Horticultural News

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Horticultural News

Editors: Winfred P. Cowgill, Jr. & Wesley R. Autio

The New Jersey State Horticultural Society was organized on August 17, 1875 at Geological Hall, Rutgers College, New Brunswick, NJ. It remains the oldest Horticultural organization in New Jersey.

Horticultural News began as the *The New Jersey State Horticultural Society News*, in October of 1920. The Society began "collecting paid membership in order to obtain funds to promote new features of the society and extend the usefulness of the society. The Horticultural Society News was started to be the official society publication." Published M. A. Blake, Professor at Rutgers College was the first president and chair of the publication committee.

Editors served as follows:

MA Blake	1920 - 1947
Norman F Childers	1948 - 1980
Win Cowgill	1981 - 1988
Emily Brown Rosen	1988 - 1990
Linda Butenis Vorsa	1991 - 1995
Jerry Frecon	1995 - 2010

June 2010: *Horticultural News* has moved to an online web-based format. The New Jersey State Horticultural Society has partnered with the University of Massachusetts *Fruit Notes*, Dr. Wesley Autio, Editor. Cowgill and Autio will be the new editors of *Horticultural News* and *Fruit Notes*.

Horticultural News is distributed to growers, extension personnel and researchers and libraries across North America. Horticultural News focuses primarily on tree-fruit culture, but addresses small-fruit cultural issues as well. Most reports are from current research at Rutgers University, University of Massachusetts, and other universities.

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Cover: McIntosh apple tree tagged for precision thinning at the UMass Cold Spring Orchard, Belchertown, MA. Jon Clements photo.

2016 Precision Thinning and Predicting-Fruit-Set Demonstrations

Jon M. Clements
University of Massachusetts Amherst

In 2016, I set up six precision thinning and predicting-fruit-set demonstrations, three at each of two locations: Tougas Family Farm, Northborough, MA, and UMass Cold Spring Orchard Research & Education Center, Belchertown, MA. McIntosh, Gala, and Honeycrisp were used at both locations. The precision-thinning procedure is as follows:

- Count and tag individual flower spurs on five representative trees per variety. For this demonstration I used ten spurs per tree for a total off 50 spurs per variety.
- Apply a petal-fall thinning spray and begin measuring individual fruit diameters on each spur. Enter fruit measurements into predicting-fruit-set spreadsheet calculating predicted fruit set for each measurement date.
- Continue measuring fruits and applying chemical thinning sprays until the desired crop load is predicted or achieved.

McIntosh flower cluster tagged in preparation for pricision-thinning assessment.

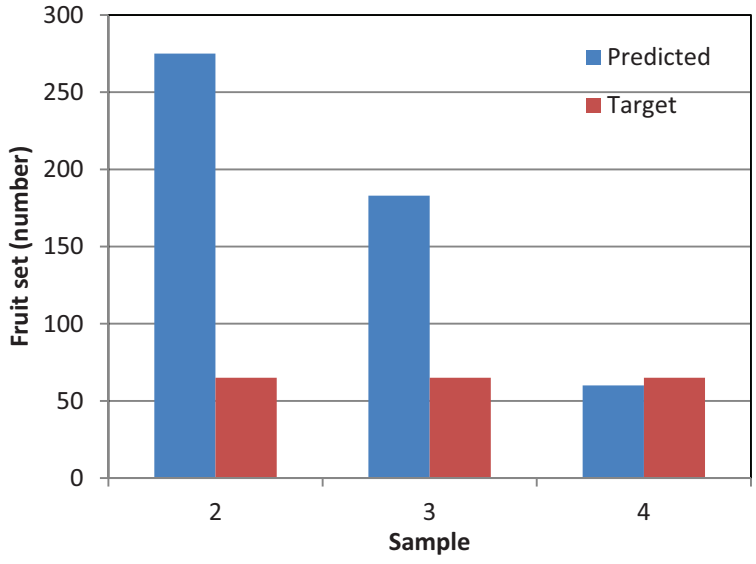

Figure 1. Predicted fruit set (number) vs. target fruit set at three sampling periods.

More information on the precision-thinning procedure and the predicting-fruit-set spreadsheet is available on the Michigan State University Extension Apples/Horticulture website: http://msue.anr.msu.edu/topic/apples/horticulture

Fruit growth data entered into the spreadsheet are used to calculate predicted number and percent fruit set based on the initial actual spur/flower count and the desired number of fruit (estimated) on the tree at harvest. See Figures 1 and 2 for examples of number of fruit and percent fruit set, respectively.

Chemical thinning applications were made on all demonstrations, but differed by orchard and variety.

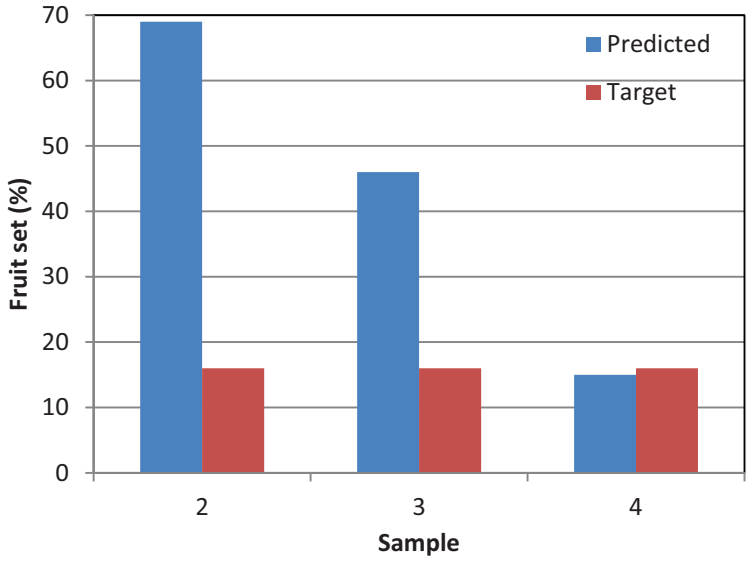

Figure 2. Predicted fruit set (%) vs. target fruit set at three sampling periods.

The Malusim carbohydrate excess/deficit model as calculated on NEWA was (or should have been) used to guide chemical thinning applications, and the outputs are shown in Figures 3 and 4 for Tougas Family Farm and UMass Cold Spring Orchard, respectively.

For each of the varieties at both locations, results of the spreadsheet outputs are summarized in Tables 1 and 2, for Tougas Family Farm and UMass Cold Spring Orchard, respectively. Chemical thinning applications are presented in each table, and results are discussed for each location.

Conclusions per Variety at Tougas Family Farm

McIntosh at harvest had 90 apples left on trees (actual count in August), which is below the target number of 125 identified in the spring. In retrospect, the target was probably too high and the final crop load was quite acceptable according to the grower. The predicting-fruit-set protocol worked well in general in this case.

Table 1. Predicted fruit set for three varieties at Tougas Family Farm.

Variety	Spurs per tree (number)	Target fruit number (%)	May 20 Predicted number (%)	May 24 Predicted number (%)	May 31 Predicted number (%)	June 3 Predicted number (%)
McIntosh	125	120 (24%)	265 (53%)	282 (56%)	194 (39%)	123 (25%)
Gala	105	100 (25%)	-	285 (71%)	215 (54%)	135 (34%)
Honeycrisp	100	45 (10%)	-	380 (84%)	217 (48%)	104 (23%)

Chemical thinning applications at Tougas Family Farm:

- McIntosh: AmidThin 7 oz. per acre at late bloom/early petal fall. Maxcel 100 ppm on 5/25. Carbaryl 1 quart applied 6/3. One hand-thinning run-through.
- Gala: Promalin (1 pt. per acre) applied 5/4 and 5/11. Maxcel (100 ppm) applied 5/25 or 26. Carbaryl (1 qt.) applied after 5/31 measuring. One hand-thinning run-through.
- Honeycrisp: AmidThin 7 oz. per acre at late bloom/early petal fall. Maxcel 100 ppm on 5/25. Carbaryl 1 qt. applied 5/31. Hand thinning twice.

Table 2. Predicted fruit set for three varieties at the UMass Cold Spring Orchard.

Variety	Spurs per tree (number)	Target fruit number (%)	May 26 Predicted number (%)	June 2 Predicted number (%)	June 8 Predicted number (%)
McIntosh	90	75 (20%)	328 (88%)	191 (51%)	115 (31%)
Gala	85	65 (16%)	275 (69%)	183 (46%)	60 (15%)
Honeycrisp	55	45 (16%)	224 (81%)	115 (42%)	51 (19%)

Chemical thinning applications at UMass Cold Spring Orchard:

- McIntosh: NAA 2 oz. per acre (5 ppm) plus Maxcel 75 ppm on 5/26. Carbaryl (1 qt.) applied 6/4.
- Gala: carbaryl (1 pt.) plus Maxcel (75 ppm) applied 5/29. Carbaryl (1 qt.) applied 6/4.
- Honeycrisp: NAA 2 oz. per acre (5 ppm) plus Maxcel 75 ppm on 5/26. Carbaryl (1 qt.) applied 6/4.

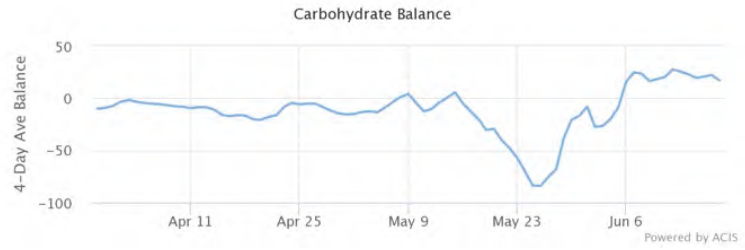

Figure 3. Malusim carbohydrate model estimates through the spring at Tougas Family Farm.

