 in years 3, 4, and 5, and when combined with MI, increased TCA in years 3 and 5, but not in year 4. MI did not affect yield until year 8 for G.16 when it was reduced compared to the control. MI increased yield of M.26 in year 9, but had no effect in other years. Compost and compost+MI increased yield in years 6 and 8 in both rootstocks, and had reduced yield in trees on G.16 rootstock in years 7 and 9 as a result of biennial bearing. Compost and compost+MI trees on M.26 rootstock had reduced yield in year 9. Cumulative yield from years 4 through 9 was not affected by rootstock, compost or MI. The addition of compost or MI was found to increase tree growth and yield, but these effects were inconsistent between the two rootstocks and did not occur consistently in every year.

(From J. American Pomological Society 68:2)

**Consumer Research Explores Acceptability of A New Canadian Apple – Salish™**

By M. Cliff, K. Stanich & C. Hampson

This research compared consumer preferences for a new Canadian apple, Salish™ (cultivar SPA493), with commercial cultivars using data collected at two University of British Columbia Apple Festivals (2008, 2010). Mean acceptability by mouth and visual acceptability scores for Salish™ were compared with those for each of three tart (subacid/acid) cultivars (Granny Smith, McIntosh, Spartan) (2008, n=165) and two relatively new cultivars (Ambrosia, Honeycrisp) (2010, n=1182). T-tests on the 2008 data (n=165) revealed that Salish™ had higher consumer acceptability than Granny Smith and McIntosh. Analysis of variance of the 2010 data evaluated the influence of ethnicity (ancestral origin), age, gender and stated apple preference (sweet, tart), for the two largest sub-groups of consumers (Asian ethnicity, n=353 European ethnicity, n=725). While 88% of consumers of Asian ethnicity categorized themselves as sweet apple eaters, consumers of European ethnicity were both sweet (55%) and tart (45%) apple eaters. The sweet apple eaters rated Ambrosia higher in acceptability by mouth than Salish™, while tart apple eaters preferred Salish™. On average, consumers’ stated apple preference (sweet, tart) was consistent with their acceptability scores. Mean acceptability by mouth scores for consumers of Asian ethnicity were higher for Ambrosia and lower for Salish™ as compared with consumers of European ethnicity. The visual acceptability of red apples with a green ground (background) colour was significantly lower than those with a yellow ground color. This suggested that sweet apple eaters of both ethnicities had a strong negative bias for apples with a slightly green ground colour. The work will assist industry in releasing and appropriately marketing cultivars to selected consumers in the metropolitan marketplace.

(From Can. J. Plant Sci. 94:99)
Cold Temperature Tolerance of Trunk and Root Tissues in One- or Two-year-old Apple Rootstocks

By R. Moran, Y. Sun, F. Geng & D. Zhang

Winter injury to the root systems of fruit trees can cause significant tree losses and yield reductions in the northern regions of the United States and Canada. To compare the root and trunk cold temperature tolerance, a series of experiments were conducted using ungrafted apple rootstocks. ‘Geneva® 11’ (G.11), ‘Geneva® 30’ (G.30), ‘Geneva® 41’ (G.41), ‘P.2’, and ‘Budagovsky 9’ (B.9) apple (Malus ×domestica Borkh.) rootstocks had root tissue hardiness similar to ‘M.26’, but ‘Geneva® 935’ (G.935) had greater cold-hardiness than M.26 when based on shoot regrowth in ungrafted trees. The LT 50 of M.26 and P.2 roots ranged from -12 to -14 °C. The LT 50 was -13 °C for B.9, -13.4 to -14.6 °C for G.30, and -12 °C for G.11. The LT 50 of G.41 was one of the highest in one experiment, -8 °C, and one of the lowest in another, colder than -15.0 °C. The LT 50 of G.935 roots was the lowest and ranged from -16 to -19 °C. Compared with M.26, trunk cold-hardiness in December was greater in B.9 and P.2 and was similar in G.30. Cold-hardiness of G.11 in December was mixed with less injury in the xylem but more injury in the phloem compared with M.26. In October, M.26 and G.935 trunks had little injury after exposure to -24 °C.

(From HortScience 46:1460)

Determination of Optimal Harvest Boundaries For Honeycrisp™ Fruit Using A New Chlorophyll Meter

By J. DeLong, R. Prange, P. Harrison, D. Nichols, H. Wright

In this study, a new chlorophyll measurement tool [the delta absorbance (DA) meter] was used to develop an optimal harvest maturity model for Honeycrisp fruit. Apples from nine commercial orchards in the Annapolis Valley, Nova Scotia, Canada, were sampled over 11 consecutive weekly harvests during the 2010, 2011 and 2012 growing seasons. At each harvest, a sample of fruit was measured for its DA (I AD) values, firmness, titratable acidity (TA),% soluble solids content (SSC), red skin coloration and internal core ethylene. Following approximately 3 months of storage at 3.5°C, samples were removed and assessed for disorder incidence. The optimal harvest period was identified by aligning all “at harvest” I AD values, fruit quality measurements and “post-storage” disorder data with the corresponding harvest week. Then, the I AD values associated with the harvests having high commercial fruit quality and the least collective expression of disorders, delineated the optimal harvest boundaries. As I AD units declined during fruit maturity, the upper boundary value of 0.59 was deemed “when to begin” harvest, while the lower boundary value of 0.36 was deemed “when to end” harvest for long-term storage. The use of the DA model approach for optimal harvest delineation is potentially applicable to all commercial apple cultivars, but should be developed for each within a distinct growing region.

(From Can. J. Plant Sci. 94: 361)
Interaction of Irrigation and Soil Management on Sweet Cherry Productivity and Fruit Quality at Different Crop Loads that Simulate Those Occurring by Environmental Extremes
By G. Neilsen, D. Neilsen, F. Kappel & T Forge

‘Cristalina’ and ‘Skeena’ sweet cherry cultivars (Prunus avium L.) on Gisela 6 (Prunus cerasus × Prunus canescens) rootstock planted in 2005 were maintained since 2006 in a randomly blocked split-split plot experimental design with six blocks of two irrigation frequency main plot treatments within which two cultivar subplots and three soil management sub-subplots were randomly applied. The focus of this study was the growth, yield, and fruit quality response of sweet cherry to water and soil management over three successive fruiting seasons, 2009–11, in a cold climate production area. The final 2 years of the study period were characterized by cool, wet springs resulting in low yield and yield efficiency across all treatments. Soil moisture content (0- to 20-cm depth) during the growing season was often higher in soils that received high-frequency irrigation (HFI) compared with low-frequency irrigation (LFI). HFI and LFI received the same amount of water, but water was applied four times daily in the HFI treatment but every other day in the LFI treatment. Consequently, larger trunk cross-sectional area (TCSA) and higher yield were found on HFI compared with LFI trees. Soil management strategies involving annual bloom time phosphorus (P) fertigation and wood waste mulching did not affect tree vigor and yield. Increased soluble solids concentration (SSC) occurred with LFI. Decreased SSC occurred with delayed harvest maturity in trees receiving P fertigation at bloom. The largest fruit size was correlated for both cultivars with low crop loads ranging from 100 to 200 g fruit/cm² TCSA. Overall cool, wet spring weather strongly affected annual yield and fruit quality, often overriding cultivar and soil and water management effects.

(From HortScience 49:215)
Mechanical Blossom Thinning of ‘GoldRush’/M.9 Apple Trees with Two String Types and Two Timing

By J. Schupp & T. Kon

‘GoldRush’/M.9 NAKBT337 apple trees [Malus x domestica (Borkh.) Mansf] were mechanically blossom thinned at either pink or full bloom bud stages, using a Darwin mechanical thinner with either of two different string attachments. Thinning treatments removed entire blossom clusters, reduced flower number on remaining spurs, removed 15-29% of the spur leaf area of persisting spurs, and reduced initial fruit set when compared to the hand thinned control. Mechanical blossom thinning treatments reduced hand thinning time, crop load and yield per tree, but had no effect on mean fruit weight at harvest. Fruit size distribution was unaffected by thinning treatment. Fruit firmness from mechanically thinned trees increased when compared to the control. No differences were observed in soluble solids concentration or acidity between fruit from hand thinned control and mechanically blossom thinned trees. Thinning at pink increased 2013 return bloom when compared to the handthinned control and to treatments applied at full bloom. String type and timing were not significant factors to explain the differences in efficacy that have been observed in our previous trials.

