NEW YORK BERRY NEWS
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Cornell University
College of Agriculture and Life Sciences

New York Berry News

Cornell University Berry Team

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New Cornell Raspberry Variety Extends Harvest into November — *Amanda Garris, Cornell News Service*

Cornell's new raspberry variety, Crimson Giant, is fashionably late. Developed by Cornell berry breeder and associate professor of horticulture Courtney Weber, Crimson Giant was bred specifically for the New York climate and can extend the harvest window for fresh, local raspberries to the beginning of November.

"Consumer disbelief is the real challenge for Crimson Giant," said Weber, who works at Cornell's New York State Agricultural Experiment Station in Geneva, N.Y. "They are not accustomed to seeing locally produced raspberries that late in the fall, and they might assume the seller has put a 'local foods' sticker on berries from California."

The berry has all the attributes of high-quality commercial fruit: true raspberry flavor and firm, bright red berries that don't darken quickly in storage. The fruit is large, averaging 4.5 grams in its New York trial, a significant increase over the 2-3 gram berries in other varieties.

In local trials, Crimson Giant begins ripening in late September or early October, three weeks later than the widely grown Cornell variety Heritage. Weber reports that during the traditional fall raspberry harvest, Crimson Giant is still flowering.

The late harvest requires a protected production system such as high tunnels to shield the flowers and fruit from fall frost. Already widely used for summer tomato production in New York state, high tunnels are structures composed of hoops of metal or plastic covered by plastic sheeting. Unlike greenhouses, they do not have a foundation and are generally not heated. Drip irrigation supplies the necessary moisture to support plant growth.

Upcoming Berry Events

December 6-8, 2011. *Great Lakes Fruit, Vegetable & Farm Market EXPO,* DeVos Place Convention Center, Grand Rapids, Michigan. For more information: http://www.glexpo.com.

December 13- 15, 2011. *New England Vegetable and Fruit Conference*. Radisson Hotel, Manchester, NH. For more information: Kristen Castratoro, Phone: 401 874-2967, e-mail: kcas@uri.edu or http://www.newenglandvfc.org/.

January 16-18, 2012. *North American Raspberry & Blackberry Conference*, Kalahari Resort, Sandusky, OH, in association with the Ohio Produce Growers and Marketers Congress. For more information, call 919-542-4037, email info@raspberryblackberry.com, or visit www.raspberryblackberry.com.

January 24 - 26, 2012. *Empire State Fruit and Vegetable EXPO and Direct Marketing Conference. OnCenter,* Syracuse, NY. Berry session Thursday 1/26/12. More details forthcoming.

January 31 – February 2, 2012. *Mid-Atlantic Fruit and Vegetable Convention*, Hershey, PA. For more information call William Troxell at 717-694-3596 or visit http://www.mafvc.org.

February 6-8, 2012. *NASGA Annual Meeting and Conference,* Harrah's Las Vegas, Las Vegas, NV. For more information visit http://www.nasga.org or call Kevin Schooley at the NASGA office 613-258-4587.

February 18 to 22, 2012. *7th International Strawberry Symposium*. Beijing, China. http://www.iss2012bjchina.org.cn.

February 29 to Mar 2, 2012. *US Highbush Blueberry Council Spring Meeting,* Sheraton Fisherman's Wharf, San Francisco, CA. For more information: http://www.blueberry.org/calendar.htm#Meetings

New Cornell Raspberry Variety (continued)

"Raspberry yield in high tunnel systems can be many times higher than field-grown plants, due in part to the lower incidence of diseases like gray mold, the ability to grow plants at a higher density and the mitigation of wind that can damage plants," said Marvin Pritts, chair and professor of horticulture. "The berries are often larger, and the need to manage most pests, diseases and weeds is lower than in the field."

SWD Survey Reminder—Your Input Needed

Input from fruit growers, gardeners, educators, and other stakeholders in the eastern United States is being requested in order to develop research & education priorities for spotted wing drosophila. What is spotted wing drosophila, and why is it important? Spotted wing drosophila (SWD, Drosophila suzukii) is a recently detected invasive pest of soft skinned fruit in the US. SWD is known to infest and potentially damage blueberries, blackberries, cherries, raspberries, strawberries, peaches, plums, nectarines, grapes, persimmons, kiwi, fig, and other soft skinned fruits. As of November 2011, SWD has been detected in Florida, Georgia, Louisiana, Alabama, South Carolina, North Carolina, Tennessee, Virginia, West Virginia, Maryland, New York, Massachusetts, Pennsylvania, Rhode Island, Connecticut, Maine, Michigan, New Hampshire, and Wisconsin in the eastern US. Who are we? We are a group of entomologists, horticulturalists, and extension specialists in the eastern US who recognize the need to for coordinated, multistate efforts to reduce the economic & environmental impact of SWD. We are soliciting input in order to determine what research, education, and outreach activities are most needed. We need your help to ensure that the work we do is relevant, appropriate, and meaningful! To complete the questionnaire online, please go to the link below.