Figure 4. Malusim carbohydrate model estimates through the spring at UMass Cold Spring Orchard.

Gala at harvest had 80 apples left on trees (actual count in August), 20% less than the target number identified in the spring. Tougas Family Farm felt, however, that the number of apples left on these Gala was just about right.

Honeycrisp at harvest had 55 apples left on trees (actual count in August), which is slightly above the target number identified in the spring. The predicting-fruit-set protocol worked well in general, indicating the need for more chemical thinning, but that last carbaryl application did not do too much because hand thinning was needed twice in this Honeycrisp block.

Conclusions per Variety at UMass Cold Spring Orchard

McIntosh: on July 11, a fruit count on each spur was made which resulted in 56 fruits left on 50 spurs.

With a potential of 250 fruits, that is 22% fruit set. A total of 553 fruit remained on the 5 data trees at harvest, an average of 111 fruit per tree. This is pretty close to the predicted number of fruit setting of 115 on June 8, but far above the target of 75. There were too many small fruit, 120-count or smaller. The April freeze and subsequent drought may have contributed to the small-fruit situation in addition to the heavier than desired crop load.

Gala: on July 11, a fruit count on each spur was made which resulted in 26 fruits left on 50 spurs. With a potential of 250 fruits, that is 10% fruit set, which is below the prediction. A total of 535 fruit remained on the five trees at harvest, an average of 107 fruit per tree. This is far more than the predicted number of fruit setting on Sample 4 (June 3), which was 60. Obviously, the spurs used were not representative of the trees. As a result, there were way too many small fruit, 120-count or smaller, left on the tree at harvest. Additional thinning was needed despite the predicting-fruit-set model. The last thinning application of carbaryl alone on June 4 was largely ineffective at removing any more fruit. Note the high carbohydrate balance (Figure 4) following this chemical thinning application.

Honeycrisp: on July 11, a fruit count on each spur was made which resulted in 35 fruits left on 50 spurs. With a potential of 250 fruits, that is 14% fruit set, which is very close to the fruit set prediction. But, a final fruit count at harvest resulted in 35 apples left on the trees. This is below the target fruit number per tree. It is likely the April freeze killed some flower buds, and that resulted in less fruit than the predicting-fruit-set model predicted. The model may not work so well in years where buds were damaged by weather extremes. Also, with fewer number of spurs tagged and measured (10 vs. 15), that increases the chance of choosing "bogus" spurs that may not be particularly representative of the trees.

Considerations for Future Use

- Increasing efficiencies and accuracy in counting flowering spurs, tagging spurs, and measuring fruits is needed. For example, a smartphone app to improve measuring efficiency would help.
- Accurately counting the number of flowering spurs and deciding on the appropriate crop load is important for the predicting fruit set protocol to work properly.
- If "bogus" spurs are used/measured, i.e., they are not representative of the tree, the predicting-fruit-

McIntosh trees used in the precision thinning demonstration at harvest at the UMass Cold Spring Orchard.

set calculations are compromised. Reducing the number of spurs counted from the recommended 15 adds to the risk of error in prediction.

- Although time consuming, it is valuable to go through the process of measuring and tracking fruit growth. The process adds greatly to the "seat of the pants" approach to chemical thinning and precision crop load management.

Thanks to Mo and Andre Tougas of Tougas Family Farm for assisting in tagging spurs and measuring fruits.

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Training and Pruning Apples, the Basics

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Rutgers University-New Jersey Agricultural Experiment Station

Jon Clements and Wes Autio
University of Massachusetts Amherst

Pruning and training apples is both an art and a science. This age-old adage is still true in today's modern high density orchard planting systems, however, the science is becoming more important to achieve peak production. Orchard productivity is a direct function of sunlight. Light management through proper pruning is the key to both high yield and high quality fruit production. Annual pruning is a necessary practice that maintains the profitability of an orchard. Knowing not only what must be cut but also what should be left uncut, and how the tree will respond is the art and science of pruning. The productivity of an orchard can be affected for the next three years by cuts made this season! It is critical for growers to know the result of management decisions made now, and understand what pruning technique will maximize profits in the long run.

This article will focus on large central leader trained trees and is a primer for general principals of pruning and training. In higher density planting systems like tall- spindle (2,200 plus trees per HA), there is greater need for detailed pruning and management of the trees. But for the sake of time we will just discuss important general rules of pruning as they apply to all orchard densities. For discussion on how to prune and manage tall spindle systems see: http://tallspindleapple.com/

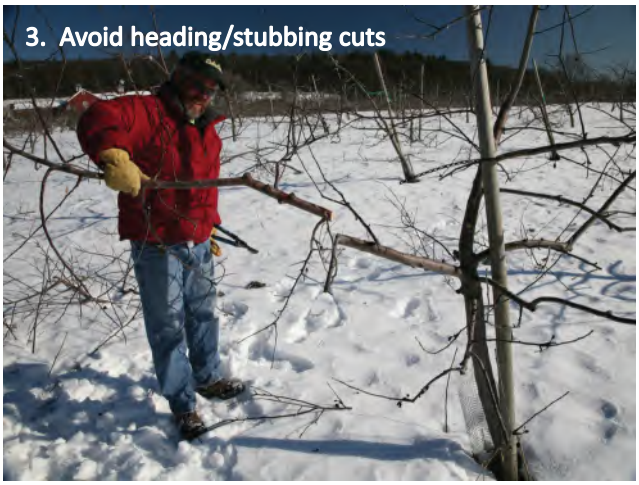
The objective of tree training and pruning is to *maximize the* sunlight interception of the tree. This allows for light distribution within the tree canopy to maximize fruit quality for the current season and to provide fruit bud initiation for next season's crop. Correct pruning and tree manipulation techniques must be done on an annual basis in the dormant season. On some varieties a "tune-up" in the summer assists with color formation. Growers should also keep in mind other important factors that justify the need for annual pruning: maintenance of tree height; building a structure to support crop load; and maintaining crop load by balancing vegetative growth with fruiting. Maintaining an open canopy with proper pruning and tree structure allows for penetration of pesticides and natural reduction of pest pressure (especially disease) due to better airflow with in the tree canopy.

Young central-leader Cameo on M.9.

Apple Tree Pruning and Training

A few basic rules for apple pruning, also known as the Seven Rules (complete them in order from 1-7).

1. **Remove the 2-3 largest limbs in the top 2/3 of the tree**, based on their diameter (apply the 2-1 rule, see #2). If growing a free-standing, central-leader tree on more vigorous rootstocks, apply this rule to the upper half of the tree above any permanent scaffold limbs. **(**The bottom limbs are permanent scaffolds. After year 6-8 you may need to remove one of the permanent scaffolds, no more than one per tree per year as needed.) *Big branches make big trees!*



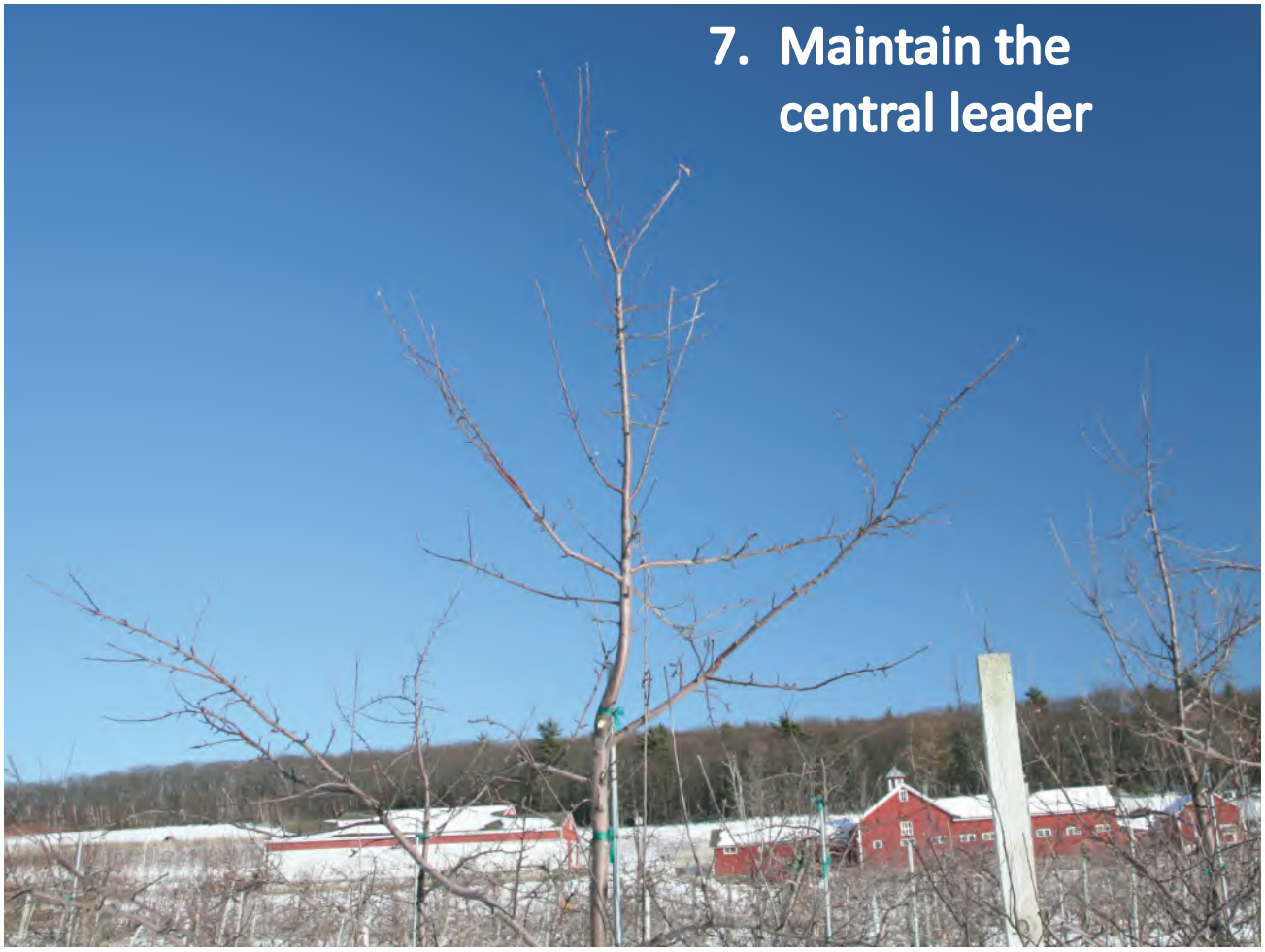
3. **Avoid heading cuts,** remove the entire limb instead using a heading cut. The one exception to this rule is a heading cut into newly planted trees (1 year old) that are to be grown to a free-standing or staked central-leader tree where strong, lower scaffold branching is desired in the bottom 1/3 of the tree. Heading is the exception if you do not have the use of the chemical 6-benzyladenine (6-Ba) to cause buds to break. Never head into upright, vigorous 1 year old wood!