(From J. American Pomological Society 68:24.

Dr. Carl S. Bittner Travel Fellowship Award

Sponsored by the State Horticultural Association of Pennsylvania

PURPOSE:
The purpose of the Bittner Travel Fellowship Award is to expose young people working in the Pennsylvania fruit industry to new ideas on fruit production being used in other areas of the world. In order to do this, the State Horticultural Association of Pennsylvania has established a Fellowship of up to $500 that can be awarded annually to someone working in the fruit industry, and promoting leadership within the society.

RECIPIENT:
Must be a fruit grower, or someone else 18 yrs. or older, associated with fruit production in Pennsylvania who would like to travel outside the state of Pennsylvania.

The recipient would be expected to make a short presentation to the SHAP membership at the annual meeting concerning the information learned in this travel.

APPLICATION PROCEDURE:
To apply, a brief explanation of the proposed trip should be submitted in writing. The application letter should include the name, address, age, and potential trip being considered by the applicant.

Applications should be submitted by November 1st to be considered for use during the subsequent year. Applications for the award should be submitted to:

Maureen Irvin, Executive Secretary
State Horticultural Association of Pennsylvania
480 Mountain Road
Orrtanna, PA 17353

The SHAP Board of Directors will review the nominations prior to their November Board meeting, at which time they will make the final decision.

The award will be presented at the Annual Fruit and Vegetable Growers Dinner in January.
Greetings Growers,

You will find the Extension Project Reports for the projects funded by SHAP for the year 2013 on the following pages. Our committee was again pleased with the work that was done on our very limited budget. We try very hard to make our dollars go as far as possible. All of the money for our projects and their related expenses come from your hard work at our booth in the Food Court at the Pennsylvania Farm Show; and for this our committee wishes to express our gratitude to all of you who have given their time and ask for your continued support in the future.

As always, we welcome any ideas and thoughts which could benefit our horticultural industries. Please feel free to contact me or any Extension Committee member. Have a good and prosperous year!

Dave Wenk, Chairman

2014 SHAP Extension Progress Reports

Competitive Orchard Systems and Technologies
Tara A. Baugher and Catherine Lara, Penn State Extension; Jim Schupp and H. Edwin Winzeler, Penn State FREC

Laboratories in the Field

Eight producers cooperate in on-farm research to improve fruit quality and 12 growers have orchard blocks dedicated to studies on increasing management precision and labor efficiency. Research on Honeycrisp is identifying crop load and fruit nutrient levels associated with fruit breakdown that results in annual crop losses of 5 to 60%. Trials with an electric autonomous prime mover compared to ladders demonstrated increases in efficiency of 25 to 105%.

Our Penn State tree fruit team’s contribution to Specialty Crop Research Initiative research conducted in Pennsylvania orchards was highlighted this fall in a USDA publication titled Investing in Science—Securing Our Future. Estimated potential impacts from the multi-state project titled Innovative Thinning of Fruit, led by Penn State, included $181.5 million per year in increased revenue to rural communities.

Technology Transfer

A research paper on technology adoption was the feature article in the February 2014 issue of HortTechnology. Our team produced a DVD of the potential horticultural and economic impacts of the various innovative technologies we have been investigating, and this was showcased at the Pennsylvania Farm Show.

The Specialty Crop Innovations team gave invited presentations on retooling the fruit industry during special engineering solutions sessions at the 2013 Mid-Atlantic Fruit and Vegetable and International Fruit Tree Association Conferences. Of 204 orchardists surveyed following the Mid-Atlantic Convention, 85% said they were likely to plant or were already planting “fruiting wall” orchard systems to increase production efficiency and fruit quality; 98% were likely to make/already making changes to increase precision and reduce environmental impacts; and 87% were likely to make/already making changes to adopt new labor saving technologies.

Penn State Extension and area fruit growers hosted 230 specialty crop growers from 25 states and 7 countries for the 2013 International Fruit Tree Association Study Tour. Pennsylvania was selected for this event because of industry leadership in Specialty Crop Innovations. The international study tour was held in conjunction with the Penn State Fruit Research and Extension Center Field Day, which saw a record attendance of 350 growers and fruit industry associates. In an exit survey, field day participants indicated that the areas of greatest need for advanced technologies in tree fruit production were fruit thinning, followed by harvesting and pruning. Producer needs continue to guide the collaborative work of the Penn State tree fruit team, and a report titled Specialty Crop Innovations—Progress and Future Directions is posted at http://extension.psu.edu/plants/tree-fruit, under “Spotlight.”
The Next Generation of Fruit Growers—Building Leadership and Coalitions

Catherine Lara, Penn State Extension Young Grower Alliance Coordinator and Specialty Crop Innovations Program Manager

This year has given members of the Young Grower Alliance (YGA) a number of opportunities to connect to industry members and leaders nationally and internationally. In the spring, two Pennsylvania and one Virginia young grower traveled to our nation’s capitol representing the apple industry via the USApple Young Leader program. Later in the summer members volunteered and attended the International Fruit Tree Association Summer Study tour visiting Gettysburg, PA. International participants on the tour included several young fruit growers from Canada who were able to connect with YGA members during this time.

Specialty Crop Tours included visits to Knouse Foods Cooperative and Rice Fruit Company. Young growers had the opportunity to sit down with leaders from both organizations and engage in conversation about the industry, a highlight of the tour. The group also toured Heller Orchards and Schwalm Farms. As in past years, members spent the week of Farm Show running the apple sales booth, selling fresh apples, cider and schnitz as a fundraiser for Penn State research and extension on behalf of the State Horticultural Association of Pennsylvania.

Workshops organized by, held for and including young grower speakers covered “Challenges and Opportunities for Obtaining Capital”, “Farm Transition Planning” and “Farm Finances.” Coalition-building is another important role of YGA. A number of members served on committees for industry organizations in 2013.

After a visit to Gettysburg by the Nicaraguan young grower working with the YGA and Project Gettysburg-Leon Ag Extension program, a YGA delegation reciprocated with a visit to Nicaragua in support of the program. Each year this international program expands, with a second ag extensionist in Nicaragua recently joining the program.

Acknowledgements

The Penn State Extension young grower leadership initiative is supported by grants from the SHAP Extension Committee and the Maryland State Horticultural Society. Lunch meetings were sponsored by grower tour hosts, Crop Production Services and Helena Chemical Company.
Food Hub Distribution Business Models Planning Project
Carla Snyder, Penn State Extension

South Central Pennsylvania is a primarily agricultural region with many small and medium sized agricultural operations. It is the intent of this project to assess the availability of locally grown vegetables, fruit, meats and dairy products and the feasibility of aggregation and distribution to individual and institutional end users. Once implemented, this project has the potential to increase market access, economic activity, create jobs and increase the amount of local fresh foods served throughout the region. According to the USDA, “a regional food hub is a business or organization that actively manages the aggregation, distribution, and marketing of source-identified food products primarily from local and regional producers to strengthen their ability to satisfy wholesale, retail and institutional demand.” In working with stakeholders we were fortunate to develop not one, but two business models through this grant.

### Institutional Supply

This model aggregates fruits and vegetables from three counties (Adams, Cumberland and York) and distributions to K-12 school districts located in the three source counties. Weekly orders will be obtained from food service directors through a continuously updated online ordering system. Distribution will occur via a hub located in York County.

### Individual Consumer Supply

This business model integrates multiple farm products from a variety of suppliers. It creates a centralized aggregation and distribution point for home distribution to individual consumers.

