New York Berry News

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Blueberries after fall mulching. Photo C. Heidenreich

CURRANT EVENTS

November 22, 2008. *Berry Production for Beginners* - Washington County Annex II, by CCE building in Hudson Falls, NY. Morning Session 9:00 - 11:30 a.m. Registration is $10. Pre-register to guarantee materials. Call Cornell Cooperative Extension at 1-800-548-0881 to pre-register or for more information.

Dec. 8-10, 2008. *North American Raspberry & Blackberry Conference*, in Grand Rapids, MI, as part of the Great Lakes Expo. More information follows in news brief below.

Dec. 9-11, 2008. *Great Lakes Fruit, Vegetable and Farm Market Expo*, DeVos Place Convention Center, Grand Rapids, http://www.glexpo.com/.

January 17, 2009. *Introduction to Berry Growing*- Cayuga County Cooperative Extension, Auburn, NY. Morning Session 9:00 AM- 12:00 noon. Registration is $10. For more information see flyer below.

Feb. 3-5, 2009. *Mid-Atlantic Fruit and Vegetable Convention*, Hershey Lodge and Convention Center, Hershey, PA. For more information contact William Troxell at 717-694-3596 or visit www.mafvc.org.

Feb. 10-12, 2009. *Empire State Fruit and Vegetable EXPO and Becker Forum*, Liverpool Holiday Inn and OnCenter, Syracuse, NY. See news brief below for details on the berry session Thursday, November 12, 2009.

June 22-26, 2009: *The 10th International Rubus and Ribes Symposium. Zlatibor, Serbia*. Save the date!

Albion strawberries in hydrostackers, October 2008. Photo C. Heidenreich

BERRY SESSION PLANNED FOR EMPIRE STATE FRUIT AND VEGETABLE EXPO

The 2009 Empire State Fruit and Vegetable Expo and Becker Forum will be held at the Holiday Inn Liverpool and the Oncenter Convention Center in Syracuse, New York on February 10, 11 and 12, 2009. Session topics include the latest in research and grower experiences regarding production and marketing of a variety of fruit and vegetable crops.

Information included in all of the educational sessions benefit growers of all size operations, from the largest commercial fruit and vegetable growing operations in New York State to the smallest.

Don't miss the opportunity to attend the Expo and learn how to grow your berry farm through knowledge, innovation and research! The berry session agenda is listed below for Thursday, February 12, 2009. DEC recertification credits are pending and will be available for those interested in receiving them. You must bring your pesticide license with you to receive credit.

BERRIES
BALLROOM WEST

8:50 am	**Announcements/welcome/DEC credit sign up** - *Paul Baker, NYSBGA Executive Secretary*
8:55	**What's new from industry?**
9:00	**Soil management for optimal blueberry production** - *Marvin Pritts, Cornell*
9:25	**Post harvest handling of small fruit - practical options for smaller producers** - *Chris Watkins, Cornell*
9:50	**The berry best of berry internet** - *Cathy Heidenreich & Laura McDermott, Berry Extension Support Specialists, Cornell*
10:00	**High tunnel raspberries and blackberries** - *Marvin Pritts, Cornell*
10:25	**A grower perspective: Adding blueberries to your fruit farm** - *Jim Bittner, Singer Farms, Appleton*
10:45	**NYS berry growers: The next generation** - *Rebecca Harbut, Cornell*
11:05	**NYSBGA Annual Business Meeting** - *Paul Baker, NYSBGA Executive Secretary*
11:10	**LUNCH & VISIT TRADE SHOW**
1:00 pm	**Announcements and DEC credit sign up** - *Paul Baker, NYSBGA Executive Secretary*
1:05	**What's new from industry?**
1:10	**Blueberry varieties** - *Mike DeGrandchamp, DeGrandchamps Farm, South Haven, MI*
1:40	**Strawberry herbicide update** - *Robin Bellinder, Cornell*
2:10	**BREAK & TRADE SHOW ICE CREAM SOCIAL**
2:40	**Practical ecology and management of white pine blister rust in currants** - *Kerik Cox, Cornell and Steven McKay, Hudson Valley Fruit Program*
3:10	**Managing fruitworms and maggots in blueberries** - *Greg Loeb, Cornell and Molly Shaw, South Central NY Ag Program*

3:40 **Virus diseases of small fruit: Tips for avoiding and assessing presence of viruses in blueberries and raspberries** - *Kerik Cox and Marc Fuchs, Cornell*

4:10 **Designing a better sprayer for pesticide application in strawberries –** *Andrew Landers and Laura McDermott, Cornell*

4:35 **ADJOURN – distribute DEC credits**

4:40 **Optional Q & A with speaker panel**

The Empire State Fruit and Vegetable Expo is sponsored by the New York State Vegetable Growers Association, Empire State Potato Growers, New York State Berry Growers Association, New York State Horticultural Society and Cornell University and Cornell Cooperative Extension. Trade show and exhibitor information is currently available and the Expo program, which includes detailed educational session information and a pre-registration form, will be available in early December. Free shuttle bus service is available from the Holiday Inn Liverpool, right off exit 37 of the New York State thruway. Make plans now and mark your calendar to attend the best Empire State Fruit and Vegetable Expo yet!

For more information, visit http://www.nysaes.cornell.edu/hort/expo/ or contact Jeff and Lindy Kubecka, New York State Vegetable Growers Association, PO Box 70, Kirkville, NY 13082 or email nysvga@twcny.rr.com. For trade show information and exhibiting, please contact Dan Wren, Lee Trade Shows, PO Box 121, Palatine Bridge, NY 13428 or email dwren@leepub.com.

NASGA ANNUAL MEETINGTO BE HELD IN NEW ORLEANS

The North American Strawberry Growers Association (NASGA) will hold its annual meeting and conference in New Orleans from January 19-21, 2009. The meeting will be held at the historic Hotel Monteleone and will feature 2 days of speaker presentations, panels and round table discussions followed by a one day tour of local berry farms in the Ponchatoula district.

NASGA will be bringing in strawberry experts from growing regions at home and abroad. Feature Speakers include Philip Lieten a well known agronomist who works with Fragaria Holland in the Netherlands. Philip Lieten will discuss new trends and developments in strawberry production in Europe. During the last decade there has been a consistent increase in programmed “out of season” strawberry production in European countries such as Belgium, The Netherlands, UK, Ireland, Germany, Switzerland and the northern part of France and Italy. Philip has worked with a variety of systems including the use of various substrates and protected structures.

Other international speakers include Ray Daniels of Sunray Strawberries, Queensland Australia. Ray will be sharing traditional growing techniques in Australia as well as new trends in the strawberry industry. Ray is a world traveler who has utilized the knowledge gained for the betterment of his operation.

There will be several themes covered by leading strawberry experts. Bielinski Santos from the University of Florida and Dell Christianson from Minnesota will discuss fertility issues and recommendations for strawberries. John Lewis from Nova Scotia will discuss results of his black root rot studies. Other strawberry disease issues will be covered by Barbara Smith from USDA in Mississippi and Natalia Peres from the University of Florida.

Other popular topics to be covered include weed management, fumigation alternatives, growth regulators and variety updates. A grower showcase will also be featured to help introduce the strawberry industry in Louisiana. A trade show, poster session and silent auction are also being organized.

The farm tour will focus on the Ponchatoula strawberry growing region just outside New Orleans. This is a developing area with several progressive growers experimenting with many of the latest growing techniques.

The NASGA meeting in New Orleans offers many highlights. The speaker sessions, the farm tour, the interaction with fellow growers and researchers and the majestic Hotel Monteleone located just off Bourbon street in the French Quarter of New Orleans make this a fabulous opportunity for learning as well as a chance to visit historic New Orleans.