2. **Use the 2-1 rule, also called diameter based pruning.** This is removing any scaffold branch or limb that is *half the size or larger in diameter as compared to the central leader*. A branch of this size chokes out the leader, not allowing the tree to reach optimal fruiting capacity. For high density systems like tall-spindle, use a bevel cut to remove these limbs.

4. **Avoid complex branches** on lateral limbs. We say simplify or de-complex the branch. If any branch divides cut off one side. Treat your lateral or scaffold branches like your leader, don't let them divide and become forked. The more lateral or scaffold branches that are 'simplified' the more desirable they are to produce high quality fruit.

5. **Remove downward hanging (pendant) branches** with a thinning cut.

6. **Remove shoots that grow straight down or straight up** from a lateral branch. Again, use a thinning cut, do not head!



7. **Leave one shoot as a central leader**, do not prune it. When the tree is mature and reached its natural height, it will fruiting, and will start to bend over. We use the term *Crop and flop*! That means when the leader bears fruit it will bend over (flop) and stop growing. You may then cut back to a weaker side branch to leave a wick (central leader) to maintain apical dominance.

Two Types of Pruning Cuts: Heading and Thinning

A heading cut is when a cut is made into a branch or the leader. Heading cuts stimulate excessive growth at the site of the cut, and will stiffen the wood that has been headed. This a typical practice when forming a central leader red delicious tree. It used to be referred to as the Don Heinke head and spread method.

Cutting into juvenile (1 year old) wood on a leader or one year growth on side branch will cause the 3-4 buds below the cut to break and grow vigorously. These fast growing shoots will cause excessive shade.

If tree growth suppression and the maintenance of a compact tree are the only desired effects from a heading cut, always cut an established limb or scaffold back into a mature, bearing side shoot or limb (2-3 year old wood). When making a heading cut never cut a limb back to blind wood (deadhead). The result will be tip dieback and wood rots will occur.

Renewal cuts, on the other hand, are cuts made at the point of branch origin. (Do not remover the branch collar) Most renewal cuts are intended to remove a branch that is no longer desirable because of vigor concerns or excessive crowding. Renewal cuts, on established trees, are always into mature wood and will not spark the vegetative regrowth that a heading cut will.

Maintain a Balanced, "Calm" Tree

A goal of training and pruning apple trees is to result in a "calm" tree, i.e., one that is not "reacting" with a lot of vigorous, upright, non-fruitful growth. The choice of rootstock, tree spacing, annual bearing and the orchard system combined with the pruning techniques used will define whether you end up with a calm or "reactionary" tree. Using a lot of thinning cuts into older wood, instead of heading cuts, will help maintain a "calm" tree.

You should strive for a balance of 1-, 2-, and 3-year-old wood in each tree. One-year old wood that is pencil-size in diameter and will produce new fruit buds in the current growing season (and may produce fruit with tip-bearing varieties on the terminal bud); Two year old

'Calm' Honeycrisp/M.9

Standard central leader

wood will have a good amount of spurs and produce the best apples; and 3-year old wood will still produce fruit but is ready to make way for new fruiting wood using a thinning/renewal cut. In the ideal, you would have a nice balance of 1/3 each of 1-, 2-, and 3-year old wood. This applies to most all orchard pruning and training systems, although older, central-leader orchards will have to keep older structural wood (in addition to the central-leader) in lateral branches (scaffold limbs) to grow younger wood from and support the crop load.

Central Leader

The central leader is the tree's natural regulator through its terminal bud and apical dominance. Tree performance and structure depends heavily on the manipulation of the central leader. Cutting into the central leader can cause a loss of growth control with that tree or delay cropping on non-bearing trees. Heading cuts on a central-leader can be done at planting when conditions warrant its use (except on slender- or tall-spindle trees where no cuts are made to the leader). Cutting the central leader should be the last resort to induce branching. If more branching is desired, other techniques such as notching, bending and the use of plant growth regulators (the PGR 6-benzyladenine (6-Ba) is very effective in stimulating buds to break). All of these methods may provide a better alternative than using a heading cut for inducing branching on the leader. Never cut into the central leader without knowing what the growth response will be!

Spur pruning is a good way to rejuvenate trees that are heavy spur bearers such as Red Delicious, Empire and Gala. A tree will produce its highest quality fruit on spurs that are 2-5 years old. Any spur that is older than 5 years reduces reduced quality fruit and should be removed. Some spur removal with pruning should be done every year on trees older than five years. The age of a spur can be determined by its size. Spurs on the bottom of limbs should be removed, as they will never produce high quality fruit. In addition, entirely remove older fruiting branches as discussed above with a thinning cut. Spur pruning initiates new shoot growth to produce new fruiting wood.

Although proper pruning is an overall dwarfing process, it is locally invigorating, stimulating vegetative

Dwarf central leader

growth at the site of the cut and the three to four buds below it. On a non-bearing tree, this type of stimuli causes the tree to remain in the vegetative mode, which delays cropping. For this reason, pruning young non-bearing trees should be minimized to correct major structural defects. Tree training and *minimal* corrective pruning of tree structure in the early non-bearing years will enhance the development of a new orchard ensuring the trees fill their space and begin fruiting.

Branch manipulation (training) plays the major role on tree structure and precocity (how quickly the orchard bears a crop) in the non-bearing years of an orchard. Only minor pruning should be done until after the tree crops for the first time. Once the tree has produced a crop, then it is time to begin an annual dormant pruning plan. Since we have not done much pruning up to this point, the tree may need a lot of attention (depending on variety) at this time (after 3-4 years of growth and non-fruiting). An excessive pruning at any single time, however, will cause an overstimulation of vegetative growth and a loss of balance within the tree between fruiting and vegetative growth. Excessive pruning can also cause sunburn to the fruit and wood of sensitive varieties such as Gala, Fuji and Golden Delicious.

Finally, understanding the proper balance and relationship between fruit and vegetative growth will ensure quality production of annual fruit crops. No two systems or cultivars will respond in the same manner to all the techniques presented above, but understanding these procedures and their responses will help growers make the right cultural decisions.

Tall Spindle

Tall spindle training requires some adjustments to the above seven rules. Primarily, there are no permanent scaffolds, all branches are renewable fruit shoots, hence Rule 1 is altered to remove the 2-3 largest limbs in the entire tree.