### Stakeholders Group

Kathy Gaskin, Director Healthy Adams County  
Megan Shreve, Director South Central Community Action Programs  
Kim Davidson, Interim Director, Center for Public Service  
Heather Thompson, Food Policy Council  
Katy Clowney, Kuhn’s Orchards  
Ben Wenk, Partner, Three Springs Fruit Farm  
Robin Fitzpatrick, President, Adams County Economic Development Corporation  
Chad Naylor, Distributor, H.A.N.J. Enterprises  
Marty Qually, Commissioner, Adams County  
Carla Snyder, Ag Entrepreneurship & Marketing Educator, PSU Extension  
Carol Richwine, Educator, Northern York School District  
Dr. Eric Eshbach, Superintendent, Northern York School District  
Anonymous Private Entrepreneurs (confidentiality kept for business development purposes)
Expanding Availability of Affordable Air Blast Sprayer Calibration to Growers  
Robert Pollock & Tara Baugher - Penn State Extension Fruit Team & Kerry Richards - Penn State Pesticide Education Program

As stated on the pesticide label – the sprayer needs calibrated before you spray! The challenge with air blast sprayer (ABS) calibration is accurately and efficiently collecting and comparing nozzle output. At a Fall 2010 presentation in New Hampshire for the Northeast Pesticide Safety Educators, John Clements, University of Massachusetts, and George W. Hamilton, University of New Hampshire, demonstrated an ABS calibration unit used by their state’s growers.

Between the spring of 2011 and spring of 2012, the Penn State Pesticide Education Program (PEP) held grower meetings to demonstrate the abilities of the calibration unit; made presentations at the Mid-Atlantic Fruit and Vegetable Growers meeting and other winter tree fruit grower meetings; and beta tested the calibration unit by conducting 10 on-farm calibrations to assess the need from a Pennsylvania grower standpoint. Input from meeting surveys indicated a need to expand this program in Pennsylvania, and the average price growers would be willing to pay to have their sprayer calibrated was $50. To show growers the true cost and value of sprayer calibration and encourage adoption, but keep the cost at $50, the PEP solicited and received a $6,000 grant from the State Horticultural Association of Pennsylvania. This grant, in addition, to significant financial support provided by the Pennsylvania Department of Agriculture kept cost to growers at $50 for the first sprayer calibrated and $30 for each additional sprayer. As a result, the number of calibrations increased exponentially from the initial pilot test of 10 sprayers in 2011 to 70 sprayer calibrations in 2013. After having their sprayers calibrated for the first time, most growers indicated they would be willing to pay more for future calibrations. To keep up with this increased demand, funds provided by this SHAP grant allowed for the training of additional technicians and provided the materials and supplies needed to conduct calibrations. In addition, support from this grant also facilitated the creation of a sprayer calibration page on the PEP website (http://extension.psu.edu/pested/sprayer-calibration) which provides growers with valuable information regarding the importance of sprayer calibration, pre-calibration directions, and facilitates grower calibration requests.

Additional impacts include:
- Every sprayer calibrated required some type of adjustment, from minor to significant, to maximize the sprayer application efficiency.
- By doing precise calibration, one grower estimated they now mix 10% less material per tank resulting in a substantial savings.
- Due to the high population of Spanish speaking workers in Adams County orchards, an additional presentation was made in Spanish for orchard workers and pesticide applicators at a spring 2013 outreach meeting.
- Since April of 2013 the calibration web page was viewed 567 times by 401 individuals and requests were received for 71 sprayer calibrations (due to equipment issues one sprayer was unable to be calibrated).

Support from this SHAP grant allowed the PEP to bring this valuable educational program to growers at a reasonable cost. In addition, the program was allowed to expand while at the same time providing for sustainability in the future. Presentations at grower meetings in 2014 have already resulted in requests for 10 new sprayer calibrations. In addition, the successful replication of this program through this partnership can serve, and is already, as a model for future multi-state program development. Three states, Washington, Oregon, and Colorado, have requested information and materials to replicate the program in their states.

“Even if you only have a few acres of trees and one sprayer, I would still recommend using the new calibration unit...it will save you a lot of money through reduced pesticide use.”
Matt Boyer, Co-Owner, Boyer Orchards
We’re a Little Worried.

Every day more orders are coming in and selections for desired trees are getting reduced. So, please keep this in mind as you make your decisions. The more quickly you chose, the more likely we’ll be able to provide. With availabilities already tight for this, and next year, help cut down on worries. Place a call and get us to work.

Jonastar® (Lentz Cultivar)
Exciting new Jonagold sport. Finishes with a nice subtle stripe over a bright red background. Wonderful taste, quality and size. Usually a one pick variety.

Schlect Spur Red Delicious
Colors early with full blush by mid-August. Colors and matures sooner with whiter flesh than any other red sport. Brix level allows for earliest picking opportunities.

Improved Golden Delicious (Gibson cv)
The most russet resistant Golden clone commercially available. Finish is smoother to the touch in comparison with a regular Golden. Recommended for russet prone areas.

Granny Smith
A late-maturing large green apple. Firm, bruise resistant, tart flavor and of excellent quality. Tree is vigorous, early bearing and annually productive.

Local Representative:
Gary Kauffman, Bendersville, PA (717) 677-6931

*Patent information available upon request.
Nutritional Analysis of New Apple Cultivars in High Density Plantings 2013

R. M. Crassweller & D. E. Smith

Modern foliar nutrient ranges for apple trees were established in the mid to late 1960’s. At that time the dominant production system for apples was a widely spaced free standing tree on a vigorous rootstock. Trees did not begin producing large crops until their seventh or eighth year. Since that time the industry has moved to more closely spaced plantings on dwarfing rootstocks whose growth are supported by support systems. Cultivars have also changed over the years with Honeycrisp currently one of the most popular new ones. In 2008 twelve plantings of Cameo/M.9 and Honeycrisp/M.26 were established at grower sites in Pennsylvania and Maryland. The plantings were funded by a Conservation Innovation Grant (CIG). The purpose was to introduce high density apple production techniques and to serve as demonstration and training sites for growers to view. The trees were supported by four wires and were trained to a vertical axis system. Trees were spaced 7 to 8 feet in the row and 14 feet between rows (389 – 444 trees/acre). These new cultivars and planting systems that were established provide an ideal means to monitor nutritional requirements. This will be the third year of sampling and will provide a basis for comparison to the previous two years.

Leaf samples consisting of 60 leaves were collected in mid-summer from eleven plantings of Honeycrisp and Cameo located in commercial orchards in Pennsylvania. At the same time, shoot length was measured on twenty randomly chosen shoots of current season’s growth of each cultivar. Shoots chosen were on the periphery of the trees approximately at chest height.

Results – Individual leaf nutrient levels. There were no significant differences between cultivars for the percent dry matter of nitrogen, phosphorus, potassium or magnesium in 2013 (Table 1). Leaf calcium, however, was significantly lower for the Honeycrisp trees. This is the third year in a row that leaf calcium has been significantly lower for Honeycrisp trees, possibly indicating that the increased problem with bitter pit with Honeycrisp may be due to an inherent inability to take up and utilize calcium. All macronutrient levels were above the sufficiency level. There were no differences between cultivars for micronutrient and all were above sufficiency levels (Table 2).

Ratio of macronutrient levels. Absorption and translocation of nutrients is interrelated and there can be antagonistic interactions. The cations (positively charged ions) of Ca, K, Mg are of particular interest, while the nitrogen- calcium ratio may also indicate problems. Samples this year showed that the N:Ca, Mg+K:Ca and K:Ca were significantly higher for Honeycrisp versus those for Cameo (Table 3). Low levels of calcium are known to influence the occurrence of such physiological problems such as
bitter pit and corking and shorter storage life. When Ca is the denominator, the higher the ratio number indicates that that particular macronutrient(s) were in greater abundance than calcium and my potentially represent poorer calcium nutrient availability.

Table 1. Percent dry matter of macronutrients in 2013 of Cameo & Honeycrisp apples in CIG plantings

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>N, %</th>
<th>P, %</th>
<th>K, %</th>
<th>Ca, %</th>
<th>Mg, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cameo</td>
<td>2.37 a</td>
<td>0.16 a</td>
<td>1.38 a</td>
<td>1.74 b</td>
<td>0.37 a</td>
</tr>
<tr>
<td>Honeycrisp</td>
<td>2.44 a</td>
<td>0.19 a</td>
<td>1.83 a</td>
<td>1.27 a</td>
<td>0.31 a</td>
</tr>
<tr>
<td>P-Value</td>
<td>0.1753</td>
<td>0.3046</td>
<td>0.1839</td>
<td>0.0100</td>
<td>0.1986</td>
</tr>
</tbody>
</table>

Letters refer to Tukey-Kramer mean separation, P=0.05

Table 2. Foliar nutrient content of micronutrients (ppm) in 2013 of Cameo and Honeycrisp apples in CIG plantings.