https://docs.google.com/spreadsheet/viewform?hl=en_US&formkey=dG8xM2Y4RXFSLW9kTEhSRmplUlc4Smc6MQ#gid=0

Note: Deadline for responses to the on line Survey is December 1, 2011.

NYS Department of Ag and Markets News

Commissioner Announces $1 Million in Grants for Specialty Crops

9 Projects Receive Federal Funds to Ensure Competitiveness of NY Fruits and Vegetables

October 7, 2011. New York State Agriculture Commissioner Darrel J. Aubertine, today, announced $1 million for 9 projects that will enhance the competitiveness of specialty crops in New York. Specialty crops include fruit, vegetables, maple, honey, horticulture and nursery/landscape. The Specialty Crop Block Grants are funded and approved by the United States Department of Agriculture (USDA).

"Agriculture is one of our most important economic sectors. These grants help us improve and grow our agricultural economy," said Aubertine. "We appreciate the support we have received from our members of Congress in obtaining these funds. These grants will better the industry as a whole and make New York crops more competitive."

The competitively awarded projects reflect input the Department received from industry stakeholders about priorities and needs related to research and grower education as well as consumer outreach and market development. A total of $506,652 was awarded for 7 research and grower education projects. In addition to those projects, the Department will be using $447,423.69 to implement two statewide consumer outreach and market development projects that will positively influence all specialty crop commodities throughout the State. A list of the awarded projects follows.

A total of 31 applications requesting over S2.2 million were received by the Department for funding. The awarded grants, which were competitively chosen, average $72,000 each and do not require matching funds.

The Specialty Crop Block Grants were available to not-for-profit organizations, government entities and educational institutions. Projects were required to benefit a commodity or the industry as a whole and could not benefit a particular commercial product or profit to a single individual or entity. A committee made up of 17 industry representatives with expertise in a wide range of subject areas was assembled to provide technical review and comments for proposals received. The committee and the Department strongly considered the project's impact on the industry and ability to achieve measurable results in the review and ranking process. USDA gave the final approval to fund the chosen projects.

New York State produces a wide range of specialty crops that include fruits and vegetables, wine, maple syrup, horticulture and nursery crops. Specialty crops generate $1.34 billion annually in New York and make up one-third of the state's total agricultural receipts. They also rank high nationally in both production and economic value. For example, New York is the second largest state in the nation for apples and maple syrup; third for pumpkins, grapes, cabbage, cauliflower; and fourth for tart cherries, pears, snap beans and onions.

USDA's announcement of the specialty crop funding can be found at: http://www.usda.gov/wps/portal/usda/usdahome?contentid=2011/10/0435.xml&navid=NEWS_RELEASE&navtype=RT&parentnav=LATEST_RELEASES&edeployment_action=retrievecontent

2011 Specialty Crop Block Grant Program Recipients

Listed in the order as ranked through the competitive grant process.

$71, 503 - *Improving Management and Profitability of Sweet Corn through Enhanced Insect Control* (Cornell University)**.** Sweet corn is the most widely grown and valuable vegetable crop in New York, valued at $80.1 million in 2010. This project will examine the resistance of European corn borer, corn earworm, and fall armyworm to pyrethroids and will also test insecticides against the Brown Marmorated Stink Bug, a newly invasive pest of sweet corn in states adjacent to New York and recently detected on Long Island and the Hudson Valley.

$69,122 - *Diagnostic Services for Monitoring & Managing Recent Outbreak of Bloat Nematode on Garlic in New York State* (Cornell University). In 2010, an outbreak of the stem and bulb (Bloat) nematode occurred on garlic throughout New York that resulted in significant yield and profitability losses. This project will offer New York's garlic growers a nematode analysis service, which will be critical to controlling, managing and documenting the spread of this costly pathogen.