Resources

Books

"Training and Pruning Apple and Pear Trees" 1992. Chick Forshey, D. Elfving and B. Stebbins, Cornell This is an excellent reference on apple pruning. It is a 166 page paperback that is out of print but can be obtained from Amazon as a used book. It contains a lot of theory on the why's of apple growth and pruning http://www.amazon.com/

Articles

"Training and Pruning Apple Trees in Intensive Orchards" 2009, Richard Marini, Virgina Tech. http://pubs.ext.vt.edu/422/422-021/422-021.html

The vertical axis apple planting system, Steve Hoying and Terence Robinson, Cornell http://www.fruit.cornell.edu/tree_fruit/resources/The%20Vertical%20Axis%20Planting%20System.pdf

Fact Sheets from UMASS-Wes Autio, Duane Green, Win Cowgill

- ***https://ag.umass.edu/fruit/fact-sheets***
- Maintaining a Balance Between the Top and the Bottom of Apple Trees
- Apple Tree Pruning and Training
- Limb Positioning

Jon Clements Blog
http://jmcextman.blogspot.com/

Youtube Video
Pruning central-leader apples 2007-Clements
https://www.youtube.com/watch?v=qx7ndnTeUME

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2017 Mid-Atlantic Fruit & Vegetable Convention Overview

Monday, January 30		
FSMA Food Safety Workshop	Recall Readiness Workshop	Greenhouse Vegetable Prod. Workshop
Hops Production Workshop	PA Pesticide Applicators' Training	Apple Tree Hands-On Grafting Workshop
Farm Market Bus Tour	Vegetable Grafting Workshop	Cider Symposium
Tuesday Morning, January 31	**Tuesday Afternoon, January 31**	**Tuesday Evening, January 31**
Fall Ornamentals	Vine Crops	Annual Grower Reception and Banquet
Broccoli	Crucifers	
Changing Climate	Winter Storage Crops	
Organic Vegetable Production	Organic Vegetable Production	
Snap Beans	Hydroponics	
Asparagus	Labor/Farm Management	
Market Trends	Wholesale Marketing	
Pome Fruit	Tree Fruit	
Keynote Presentation		
Wednesday Morning, February 1	**Wednesday Afternoon, February 1**	**Wednesday Evening, February 1**
High Tunnels	Sweet Corn	Ice Cream Social
General Vegetables	General Vegetables	
Greenhouse Ornamentals	Greenhouse Ornamentals	
Cover Crops	Small Fruit	
Onions	Agritainment and Direct Marketing	
Marketing 101	Wine Grapes	
Wine Grapes	Tree Fruit	
Tree Fruit	Spanish	
Spanish		
Thursday Morning, February 2	**Thursday Afternoon, February 2**	
Tomatoes	Tomatoes	
High Tunnels	Specialty Vegetables	
Potatoes	Potatoes	
Cut Flowers	Leafy Greens	
Small Fruit	Small Fruit	
CSAs	Social Media and Advertising Strategies	
Tree Fruit	Stone Fruit	
	Tree Fruit	

FSMA Grower Certification Training

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Fee - $50 includes lunch PA growers, $150 for non-PA growers - limited registration

This training is for fruit and vegetable growers and others interested in learning about: produce safety, the Food Safety Modernization Act (FSMA) Produce Safety Rule, Good Agricultural Practices (GAPs), and co-management of natural resources and food safety. This PSA course is one way to satisfy the grower training requirement of the FSMA Produce Safety Rule as outlined in Section 112.22(c).

Participants in the course will learn about:

- Microorganisms relevant to produce safety and where they may be found on the farm;
- How to identify microbial risks, practices that reduce risks, and how to implement produce safety practices on the farm;
- Requirements in the FSMA Produce Safety Rule and how to meet them.

After attending the entire course, participants will be eligible to receive a certificate from the Association of Food and Drug Officials (AFDO) that verifies they have completed the training course. The Pennsylvania Food Safety Resource Center is providing funds to cover AFDO certification fees and course material costs for this workshop.

Instructors: Jeffrey Stoltzfus, Lee Stivers, and others from the Penn State FSMA Extension Team

Greenhouse Vegetable Production Workshop

9:00 a.m. to 4:00 p.m.

Fee - $60 includes lunch - limited registration

We will cover greenhouse production of tomatoes, bell peppers and cucumbers from A- Z. This is the ideal place for someone new to greenhouse production or seeking to refine their operation. Topics include: Overview of Greenhouse Production Systems; Pruning and Trellising; Pollination; Plant Nutrition; Greenhouse Vegetable Diseases; Greenhouse Vegetable Insects and Mites; Best Varieties for Greenhouse Production; Harvest and Post Harvest Handling; Economics of Greenhouse Production .(bring your numbers as this is an open discussion)

Instructors: Steven Bogash, VP ISP Technologies and PSU Extension Ret.; Dr. Timothy Elkner, Horticulture Educator, PSU Extension: Thomas Ford, Horticulture Educator, PSU Extension; and Dr. Beth Gugino, Plant Pathologist, PSU Plant Pathology.

Hops Production Workshop
9:00 a.m. to 3:30 p.m.
Fee - $90 includes lunch

The demand for local hops is creating a renewed interest in growing hops. This workshop features some of the most knowledgeable hops researchers and educators on the East Coast. This one day session on hops production is designed to educate hops growers and prospective hops growers on pest management, nutrient management, economic implications, malting barley as a companion enterprise, new research, and why hops are used in beer production.

Instructors: *Erin Lizotte, Michigan State Univ.; Tanner Delvalle, Penn State Univ.; Brad Bergefurd, Ohio State Univ.; William Bamka, Rutgers Univ.; Jon Bonfiglio, Penn State Univ; and Dr. Ryan Elias, Penn State Univ.*

Recall Readiness Workshop - What To Do When FDA Calls
8:30 a.m. to 11:30 a.m.
Fee - $20 - limited registration

There are painful recalls and then there are very painful recalls. More often than not, the difference is attributed to preparation. While many companies have plans that address the product-related components of a recall, most are sorely unprepared for the onslaught of unwanted attention from the media, customer and regulators.

During this session, we will review the recall response process and then dive deep into what it takes to communicate during a recall. Under the Food Safety Modernization Act (FSMA), the U.S. Food & Drug Administration requires four specific recall plan components in order to comply with the Preventive Controls for Human Food (PCHF) rule – and three of them have to do with how and to whom the company communicates. Whether you must comply with the PCHF rule or not, these are elements that shouldn't be left out of any recall plan!

Instructor - Amy Philpott, Vice President, Crisis Services and Reputation Management at Watson Green LLC, Co-developer to the International Food Information Council's 2015 Food Safety: A Communicator's Guide to Improving Understanding

Vegetable Grafting Workshop
1:00 p.m. to 4:00 p.m.
Fee - $30

This half day workshop will explain and demonstrate grafting techniques for vegetable plants focusing on tomatoes and peppers. Participants will have the opportunity to practice their grafting techniques in the workshop.

Instructor - Dr. Matthew Kleinhenz, Ohio State Univ.

Pennsylvania Pesticide Applicators' License Training
9:00 a.m. to 4:00 p.m.
Fee - $60 includes lunch and course and study materials.

If you intend to purchase and/or apply restricted use pesticides for the purpose of producing an agricultural commodity on land which is owned or rented by you, then you need a Pennsylvania Department of Agriculture Pesticide License. To become a certified private applicator, testing is required. This full day session on January 30 will cover the basics and prepare you for the pesticide applicator's exam which will take place the next morning, January 31, from 8:30 AM – 11:30 a.m.

Hands-on Apple Tree Grafting Workshop
1:30 – 3:30 p.m.
Fee - $65 – limited registration

Have some antique varieties you would like to grow on a size-controlling rootstock? Find a scion mutation in your orchard you want to evaluate? Join us for this workshop. Our guest speakers Jerry Frecon, Taylor Mackintosh, and Shaun Callahan are well versed in the science of grafting and maintenance of variety plantings. Knives, rootstocks, and scion wood will be provided. Participants will also receive a grafting knife to take home! Topics include:

Practical benefits of learning how to topwork or bench graft trees;
Establishing and Maintaining a Test Planting for Assessing the Potential for New Varieties on your Farm
Bark Grafting and Bench Grafting

Cider Symposium
9:00 a.m. to 3:00 p.m.
Spring Gate in the Village 5948 Linglestown Rd. Harrisburg, PA 17112
Fee - $160 includes lunch

What's behind a quality cider? This full day workshop will provide information and up to date research on sensory analysis, tannins, cider apple varieties, and help to hone your own senses to make you a better quality control check point at your own cidery. Participants will hear from researchers, educators and professionals in the cider production and marketing fields. This workshop is a must for those opening a cider business or looking to perfect their cider production or marketing skills. Speakers include Adam Redding from Good Intent Cider in Bellefonte, Edwin Winzeler from Ploughman Cider in Wenksville, and Carla Snyder from Penn State Extension. For further details visit www.mafvc.org or call 717-334-6271 extension 321. Workshop participants are invited to a networking reception and tour following the close of this program at Spring Gate Vineyard.

Mid-Atlantic Fruit and Vegetable Convention
2017 Educational Program

As of January 4, 2017

Tuesday Morning, January 31, 2017

Fall Ornamentals - Trinidad Room,
9:00 **Update on PVGA Funded Pumpkin Variety Trial** - Elsa Sanchez, Penn State Univ
9:45 **Fall Agritainment at Ackerman Farms** - John & Eve Ackerman, Ackerman Family Farms

Broccoli - Magnolia Room ABC,
9:00 ** **Core Credit** - to be announced
9:45 **Expanding Eastern Broccoli Production with Adapted Varieties and Expanded Market Channels** - Dr. Thomas Bjorkman, Cornell Univ.

Changing Climate - Wild Rose Room,
9:00 ***Managing Weeds in a Warmer World** – Dr. Steve Young, Cornell Univ
9:45 ***Managing Vegetable Diseases in a Changing Climate** – Dr. Beth Gugino and Dr. Shelby Fleischer, Penn State Univ

Organic Vegetables - Empire Room AB,
9:00 **Organic Herb Production** - Tony Ricci, Green Heron Farm
9:45 **Rotational No-Till and Insectary Strips for Organic Cucumber Production** – Dr. Gladis Zinati, Rodale Institute

Snap Beans - Empire Room CD,
9:00 ***Snap Bean Weed Control Update** - Dwight Lingenfelter, Penn State Univ.
9:45 ***Improving the Management of White Mold in Snap Beans** – Dr. Sarah Pethybridge, Cornell Univ

Asparagus - Cocoa Terrace/Cocoa 1,
9:00 **Creating New Asparagus Varieties** - Scott Walker, Walker Bros Asparagus Farms
9:45 **Growing and Marketing Asparagus** - Carl Cantaluppi, North Carolina Ext. Retired

Market Trends - Crystal Room,
9:00 **Direct Marketing - Is There a Silver Bullet Model for Farmers Markets CSA's & Home Delivery**- Heather Manzo, Penn State Univ.
9:45 **On the Ground Evolution of Farmers Markets, CSA's & Other Adventures in Direct Marketing** - Art King, Harvest Valley Farms

Pome Fruit - Nigerian Room,
9:00 **Invocation** – Ed Weaver, Weavers Orchard
9:05 **President's Address** – Tad Kuntz, State Horticultural Assn. of PA
9:15 **Update on Interstate Cooperation in Fruit Programs –** Dr. Carolee Bull, Penn State Univ.
9:45 ***George Goodling Lecture - Getting the Most from ReTain –** Dr. Phil Schwallier, Michigan State Univ.