For more information on registering for the conference or making hotel reservations visit www.nasga.org or contact Kevin Schooley at info@nasga.org or 613-258-4587

30th North American Strawberry Growers Association

Annual Meeting and Conference

January 19-21 2009

Hotel Monteleone, New Orleans, Louisiana

AGENDA

Sunday, January 18

2:00-4:00 PM NASGA Board Meeting
5:00-7:00 Registration
7:00-9:00 Welcome Reception –Iberville Room

Agriculture in Louisiana and the Southeast
David Himelrick, Louisiana State University, Baton Rouge, LA

Monday, January 19

7:30-8:30 Registration and Trade Show

General Session: La Nouvelle Orleans Room

8:30 **Highlights from NASGA'S 2008 Spain Tour** Steve Polter & Rudy Heeman, NASGA Members

9:00 **Grower Profile** Eric Morrow, Morrow Family Farm, Ponchatoula, LA

9:30 **Strawberries in Australia: Traditional Production and Current Trends**
Ray Daniels, SunRay Strawberries, Queensland, Australia

10:00 BREAK
10:20 Sponsor and Trade Show Representatives Open Microphone

10:30 Concurrent Sessions Choose from 1 of 2

1. Managing Fumigation: Current Options
Victor Lilly, Reddick Fumigants, Williamston, NC
Rob Welker, North Carolina State University
Robert Kreger, Arysta Life Sciences

2. Integrated Food Safety Management Practices
David Picha, Louisiana State University, Baton Rouge
Planning for Food safety Audits, TBA

12:00 NASGA Annual Meeting and Luncheon, Queen Anne Room

2:00 **Under Mulch and Row Middle Herbicide Programs for Annual Strawberry Production**
Andrew MaCrae, University of Florida, Gulf Coast Research Center

2:30 BREAK
2:50 Sponsor and Trade Show Representatives Open Microphone

3:00 **Antioxidant Capacity and Anticancer Properties of Wild versus Cultivated Strawberries**
Kim Lewers, USDA, ARS Beltsville, MD

3:30 **Strawberry Variety Updates** (15-20 min. each)
Panel Curt Gaines - California Varieties
Brian Smith - Variety Performance and Breeding for the Upper Mid-west
Philip Lieten - Variety Developments in Northern Europe
TBA- Florida Variety Update

5:00 Dinner on your own

Tuesday, January 20

7:30-8:30 Registration, Trade Show and Poster Session

General Session: La Nouvelle Orleans Room

8:30 **Soil Revitalization for Improved Strawberry Production Using Fungal Dominant Compost and Compost Tea** John Lewis, AgraPoint, Kentville, Nova Scotia

9:00 **Disease Models for Timing Fungicide Applications to Control Anthracnose and Botrytis Fruit Rots** Natalia Peres, University of Florida, Gulf Coast Research Center

9:30 **Anthracnose Research with an Emphasis on Cultural Control** Barbara Smith, USDA-ARS Poplarville, MS

10:00 BREAK

10:20 Sponsor and Trade Show Representatives Open Microphone

10:30 **Plant Nutrition/Organics and Pesticide Free Ideas** Del Christianson, Agro K, Detroit Lakes, MN

11:00 **How Strawberries Respond to Fertilization and Irrigation** Bielinski Santos, University of Florida, Gulf Coast Research Center

11:30 **Growing in Substrates and Tunnels in the EU** Philip Lieten, Fragaria Holland

12:15 Lunch – Visit Trade Show and Poster Session

2:00 **Update on Runner Management for Plasticulture** David. Handley, University of Maine

2:30-4:30 **NASGA Round Table Discussions – Choose 4 of 6**

Season Extension	Fumigation and Weed Management	Disease Management
Varieties	Food Safety	Irrigation/Fertigation

4:30 Dinner and Evening on Your Own

Wednesday, January 21 Farm Tour – Depart from Hotel at 7:30 am

BRITISH COMPANY DEVELOPS ELECTRIC STRAWBERRY HARVESTER

A British engineering design company, Tech2reality Ltd, has taken a fresh look at the commercial harvesting of strawberries and has come up with a brand new solution - a revolutionary electric harvesting rig. The TEKTU T100 comes in 4-, 5-, and 6-bed versions, carrying 8, 10 or 12 pickers. Pickers are comfortably positioned over the crop rows and gather the fruit quickly and efficiently, directly into plastic baskets. Conveyors carry the laden baskets to the load platform, where they are packed into trays and off-loaded.

The TEKTU T100s rechargeable batteries enable it to run silently and with zero emissions inside poly-tunnels. The battery pack lasts for at least a full shift and multi-shifting simply involves a quick battery change operation. Because terrain can be tough, four-wheel drive is an option, as is four-wheel steering, which enables the T100 to neatly crab sideways at the end of a crop row.

Electric drive and control brings a number of benefits, according to the company. The T100 is fitted with ultrasonic automatic steering which means there is no need for a driver while harvesting. The rig's speed of travel is controlled very precisely and, in auto-speed mode, demand requests from the pickers are processed electronically to set an optimum harvesting speed. Productivity data can be downloaded too, enabling detailed analysis of harvesting efficiency and yield density variations through the crop.

Demanding automotive standards have been applied to all aspects of the design and specification, to ensure trouble-free operation in all weather conditions. In the few weeks that the T100 has been operating in the field, the company states, customers are seeing 25-30% improvement in productivity and are expecting payback during the second full season of operation. The company's web site is: **www.tech2reality.com**

USDA AWARDS MORE THAN $28 MILLION IN SPECIALTY CROP RESEARCH

Jennifer Martin, Public Affairs Specialist, USDA Cooperative State Research Education and Extension Service (202) 720-8188, jmartin@csrees.usda.gov

WASHINGTON, Oct. 8, 2008 - Agriculture Secretary Ed Schafer today announced that USDA has awarded more than $28 million through the Specialty Crop Research Initiative (SCRI) to solve critical specialty crop agriculture issues, address priorities and solve problems through multifunctional research and extension.

The Specialty Crop Research Initiative was established by the 2008 Farm Bill to support the specialty crop industry by developing and disseminating science-based tools to address needs of specific crops and their regions in five focus areas: 1) improve crop characteristics through plant breeding, genetics and genomics; 2) address threats from pests and diseases; 3) improve production efficiency, productivity and profitability; 4) develop new innovations and technologies and 5) develop methods to improve food safety. Each of the focus areas received at least 10 percent of the available funds. The majority of the funded projects address two or more focus areas.

The funded projects address research and extension needs for crops that span the entire spectrum of specialty crops, from sustainable production systems for turf grass to mechanical fruit thinning devices for peach and apple. Except for projects that addressed plant breeding, genetics and genomics of specific crops, successful applicants simultaneously addressed needs in more than a single crop. Major projects were also funded to protect important specialty crops from invasive pests, such as Citrus Greening.

Although 17 institutions will manage the research/extension grant funds from this program, each award includes collaborators from an average of three other states who will work together in a multi-disciplinary approach to solve problems. All of the awards required 100 percent matching funds from non-federal sources which will double the impact of the award dollars.

Fiscal Year 2008 SCRI research and extension grants were awarded to the following small fruit projects (among others):

- **University of Georgia, $1,703,301**: Advancing Blueberry Production Efficiency by Enabling Mechanical Harvest, Improving Fruit Quality and Safety, and Managing Emerging Diseases.
- **Rutgers University, $996,687**: Breeding and Genetics of Fruit-Rot Resistance and Polyphenolics in the American Cranberry.
- **USDA/ARS Beltsville Area Research Center (MD), $1,000,000**: Generating Genomic Tools for Blueberry Improvement.

(To view the whole list of awardees, go to: http://www.csrees.usda.gov/newsroom/news/2008news/10081_scri.html.)

NPIC EN ESPANOL

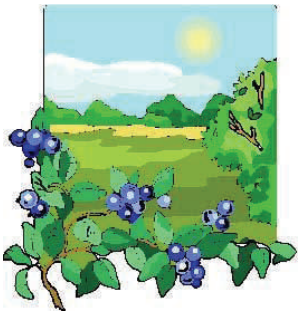
EPA is pleased to announce that the National Pesticide Information Center (NPIC) has launched a Spanish language version of its Web site. The site is designed to mirror the English version, presenting original NPIC content and numerous pesticide resources in am user-friendly format. The development of more NPIC Web pages in Spanish will be ongoing.

NPIC is a cooperative effort of EPA and Oregon State University that provides objective, science-based information about a variety of pesticide-related subjects, including pesticide products, recognition and management of pesticide poisoning, toxicology, and environmental chemistry. The information NPIC provides help people make better-informed decisions about pesticides and their use.

Spanish is the second most widely spoken language in the United States, demonstrating the utility and importance of supplying pesticide information in Spanish.