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Mn</th>
<th>Fe</th>
<th>Cu</th>
<th>B</th>
<th>Zn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cameo</td>
<td>96 a</td>
<td>46 a</td>
<td>7 a</td>
<td>37 a</td>
<td>37 a</td>
</tr>
<tr>
<td>Honeycrisp</td>
<td>129 a</td>
<td>48 a</td>
<td>7 a</td>
<td>42 a</td>
<td>38 a</td>
</tr>
<tr>
<td>P-Value</td>
<td>0.1493</td>
<td>0.3527</td>
<td>0.6926</td>
<td>0.2092</td>
<td>0.6379</td>
</tr>
</tbody>
</table>

Letters refer to Tukey-Kramer mean separation, P=0.05

Table 3. Selected nutrient ratios of macronutrients in leaf samples from Cameo and Honeycrisp apples in CIG plantings.

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>N:K ratio</th>
<th>Ca:Mg ratio</th>
<th>N:Ca ratio</th>
<th>Mg+K:Ca ratio</th>
<th>K:Ca ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cameo</td>
<td>2.61 a</td>
<td>4.69 a</td>
<td>1.49 a</td>
<td>1.18 a</td>
<td>0.96 a</td>
</tr>
<tr>
<td>Honeycrisp</td>
<td>1.38 a</td>
<td>4.04 a</td>
<td>2.05 b</td>
<td>1.80 b</td>
<td>1.54 b</td>
</tr>
<tr>
<td>P-Value</td>
<td>0.1186</td>
<td>0.0633</td>
<td>0.0062</td>
<td>0.026</td>
<td>0.0335</td>
</tr>
</tbody>
</table>

Letters refer to Tukey-Kramer mean separation, P=0.05

**Summary**: This was the third year in following the nutritional levels of these plantings. The availability of these similar plantings provide a good opportunity to follow long term nutritional trends of two new cultivars in high density plantings with modern training systems. There are twelve plantings spread across Pennsylvania and one in Maryland. Unfortunately, we were unable to collect a sample from the Maryland planting this year and the results from one of the Pennsylvania plantings was not included in the results due to abnormal readings that appeared to be some form of contamination. Nevertheless, the results do supply ongoing monitoring of how these new cultivars and systems perform and provide a basis for detecting any approaching trends that need to be addressed.
Variability and unpredictability in chemical thinning of apples has been a problem for growers since the introduction of the operation. Interactions of environment at the time of application, application method and coverage and drying conditions have led to less than consistent responses to thinners. Possibly more important and an overriding factor is the sensitivity of the tree itself to the chemical thinners applied. Environmental factors that affect the tree physiology are temperature and sunlight and their impact upon carbohydrate supply (photosynthesis). Carbohydrate production is driven by two main environmental conditions; temperature and light. High night time temperatures and low daytime light levels reduce carbohydrate production; whereas cool night temperatures and high sunlight results in abundant production of carbohydrates. The combined effects of these two factors on carbohydrate production has been hard to predict. A carbohydrate production simulation model has been tested and refined over a number of years to help explain trees response to chemical thinners. The theory is that during periods of carbohydrate deficits (carbohydrate production is less than carbohydrate demand for growth) trees are more responsive to chemical thinners and vice-versa when production exceeds demand. In multiple year trials Robinson & Lakso (2011) showed that during periods of prolonged carbohydrate deficits (> 4 days) resulted in intense thinning. While shorter periods of deficits (1-2 days) did not have intense thinning. In 2012 the model was run based on weather data was monitored at 6 sites. Since the season was abnormally early there were some initial glitches. However, individual comments indicated that the information was valuable.

**Methods:** We utilized 4 grower sites that subscribed to the SkyBit service strategically located around the state to serve as sentinel sites for running the model and weather data from the FREC and the Hort. SkyBit weather data was utilized to run the model. In April of 2013 four growers installed RainWise weather stations at their farms and were automatically signed into the Northeast Weather Applications (NEWA) system that automatically recorded their temperatures and solar radiation. This information was transmitted back to the climate center and the MaluSim model utilized this information to calculate the carbohydrate balance for the orchards.

**Results:** Output of the model were posted during the fruit thinning period beginning May 9 and ending on May 27 in the Fruit Times Newsletter site which was immediately sent electronically to all subscribers. You can view all the postings for the 2013 thinning period by going to the Fruit Times Newsletter web site (http://extension.psu.edu/plants/tree-fruit/news ) and entering the search term carbohydrate. As an example of the output the table below shows the result for one
single site over the period of May 17 through May 23 with actual values and beyond May 23 as predictive values. This site used the date of green tip (GT) of April 5 and full bloom (BLM) for the site as April 30.

It should be noted that while the model shows predictive values for this site, the predictive values did not always match the actual data output once the weather and sunlight conditions were recorded. This points out one of the weaknesses of the model in that it is only as good as the weather forecast. We also discovered that the model did not anticipate temperatures higher than 85F and consequently failed to accurately predict a period of excessive negative carbohydrate balance.

Based upon the carbon balance values a series of recommendations for the adjustment to standard chemical thinning rates is utilized (Table 2). It should be noted that no specific rates or materials are given in the recommendations but rather it is suggested that standard rates that the grower would normally use on different cultivars should be adjusted up or down, thereby, allowing the individual grower to utilize materials they feel most comfortable from past experiences.

This system will again be utilized for the 2014 season and the results will be posted to the Fruit Times Newsletter. To view the NEWA site and all the stations within Pennsylvania go to newa.cornell.edu.com

Table 1. Carbohydrate balance based on data through May 17 through 27 with predictive values in grams per day

<table>
<thead>
<tr>
<th>Date</th>
<th>Max T</th>
<th>Min T</th>
<th>MJ Rad</th>
<th>Production</th>
<th>Demand</th>
<th>Balance</th>
<th>Cornell rate adjustments</th>
</tr>
</thead>
<tbody>
<tr>
<td>17-May</td>
<td>78</td>
<td>54</td>
<td>24.2</td>
<td>77</td>
<td>78.11</td>
<td>-1.11</td>
<td>Apply standard chemical thinner rate</td>
</tr>
<tr>
<td>18-May</td>
<td>68</td>
<td>51</td>
<td>11.5</td>
<td>49.38</td>
<td>58.59</td>
<td>-9.21</td>
<td>Apply standard chemical thinner rate</td>
</tr>
<tr>
<td>19-May</td>
<td>62</td>
<td>56</td>
<td>2.7</td>
<td>0</td>
<td>57.34</td>
<td>-57.34</td>
<td>Decrease chemical thinner rate by 20%</td>
</tr>
<tr>
<td>20-May</td>
<td>82</td>
<td>61</td>
<td>20</td>
<td>72.43</td>
<td>91.36</td>
<td>-18.93</td>
<td>Apply standard chemical thinner rate</td>
</tr>
<tr>
<td>21-May</td>
<td>84</td>
<td>61</td>
<td>18.3</td>
<td>66.99</td>
<td>93.21</td>
<td>-26.22</td>
<td>Decrease chemical thinner rate by 20%</td>
</tr>
<tr>
<td>22-May</td>
<td>83</td>
<td>64</td>
<td>17</td>
<td>62.11</td>
<td>88.58</td>
<td>-26.48</td>
<td>Decrease chemical thinner rate by 20%</td>
</tr>
<tr>
<td>23-May</td>
<td>73</td>
<td>62</td>
<td>13.1</td>
<td>56.48</td>
<td>64.23</td>
<td>-7.76</td>
<td>Apply standard chemical thinner rate</td>
</tr>
<tr>
<td>24-May</td>
<td>61</td>
<td>48</td>
<td>20.5</td>
<td>95.74</td>
<td>33.3</td>
<td>62.45</td>
<td>Increase chemical thinner rate by 30%</td>
</tr>
<tr>
<td>25-May</td>
<td>64</td>
<td>40</td>
<td>25.5</td>
<td>113.54</td>
<td>28.19</td>
<td>85.35</td>
<td></td>
</tr>
<tr>
<td>26-May</td>
<td>66</td>
<td>43</td>
<td>22.1</td>
<td>104.34</td>
<td>32.14</td>
<td>72.2</td>
<td></td>
</tr>
<tr>
<td>27-May</td>
<td>68</td>
<td>47</td>
<td>18.1</td>
<td>90.13</td>
<td>36.57</td>
<td>53.56</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Decision rules for using the output of the carbohydrate model to adjust chemical thinning rate.