Keynote - Nigerian and Trinidad Rooms
10:45 **Produce Industry Legislative Update** - Robert Guenther, United Fresh Produce Association
11:00 **Keynote – How Mid-Atlantic Fruit and Vegetable Growers Can Take Advantage of Future Trends In Agriculture as the Climate, Technology, Economy and Political Landscape Change –** Dr. Jay Lehr

Tuesday Afternoon, January 31, 2017

Vine Crops - Trinidad Room, sponsored by the ***American Vegetable Grower*** *magazine*
1:00 **Pumpkin Production at Ackerman Family Farms –** John Ackerman, Ackerman Family Farms
1:30 **Midwest Performance and Perspective on Ornamental Pumpkins -** Brad Bergefurd, Ohio State Extension
2:00 ***Silicon Nutriton for Powdery Mildew Disease Suppression** – Dr. Joseph Heckman, Rutgers Univ.
2:30 **Overview of Melon, Squash & Cucumber Varieties** - Sheldon Sutton, Rupp Seeds
3:15 ***Pumpkin Diseases** – Dr. Margaret McGrath, Cornell Cooperative Extension

Crucifers - Magnolia Room ABC,
1:30 **Cabbage Production** – Dr. Christopher Gunter, North Carolina State Univ.
2:00 ***Diseases of Cole Crops - What To Lookout for in 2017** – Dr. Beth Gugino, Penn State Univ.
2:30 ***Insect Pests of Cole Crops** – Dr. Thomas Kuhar, Virginia Tech
3:15 **Raising Broccoli Profitably in the Mid-Atlantic** – Dr. Thomas Bjorkman, Cornell Univ.
4:00 **Miscellaneous Cole Crops** – Dr. Lewis Jett, West Virginia Univ.

Mid-Atlantic Fruit and Vegetable Convention
2017 Educational Program

Tuesday Afternoon, January 31, 2017 Continued

Winter Storage Crops - Wild Rose Room,

1:30 ****Pesticide Safety Challenge** - John Esslinger, Penn State Extension
2:00 **Onions** – Dr. Michael Orzolek, Penn State Univ.Emeritus
2:30 **Growing Root Crops** – Dr. Lewis Jett, West Virginia Univ.
3:15 **Production of Winter Squash** - Gordon Johnson, Univ. of Delaware
4:00 **Potatoes** – Dr. Matthew Kleinhenz, Ohio Ag Research & Development Center

Organic Vegetable Production - Empire Room AB,

1:30 **Organic Snap Bean Production** - Jennifer Glenister, New Morning Farm
2:00 **Using Cover Crops** - Elsa Sanchez, Penn State Univ
2:30 ***Managing Late Blight on Organic Farms** - Abby Seaman, NYS IPM Program
3:15 **Overcoming Tunnel Vision - Using Cover Crops in High Tunnels** – Dr. Julie Grossman and Liz Perkus, Univ.of Minnesota
4:00 **Zone Tillage for Organic Vegetables** – Dr. Julie Grossman, Univ.of Minnesota

Hydroponics - Empire Room CD

1:30 **The Latest in Greenhouse LED Research** – Dr. A. J. Both, Rutgers Univ.
2:00 **Gone Fishing: Aquaponics and Float Culture Salad Greens Production –** Dr. Robert Berghage, Penn State Univ.
2:30 **Growing Leafy Greens Using LEDs** - Qingwu (William) Meng, Michigan State Univ.
3:15 **Microgreen Production: Healthy for You and Your Bottom Line –** Dr. Robert Berghage, Penn State Univ.
4:00 ****Core Credit** – To be Announced

Farm Business Transition – What's Your Exit Plan? - Cocoa Terrace/Cocoa 1,

1:30 **Common Concerns, Challenges Often Seen and Solutions Found** - John Berry, Penn State Extension
2:15 **Our Business Transition Experience** – farmer panel: Paul Parsons, Parson's Farms Produce; Kay Hollabaugh, Hollabaugh Bros.; Reed Soergel, Soergel Orchards
3:45 **Here Is a Path for Planning, Implementing and Managing the Process** - Philip Mason, Peerless Business Advisors

Wholesale Marketing - Crystal Room,

1:30 **Review of FSMA Transportation Rule –** Robert Guenther, United Fresh Produce Association
2:00 **How to Get Us to Buy Your Produce –** a panel of chain store and wholesale buyers including Four Seasons Produce, Giant Foods and others
3:15 **Cooperative Marketing Opportunities –** a panel of cooperative representatives to be announced
4:00 **Farm to Table Program –** Elaine McDonnell, Penn State Univ.

Pome Fruit - Nigerian Room - sponsored by the ***American Fruit Grower*** *magazine*

1:30 **USDA-ARS Appalachian Fruit Research Station Programs –** Dr. Tracy Leskey, USDA
2:00 ***BMSB Past Present & Future –** Dr. Gregory Krawczyk, Penn State Univ.
3:00 ***Protecting Pollinators and Natural Enemies in the Orchard –** Dr**.** Ann Nielsen, Rutgers Univ.
3:30 ****Worker Protection Starts Now –** James Harvey, Penn State Univ.

Tuesday Evening, January 31, 2017

Social – Nigerian and Trinidad Rooms

6:00 **Reception –** sponsored by Ag Choice Farm Credit/MidAtlantic Farm Credit (ticket required)
7:00 **Banquet –** awards, recognitions, door prizes (ticket required)

Wednesday Morning, February 1, 2017

High Tunnels - Magnolia Room ABC, sponsored by the ***American Vegetable Grower*** *magazine*

9:00 **Choosing a High Tunnel Plastic to Suit Your Needs** - Kathleen Demchak, Penn State Univ.
9:30 **Best Varieties for High Tunnels - Tomatoes, Peppers and Cucumbers** - Debra Deis, Seedway
10:15 **Grafting Tomatoes to Reduce Yellow Shoulder** - William Lantz, Univ. of Maryland Coop. Extension
11:00 **High Tunnel Strawberry Plusses and Minuses** - Kathleen Demchak, Penn State Univ.
11:30 **PVGA Annual Meeting –** Crystal Room **-** all members urged to attend

General Vegetables - Crystal Room,

9:00 ***Common Soil Diseases of Vegetables** –Dr. Beth Gugino, Penn State Univ.
9:30 **Summer Squash Production** – Dr. William Lamont Jr., Penn State Univ
10:15 **Long Term Affects of Dry Manure Compost Application** – Dr. Matthew Kleinhenz, Ohio Ag Research & Development Center
11:00 **Post Harvest Sanitizers** – Dr. Luke LaBorde, Penn State Univ.
11:30 **PVGA Annual Meeting –** Crystal Room **-** all members urged to attend

Mid-Atlantic Fruit and Vegetable Convention
2017 Educational Program

Wednesday Morning, February 1, 2017 Continued

Greenhouse Ornamentals - Empire Room AB,

9:00 ***Spring Diseases** – Dr. Margery Daughtrey, Cornell Univ.
9:30 ***Aphids and Bio-Control** - Carol Glenister, IPM Laboratories
10:15 **Best of the PSU Flower Trials** - Sinclair Adam, Penn State Extension
11:00 **LED Colors Matter to Flowering** - Qingwu (William) Meng, Michigan State Univ.
11:30 **Fertilization of Perennials and Mums** - Krystal Snyder, JR Peters Co

Cover Crops - Empire Room CD,

9:00 **Getting More From Your Cover Crop with Species Mixtures** – Dr. Charles White, Penn State Univ
9:30 ***Cover Crops for Pollinators** - Erin Treanore, Penn State Univ
10:15 **The Vegetable Grower's Challenge to Maintain Soil Health Can be Aided by Precision Cover Cropping** – Dr. Thomas Bjorkman, Cornell Univ.
11:00 ***Impact of Cover Crops on Diseases of Vegetable Crops** – Dr. Kathryne Everts, Univ. of Maryland
11:30 **PVGA Annual Meeting –** Crystal Room **-** all members urged to attend

Onions - Wild Rose Room,

9:00 **Harvest and Post-Harvest Handling of Onions** - Jeffrey Stoltzfus, Penn State Ext
9:30 ***Insect Pests of Onion: Managing the Old and the New** – Dr. Shelby Fleischer, Penn State Univ
10:15 ***Foliar Disease Management of Onion** – Dr. Beth Gugino, Penn State Univ.
11:00 ****Core Credit** - To be announced
11:30 **PVGA Annual Meeting –** Crystal Room **-** all members urged to attend

Marketing 101 - Trinidad Room,

9:00 **Adding Prepared Foods to Your Market** - Caleb Torrice, Tabora Farm and Orchard
9:30 **Finding the Right POS System** - Jennifer Brodsky, Kitchen Table Consultants
10:15 **Events on the Farm** - Caleb Torrice, Tabora Farm and Orchard
11:00 **Working With Your Tourism Bureau** - Kellie Hinkle, Virginia Economic Development
11:30 **How to Compete with Box Stores** - Jennifer Brodsky, Kitchen Table Consultants

Wine Grapes - Cocoa Terrace,

9:00 ****Strategies for Integrated Weed Control in New and Established Vineyards** – Lee Stivers, Penn State Extension
9:30 **Wine Grape Varieties of Promise for the Mid-Atlantic Region** – Dr. Joseph Fiola, Univ. of Maryland
10:20 **Success in the Vineyard: A Manager's Insight –** Jeffrey Zick, Nimble Hill Vineyards
11:00 **Red Leaves in Vineyard: Abiotic and Biotic Stresses –** Dr. Hemant Gohil, Rutgers Univ.
11:30 **Integrating Soil and Tissue Analysis into Vineyard Nutrient Management –** Dr. Gary Pavlis, Rutgers Univ.