The site is available at http://npic.orst.edu/index.es.html

(Reprinted from: EPA Pesticide Program Updates from EPA's Office of Pesticide Programs 10/29/08, http://www.epa.gov/pesticides)



Introduction to Berry Growing

Saturday, January 17, 2009
9:00 am to 11:30 am
Cornell Cooperative Extension Cayuga County
248 Grant Avenue, Auburn, NY 13021

This workshop will be most useful to beginning berry growers and home gardeners. Strawberries, brambles, blueberries, currants and gooseberries will be included in the discussions.

Presenter:

Cathy Heidenreich, Cornell Berry Extension Support Specialist Department of Horticulture, College of Agriculture and Life Sciences, Cornell University

The Workshop will cover keys to successful berry growing:

- Marketing
- Startup costs
- Site Selection
- Preparation and layout
- Cultivar selection and planting
- Crop production and management
- Labor and profitability

Topics include:

- Nutrient management
- Weed, insect and disease management
- Trellising
- Irrigation and more

Fee: $10.00 per farm/family.

To register or for additional information, contact Cornell Cooperative Extension at 315.255.1183.

"Please contact the Cornell Cooperative Extension Cayuga County office if you have special needs or are unable to pay."

Registration Form for Introduction to Berry Growing

Saturday, January 17, 2009 CCE Cayuga County, 248 Grant Ave., Auburn, NY

Fee: $10 per farm/family

Name: _____
Please Print Clearly

Address: _____

Phone number (in case of cancellation): _____

Number attending: _____ Total amount enclosed: $ _____

Please make check payable to "Cornell Cooperative Extension Cayuga County" and **mail to:**

Cornell University
Cooperative Extension
Cayuga County

Attn.: Peggy Lillie
CCE Cayuga County
248 Grant Avenue
Auburn, NY 13021

ARS LICENSES HAIRY VETCH VARIETIES

Dennis O'Brien, ARS News Service, Agricultural Research Service, USDA, (301) 504-1624, dennis.obrien@ars.usda.gov

(Editor's Note; We first brought you news of these new vetches in the June issue of New York Berry News (Vol. 7 No. 6), "Early-Flowering, Winter-Hardy Hairy Vetch Released For Northern United States". Below is an update on their commercial availability)

November 14, 2008. The Agricultural Research Service (ARS) has entered into licensing agreements with four seed distributors interested in marketing varieties of a new hairy vetch developed by an ARS scientist and cooperators.

Hairy vetch is a common cover crop planted in the fall that lies dormant throughout the winter and flowers in the spring. It can be tilled into the soil or rolled onto the soil surface, leaving a mat of protective stems that hold in moisture, prevent weed growth and curb erosion. (*Photo right: Developing seed pods of hairy vetch. Several young seeds are evident as swellings inside each pod. Photo Image 1079-1 by Peggy Greb, UDSA.)*

The two new varieties, Purple Bounty and Purple Prosperity, were developed by geneticist Tom Devine with the ARS Sustainable Agricultural Systems Laboratory in Beltsville, Md., and cooperators. The two new hairy vetches are hardier and flower earlier than traditional varieties, adding up to two weeks to the growing season for corn, tomato, pumpkin and other summer crops.

ARS has licensed Purple Prosperity to Ted Weydert of DeKalb, Ill., and has licensed both Purple Prosperity and Purple Bounty to the Albert Lea Seed Co. of Albert Lea, Minn., Kings AgriSeeds LLC of Ronks, Pa., and Allied Seed LLC of Nampa, Idaho.

Organic farmers have been using hairy vetch for decades because it adds nitrogen to the soil without the use of synthetic or manufactured fertilizers. But previous earlier flowering varieties had limited use north of Maryland because they cope poorly with northern winters. The new varieties allow farmers to grow earlier-flowering vetch as far north as *Ithaca, N.Y.* The plants, named for their striking purple blooms, may also be attractive to conventional farmers because they cut in half the need for synthetic fertilizers, which are made using expensive natural gas.

Devine spent the past decade breeding the varieties at ARS fields in Beltsville and at the University of Maryland farm in Keedysville, Md., using traditional breeding techniques with seed kept in the U.S. National Plant Germplasm System.

ARS is a scientific research agency of the U.S. Department of Agriculture.

Elderberry Survey

The University of Missouri Center for Agroforestry (UMCA) is launching a nation-wide survey including all individuals and businesses that are active participants in the elderberry market. Producers who participate in the survey will receive copies of the resulting report, which will provide an industry snapshot and predict trends for the next five years. The information in the report will help producers better identify market opportunities and problems, generate, refine and evaluate marketing actions, and monitor marketing performance. If you are an elderberry or elderberry value added producer and would like to receive a survey, please contact Mike Gold (goldm@missouri.edu or 573-884-1448) or Ina Cernusca (cernuscam@missouri.edu or 573-882-4848).

THE NEW FACE OF NEW YORK BERRY GROWERS

INSIGHTS FROM THE NYS BERRY GROWERS SURVEY

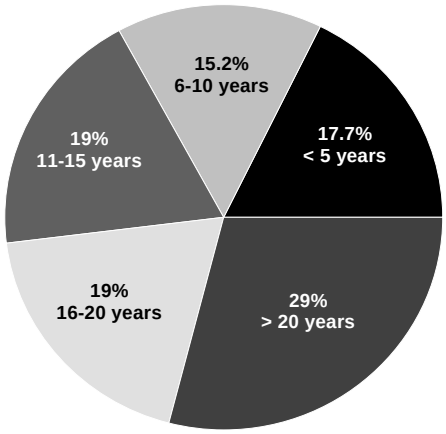
Rebecca Harbut, Department of Horticulture, Cornell university College of Agriculture and Life Sciences, Ithaca, NY 14853

If you ask Californians what a berry farm looks like you will probably get descriptions of endless acres of plasticulture continuously being harvested and replanted. Floridians would probably direct you to Plant City where their strawberry industry is concentrated. But what sort of image does a New Yorker conger up when they think of a berry farm? I suppose it depends on who you ask. If you ask shoppers at Green Market you will probably be told about the committed farmer that comes from the Hudson Valley to bring them fruit, perhaps a bit uncertain of what the farm actually looks like. The family in central NY visiting their local pick-your-own probably thinks of a family run operation, while the rural neighbor to the strawberry farmer thinks of the 50 acres that are rotated in and out of strawberries with small armies of pickers descending on the fields in June. While all of these images are somewhat different they all are sure to include some sort of relationship with the farmer. Perhaps this is what defines the New York berry farm; an operation which is directly linked to the community they serve.

DID YOU KNOW…

56% of NY berry farms are 3 acres or less.

79% of NY berry growers direct market their own fresh fruit.



What sort of answer do we get if we ask a berry farmer what the typical berry farm in New York looks like? Well, based on the surveys and interviews conducted, most berry farmers consider a commercial berry farm to be fairly large (i.e. 15 acres or more), despite the fact that many of them had 3 acres or less. Many growers we interviewed were concerned that their input would not be useful because they only have a small amount of acres in production or they grow several other crops besides berries. So what is a typical commercial New York berry farm? Well, it may not be what you expect...it may be just like yours!

When we started to develop this survey, we had three main objectives; the first was to understand the average New York berry farm, including what and how much they grow and to whom they are selling their produce. The second was to explore how and where berry growers get their information. The third objective was to gather information about the success of various production practices. This article will concentrate on the first objective and subsequent articles will discuss some of the other findings.

Figure 1. Years of experience growing berries of New York growers currently growing berries.

A telling window into the berry industry is the experience of growers currently producing berries in the state. As illustrated in Figure 1, there is an even spread of experience ranging from less than 5 years to more than 20 years, an indication of an industry that is healthy and growing. This diversity in experience is a wonderful opportunity for exchange of new ideas and tested methods.

Although there is some variability in the type of production system growers are using, the majority of growers practice a no or low spray program. Survey results showed that 33.5% of growers utilize either a 'No Spray' or a 'Rigorous IPM Spray Program', 39.8% are using a 'Low Spray' program and 17.5% of growers are growing berries organically (certified or non-certified). This desire to grow the crops with as little chemical use as possible was also clear in the interviews. Many growers expressed that a top concern of their customers, particularly U-pick customers, is the amount of chemicals that are used on the fruit. This is a great example of how the relationship between growers and consumers is built on trust and communication.