<table>
<thead>
<tr>
<th>4-day Av. Carb. Balance</th>
<th>Thinning Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 0g/day</td>
<td>Increase Chemical Thinner Rate by 30%</td>
</tr>
<tr>
<td>0g/day to -20g/day</td>
<td>Apply Standard Chemical Thinner Rate</td>
</tr>
<tr>
<td>-20g/day to -40g/day</td>
<td>Decrease Chemical Thinner Rate by 15%</td>
</tr>
<tr>
<td>-40g/day to -60 g/day</td>
<td>Decrease Chemical Thinner Rate by 30%</td>
</tr>
<tr>
<td>-60g/day to -80 g/day</td>
<td>Decrease Chemical Thinner Rate by 50%</td>
</tr>
<tr>
<td>&lt; than -80g/day</td>
<td>Do not thin (many fruits will fall off naturally)</td>
</tr>
</tbody>
</table>
Convention Highlights

2013 Grower of the Year
Reed Soergel

By Dave Wenk

It is my pleasure to present the 2013 Outstanding Grower Award.

I got to know this year’s recipient over the years that we served together on the State Horticultural Association Board of Directors, and other committees of the association. His attendance was always outstanding, nearing 100%, even though his travel for each meeting was over 400 miles and nearly 8 hours. By our calculations, he made 8 or more trips from his farm to Biglerville or Hershey for these meetings EACH year. Since we became acquainted I am sure he has amassed well over 35,000 miles just in service to our association. (maybe 40k)

He has served 9 years on the Board of Directors, serves on both the research and extension committees, and faithfully refills the apple and cider display in the lobby at the convention in Hershey.

He is now the president of his family farm operation in western PA. This operation currently includes 16 family members. It operates 500 acres growing apples, organic apples, blueberries, raspberries, strawberries, peaches, organic hops, and 70 varieties of vegetables.

But this operation is known for its farm market. From very humble beginnings in the late 1960’s when frost resulted in a small crop, his father and mother opened a roadside stand to sell the apple crop. The family had been farming here since the 1850’s and selling their apples at the Pittsburgh market.

Today this market includes: a bakery, a garden center, a deli, a gift shop, an allergen free building, a cider press, an Amish furniture store, and agritainment. The market includes all the fruits and vegetables grown, plus value added products and I believe they now produce their own beef and turkeys.(??) They book party rentals, farm tours, weddings, and host annually 14 or more festivals and gourmet food events. The newest venture is a pick-your-own operation.

Visitors annually exceed 100,000. (I have been there and this number seems low to me.)

135 people are employed in the operation. And as I said previously, 16 family members are involved including brothers Richard and Randy, and sister Linda.

Our recipient oversees and manages this operation.

He is also a member of the PA Vegetable Growers Association, a Director on the PA Apple Marketing Board, and a Board member of the Farmers Mutual Insurance.

He is a graduate of the Pennsylvania State University.

He is married to Danetta, and is the proud father of Leslie and Deonna.

Our 2013 Outstanding Grower is Reed Soergel!

Congratulations!!

Reed Soergel (right) from Soergel Orchards in Wexford, PA accepts the 2013 Grower of the Year Award from Dave Wenk, Three Springs Fruit Farm, presenter of the Award.

Dr. Steven McArtney (right) accepts a plaque for his presentation of the George Goodling Memorial Lecture from Carolyn McQuiston, President of the State Horticultural Association of Pennsylvania.
Convention Highlights

Carolyn McQuiston (left), President of the State Horticultural Association of Pennsylvania and Brian Campbell (center), President of the Pennsylvania Vegetable Growers Association, present a gift basket to Lieutenant Governor, Jim Cawley.

Carolyn McQuiston (right), President of the State Horticultural Association of Pennsylvania, presents the 2014 Best Bushel Award from the Pennsylvania Farm Show, to Ellie Hollabaugh-Vranich from Hollabaugh Bros., Inc. Fruit Farm and Market located in Biglerville, Pennsylvania.

Carolyn McQuiston (right), outgoing President passes the gavel to Tim Weiser, incoming President of the State Horticultural Association of Pennsylvania.

Carolyn McQuiston (right), President of the State Horticultural Association of Pennsylvania, presents the 2014 Best Roadside Market Exhibit Award from the Pennsylvania Farm Show, to Kevin Knouse from Knouse Fruitlands Inc., located in Biglerville, Pennsylvania.
2014 Mid-Atlantic Fruit and Vegetable Convention Exhibitors

We gratefully acknowledge the support of our exhibitors. The Joint Convention Committee would like to thank the exhibitors for contributing to the success of another great convention, and we urge all of you to support them. We look forward to seeing you in Hershey again next year January 28-30, 2015.

<table>
<thead>
<tr>
<th>Company</th>
<th>Contact</th>
<th>Address</th>
<th>Phone</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abbott &amp; Cobb, Inc.</td>
<td>Ivy Perez</td>
<td>P. O. Box 307, Feasterville, PA 19053</td>
<td>215/485-6619</td>
<td><a href="http://www.acseed.com">www.acseed.com</a></td>
</tr>
<tr>
<td>Acadian Seaplants</td>
<td>Armando Tenias</td>
<td>30 Brown Avenue, Dartmouth, NS Canada B3B 1X8</td>
<td>902/468-2840</td>
<td><a href="http://www.acadianseaplants.com">www.acadianseaplants.com</a></td>
</tr>
<tr>
<td>Adams County Nursery, Inc.</td>
<td>Julie Haller</td>
<td>P. O. Box 108, Aspers, PA 17304</td>
<td>717/677-8105</td>
<td><a href="http://www.acnursery.com">www.acnursery.com</a></td>
</tr>
<tr>
<td>Ag Squared LLC</td>
<td>Giulia Stellari</td>
<td>P. O. Box 414, Port Jefferson Station, NY 11776</td>
<td>646/867-1887</td>
<td><a href="http://www.agsquared.com">www.agsquared.com</a></td>
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<tr>
<td>AgTec/Superb Horticulture</td>
<td>Adam Longenecker</td>
<td>2811 U.S. 31, Plymouth, IN 46563</td>
<td>800/567-8264</td>
<td><a href="http://www.superbhorticulture.com">www.superbhorticulture.com</a></td>
</tr>
<tr>
<td>Agri Analysis Inc.</td>
<td>George Mitchell</td>
<td>280 Newport Road, Leola, PA 17540</td>
<td>717/656-9326</td>
<td><a href="http://www.agrianalysis.com">www.agrianalysis.com</a></td>
</tr>
<tr>
<td>Agro Culture Liquid Fertilizers</td>
<td>Benjy Conover</td>
<td>3250 Baltimore Pike, Littlestown, PA 17340</td>
<td>717/357-9484</td>
<td><a href="http://www.agroliquid.com">www.agroliquid.com</a></td>
</tr>
<tr>
<td>APM Buildings</td>
<td>Curt Grim</td>
<td>P. O. Box 310, Arendtsville, PA 17303</td>
<td>717/677-6161</td>
<td><a href="http://www.apmbuildings.com">www.apmbuildings.com</a></td>
</tr>
<tr>
<td>Arctic Refrigeration Company</td>
<td>Mike Mager</td>
<td>26 Cedar Street, Batavia, NY 14020</td>
<td>585/343-2678</td>
<td><a href="http://www.arcticrefrigeration.com">www.arcticrefrigeration.com</a></td>
</tr>
<tr>
<td>Arendtsville Garage</td>
<td>Loy Hoke</td>
<td>P. O. Box 545, Arendtsville, PA 17303</td>
<td>717/677-7416</td>
<td></td>
</tr>
<tr>
<td>Arysta Life Science Company</td>
<td>Frank Donohue</td>
<td>11 Federal Lane, Newtown, PA 18940</td>
<td>215/504-0636</td>
<td><a href="http://www.arysta-na.com">www.arysta-na.com</a></td>
</tr>
<tr>
<td>Atlantic Power Solutions Inc.</td>
<td>Bill Warner</td>
<td>2287 Bonlee Bennett Road, Siler City, NC 27344</td>
<td>302/448-5417</td>
<td><a href="http://www.AtlanticPowerSolutions.com">www.AtlanticPowerSolutions.com</a></td>
</tr>
<tr>
<td>Autrusa</td>
<td>George Leidig</td>
<td>941 Perkiomenville Road, Perkiomenville, PA 18074</td>
<td>610/754-1110</td>
<td><a href="http://www.autrusa.com">www.autrusa.com</a></td>
</tr>
<tr>
<td>Avian Control</td>
<td>Dan Kramer</td>
<td>2000 Pontiac Drive, Sylvan Lake, MI 48320</td>
<td>888/707-4355</td>
<td><a href="http://www.solveyourbirdproblems.com">www.solveyourbirdproblems.com</a></td>
</tr>
<tr>
<td>Baker Ag-Lime</td>
<td>Steve Morrison</td>
<td>320 North Baker Road, York, PA 17408</td>
<td>717/793-5446</td>
<td><a href="http://www.bakerlime.com">www.bakerlime.com</a></td>
</tr>
<tr>
<td>N.M. Bartlett Inc.</td>
<td>Matt Peters</td>
<td>4509 Bartlett Road, Beamsville, Ontario LOR 1B1</td>
<td>905/563-8261</td>
<td><a href="http://www.bartlett.ca">www.bartlett.ca</a></td>
</tr>
<tr>
<td>BASF Corporation</td>
<td>Tim Helmers</td>
<td>415 Long Trail Terrace, Rockville, MD 20850</td>
<td>402/660-0896</td>
<td><a href="http://www.basf.com">www.basf.com</a></td>
</tr>
</tbody>
</table>