Pome Fruit - Nigerian Room- sponsored by the ***American Fruit Grower*** *magazine*

9:00 ****Pesticide Storage Security: Be Ready for the Unexpected –** Tracy Harpster, Penn State Univ.
9:30 ***Precision Crop Load Adjustment of Honeycrisp and Other High Value Cultivars -** Dr. Phillip Schwallier, Michigan State Univ.
10:30 **Early Training of Tall Spindle Apple Trees -** grower panel - Dr. Robert Crassweller (moderator) Chris Baugher, PA, John Saunders, VA, Washington White, MD
11:30 ****Protecting Yourself from Lyme Disease –** Dr. Ron Hamlen, Lyme Disease Assn. of Southeastern PA

Spanish - Cocoa 1

9:00 **Actividad de apertura** (Welcome and Ice-breaker)
9:15 **Rindiendo cuentas para su bienestar** (Being accountable to your well-being—financial literacy) - Miguel Saviroff, Penn State Extension
9:45 ***Insectos benéficos que aumentan rendimientos - amigos de la horticultura** (Beneficial insects that increase yields - friends of horticulture) - Beth Sastre, VCE-Loudon Extension; Dr. Margarita López-Uribe, Penn State Extension
10:30 ***Identificacion, diagnóstico y manejo de enfermedades en plantas** (Basic plant disease ID, diagnosis and management) - Dr. Laura Ramos Sepulveda, Penn State Univ.
11:15 **Sueños de mis hijos—Cómo puede ayudar Penn State** (Dreams for my Children—Possible Penn State Role) - Melanie Miller-Foster, Penn State Extension

Mid-Atlantic Fruit and Vegetable Convention
2017 Educational Program

Wednesday Afternoon, February 1, 2017

Sweet Corn - Magnolia Room ABC,

1:30 ***Sweet Corn Weed Control - New Herbicides, No-till Issues and Other Considerations** - Dwight Lingenfelter, Penn State Univ.

2:00 **Growers Sharing Experiences –** the room will be divided into four sections with a grower stationed in each section to share his experience with the following production techniques for 30 minutes. Each topic will be repeated four times and attendees will be asked to move between the rooms to listen to the topics of interest to them.

No-till With Floating Cover – Franklin County Farmers

Transplanting Into Clear Plastic – Joseph Swann, Swann Farms

Double Cropping Practices Behind Early Season Sweet Corn – Rueben Martin and Eli Burkholder, Maplewood Produce

Transplanting Into Plastic With Floating Row Covers and Tunnels – Brent Barnhardt, Country Creek Produce

General Vegetables - Wild Rose Room,

1:30 **Tips For Successful Drip Irrigation** - William Wolfram, Toro Ag

2:00 **Traceability in a Global Market** - Robert Frost, LinkFresh

2:30 **Biodegradable Mulch Applications and Results** - Dan Martens, Novamont

3:15 ***Using a Red Clover Mulch to Improve Insect Management, Yield and Environmental Quality in Peppers and Cucumbers** - Cerruti Hooks, Univ. of Maryland

4:00 **New Heating Technology for High Tunnels** - Tim Ransford, Anglesea LLC

Greenhouse Ornamentals - Empire Room AB,

1:30 ****Respiratory Protective Devices for Pesticides -** Tracey Harpster, Penn State Univ.

2:00 **Proven New Perennials** - Sinclair Adam, Penn State Extension

2:30 ***Assessing the Quality of Bio-Control Agents** - Carol Glenister, IPM Laboratories

3:15 ***Downy Mildew** – Dr. Margery Daughtrey, Cornell Univ.

4:00 **e-GRO - A Comprehensive Online Resource For the Greenhouse Industry** - Lee Stivers, Penn State Extension

Small Fruits - Empire Room CD,

1:30 ***Improving our Understanding of Black Root Rot in Strawberry** - Annie Montes, Univ. of Maryland

2:00 ***Fungicide Resistance Management for Strawberry Fruit Rots** – Dr. Johanna Del Castillo, Univ. of Maryland

2:30 ***Black Shadow on Blueberries - What Is It and Why Does It Matter** - Timothy Waller, Rutgers Univ

3:15 ***Towards an IPM-Based Management Strategy for Spotted Wing Drosophila in Blueberries** - Cesar Rodriguez-Soana, Rutgers Coop. Extension

4:00 ***Managing Insecticide Resistance when Treating for SWD and Other Pests** - Dean Polk, Rutgers Univ.

Agritourism and Direct Marketing - Crystal Room,

1:30 **Hosting Birthday Parties** - John Hill, Hill Ridge Farms

2:30 **Cautionary Tales for your Agritainment Business** - Brian Schilling, Rutgers Cooperative Extension

3:15 **Learning From Our Experiences –**grower panel

Innovative Approaches to Expand Local Markets - Rose Robson, Robsons Farm

Expanding Your Reach Into Diverse Ethnic Communities - Steven Specca, Specca Farms

Pay the Farm Mortgage by Charging Admission - Kurt Alstede, Alstede Farm, LLC

4:10 **Resources to Help Grow Your Agritainment and Direct Marketing Operation** - Gillian Armstrong, Rutgers Univ. and William Hlubik, Rutgers Coop. Ext.

Wine Grapes - Cocoa Terrace,

1:30 **Canopy Management Strategies for Achieving Balanced Vines –** Maria Smith, Penn State Univ.

2:00 ****Can Grape Root Borer Be Controlled with Pheromones? –** Martin Keen, Landey Vineyards

2:40 **Grape Fruit Sampling, Evaluation and Settling on Ripeness for Harvest** – Dr. Dan Ward, Rutgers Univ.

3:10 ****Grape Disease Management Review and Research Update –** Bryan Hed, Penn State Univ.

3:50 ***Update on Spotted Lanternfly: What to Look for and Control Strategies** - Dr. Michael Saunders, Penn State Univ.

Tree Fruit - Nigerian Room,

1:30 **Projections for Apple Industry's Future – How to Remain Competitive –** Robert Pollock (moderator), Jim Bair-US Apple Assn., Ryan Hess-PA, Ben Rice-PA

2:00 ***Fighting Fire Blight: An Update on Blossom and Shoot Blight Management** - Dr. Kari Peter, Penn State Univ.

3:15 **Addressing the Workforce Gap in the Fruit and Vegetable Industry -** Dr. Scott Sheely, PA Dept. of Agriculture

Mid-Atlantic Fruit and Vegetable Convention
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Wednesday Afternoon, February 1, 2017 Continued

Stone Fruit - Trinidad Room

1:30 **National Peach Council Update -** Kay Rentzel, National Peach Council
1:45 **Peach Orchard Irrigation During a Dry Season** – Dr. Hemant Gohil, Rutgers Univ.
2:15 ***Ernie Christ Memorial Lecture** – **How the MyIPM Smartphone App Can Be of Use to the Grower –** Dr. Guido Schnabel, Clemson Univ.
3:00 ***Peach Scab: Biology and Control –** Dr**.** Norm Lalancette, Rutgers NJAES
3:30 ***Pollination Services: Lessons from Wild Bees** - Margarita López-Uribe, Penn State Extension

Spanish - Cocoa 1

1:30 **Lavado correcto de frutas y hortalizas después de la cosecha** (Safely washing fresh fruits and vegetables after harvest) - Lee Stivers, Penn State Extension
2:15 ****Como llegar sanos y sanas a nuestro hogar al final del día** (How to arrive safely to our homes at the end of day) - Maria Gorgo-Gourovitch, Penn State Extension

Wednesday Evening, February 1, 2017

Social

5:00 **Apple Growers Reception** - Cocoa Suites 3-4-5
7:00 **Ice Cream Social** – Great Lobby - for all Convention attendees, *sponsored by Pennsylvania Vegetable Growers Association*
8:30 **Musical Jam Session –** Main Lobby – bring your instrument and join in

Thursday Morning, February 2, 2017

Tomatoes - Magnolia Room ABC - sponsored by the ***American Vegetable Grower*** *magazine*

9:00 ***Tomato Disease Update** – Dr. Beth Gugino, Penn State Univ.
9:30 ****Impact of Water Quality on Pesticides** - John Esslinger, Penn State Extension
10:15 - Dr Frank Louws, North Carolina State Univ.
11:00 **Grafting For The Future** - Benjamin Hinson, Tri-Hishtil
11:30 **Fresh Market Tomato Variety Trial Year 1** – Dr. Timothy Elkner, Penn State Extension