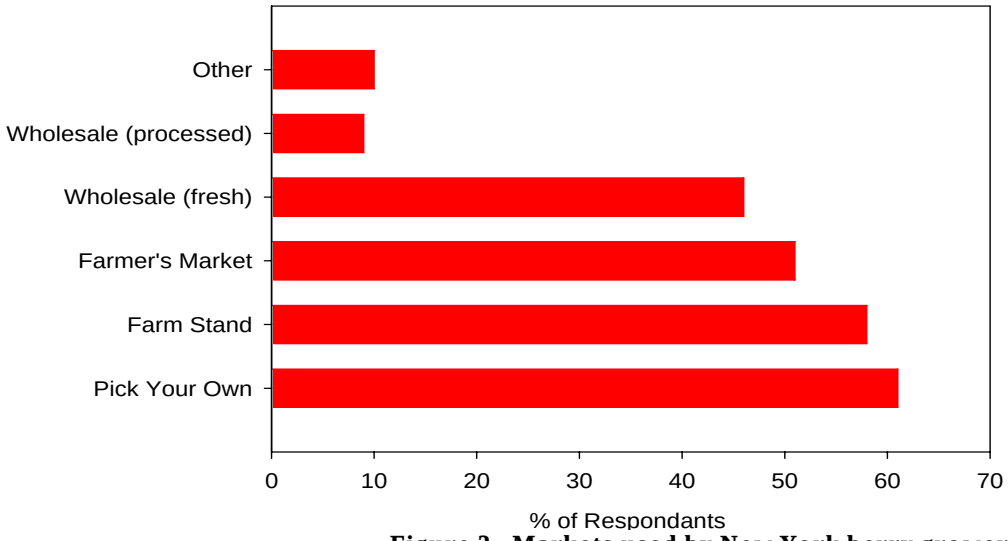


Figure 2. Markets used by New York berry growers.

Evaluation of marketing also demonstrates the close relationship berry growers have with their consumers. The survey showed that most growers market their crops directly to their consumers through PYO, farm stands, and farmers markets (Figure. 2). Although 50% of growers do sell fresh fruit wholesale, this market only accounts for a small portion of their sales, with the exception of one grower who sells exclusively wholesale. Due to the close relationship that growers have with their customers and community, most growers rely on word of mouth as their primary form of advertising (Fig.3). However, websites and email are increasing as a primary form of advertising.

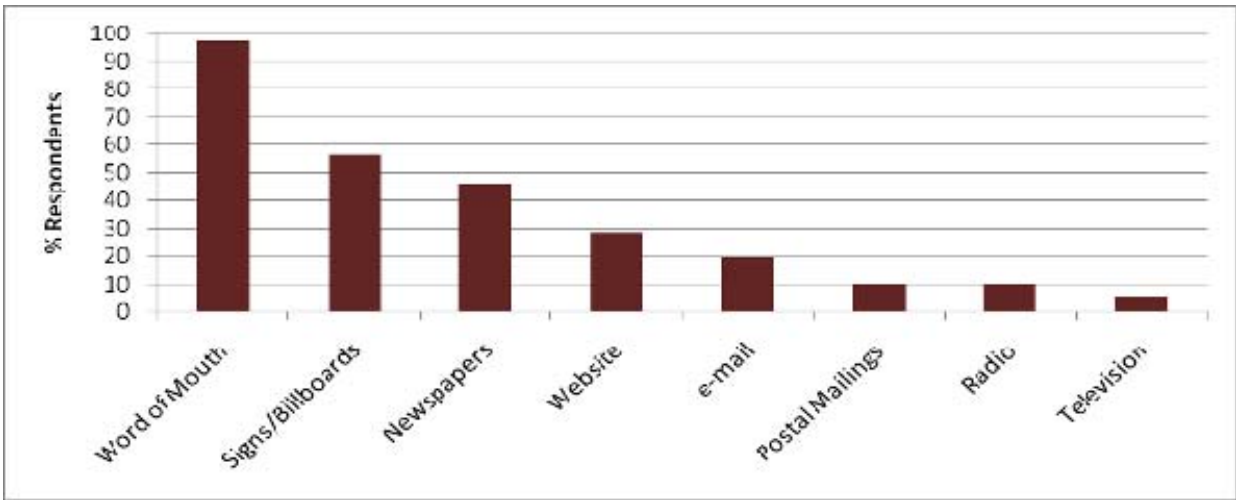


Figure 3. Advertising methods used by New York berry growers.

According to our study, one of the greatest misconceptions among growers is that a commercial berry farm has to be of a certain size to be considered a legitimate berry farm. While this may be the case in some other production areas in the U.S., this is not the case in New York. The results of our survey found that 56% of growers that were surveyed (Fig. 4) had three acres or less in berry production. Many of these farms also were growing other crops such as flowers, vegetables and tree fruits, so the area in berry production was small due to the diversity of the farm.

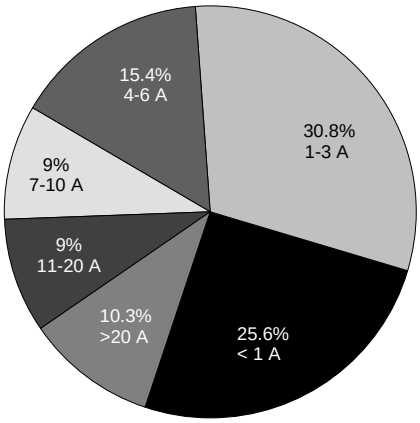


Figure 4. Acres in berry production on New York berry farms.

So what does this mean? Well, it means that even if you only have a couple acres, you are the average berry grower and your thoughts matter! The challenges you face are likely to be similar to the challenges of most other berry growers in New York. So, since you are a member of a growing and ever changing berry industry, you should get involved! Don't hesitate to be active in the grower associations, attend meetings and to voice your concerns to extension agents and researchers about what your needs are. There are different challenges that face a berry industry like ours compared to those facing industries in other states. Researchers will only know what your needs are if they hear about them, so be sure to speak up!

Stay tuned to the upcoming editions of the NY Berry News. We will be discussing the survey results relating to production practices of the different berry crops.

Thanks again to all of you who took the time to participate in the surveys and interviews, we hope that you find the information useful!

WHAT IS THE BEST WAY TO PUT MICRONUTRIENTS INTO PLANTS?

Steve Bogash, Regional Horticulture Educator, Penn State Cooperative Extension, 181 Franklin Farm Lane, Chambersburg, PA 17202, smb13@psu.edu.

There are several ways to approach micronutrient plant nutrition. The first and best long-term management technique is to have sufficient micronutrients available to plants through their root system. Root micronutrient (and macronutrient as long as we are talking nutrients) uptake is largely based on pH, and having nutrients in available forms and in sufficient amounts so that any single nutrients' availability is not adversely affected by other nutrient concentrations. Secondly, plants also take in nutrients through their leaves. Foliar application can be an excellent method to make up for short term deficiencies. A regular program of timely tissue testing is the only method to spot deficiencies before they affect plant health and yield.

In general, when we are talking micronutrient deficiency in our region we are considering levels of Copper, Iron, Manganese, Magnesium, Calcium, Boron, and Zinc. Calcium and Magnesium are most often referred to as secondary nutrients, but since they are seldom addressed in articles relating to macronutrients and we use similar techniques to make up for deficiencies in them, their application is included here. Working towards a slightly acidic pH of 6.2-6.8 in the root zone will greatly increase the availability of most of the nutrients needed to grow a good small fruit or vegetable crop (with the notable exception of blueberries). As pH in the soil solution approaches 7.0 and higher, many nutrients become less available. Some soluble fertilizers such as Miller's Nutrichem 9-15-30 contain a blend of micronutrients formulated largely as chelates which are very stable and available to plants along with N, P and K. Dry kelp meal or kelp extracts are good natural sources to bring soil micronutrient levels up. Some, but not all of these products are OMRI approved. Soluble fertilizer blends consisting only of a blend of micronutrients such as Miller's Microplex are another option. Specific nutrient materials such as Helena's Ele-Max Super Zinc and Ele-Max Magnesium FL are very useful in supplementing Z & Mg levels. Trace elements fed to livestock and applied as manure to fields will often prevent micronutrient deficiencies.