$79,998 - *Managing Japanese Beetle in eastern Vineyards by Reducing Grub Populations in Sod Row Middles with Persistent Entomopathogenic Nematodes* (Cornell University)**.** Grapes are the second largest fruit crop in New York. Japanese beetles cause significant defoliation of grapevines resulting in multiple applications of insecticides. This project develops the use of persistent *Entomopathogenic* (insect-attacking) nematodes to manage foliar feeding damage by adult Japanese beetles in vineyards, thereby increasing profits and minimizing potential environmental impacts.

$77,200 - *Biological Control of Plum Curculio in Organic Apple Production Systems* (Cornell University)**.** Plum curculio is the single greatest insect pest challenge for organic apple production. This project will evaluate the potential of New York cold adapted ento-

NYS Department of Ag and Markets News (continued)

mopathogenic (insect-attacking) nematodes to reduce the impact of plum curculio on organic apple production, reduce the cost of organic apple production, provide a higher degree of marketable fruit and a higher profit for the organic apple producer.

$78,897 - *Developing a Monitoring, Scouting & Damage Assessment Tool to Assess the Spread and Impact of the Invasive Brown Marmorated Stink Bug* (Cornell University)**.** The brown marmorated stink bug (BMSB) is a native of Asia and an invasive insect in both urban and agricultural landscapes. Confirmed in 33 states, including New York, its dramatic population explosions in 2010 devastated agricultural commodities throughout the Mid-Atlantic region, resulting in $37 million in losses to tree fruit alone. This project will employ GIS-based mapping architecture to effectively coordinate and display information important for pest management decision making.

$80,000 - *Predicting Chemical Thinning of Apple to Maximize Crop Value of Apple Orchards* (Cornell University). One of the most critical apple production problems is to predictably reduce the crop load per tree so that each tree achieves the optimum number of apples and fruit size, which in turn maximizes market value. This project will help growers predict chemical thinning responses by using a carbohydrate supply/demand model, which utilizes weather data to predict the trees carbohydrate status and thus susceptibility to chemical thinner action. If this project helps half of the apple growers in the state consistently achieve the optimum fruit size on 25,000 acres of apples it will have a potential economic impact of $100-175 million annually.

$49,932 - *Testing Budwood for Latent Fire Blight Bacteria Threatening Nursery Trees and New Plantings* (Cornell University)**.** Apple production in New York is valued at over $200 million annually. New apple plantings in New York suffer up to 80% tree loss from fire blight. If fire blight is spread through nursery stock, the original source of bacteria may be budwood collected from infected mother trees, as reported from Washington State. This project will investigate the phenomenon of bud-transmitted fire blight, and then establish protocols for preventing it.

Statewide Initiatives Affecting All Commodities

$349,169.27 - *Expanding Consumer Awareness and Institutional Purchasing Capacity of New York Food and Farms (Department of Agriculture & Markets)***.** Retailers, wholesalers, distributors, restaurants, schools, institutions and the public are seeking a wide range of local farm products in varying quantities and geographic locations. This project will assist consumers and small-scale commercial buyers in easily searching for and locating sources of food and specialty crop agricultural products grown in New York State, through a comprehensive on-line directory of producers and value-added processors.

$98,254.42 - *Enhancing the Marketing & Promotion of Regional "Buy Local" Campaigns (Department of Agriculture & Markets)***.** As the buy local market has grown and consumers have become more educated about the benefits of buying local, many are seeking products that are produced as nearby as possible. This project will build the capacity of regional organizations to increase the sales of producers by developing regional brands and functionally integrating regional efforts on a statewide basis. The project will provide financial resources to regions to purchase media time, including radio, television, on-line banners, print advertising, etc.

USDA News

USDA Awards Specialty Crop Grants to Strengthen Agricultural Economy

Investments to Create New Markets for American Agricultural Products

WASHINGTON, Oct. 5, 2011 – Today, Agriculture Deputy Secretary Kathleen Merrigan announced that USDA will be investing in 55 specialty crop block grants that will fund 740 initiatives across the United States and its territories. The grants will help strengthen the market for specialty crops such as fruits, vegetables, tree nuts, dried fruits, horticulture and nursery crops, including floriculture.

"Agriculture plays a vital role in the health and strength of our economy, and by investing in specialty crop growers and producers across the country, we can help spark new markets and job creation, while expanding production of healthy, safe and affordable food," said Agriculture Deputy Secretary Kathleen Merrigan.