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Bayer CropScience  
Attn: Monte Sorensen  
706 Towering Road  
Glen Allen, VA 23059  
919/306-7342  
www.bayercropscience.us

BCS/Wes Stauffer Engines & Equipment  
Attn: Wes Stauffer  
23 Pleasant Valley Road  
Ephrata, PA 17522  
717/738-4215  
www.wesstauffer.com

BDI Machinery Sales Company  
Attn: Bill Reiss  
52 Race Street  
Macungie, PA 18062  
800/808-0454  
www.bdimachinery.net

Binkley & Hurst Bros., Inc.  
Attn: David Dum  
133 Rothsville Station Rd., Box 395  
Lititz, PA 17543  
717/626-4705  
www.binkleyhurst.com

Biobest – USA Inc.  
Attn: Doug Barrow  
2914 Denbeigh Drive  
Hatfield, PA 19440  
267/644-9886  
www.biobest-usa.com

BioSafe Systems, LLC  
Attn: Alyssa Davis  
22 Meadow Street  
East Hartford, CT 06108  
860/290-8890  
www.biosafesystems.com

Bird Gard/JWB Marketing  
Attn: Jim Burton  
2308 Raven Trail  
West Columbia, SC 29169  
803/939-9622  
www.birddamage.com

Bowsmith Inc.  
Attn: Johann von Schenkel  
P. O. Box 428  
Exeter, CA 93221  
800/269-7648  
www.bowsmith.com

BRANDT  
Attn: Gregory Jackson  
2126 Old Wrench School Road  
Godwin, NC 28344  
800/300-6559  
www.brandt.co

Business Resources, Inc.  
Attn: Mark McCarthy  
3324 Hazelwood Drive  
Fallston, MD 21047  
410/557-8177

C & O Nursery  
Attn: Todd Snyder  
P. O. Box 116  
Wenatchee, WA 98807  
509/662-7164  
www.c-onursery.com

Carlisle Container Company  
Attn: Diane Wolf  
750 Claremont Road  
Carlisle, PA 17013  
717/249-2444  
www.carlislecontainer.net

CAS PACK Corporation  
Attn: Scott Clewell  
1750B Woodhaven Drive  
Bensalem, PA 19020  
215/254-7225  
www.caspack.com

CBC America  
Attn: Greg Stamm  
4 Owenwood Drive  
Lincoln University, PA 19352  
610/563-6326  
www.pacificbiocontrol.com

C.S.I. Chemical Corp./PA Service & Supply  
Attn: Roger Wherley  
417 Oak Hill Road  
Biglerville, PA 17307  
717/334-6129  
www.nutri-cal.com

Center for Schools & Communities  
Attn: Jose Reyes-Lua  
275 Grandview Avenue, Suite 200  
Camp Hill, PA 17011  
717/763-1661, x-129

Certis USA  
Attn: Judy Collier  
168 Buckingham Drive  
Rehobeth, DE 19971  
302/542-4665  
www.certisusa.com

Chemtura Agro Solutions  
Attn: Jay Angle  
577 Park Road  
Watertown, CT 06795  
203/631-3758  
www.chemtura.com

Clifton Seed Company  
Attn: Linda Trujillo  
P. O. Box 206  
Faison, NC 28341  
910/267-2690  
www.cliftonseed.com

Compac Sorting Equipment  
Attn: Jody Jackson  
1607 91st Court  
Vero Beach, FL 32966  
772/794-9904  
www.compacsort.com

Country Folks Grower  
Attn: Dan Wren  
6113 State Hwy. 5  
Palatine Bridge, NY 13428  
518/673-3237  
www.leepub.com

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CropCare
Attn: Galen Martin
50 Woodcorner Road
Lititz, PA 17522
717/575-2308
www.cropcareequipment.com

Crop Production Services
Attn: Dave Hull
P. O. Box 340
Biglerville, PA 17307
717/677-6101
www.cpsagu.com

Decco US Post Harvest, Inc.
Attn: John Holowid
11282 Williamson Road
Meadville, PA 16335
814/720-5763
www.deccous.com

Delta T Solutions
Attn: Mike Kovalyck
349 Aspen Court
Aurora, OH 44202
216/854-6335
www.deltatsolutions.com

Douglass Industries
Attn: Frank Palermo
412 Boston Avenue
Egg Harbor City, NJ 08215
609/965-6030
www.dougind.com

Dow AgroSciences
Attn: Patti Webb
151 Quaker Hill Road
Magnolia, DE 19962
302/382-1179
www.dow.com

DuBois Agrinovation
Attn: Eric Menard
478 Notre-Dame, P.O. Box 3550
St. Remi, QC, Canada J0L 2L0
450/454-3961
www.duboisag.com

DuPont Crop Protection
Attn: Alicia Griffin
16822 Crosshaven Drive
Charlotte, NC 28278
704/583-0830

Durand-Wayland, Inc.
Attn: Sam Judah
101 Durand Road
LaGrange, GA 30241
706/882-8161
www.durand-wayland.com

Esh Computer Center
Attn: Nathaniel Gingrich
5351 Lincoln Hwy., Suite 9
Gap, PA 17527
717/442-1080
www.eshcomputer.com

Farmer’s Choice
Attn: Randy Dole
43 W. Knowlton Road
Media, PA 19063
610/499-9477
www.promotioninmotion.com

FilmTech
Attn: Jon Weiswasser
1577 Hagys Ford Road
Narberth, PA 19072
610/909-7594
www.mulchfilm.com

Flamin Fury Peaches
Attn: Paul Friday
P. O. Box 850
Coloma, MI 49038
269/208-4329
www.flaminfury.com

FMC
Attn: Phil Luers
31 Cornerstone Court
Doylestown, PA 18901
919/302-4170
www.fmc.com

Frey Brothers Inc.
Attn: Tammy
372 Puseyville Road
Quarryville, PA 17566
717/786-2146
www.freybrothersinc.com