While agricultural limestone and dolomitic limestone are good sources of calcium and magnesium, the often heavy application rates of these materials have the unpleasant side effect of increasing pH, thus decreasing the availability of many other nutrients. Applications of liquid calcium products, calcium chelate, magnesium oxides and magnesium chelate will increase the availability of these nutrients without adversely impacting soil pH.

Foliar application of nutrients is an excellent method to cure immediate deficiency problems. The single greatest concern in foliar application is in causing phytotoxic reactions, thus damaging leaves or fruit. While you might apply #1-2 / acre of Zinc chelate through drip lines, a foliar application of 3-8 oz of the same material is sufficient. Up to #3/ acre of Boron as Borax can be applied to the soil, yet only 4-8 oz/ acre is the maximum that can be applied foliarly. Growers can utilize tank mixes in applying many micronutrients. However, just as some mixes of fungicides and insecticides can be phytotoxic, multiple micronutrients in a tank mix can have a similar result. Most injury shows up within the first 48 hours. So apply a test solution to a small area, wait 48 hours and assess the situation before making the entire application. Foliar applications are best used to make up for short term deficiencies. Growers will either need to apply them often or combine foliar with fertigation application. The first step in producing a healthy crop is in creating a healthy canopy. Once you've burned the leaves from too much material or a toxic blend, it is very challenging to turn the crop around.

Copper and zinc deficiencies are often avoided through the use of fungicide / bactericides such as Kocide, Phyton 27, Champ, mancozeb, Manzate, Dithane... as these materials contain either copper or zinc (zinc-based materials are primarily fungicides while copper materials do double duty). Tissue testing often indicates very high to toxic amounts of these materials if the samples are pulled shortly after their application.

Liquid kelp extracts are often applied foliarly to make up for general micronutrient deficiencies in crops grown under organic production rules. Many organic growers that I've spoken with in the Lancaster area are convinced that fermented vermiculture solutions not only supply vital nutrients, but also confer serious disease prevention characteristics. Fertrell Products worked with Penn State in the side-by-side tomato nutrient study this past season at the Southeast Research and Extension Center (SREC, also known as the Landisville Research Farm). We are just starting to analyze the results of that study which will be published over the next few months. An increasing number of new nutrient products are being introduced to serve the organic production market. Be sure to check the most recent OMRI listing before application as this list is evolving over time.

Of all of the errors that I've made and seen growers make over the years, simple mathematical errors that occur in determining foliarly applied micronutrient rates seem to be the worst. It is very easy to make a simple mistake of one decimal point in calculating rate and burn a crop past the point of no return. A one decimal point mistake can produce a 10x error that will readily create a micronutrient solution that is very toxic to a crop. Foliar application also complicates tissue testing since the laboratory has no way of knowing whether the boron / zinc / copper.... that is showing up in their sample is sitting on the tissue surface or has been taken up by the plant. For field samples, wait to harvest tissue until after a soaking rain. When pulling greenhouse or high tunnel samples, wait at least one week after nutrient application, carefully wash the leaves or petioles, then, blot dry on paper towels. This simple extra care in sample handling will greatly increase test accuracy.

Both foliar and root applied micronutrients are useful in maintaining plant health, neither method is better than the other. A program of soil or media testing prior to planting followed up with regular, timely tissue testing and subsequent nutrient application is the "solution" to applying micronutrients. While several examples of specific fertilizer blends and manufacturers were mentioned in this article, Penn State does not recommend one product over another. Speak to your current supplier, shop around for products that meet your needs and always get competitive pricing. Be sure you are comparing like materials.

(Reprinted with permission from: The Vegetable & Small Fruit Gazette, November 2008, Volume 12, No. 11)

PUTNAM SCALE ON BLUEBERRIES

Kathy Demchak, Penn State Horticulture

Last summer in late June, a local county extension office was contacted by a grower who noticed some small white dots on their blueberry fruit. The dots were surrounded by a narrow reddish ring, and beyond that, a surrounding light-colored bleached area. The diagnosis (thanks to Dean Polk and Cesar Rodriguez-Saona at Rutgers) was Putnam scale.

There have been several instances of Putnam scale being diagnosed as a problem on blueberries in Pennsylvania, and though the frequency hasn't been high, I'm suspicious that this insect may be more common than you'd think. A heavy infestation of Putnam scale can result in a decline in plant vigor, smaller berries, and eventual plant death, so you may want take a look for these insects after the leaves fall off the bushes, or monitor for them next spring.

Putnam scale falls in the category of armored scales, which means that the insects themselves, which are soft-bodied, are protected by a hard coating. This affects which control measures are effective and timing of their use. Newly-hatched scale insects are called "crawlers" because they move to their feeding locations, and it is only at this point in their life cycle that they are exposed. Putnam scale is found not only blueberries, but also can be found on apple and cherry trees, and various forest and shade trees including maple, ash, beech and oak. Putnam scale may be most commonly brought into a planting on nursery plants, but crawlers can also be moved in from surrounding forest or fruit trees by wind, birds or insects. Their populations most commonly build when pruning has been minimal.

On blueberries, most of the scales are found under the rough bark on older canes - another good reason to prune the oldest canes out. By removing older canes, you remove a good percentage of the scale population, and also their most-protected living areas. A recent report suggested that the scale may only be seen on other areas of the plant, such as young stems, leaves, and berries, when their living conditions become too crowded on the older stems.

So, how do you know whether you have Putnam scale? The scales once mature are difficult to see, as they may be covered by bark, and appear as tiny (only 1/16" in diameter) gray waxy dots. If the waxy covering is lifted off, yellow insects can be seen underneath. The crawlers also are yellow. Double-sided sticky tape can be wrapped around the stems in spring and early summer, when crawlers on the tape should be apparent. Applying black electrician's tape (sticky-side out) to the double-sided tape will make the crawlers on the edge of the tape more visible, but you'll probably still need a magnifying lens or hand lens to see them, as they are about the size of mites. Research in New Jersey showed that there are two generations of this insect per year in warmer areas of New Jersey. In colder areas of the Northeast such as Connecticut, only one generation occurs. Most, if not all, of PA, probably falls in the one-generation-per-year area, but this isn't for certain. The bottom line is that crawlers will be around in spring to early summer, but if you are in a warm location where there are two generations per year, they may be found in midsummer also. Photos of all life stages can be found at http://www.blueberries.msu.edu/scales.htm.

Besides pruning out old canes, conserving naturally-occurring predators of Putnam scale – several species of parasitic wasps – will help with management. This means avoiding the use of broad-spectrum insecticides (whether conventional or organic) when possible. Lime sulfur applied in the springtime for disease control also helps with scale control. Superior oil can be applied when the buds are swelling, but prior to green tissue appearing. This material is basically used to smother overwintering scales, but coverage must be complete. Use 3.0 gal of oil in 250-300 gallons of water per acre at high pressure (300-400 psi).

Esteem 35WP at 5 oz/ is labeled for Lecanium scale, which can also be a problem on blueberries, but isn't labeled for Putnam scale. Esteem's active ingredient (pyriproxyfen) is a juvenile hormone mimic. It is relatively specific, affecting certain insects such scale crawlers and cherry and cranberry fruitworm larvae, and is safe to parasitic wasps and bees. However, on the down side for predator conservation, it is also toxic to ladybird beetles.