The Specialty Crop Block Grant Program for fiscal year 2011 supports initiatives that:

- Increase nutritional knowledge and specialty crop consumption

USDA News (continued)

- Improve efficiency within the distribution system and reduce costs
- Promote the development of good agricultural, handling and manufacturing practices while encouraging audit fund cost-sharing for small farmers, packers and processors
- Support research through standard and green initiatives
- Enhance food safety
- Develop new/improved seed varieties and specialty crops
- Control pests and diseases
- Create organic and sustainable production practices
- Establish local and regional fresh food systems
- Expand food access in underserved/food desert communities

A growing number of specialty crop producers are selling into local and regional markets and many of the grants announced today help support specialty crop producers and small businesses expand their business locally. These markets offer a significant opportunity to create jobs for farmers and entrepreneurs. Funds will be used by all 50 states, the District of Columbia, the Commonwealth of Puerto Rico, American Samoa, Guam and the U.S. Virgin Islands.

Merrigan also highlighted the three pending trade agreements with Colombia, Panama, and South Korea that will support tens of thousands of jobs in the United States and create market opportunities for specialty crop producers. When approved, these agreements will clear the way for new American exports around the world, help create jobs and provide new income opportunities for our nation's agricultural producers, small businesses, and rural communities. For American agriculture, passage of these agreements means over $2.3 billion in additional exports, supporting nearly 20,000 jobs here at home.

The Specialty Crop Block Grant Program is administered by the Agricultural Marketing Service (AMS). Visit www.ams.usda.gov/scbgp to read fiscal year 2011 project summaries. A listing of awards by location is also available.

USDA Supports Research and Marketing of Organic Agriculture in 18 States

WASHINGTON, Oct. 25, 2011–Agriculture Deputy Secretary Kathleen Merrigan announced today 23 new grants to research and extension programs working to help organic producers and processors grow and market high quality organic agricultural products. The grants, totaling $19 million in all, are funded by the U.S. Department of Agriculture's (USDA) National Institute of Food and Agriculture (NIFA) through two unique programs: the Organic Agriculture Research and Extension Initiative (OREI) and the Organic Transitions Program (ORG).

"As more and more farmers adopt organic agriculture practices, they need the best science available to operate profitable and successful organic farms," said Merrigan. "America's brand of organic agricultural goods is world-renowned for its high-quality and abundance of selection. These research and extension projects will give producers the tools and resources to produce quality organic food and boost farm income, boosting the 'Grown in America' brand."

The grants announced today include more than $15 million in 2011 grants through the OREI. Supporting the development of sustainable agricultural and forestry practices, including organic farming, to both reduce negative impacts on the environment and keep U.S. farmers competitive is a priority of USDA research. For more OREI information, visit www.nifa.usda.gov/fo/organicagricultureresearchandextensioninitiative.cfm.

In addition, the grants announced today include nearly $4 million through the ORG. In FY 2011, ORG focused on environmental services provided by organic farming systems that support soil conservation and contribute to climate change mitigation. Practices and systems to be addressed include those associated with organic crops, organic animal production (including dairy) and organic systems integrating plant and animal production. More information on the program can be found online at www.nifa.usda.gov/fo/organictransitionsprogram.cfm.

Since the late 1990s, U.S. organic production has seen significant growth. U.S. producers are increasingly turning to certified organic farming systems as a potential way to decrease reliance on nonrenewable resources, capture high-value markets and premium prices,

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and boost farm income. Today more than two-thirds of U.S. consumers buy organic products at least occasionally, and 28 percent buy organic products weekly.

Fiscal Year 2011 projects were awarded in **Alabama, Arkansas, California, Illinois, Maryland, Michigan, Minnesota, Missouri, Montana, New Hampshire, New Mexico, New York, North Carolina, Ohio, Oregon, Pennsylvania, Washington and West Virginia**. Highlights include:

- A project in New Hampshire to enhance the year-round capacity of Northeast organic dairy producers to produce high quality component-enriched organic milk.
- A project in Missouri to improve organic cropping systems by increasing grain productivity, suppressing weeds and providing fertility while reducing negative impacts on the environment.
- A project in Ohio to study the feasibility of incorporating pasture-raised organic poultry and naked oats into a multi-year organic rotation plan.
- A project in Montana to develop a holistic sheep and organic crop production system that uses targeted sheep grazing to reduce tillage intensity and improve soil fertility and soil carbon sequestration.

A full list of awardees can be found online at: www.nifa.usda.gov/newsroom/news/2011news/organic_awards.html. Through federal funding and leadership for research, education and extension programs, NIFA focuses on investing in science and solving critical issues impacting people's daily lives and the nation's future. More information is at: www.nifa.usda.gov.