Growers Equipment Center, Inc.
Attn: James Showers
P. O. Box 706, Third Street
Biglerville, PA 17307
717/677-7133

Growers Mineral Solutions
Attn: Elvin Hursh
220 Wood Corner Road
Lititz, PA 17543
717/371-9578
www.growersmineral.com

Growmark FS LLC
Attn: Ron Fetrow
3150 Stoney Point Road
East Berlin, PA 17316
717/259-9573
www.GrowmarkFS.com

Growth Products
Attn: Craig Lambert
80 Lafayette Avenue
White Plains, NY 10603
914/428-1316
www.growthproducts.com

Harris Moran Seed Company
Attn: Kristin Barrall
3322 Woodland Ferry Road
Seaford, DE 19973
302/381-3404
www.hmclause.com

Harris Seeds
Attn: Michael Wells
355 Paul Road
Rochester, NY 14624-0966
800/544-7938
www.harrisseeds.com

Gardner Pie Company
Attn: Kevin Hickernell
191 Logan Parkway
Akron, OH 44319
717/629-4225
www.gardnerpie.com

Gowan Company
Attn: David Pieczarka
1630 Berry Road
LaFayette, NY 13084
315/447-0560
www.gowanco.com

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Haygrove, Inc.
Attn: Crystal Reisinger
694 Kraybill Church Road
Mount Joy, PA 17552
717/492-4955
www.haygrove.com

Helena Chemical Company
Attn: Jared Hafer
513 W. 3rd Street
Mifflinville, PA 18631
570/336-6147
www.helenachemical.com

High Mowing Organic Seeds
Attn: Brigitte Derel
76 Quarry Road
Wolcott, VT 05680
802/472-6174
www.highmowingseeds.com

Hillside Cultivator Company LLC
Attn: John Shenk
911 Disston View Drive
Lititz, PA 17543
717/669-3158
www.hillsidecultivator.com

Hollard Seeds
Attn: Brad Smith
18875 Hwy. 50 East
Rocky Ford, CO 81067
719/254-7411
www.hollarseeds.com

Hunter Insurance Associates
Attn: Bill Hunter
90 Wagner Drive
Carlisle, PA 17013
717/243-0625

Independent Ag Equipment
Attn: Courtney Picarelli
374 Heidlersburg Road
Biglerville, PA 17307
717/677-6197
www.gvminc.com

International Paper
Attn: Tom Allwein
136 E. York Street
Biglerville, PA 17307
717/677-3124
www.ipaper.com

Kirby Agri Inc.
Attn: Kevin Neyer
500 Running Pump Road
Lancaster, PA 17601
717/299-2541
www.kirbyagri.com

Koppert Biological Systems, Inc.
Attn: Dave Bonk
1502 Old U.S. Hwy. 23
Howell, MI 48843
810/632-8750
www.koppertonline.com

Kube Pak Corporation
Attn: Henry Jenkinson
194 Rt. 526
Allentown, NJ 08501
609/259-3114
www.kubepak.com

Kwik Lok Corporation
Attn: Lisa Ridgway
1222 Ryan Road
New Haven, IN 46774
260/493-4429
www.kwiklok.com

Lee Rain Inc.
Attn: John Melora
2079 East Wheat Road
Vineland, NJ 08361
856/691-4030
www.leerain.com

Lentz Milling Company
Attn: Kerry Schwartz
P. O. Box 13159
Reading, PA 19612-3159
800/523-8132
www.lentzmilling.com

Liphatech Inc.
Attn: Nick Bryars
330 W. Diversey Pkwy., #1006
Chicago, IL 60657
334/462-5094
www.liphatech.com

John Deere Water
Attn: John Kelly
440 Ridge Lane
Springfield, PA 19064
610/755-2465
www.johndeerewater.com

Earl F. Kegerise Inc.
Attn: Larry Kegerise
3454 Pricetown Road
Fleetwood, PA 19522
610/944-8532

King Orchards
Attn: Jim King
4620 N. M-88
Central Lake, MI 49622
231/544-6479
www.kingorchards.com

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Macro Plastics, Inc.
Attn: Pam Bartemus
20 Bengal Terrace
Rochester, NY 14610
585/330-1035
www.macroplastics.com

MANA
Attn: Jim Colitas
7195 Tuscani Drive
Macungie, PA 18062
610/216-0992
www.manainc.com

Maple Ridge Supply
Attn: Jerry Kamysiak
9528 S. Bolton Road
Posen, MI 49776
989/356-4807
www.mapleridgesupply.com

Marrone Bio Innovations
Attn: Zoe Chiaramonte
2121 Second Street, Ste. B-107
Davis, CA 95618
530/750-2800
www.marronebio.com

Martin’s Produce Supplies
Attn: Kevin Martin
627 Britton Road
Shippensburg, PA 17257
717/532-5918
www.martinsproducessupplies.com

MAS LABOR H-2A, LLC
Attn: Kerry Scott
P. O. Box 507
Lovingston, VA 22949
434/263-4300
www.maslabor.com

Mayerfield Supply Company
Attn: Henry Mayerfield
P. O. Box 249
Norma, NJ 08347
856/692-1313
www.mayerfeldsupplycompany.com

Meister Media Worldwide
Attn: Cheryl Van Jaarsveld
37733 Euclid Avenue
Willoughby, OH 44094
440/602-9234
www.meistermedia.com

Metallo
Attn: John Bentley
112 S. Railroad Avenue
New Holland, PA 17557
888/693-2638

Mid-lantic Labeling & Packaging
Attn: Brandon Conlow
P. O. Box 1222
Hammondton, NJ 08037
609/561-9494
www.mid-lantic.com

Miller Chemical and Fertilizer Corp.
Attn: Sam Evans
1606 Knob Run Road
Duncansville, PA 16635
814/215-0137

Monte Package Company
Attn: Mark Dahn
3752 Riverside Road
Riverside, MI 49084
269/849-1722
www.montepkg.com

Morrissey Insurance
Attn: Jason Morrissey
890 North Reading Road
Ephrata, PA 17522
800/422-8335
www.insuringyourfuture.com

Natural Forces LLC
Attn: Danielle Worden
P. O. Box 2601
Davidson, NC 28036
704/892-9952
www.naturalforcesllc.com

N. E. Seed
Attn: Ted Willard
3580 Main Street, Bldg. 10
Hartford, CT 06120
860/724-1240
www.neseed.com

Nichino America Inc.
Attn: Carol Buczik
4550 New Linden Hill Rd.,
Suite 501
Wilmington, DE 19808
302/636-9001
www.nichino.net

Nourse Farms, Inc.
Attn: Tim Nourse
41 River Road
South Deerfield, MA 01373
413/665-2658
www.noursefarms.com

Novozenes Bio Ag
Attn: Sandee Flores
12320 Cuten Road
Houston, TX 77066
281/580-1643
www.novozymes.com

Nufarms Americas Inc.
Attn: Ross Honeycutt
4845 Frankie Road
Fuquay Varina, NC 27526
919/244-4098
www.nufarm.com

O. A. Newton
Attn: Rob Rider
P. O. Box 397
Bridgeville, DE 19933
302/337-8211
www.oanewtonirrigation.com

O. C. Rice, LLC
Attn: Drew Bohrer
104 N. Main St., P. O. Box 471
Biglerville, PA 17307
717/677-8135
www.ocrice.com

OESCO, INC.
Attn: Howard Boyden
P. O. Box 540
Conway, MA 01341
413/369-4335
www.oescoinc.com

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Olde Tradition Spice/
Hidden Creek Birdhouses
Attn: Richard Denchfield
125 Spring Street
Gaithersburg, MD 20877
800/977-1117
www.oldetraditions splice.com
www.ediblebirdhouses.com

Okanagan Specialty Fruits Inc.
Attn: Joel Brooks
311 East 41st Avenue
Vancouver, BC Canada V5W 1N9
509/560-4518
www.arcticapples. com

PA Department of Agriculture
Attn: Samantha Snyder
2301 N. Cameron Street
Harrisburg, PA 17110
717/772-1429
www.pa.preferred.com