Life cycle and further info on control measures for Putnam and other scales are outlined in the Blueberry chapter of the Mid-Atlantic Berry Guide, available possibly through your county Extension offices (call ahead) or on-line at http://pubs.cas.psu.edu/freepubs/MAberryGuide.htm. (Also in the Cornell Pest Management Guidelines for Berry Crops:

References and for Further Reading:

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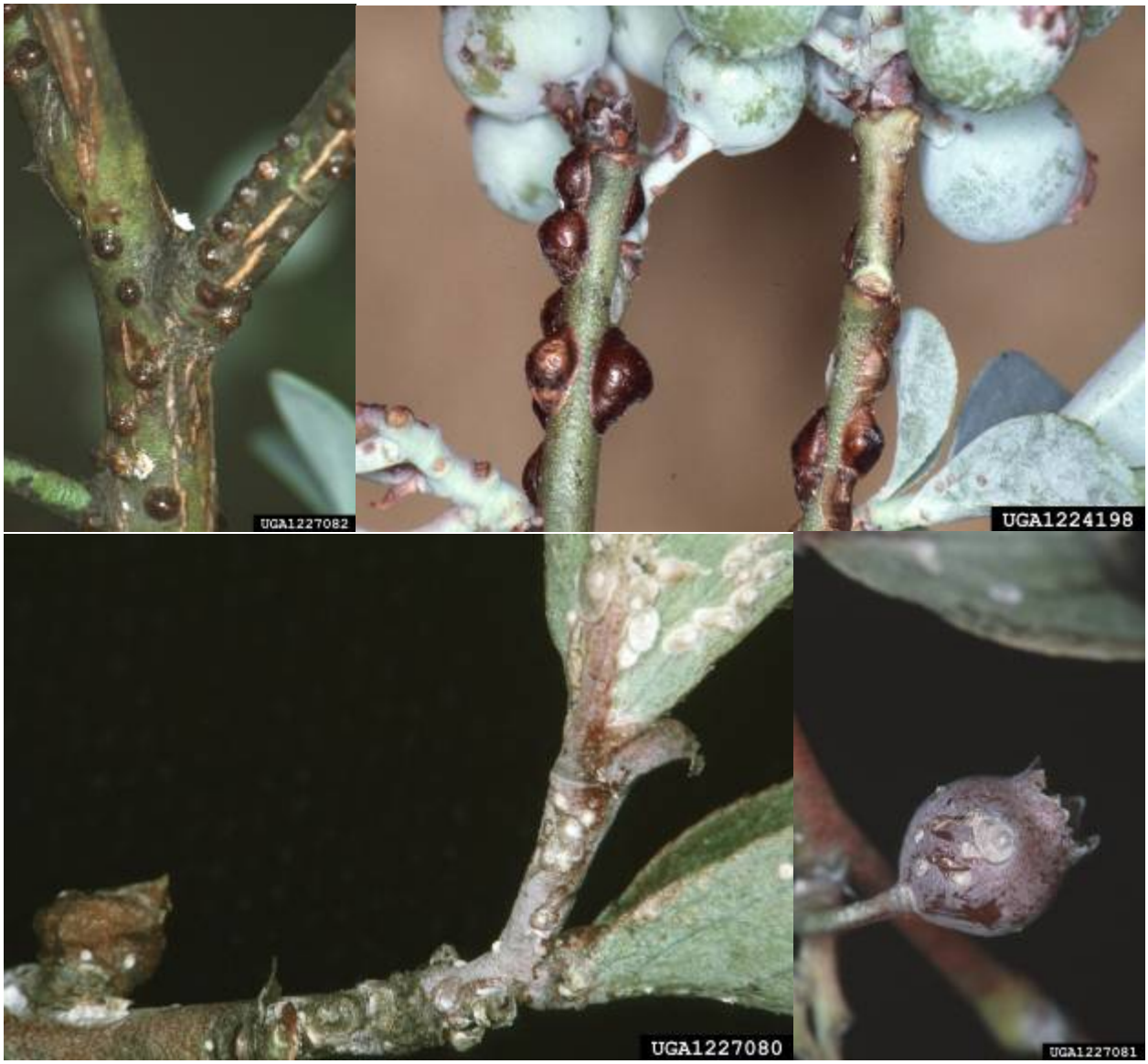
3. Polavarapu, S., J. A. Davidson, and D. R. Miller. 2000. Life history of the Putnam scale, *Diaspidiotus ancylus* (Putnam) (Hemiptera: Coccoidea: Diaspididae) on blueberries (*Vaccinium corynbosum*, Ericaceae) in New Jersey, with a world list of scale insects on blueberries. Proc. Entomol. Soc. Wash. 102(3):549-560.

(Reprinted with permission from: The Vegetable & Small Fruit Gazette, November 2008, Volume 12, No. 11)



Top left: Terrapin scale (*Mesolecanium nigrofasciatum)* on southern blueberry. **Top right**: European fruit lecanium (*Parthenolecanium corni)* on huckleberry. **Bottom (L to R)**: Putnam scale *(Diaspidiotus ancylus)* on rabbit-eye blueberry and deerberry. *Photos by Jerry A. Payne, USDA Agricultural Research Service*, http://www.ipmimages.org.

POSITIVE PRACTICES IN FARM LABOR MANAGEMENT

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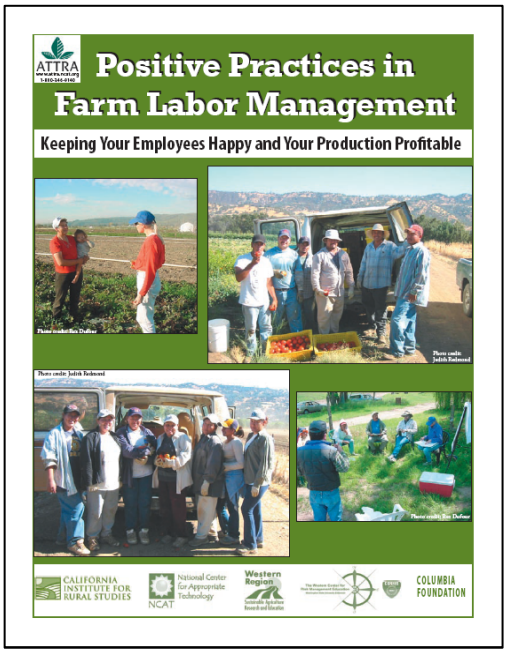

This recent guide is a collaboration between NCAT and the California Institute for Rural Studies (CIRS), based on case-study research conducted by CIRS. Interviews with farmers, farm managers and over 100 employees demonstrate that positive working conditions for farm employees can, and often do, go hand-in-hand with healthy profits for farm businesses.

Intelligent, hard-working employees are invaluable for a sustainable agriculture operation. This publication looks at ways to keep employees satisfied, so they will want to continue working on your farm or ranch.

Below are excerpts just to whet your appetite for more! The publication is available free on line at: http://attra.ncat.org/attra-pub/PDF/positive_labor.pdf.

Ten Positive Farm Labor Management Practices

Do you want to improve working conditions on your farm but aren't sure what's most important to employees? Think you can't afford to? Don't know where to start? These Ten Positive Practices will provide you with specific ideas and strategies to:

- Improve employee satisfaction and retention
- Increase productivity while reducing costs
- Improve access to markets that emphasize fair labor practices

Employees interviewed for a recent ATTRA publication identified the workplace conditions they most value. This list is arranged in that order.

- Respectful Treatment
- Fair Compensation
- Year-Round Employment
- Traditional Benefits
- Non-Traditional Benefits
- Safe and Healthy Workplace
- Direct Hiring & Recruitment
- Team-Based Management
- Structures
- Open Communication and Decision-Making
- Opportunities for Professional Development and Advancement

How Do Growers Benefit from Positive Labor Practices?

Increased retention and reduced training costs: One farmer, with a retention rate of approximately 90%, estimates annual savings of approximately $20,000 to $30,000 as a result of reduced training costs.

Reduced management costs: Motivated and committed employees require less supervision. Farms with fewer foremen or managers can save thousands of dollars while increasing worker satisfaction.

Improved product quality and better prices: A skilled, knowledgeable and committed workforce translates to higher quality products.

Reduced accidents and lower workers' compensation rates: Reduced pesticide exposure on sustainable and organic farms, a slower pace of work, diversity of tasks, and teamwork in lifting heavy items can reduce accidents, injuries, and workers' compensation costs.

A more stable, knowledgeable, and trustworthy workforce: Employees who feel respected, valued and trusted are more likely to work harder and feel committed to the success of the farm business.

Taking Care of Business
Strategies for how to implement these positive labor practices vary in cost. Notice how many things you can do with very little monetary investment!