High Tunnels - Crystal Room,

9:00 ***Managing Aphids, Whiteflies and Spider Mites in High Tunnels with Biologicals** - Ronald Valentin, Bioline
10:15 ***Best Uses of Biologicals for Insect and Mite Management in Greenhouses and High Tunnels** - Matthew Krause, BioWorks
11:00 ***Methods of Application of Biologicals for Insect and Mite Management** - Doug Barrow, Biobest
11:30 ***Best Uses of Biologicals for Disease Management in Greenhouses and High Tunnels** - Matthew Krause, BioWorks

Potatoes - Empire Room AB,

9:00 **Update on Potato USA** - Bryan Bender, Benders Potatoes
9:30 **Observations from 2016 Growing Season** - Robert Leiby, PA Coop Potato Growers
10:15 ***Update on Dickeya Situation** –Dr. Steven Johnson, Univ. of Maine Cooperative Extension
11:00 ***What's New in Potato Disease Management for 2017** – Dr. Beth Gugino, Penn State Univ.
11:30 ***Update on Insect Management in Potatoes** – Dr. Thomas Kuhar, Virginia Tech

Cut Flowers - Empire Room CD,

9:00 ***Thrips Management in Cut Flowers** - Thomas Ford, Penn State Extension
9:30 **Nutrient Management and Fertigation Programs for Cut Flowers** - Krystal Snyder, JR Peters Co
10:15 **Selling Specialty Cut Flowers to Area Florists** - Dave Delbo, Dave's Flowers
11:00 **Perennials as Specialty Cut Flowers** - Sinclair Adam, Penn State Extension
11:30 **Maximizing Profit in Direct Marketing with Cut Flowers** - Jenny Carleo, Rutgers Cooperative Extension

Small Fruit - Wild Rose Room,

9:00 **How You, Too, Can Harvest Strawberries for Six Months a Year** - Brad Bergefurd, Ohio State Extension
9:30 **Gooseberries, Currants, and White Pine Blister Rust: A Modern-Day Understanding** - Steve McKay, Cornell Univ.(retired)
10:15 **Plasticulture and Matted-Row Strawberry Variety Trial Update** – Dr. Timothy Elkner, Penn State Extension and Kathleen Demchak, Penn State Univ.
11:00 ***How to Keep Your Brambles Disease Free** – Dr. Mahfuzur Rahman, West Virginia Extension
11:30 ***Broad Mites in Primocane-Fruiting Blackberries - Another New Pest?!** - Kathleen Demchak, Penn State Univ.

Mid-Atlantic Fruit and Vegetable Convention
2017 Educational Program

Thursday Morning, February 2, 2017 Continued

CSAs - Cocoa Terrace/Cocoa 1,

9:00 **Managing Excess or Shortage of Produce in a CSA Marketing Operation** - Michelle Infante-Casella, Rutgers Co-op Extension
9:30 **Incorporating Value Added Products for CSA Marketing** - Stephen Komar, Rutgers Cooperative Extension
10:00 **Product Contact Surface Sanitation for Retail Marketing** - Meredith Melendez, Rutgers Cooperative Extension
10:30 **Pros and Cons of Operating a CSA and My Experiences** - Robert Muth, Muth Family Farm
11:00 **Growing CSA: How to Improve Member Outcomes in CSA Programs** - Simon Huntley, Small Farm Central
11:30 **Different Models for CSA Operations and Farmer Experiences** - grower panel - Robert Muth, Muth Family Farm, Samantha Jany, Brown Dog Produce and Julie Pierre, Our Yards Farm

Tree Fruit - Nigerian Room - sponsored by the ***American Fruit Grower*** *magazine*

9:00 ***Dealing with Apple Summer Diseases in the Mid-Atlantic Region** – Dr. Keith Yoder, Virginia Tech Univ.
9:30 ***Management of Important Preharvest and Postharvest Rots of Peach –** Dr. Guido Schnabel, Clemson Univ.

Horticulture 101

10:30 **Why Apples Blush: Red Color Development in Apple -** Dr. Richard Marini, Penn State Univ.
11:00 **Frost, the Nature of the Beast** - Dr. Robert Crassweller, Penn State Univ.
11:30 **A Perspective of South Africa Fruit Production** - Ben Wenk, Three Springs Fruit Farm

Thursday Afternoon, February 2, 2017

Tomatoes - Magnolia Room ABC

1:30 **Penn State Tomato Breeding Program** – Dr. Majid Foolad, Penn State Univ.
2:00 ***Growing List of Viruses Impacting Tomatoes** – Dr. Margaret McGrath, Cornell Extension
2:30 **Biostimulants in Tomato Production** - Steve Bogash, Isptech
3:15 ***Stink Bugs and Aphids - What's New For Controlling These Pests** –Dr. Thomas Kuhar, Virginia Tech

Specialty Vegetables - Crystal Room,

1:30 **Growing Rhubarb Best Practices** - Nathan Nourse, Nourse Farms
2:00 **The New Snack Peppers** - Debra Deis, Seedway
2:30 **New Eggplant Cultivars** – Dr. Michael Orzolek, Penn State Univ.Emeritus
3:15 **Sweet Potato Production** – Dr. Luis Duque, Penn State Univ

Potatoes - Empire Room AB,

1:30 **Nutrition Program for Potatoes** – Dr. Steven Johnson, Univ. of Maine Extension
2:00 **New Ideas on Branding and Marketing PA Potatoes** – David Masser, Sterman Masser Inc.
2:30 **What's New from Cornell's Potato Breeding Program** – Dr. Walter DeJong, Cornell Univ.
3:15 **Colored Potatoes and Colon Cancer** - Venkata Charepalli, Penn State Univ
3:45 **Roots and Shoots Need to be Managed to Propel Quality Yields** - Denny Wildman, Advanced Agriculture & Assoc East

Leafy Greens - Empire Room CD,

1:30 **Seed to Sale: All-Season Plasticulture Lettuce Production** – grower panel – Brian Campbell, Brian Campbell Farms; David King, Harvest Valley Farms and Michael Brownback, Spiral Path Farm
2:30 **Mud, Water, Tubs and Sanitizers: Safe Washing of Leafy Greens** - Lee Stivers, Penn State Extension
3:15 **Spinach Production** - Michael Brownback, Spiral Path Farm

Small Fruit - Wild Rose Room,

1:30 **Discussion Time: Do High Tunnel Raspberries Pay?** –Dr. David Conner, Univ. of Vermont
2:00 ****Changes In Worker Protection Standards –** James Harvey, Penn State Univ
2:30 **Low Tunnels For Strawberry Production** – Dr. Kim Lewers, USDA-ARS; Dr. David Conner, Univ. of Vermont and Kathleen Demchak, Penn State Univ.

Social Media and Advertising Marketing Strategies - Cocoa Terrace/Cocoa 1,

1:30 **Cultivating Customers: Setting up Systems to Drive Farm Sales Using Internet Marketing** - Simon Huntley, Small Farm Central
2:15 **Using Social Media on the Farm** - Kelly Jackson, Emily's Produce
2:45 **Ecommerce and Online Sales** - George Latella, St. Joseph's Univ.
3:30 **Tricks of the Trade** - Shannon Dill, Univ. of Maryland Extension

Tree Fruit - Nigerian Room

1:30 ***IPM without Lorsban –** Dr. David Biddinger, Penn State Univ.
2:15 **Crop Insurance Issues** – Rita McMullen, PDM Insurance Agency, Inc.
2:45 **Update on NC-140 Rootstock Trials** – Dr. Robert Crassweller, Dr. James Schupp, Dr. Richard Marini, Penn State Univ.

2017 New Jersey State Horticultural Society Membership and Advanced Registration Mid-Atlantic Fruit & Vegetable Convention, Hershey Lodge & Convention Center • Jan. 31 - Feb. 2, 2017 JOIN NJSHS to QUALIFY for the CONVENTION MEMBER RATE

STEP 1 FARM/BUSINESS INFORMATION (PLEASE PRINT)

FARM/BUSINESS NAME		
STREET ADDRESS		
CITY	STATE	POSTAL CODE
E-MAIL	PHONE	

STEP 2 MAILING PREFERENCE (Please check preference)

☐ E-mail me! (receive 4 electronic issues of *Horticulture News*) - included in membership fee.