PA Department of Agriculture
Attn: Karen Powell
2301 N. Cameron Street
Harrisburg, PA 17110
717/705-9511
www.agriculture.state. pa.us

PA Farm Link, Inc.
Attn: Darlene Livingston
2301 N. Cameron St., Room 311
Harrisburg, PA 17110
717/705-2121
www.pafarmlink.org

PA Office of Rural Health –
Penn State Univ.
Attn: Jim Harvey
202 Beecher Dock House
University Park, PA 16802
814/563-8214
www.porh.psu.edu

PCA - Supply Services
Attn: Dan Hofer
109 Arrowhead Drive, Bldg. 2
Manheim, PA 17545
610/268-5253
www.packagingcorp.com

PDM Insurance Agency, Inc.
Attn: Rita McMullen
4050 Lincoln Way West
Chambersburg, PA 17202
717/369-5500
www.pdminsuranceagency.com

Penns Creek Welding
Attn: Ben Oberholtzer
1340 Broadway Road
Winfield, PA 17889
570/837-1197
www.pennscreekwelding.com

Pennsylvania Farm Bureau
Attn: Chad Newton
510 S. 31st Street
Camp Hill, PA 17011
717/761-2740
www.pfb.com

Phil Brown Welding Corp.
Attn: Phil Brown
4689 - 8 Mile Road
Conklin, MI 49403
616/784-3046
www.philbrownwelding.com

Plant Food Company, Inc.
Attn: Michael Giovanelli
38 Hightstown-Cranbury Station Rd.
Cranbury, NJ 08512
609/548-2555
www.plantfoodco.com

Plummer Supply Inc.
Attn: Rita Lipscomb
P. O. Box 177
Bradley, MI 49311-0177
269/792-2215
www.plummersupply.com

G. Porter Associates
Attn: Bonnie Porter
1850 Bloomingrove Road
Williamsport, PA 17701
570/326-0918
www.gporterassociates.com

Produce Packaging.com
Attn: Kurt Zuhlke
P. O. Box 609
Bangor, PA 18013
610/588-7992
www.producepackaging.com

R & W Equipment Company
Attn: Tom Wivell
2510 Ritner Highway
Carlisle, PA 17015
717/243-2686

RFC Container Company, Inc.
Attn: Nick Magolda
5430 Piacenza Avenue
Vineland, NJ 08361
856/457-1131

Robert Marvel Plastic Mulch, LLC
Attn: Tara Marvel
2425 Horseshoe Pike
Annville, PA 17003
800/478-2214
www.robertmarvel.com

Rockford Package Supply
Attn: Howard Paulson
10421 Northland Drive
Rockford, MI 49341
800/444-7225
www.rockfordpack.com

Roof Basket Works
Attn: Karen Roof
1514 Pigsah Church Road
Lexington, SC 29072
803/359-6808
www.roofbasket.com

Ruhl Insurance
Attn: Nevin Dourte
26-28 Market Square
Manheim, PA 17545
800/665-2283
www.iruhl.com

Rupp Seeds, Inc.
Attn: Jay Ruwet
25 Wegman Street
Auburn, NY 13021
866/240-7333
www.ruppseeds.com

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Saylor’s Farm Products
Attn: John Saylor
17319 Rte. 68
Sligo, PA 16255
814/745-2306
www.saylorsfarm.com

Schafer Fisheries Inc.
Attn: Angelina Schafer
P. O. Box 399
Thomson, IL 61285
815/589-3368
www.sf-organics.com

Seedway LLC
Attn: Bruce Ulmer
P. O. Box 250
Hall, NY 14463
800/836-3710
www.seedway.com

Seminole Produce Distributing Co.
Attn: Rick Stauffer
P. O. Box 4521
Sanford, FL 32772
407/322-7785
www.freshveggie.com

Shawnee Canning Company
Attn: Lisa Johnson
P. O. Box 657
Cross Junction, VA 22625
540/888-3429, x-201
www.shawneesprings.com

Siegers Seed Company
Attn: Denise Rohlof
13031 Reflections Drive
Holland, MI 49424
800/962-4999
www.siegers.com

Signs of the Seasons
Attn: Suzanne Gilmore
2675 W. Clark Street
Rensselaer, IN 47978
219/866-4507
www.signsoftheseasons.com

Solutions 4Earth
Attn: Dan Gard
119 Glebe Lane
Lancaster, PA 17602
717/940-3002
www.solutions4earth.com

Spectrum Technologies, Inc.
Attn: Bridget Bozarth
3600 Thayer Court
Aurora, IL 60504
800/248-8873
www.specmeters.com

Stand ‘n Plant
Attn: Fran Olliver
95 Rose Road
Saltsburg, PA 15681
724/639-3965
www.standnplant.com

Stark Bros. Nurseries & Orchards Co.
Attn: Shawn Bixby
P. O. Box 398
Louisiana, MO 63353
800/435-8733
www.starkbros.com

Stokes Seeds Inc.
Attn: Tom Pagels
854 N. Main Road, Suite A
Vineland, NJ 08360
856/692-6218
www.stokeseeds.com

Stoller Enterprises, Inc.
Attn: Shelli Male
4001 W. Sam Houston Pkwy., #100
Houston, TX 77043
713/467-1493
www.stollerusa.com

Summit Harvest Inc.
Attn: Douglas Pallman
1511 Summit Lake Road
Clarks Summit, PA 18411
570/585-1707
www.summitharvest.com

Summit Tree Sales
Attn: Jan Melvin
55826 60th Avenue
Lawrence, MI 49064
800/424-2765
www.summittreesales.com

Superior Wind Machine Service
Attn: Lee DeLeeuw
6919 Kraft Avenue
Caledonia, MI 49316
616/971-8177
www.orchard-rite.com

Sustane Natural Fertilizer
Attn: Rich Hawkes
P. O. Box 168
Staatsburg, NY 12580
914/474-1198
www.sustane.com

Suterra LLC
Attn: Nathaniel Bliss
20950 NE Talus Place
Bend, OR 97701
541/408-5065
www.suterra.com

Syngenta
Attn: Duane Hobbs
2710 Long Farm Lane
Lancaster, PA 17601
717/560-1421
www.syngenta.com

T3 Technologies
Attn: Patrick Trail
P. O. Box 65
Centreville, MI 49032
269/615-0773
www.T3Tracking.com

Tallman Family Farms LLC
Attn: Susan Tallman
31 Schwalm Road
Tower City, PA 17980
717/647-2623
www.tallmanpotatoes.com

Targit Sales Associates
Attn: Tim Polak
P. O. Box 6298
Hillsborough, NJ 08844
800/526-9224
www.targitsales.com

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Paul S. Harner January 19, 1914 - September 14, 2009

In Memory Of

Paul S. Harner, 95, of Pine Grove Mills, passed away at his home on Friday, Sept. 11, 2009. He was born on Jan. 19, 1914, in Natrona, a son of the late Melvin C. and Alma J. Sechman Harner. In 1939, he married Adelaide Morgan, and together they raised three children and three stepdaughters, one stepson and seven grandchildren. Memorial contributions may be made to St. Paul Lutheran Church, 227 West Pine Grove Road, P.O. Box 277, Pine Grove Mills, PA 16868.

C. Harner and his wife, Gail, of Gulf Port, Fla., and Earle W. Danny R. Harner and his wife, Pamela, of State College, David E. Harner and his wife, Gail, of State College, State campus. In addition to his wife, he is survived by four sons, one daughter, three stepdaughters, one stepson and 13 grandchildren. Burial was in Pine Grove Mills. Visitation was Saturday, Sept. 13, 2008, at Koch Funeral Home, 227 West Pine Grove Road.

In October 1985, he married his second wife, Nancy, of State College. She survives him along with 13 grandchildren and six great-grandchildren. Visitation was Saturday, Sept. 13, 2008, at Koch Funeral Home, 227 West Pine Grove Road.

C. Harner was a 1932 graduate of Wilkinsburg High School. He earned a Bachelors Degree in Horticulture from Penn State in 1939. He served on the Ferguson Township School Board and the State College Area School District’s Board. Paul was Horticulture Society of Pennsylvania and the Penn State Alumni Association. He served on the Ferguson Township School Board.
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