Low-Cost Strategies	Medium-Cost Strategies	Higher-Cost Strategies
Respectful treatment Regular acknowledgement and appreciation Free food from the farm Personal loans Policies for communication and information sharing Clear grievance procedures Flexible work schedules Safe and healthy work environment Diversity of tasks Allow social services to conduct on-farm outreach Celebrations, team-building and appreciation parties	Bonuses and profit-sharing Year-round employment Paid time off Retirement plans Educational assistance Opportunities for training and professional advancement	Higher wages Health insurance

New Market Opportunities
Adding Value to Your Products with Positive Labor Practices
It can be a financial challenge to improve compensation and benefits for your agricultural employees. However, new market-based opportunities may help you offset the costs of improving working conditions for your employees.

Many consumers today are looking to buy products from businesses that demonstrate social responsibility. Food retailers and restaurant chains have responded to this trend by setting standards throughout their supply chains that incorporate fair farm labor practices.

Producers can advertise their responsible labor practices directly to consumers or through certification and labeling programs. Below are several examples of U.S.-based programs that support and/or certify growers who cultivate positive labor management practices.

1. **Agricultural Justice Project (AJP)** www.cata-farmworkers.org/ajp. The AJP is a collaboration of organizations that developed a Domestic Fair Trade label based on social justice standards for organic and sustainable agriculture.
2. **Food Alliance** www.foodalliance.org. Food Alliance is a nonprofit, third-party certification program that promotes sustainable agriculture.
3. **Scientific Certification Systems** www.scscertified.com. SCS offers numerous certification programs including social responsibility standards, a Fair Labor Practices and Community Benefits label, and the Veriflora label.
4. **Socially Accountable Farm Employers (SAFE)** www.safeagemployer.org. SAFE is a nonprofit organization that provides independent auditing and certification of fair, lawful farm labor practices in the agriculture industry.

How to Implement Positive Farm Labor Practices
Respectful Treatment *" Before, I worked with a contractor and was treated badly. Here there are policies. No one says anything in a mean way. That means a lot. When you are happier you work harder." Employee*
- Create and enforce policies about how employees are to be treated.
- Provide employees with a degree of freedom to take care of personal and family needs.
- Check in with employees, inquire about their personal lives. Show that you care about them as people.

Fair Compensation *"We work harder here because we know that if the farm does well, we do well. At the end of the year, there are bonuses. In other places where I worked, they don't have bonuses." Employee*
- Ensure that your pay scales are comparable or better than local farms.
- Offer incentives at least once per year, on employees' birthdays or as a reward for staying through harvest.
- Communicate clearly about how bonuses are calculated and how the farm is faring financially.
- Account for cost-of-living increases when making wage adjustments for employees.

Year-Round Employment *"We provide year-round employment. That's huge. It means that our workers can live here with their families. This is their community now. Families go to school here." Employer*
- Diversify crop mix to allow for year-round production.
- Contract with neighbors to hire your workers in the off-season.
- Hire field staff to help with maintenance and repairs during the winter.
- Include value-added products that can be made and sold in the winter.

Traditional Benefits *"Housing has been a huge issue. It's a commitment of ours to help folks find housing. When anything is available, we snap it up. We sign a lease. We make sure the rent gets paid, even when there aren't workers there." Employer*

- Health Care: Provide health insurance or if costs are prohibitive, provide access to clinics, health screenings & education, referrals to low-cost care.
- Housing: Provide free or subsidized housing, or help workers find local housing and negotiate rentals.
- Paid time off: Offer paid vacation to employees working to the end of the year. Offer increasing amounts of paid time off for long-term employees.
- Retirement benefits: Encourage employees to save for retirement, matching contributions to 5% of wages.
- Overtime pay: Provide overtime after eight hours/day or 48 hours/week.

Non-Traditional Benefits *"You can bring all the food home that you want. We are eating a lot of vegetables. We all have more to eat." Employee*

- Provide no-interest personal loans that employees pay back with payroll deductions, retirement plans.
- Allow social service agencies to conduct outreach on the farm. Pay employees for the time spent attending those sessions.
- Offer college scholarships for employees' children.

Safe, Healthy Workplace

- Diversify employee tasks throughout the day to prevent chronic injuries. Limit hand weeding, stoop labor to two hours a day.
- Encourage teamwork. For example, ask employees to carry heavy items with co-workers.
- Adopt sustainable farming practices to reduce workers' pesticide exposure.

Direct Hiring and Recruitment

- Recruit new employees via other farmworkers. This way your employees may be related or from a similar region. Employers report that this results in a more cohesive workforce with less interpersonal conflict.
- Prepare written job descriptions for new positions so everyone is clear about the employees' duties.
- Invest time in finding the right person for the job to save time and money later.

Team-Based Management

"We have leaders with a lot of responsibility, but we don't call them foremen or majordomos. We make sure their authority is limited . . . We encourage team management." Employer

- Practice the MBWA management style "management by walking around." Communicate directly with employees daily.
- Encourage collaboration between employees, allowing workers to help and train one another.

Open Communication and Decision Making

"Here we have meetings and the patron informs us about what is happening on the farm. He takes us into account. He asks our opinion." Employee

- Hold regular staff meetings on important topics such as production tasks, personnel conflicts, or safety concerns.
- Encourage employee feedback about workplace practices, production issues.

Professional Development and Advancement

"Here they give lots of opportunities for advancement. I started as a harvester and now I run machinery. They help you get the training and licenses to operate machinery. I want to keep moving up." Employee

- Encourage & reward employee initiative to develop new skills and responsibilities. Expose employees to different aspects of the operation.
- Provide management training. Be sensitive to conflicts of interest that arise when workers are responsible for managing friends, family members.
- Provide opportunities for formal educational advancement at local community colleges.

ATTRA offers hundreds of free publications, many in Spanish, on organic and sustainable agriculture topics. They can be downloaded from ATTRA's website, www.attra.ncat.org. To order paper copies call: 800-346-9140; en Espanol 800-411-3222.

(This article is excerpted from ATTRAnews September 2008, Vol.16, No. 3. ATTRAnews is the bi-monthly newsletter of ATTRA - National Sustainable Agriculture Information Service. The newsletter is distributed free throughout the United States to farmers, ranchers, Cooperative Extension agents, educators, and others interested in sustainable agriculture. ATTRA is funded through the USDA Rural Business-Cooperative Service and is a project of the National Center for Appropriate Technology (NCAT), a private, non-profit organization that since 1976 has helped people by championing small-scale, local and sustainable solutions to reduce poverty, promote healthy communities, and protect natural resources.)

WEATHER NOTES

NEW YORK CROP WEATHER SERVICE NOTES

Week ending October 12th: Temperatures averaged slightly above normal with precipitation near to above normal across much of upstate New York and below normal across southeast New York. High pressure remained across the region through the middle portion of the week. A cold front then swept east on Wednesday into Thursday preceded and accompanied by scattered to numerous showers. High pressure then moved southeast into the region for Friday into Saturday. A widespread frost and freeze occurred across upstate New York Tuesday morning and Wednesday morning ending the growing season in many areas as temperatures fell into the mid 20's to lower 30's at many locations.

Week ending October 19th: The week began with a large area of high pressure situated over the northeast which allowed for dry weather for Sunday and Monday. A weak front passed through the region on Tuesday into Wednesday which brought some widely scattered showers to parts of the upstate mainly in western areas. By Thursday, a more potent cold front passed through the region. This brought a widespread rainfall to much of upstate New York with the heaviest rainfall in excess of one inch across far western New York and the Niagara Frontier. Most of the southeastern New York around New York City and Long Island saw little to no rainfall from this system. Another area of high pressure dominated the state for Friday and Saturday with dry weather returning to the entire state. Temperatures for the beginning to middle part of the week were above normal with high temperatures reaching the 70's across the state with the exception of northern areas. Behind Thursday's cold frontal passage, temperatures dropped considerable. Friday and Saturday averaged below normal across the entire state. Temperatures Saturday morning were below freezing across much of upstate New York, resulting in a killing frost. However, parts of the mid Hudson Valley, the lower Hudson Valley, New York City area, and much of Long Island escaped a killing frost on Saturday morning as temperatures in those areas only dropped into the middle and upper 30's.

This is the last edition of the New York "Weather and Crops" for the 2008 season. The New York Agricultural Statistics Service gratefully acknowledges the weekly cooperation of the Agricultural Weather Information Service, Inc., National Weather Service personnel, Agricultural Extension agents, FSA representatives, and independent volunteer observers who collectively make this report possible.

Questions or Comments about the New York Berry News?