☐ I would like to receive a printed copy of *Horticulture News* via US Mail. I will pay the additional $35.00 a year fee - **please circle below.**

STEP 3 SPECIAL OFFER WITH NJSHS REGISTRATION

☐ **FREE** 1 year subscription to *Country Folks Grower* , *Fruit Grower News* & *American Fruit Grower.*

STEP 4 ATTENDEE ADVANCED REGISTRATION: MUST BE POSTMARKED ON OR BEFORE JAN. 16, 2017

Please **CIRCLE** the fees that apply to you.
Only 1 person per farm or business needs to become a member.
PLEASE PRINT NAME(S)

	NJSHS 2017 DUES	2017 NJSHS MEMBER Advanced 3day Registration Before Jan. 16th MEMBER	2017 NJSHS MEMBER Advanced 3day Registration ADDITIONAL (Family or Employee)	Walk In 1-3 days	Non Member Walk In 1 day	Non Member Walk In 3 day	WORKSHOPS Monday, Jan. 30, 2017 Growers Dinner Tue. Feb. 2 6:00 pm	Farm Market Tour	Cider Symposium	Apple Tree Grafting	Greenhouse Veg. Prd.	Vegetable Grafting	Recall Readiness	FSMA Grower Training	Hops Production	Horticulture News US Mail	TOTAL
1. Member	$50	$65	—	$80	$110	$150	$35	$60	$160	$65	$60	$30	$20	$50	$90	$35	$
2. Additional	—	—	$60	$80	$110	$150	$35	$60	$160	$65	$60	$30	$20	$50	$90	—	$
3. Additional	—	—	$60	$80	$110	$150	$35	$60	$160	$65	$60	$30	$20	$50	$90	—	$
4. Additional	—	—	$60	$80	$110	$150	$35	$60	$160	$65	$60	$30	$20	$50	$90	—	$
5. Additional	—	—	$60	$80	$110	$150	$35	$60	$160	$65	$60	$30	$20	$50	$90	—	$
6. Additional	—	—	$60	$80	$110	$150	$35	$60	$160	$65	$60	$30	$20	$50	$90	—	$

Contribution to Ernest Christ Distinguished Lecture Series: $100 $50 $25 Other $ _____ $

Support of Horticultural Research: $1000 $500 $250 $100 Other $ _____ $

Please make your check payable to: NEW JERSEY STATE HORTICULTURAL SOCIETY (NJSHS)

Mail registration and check to: NJSHS c/o Greg Donaldson, 176 Airport Road Hackettstown, NJ 07840 **Questions?** Email Dean Polk polk@njaes.rutgers.edu or Greg Donaldson greg@donaldsonfarms.net or call Greg #908-296-1604.

TOTAL ENCLOSED _____

You saved by registering in advance!

John H. Baugher Passes

John H. Baugher, 88, died at his home on January 2, 2017. He was born June 19, 1928 to the late George L. Baugher and Julia Maddox Baugher. He was the husband of Nadine J. Baugher to whom he was married for 65 years.

He was the manager of Adams County Nursery for many years and continued to be active in his family business until his death. He served as President of the Pa Cherry Growers Association and the Adams County Fruit Growers Association. He was on the Board of Directors at Knouse Foods Cooperative as well as The Mountain Orchard Cooperative. He was awarded Master Farmer in 1976. He also served on the Penn State Extension Board, the Christ Lutheran Church Council and the Upper Adams School Board.

In addition to his wife, Nadine, he is survived by his children, Julia B. Haller and husband, Steve, John Baugher Jr. and wife, Joan, Phillip D. Baugher and wife, Tara, and Chris B. Baugher and wife, Cynthia, all from Aspers; ten grandchildren; and six great-grandchildren. He is also survived by two sisters, Doris (Dolly) Brough and Lucy B. Falk. He was predeceased by one granddaughter, Janel Baugher; and two siblings, George L. Baugher Jr. and Virginia Barnhart.

The love for his family and his community was evident throughout his life. He shared his passion for growing apples, peaches and nursery trees with his children and grandchildren. He also shared his joy of hunting and fishing with many friends and family and particularly enjoyed fishing the Florida Keys during his later years. His gardens were also a place he liked to spend time, always looking for places to plant something new and interesting.

Services were held at Bethlehem Lutheran Church, 126 W. Church St., Bendersville, on Monday, January 9, with the Rev. B. Wesley Smith officiating. Memorial contributions can be made to Spirit Trust Lutheran Hospice, 260 West High St., Gettysburg, PA 17325 or the State Horticultural Association of PA Endowment Fund, 480 Mountain Rd, Orrtana, PA 17353. Friends may submit condolences at DuganFH.com.

Published in Evening Sun on Jan. 3, 2017.

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New Jersey News

New Jersey Peach Calendar

Glassboro, NJ (January 1, 2017)—Longing for those juicy Jersey-grown peaches? They won't be available till summer, but you can follow their growing season for 12 months, with the New Jersey Peach Promotion Council newly released peach calendar.

"We want to keep our Jersey peaches top of mind," says Santo John Maccherone, president of the council. "Our harvest season doesn't start until late June but then growing and planning for the marketing of Jersey Fresh peaches is a year round job. Development of the calendar was the brainchild Francisco Allende, a director of NJPPC and General Manager of Sunny Valley International to replace the NJ Peach Buyers Guide. Each page has the NJ Peach Promotion Council website, email address, facebook and twitter information." In addition to beautiful pictures of peach production and marketing, the calendar has a listing of farm retailers and ads from various venders and shippers of Jersey Fresh peaches.

The colorful calendar features photos of beautiful blushing white and yellow fleshed nectarines and peach varieties in June, July, August, and September. During July and August (Jersey Peach Month), New Jersey peaches were celebrated and featured at 32

farmers markets, with 11 "Perfect Peach Pie" contests. They were also featured with special nutritional demonstrations in 17 supermarkets and in several restaurants.

"We have some new varieties coming on line for 2017 and we look forward to a full crop season," concludes Maccherone.

During the 2016 season, New Jersey growers produced approximately 51 million pounds with a wholesale value of $20,000,000 both down from a normal crop in 2015. The New Jersey Peach Promotion Council is a non-profit voluntary organization of growers, shippers, wholesalers and associated industries dedicated to the orderly promotion and marketing of New Jersey peaches from the Garden State, thus preserving farmers and farmland, and providing the highest quality and best tasting fresh local peaches for consumers.

For further information, contact the New Jersey Peach Promotion Council, 800 Ellis Mill Road, Glassboro, NJ 08028 email: info@jerseypeaches.com; check us out www.jerseypeaches.com.

Jerry Frecon and Dr. Joe Goffreda at the Rutgers 250 anniversary celebration to recognize plant breeding and shellfish programs. Joe directs the Rutgers NJAES tree-fruit breeding program and has developed and introduced many new peach and nectarine varieties. Jerry has helped with the testing and introduction working with Rutgers and Adams County Nursery.

Donald Bostrom Passes

Donald Bostrom, 82, of Randolph, New Jersey, passed away on Sunday, January 15, 2017 at Morristown Memorial Hospital, Morristown.

Don began fruit faming with his dad Fred Bostrum, as a young man. He was actively involved in the operation of the family farm, Sun High Orchards. Fred and Ranghield planted the first fruit trees in 1945. Don served as a teacher in Okinawa, Japan for the Department of Defense from 1967 to 1968. He was a former history teacher and cross country coach at Dover High School. He then became a guidance counselor at Randolph High School, retiring in 2001, after 41 years. He was actively involved in the operation of the family farm after retirement and was a lover of apple culture.

Don was a long term member of the NJ State Horticulture Society. He worshiped at Bethlehem Church in Randolph his whole life. Don loved his family, photography, the Cubs and dedicated his life to his Lord and Savior Jesus Christ.

He is survived by Joann, his wife of 56 years; two children Brenda Torster of Randolph and Chris of Wheaton, IL; son in law Phil Green; and his grandchildren, Bjorn, Mason, Kayla, Blake, Mia. Phil, and Brenda operate the thriving Sunhigh Orchards business.

Bob Phillips Passes

Robert E. “Bob” Phillips, 87, of Holland Township, NJ, passed away on Friday, January 13, 2017 at the Hunterdon Medical Center in Raritan Township, NJ, with his family by his side.

Bob was born July 24, 1929 in Holland Township, NJ, the son of the late John Earl and Dorothy (Sinclair) Phillips. He was born and raised on the family farm, which had been in the family since 1806, where he continued to live until his death. His first schooling occurred in the one-room school house on Church Road. He graduated from Frenchtown High School in 1945.

After his father’s death in 1948, Bob followed his father’s footsteps in the dairy farming business. In the 1950’s, he became a part-time agent for the Farm Family Insurance Companies. In 1960, he sold his dairy cows to continue full-time in the insurance business, while continuing to raise Suffolk sheep. Bob retired from Farm Family in 1994 after 37 years of service and kept his sheep until 2004. He was frequently seen on his tractor and visiting with customers at “The Stand”, the retail outlet of the current thriving Phillips Farms operation. In 1951, he married Iris Brown. She was his constant companion and fellow farmer until her death in 2004 after 52 years of marriage.

Bob was well known throughout Hunterdon county and all of the North Western NJ agricultural community. Bob was a member of the New Jersey Farm Bureau, the New Jersey Agricultural Society and the Hunterdon County Board of Agriculture. For 12 years, he served on the Hunterdon County Library Board of Commissioners. He was the Holland Township Tax Assessor and Registrar of Vital Statistics from 1953 until 1975, also serving on the Planning Board (1959-1975), the Board of Adjustment (1976-1979), and the Board of Health (1953-1980). Bob was a long time member of the Milford Lions Club and the Phillipsburg Masonic Lodge #52 F. & A. M.

As a lifetime faithful member of St. Peter’s Lutheran Church in Riegelsville, PA, Bob served several terms on the Church Council and taught Sunday school for several years. Family tradition tells that Bob’s grandfather helped haul the stones to build the church.

Survivors include his son and daughter-in-law Marc and Holly Phillips; his daughter Kathleen Sciarello, all of Holland Township, NJ, and grandchildren Jason Phillips, Megan Phillips, Sara Sciarello, and Julia Sciarello-McGuinness. Also surviving are step-grandchildren Lora Radzieta and Jessica Palmadessa, and three step great-grandchildren Adam, Ginger, and Amelia.

Memorial contributions should be made to the Milford Lions Club, P.O. Box 112, Milford, NJ 08848.

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