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Editor's Note: We are happy to have you reprint from the NYBN. Please cite the source when reprinting. In addition, we request you send a courtesy E-mail indicating NYBN volume, issue, and title, and reference citation for the reprint. Thank you.

Check out the NYSAES Tree Fruit and Berry Pathology web site at:
www.nysaes.cornell.edu/pp/extension/tfabp

WEATHER REPORTS OF TEMPERATURES AND PRECIPITATION THROUGHOUT NEW YORK STATE FOR WEEK ENDING SUNDAY 8:00am, October 12th, 2008

	Temperature				Growing Degree Days (*Base 50*)			Precipitation (*inches*)			
	High	***Low***	***Avg***	***DFN[1]***	***Week***	***YTD[2]***	***DFN***	***Week***	***DFN***	***YTD***	***DFN***
Hudson Valley											
Albany	73	32	53	1	29	2849	375	0.40	-0.23	24.53	3.83
Glens Falls	71	27	49	-2	14	2253	120	0.29	-0.34	22.64	2.10
Poughkeepsie	79	36	55	3	35	2928	315	0.02	-0.65	27.26	3.53
Mohawk Valley											
Utica	65	30	48	0	9	1744	83	0.95	-0.03	29.55	-0.15
Champlain Valley											
Plattsburgh	72	28	50	0	19	2164	3	0.37	-0.19	20.79	0.79
St. Lawrence Valley											
Canton	71	28	49	0	10	2148	204	0.45	-0.28	21.60	-0.22
Massena	68	28	50	1	17	2156	130	0.26	-0.37	18.86	-0.98
Great Lakes											
Buffalo	72	36	55	2	38	2653	242	0.17	-0.48	22.17	0.71
Colden	71	29	50	-1	16	1992	49	0.25	-0.59	25.25	-0.09
Niagara Falls	71	32	53	-1	27	2510	93	0.18	-0.45	19.48	-1.50
Rochester	72	34	54	1	32	2731	389	0.16	-0.39	15.34	-3.02
Watertown	66	28	50	-1	17	2210	204	0.47	-0.14	22.40	4.96
Central Lakes											
Dansville	74	31	52	-2	24	2444	99	0.07	-0.54	21.68	1.45
Geneva	72	33	52	-1	26	2387	69	0.24	-0.39	19.76	-0.28
Honeoye	72	29	50	-4	15	2312	-137	0.00	-0.63	19.76	-0.06
Ithaca	73	28	49	-2	14	2211	122	0.06	-0.71	19.62	-2.13
Penn Yan	74	36	55	4	40	2804	486	0.06	-0.57	18.91	-1.13
Syracuse	71	32	53	1	30	2614	254	0.26	-0.46	20.19	-2.59
Warsaw	68	32	50	0	15	1957	181	0.25	-0.52	28.24	4.45
Western Plateau											
Alfred	72	26	48	-3	3	1715	-39	0.08	-0.62	21.97	-0.42
Elmira	74	27	51	-1	17	2403	198	0.04	-0.59	17.59	-2.66
Franklinville	73	27	48	0	6	1823	214	0.22	-0.62	25.02	0.89
Sinclairville	76	32	51	2	18	2106	282	0.28	-0.63	22.10	-4.99
Eastern Plateau											
Binghamton	70	34	53	3	29	2374	248	0.06	-0.57	19.81	-1.58
Cobleskill	70	31	50	0	15	2165	187	0.15	-0.55	25.87	2.78
Morrisville	67	34	50	1	13	2007	130	0.23	-0.54	22.00	-1.35
Norwich	72	30	49	-1	12	2101	126	0.23	-0.48	20.85	-2.14
Oneonta	76	30	51	2	17	2461	652	0.12	-0.65	19.22	-5.28
Coastal											
Bridgehampton	71	37	55	-2	38	2802	273	0.36	-0.34	24.86	2.38
New York	77	48	62	3	84	3823	453	0.12	-0.51	24.58	1.08

1. *D*eparture *from N*ormal
2. *Y*ear *to D*ate: Season accumulations are for April 1st to date

The information contained in these weekly releases are obtained from the New York Agricultural Statistics Service (http://www.nass.usda.gov/ny/), who in turn obtains information from reports from Cornell Cooperative Extension agents, USDA Farm Service Agency, Agricultural Weather Information Service Inc., the National Weather Service and other knowledgeable persons associated with New York agriculture.

WEATHER REPORTS OF TEMPERATURES AND PRECIPITATION THROUGHOUT NEW YORK STATE FOR WEEK ENDING SUNDAY 8:00am, October 19th, 2008

	Temperature				Growing Degree Days (*Base 50*)			Precipitation (*inches*)			
	High	***Low***	***Avg***	***DFN[1]***	***Week***	***YTD[2]***	***DFN***	***Week***	***DFN***	***YTD***	***DFN***
Hudson Valley											
Albany	70	30	53	4	38	2887	394	0.43	-0.20	24.96	3.63
Glens Falls	68	24	50	3	22	2275	131	0.58	-0.05	23.22	2.05
Poughkeepsie	74	32	54	4	41	2969	333	0.02	-0.66	27.28	2.89
Mohawk Valley											
Utica	70	24	48	3	20	1764	95	0.97	-0.01	30.52	-0.16
Champlain Valley											
Plattsburgh	71	26	49	3	16	2180	7	0.42	-0.14	21.21	0.65
St. Lawrence Valley											
Canton	75	23	49	4	23	2171	216	0.53	-0.17	22.13	-0.39
Massena	74	21	50	4	25	2181	143	0.17	-0.45	19.03	-1.43
Great Lakes											
Buffalo	76	32	54	5	46	2699	264	1.51	0.82	23.68	1.53
Colden	77	26	51	3	30	2022	63	1.41	0.59	26.66	0.50
Niagara Falls	76	29	54	4	43	2553	112	0.74	0.14	20.22	-1.36
Rochester	81	30	56	6	56	2787	421	1.06	0.54	16.40	-2.48
Watertown	73	23	50	2	28	2238	217	0.62	0.03	23.02	4.99
Central Lakes											
Dansville	82	25	53	3	43	2487	118	0.70	0.14	22.38	1.59
Geneva	77	29	52	4	37	2424	85	1.50	0.87	21.26	0.59
Honeoye	81	28	53	2	38	2350	-124	1.65	1.02	21.41	0.96
Ithaca	78	22	51	3	33	2244	137	0.43	-0.29	20.05	-2.42
Penn Yan	80	31	56	7	58	2862	523	0.37	-0.26	19.28	-1.39
Syracuse	78	28	53	4	42	2656	272	1.26	0.56	21.45	-2.03
Warsaw	77	29	50	4	31	1988	199	1.70	1.00	29.94	5.45
Western Plateau											
Alfred	78	20	49	3	24	1739	-29	0.36	-0.27	22.33	-0.69
Elmira	79	22	53	6	48	2451	228	0.27	-0.36	17.86	-3.02
Franklinville	78	21	49	4	26	1849	228	1.22	0.41	26.24	1.30
Sinclairville	80	24	51	4	28	2134	296	0.54	-0.35	22.64	-5.34
Eastern Plateau											
Binghamton	75	31	55	7	51	2425	284	0.42	-0.21	20.23	-1.79
Cobleskill	75	24	50	3	26	2191	199	0.42	-0.22	26.29	2.56
Morrisville	73	20	50	4	31	2038	149	0.69	-0.05	22.69	-1.40
Norwich	76	24	51	4	24	2125	138	0.47	-0.23	21.32	-2.37
Oneonta	74	26	52	6	31	2492	670	0.61	-0.13	19.83	-5.41
Coastal											
Bridgehampton	73	39	57	4	53	2855	294	0.00	-0.75	24.86	1.63
New York	78	43	62	6	83	3906	485	0.00	-0.65	24.58	0.43

1. *D*eparture *from N*ormal
2. *Y*ear *to D*ate: Season accumulations are for April 1st to date

The information contained in these weekly releases are obtained from the New York Agricultural Statistics Service (http://www.nass.usda.gov/ny/), who in turn obtains information from reports from Cornell Cooperative Extension agents, USDA Farm Service Agency, Agricultural Weather Information Service Inc., the National Weather Service and other knowledgeable persons associated with New York agriculture.