USDA Invests in Crop Insurance Education to Help Small and Underserved Producers in 47 States Manage Risk, Remain Productive

WASHINGTON, Oct. 28, 2011—Agriculture Secretary Tom Vilsack announced today that the U.S. Department of Agriculture's (USDA) Risk Management Agency (RMA) will support crop insurance education and outreach in 47 states to ensure that small and underserved producers get the information they need to effectively manage their risk and remain productive. Awards totaling approximately $13.6 million from two RMA programs—Targeted States and the Education and Outreach programs—will support thousands of American farmers, ranchers and producers.

"Despite hardships and setbacks due to extreme weather conditions in many parts of the country, American agriculture is experiencing its strongest year overall thanks to the dedication and resilience of our farmers and ranchers," said Vilsack. "USDA is committed to diversity, inclusion and performance in everything we do, and we need to continue to ensure opportunities in agriculture for all Americans. Through these partnerships, traditionally underserved agricultural producers and those in targeted states will receive assistance in understanding and using risk management tools."

The partnerships announced today will provide farmers and ranchers access to a complete set of conferences, targeted instruction, strategies, and networking opportunities at a local level.

The Risk Management Education and Outreach Agreements program is awarding $8.5 million to fund 109 agreements. Examples include:

- In Wisconsin, six hands-on workshops will educate dairy farmers on using recordkeeping and financial analysis software.
- Washington State will expand on previous work with Hmong and Latino farmers using targeted farm production and business management curricula.
- Oklahoma State University will hold a statewide conference and six regional conferences for producers of underserved commodities and specialty crops.

New and beginning refugee and immigrant farmers in Massachusetts will perform a risk management assessment of their operations, and be taught to incorporate risk management strategies and practices into their plans.
Under the Risk Management Targeted States program, $4,999,821 is being awarded to deliver crop insurance education and information to agricultural producers in 16 states designated as historically underserved with respect to crop insurance. These targeted states include Connecticut, Delaware, Hawaii, Maine, Maryland, Massachusetts, Nevada, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Utah, Vermont, West Virginia, and Wyoming.

USDA News (continued)

The Risk Management Education and Outreach and Targeted States programs are designed to help ensure that farmers and ranchers effectively manage their risk through difficult periods, helping to maintain America's robust food supply and the survival of small, limited resource, socially disadvantaged and other traditionally under-served farmers. RMA administers these partnership projects as well as the Federal crop insurance program, with funding and authority from the Federal Crop Insurance Act.

RMA helps producers manage their business risks through effective, market-based risk solutions. RMA's mission is to promote, support, and regulate sound risk management solutions to preserve and strengthen the economic stability of America's agricultural producers. Federal crop insurance provides support to American producers as part of the "farm safety net." A strong farm safety net is important to the vitality of American agriculture.

Complete listings of the agreements can be found on the RMA Web site at: http://www.rma.usda.gov/aboutrma/agreements/.

US Department of Labor Extends Comment Period on Proposed Rule to Update Child Labor Regulations

Interested Parties May Submit Comments through Dec. 1

WASHINGTON — The U.S. Department of Labor's Wage and Hour Division has announced a 30-day extension of the comment period for its proposed rule to revise regulations addressing child labor in agricultural and nonagricultural employment under the Fair Labor Standards Act. The rule proposed by the Wage and Hour Division would amend existing FLSA child labor regulations and incorporate into the regulations the enforcement policies the division follows when determining whether to assess a civil money penalty for child labor violations.

On Sept. 2, the department published a notice of proposed rulemaking in 76 Federal Register 54836 with a comment period scheduled to end on Nov. 1. Although many comments have been submitted on the proposal, the department also has received requests to extend the period for filing public comments from members of Congress and various agricultural business organizations.

Because of the interest that has been expressed and the department's desire to obtain as much information about its proposals as possible, the period for submitting public comment on the notice of proposed rulemaking has been extended through Dec. 1. To view the proposed rule and submit comments, visit the federal e-rulemaking portal at http://www.regulations.gov and search by regulation identification number 1235-AA06.

Information about the federal labor laws enforced by the Wage and Hour Division is available in English and Spanish by calling the division's toll-free helpline at 866-4US-WAGE (487-9243), or by visiting its website at http://www.dol.gov/whd/.

NEW YORK BERY GROWER ASSOCIATION (NYSBGA) NEWS

Empire State Fruit and Vegetable EXPO Berry Session 2012

Join berry growers from across the state at on Thursday, January 26th at the NYS Fruit and Vegetable EXPO at the OnCenter in Syracuse, NY. The day long program features national expert Dr. Barclay Poling from North Carolina State speaking on Strawberry Plasticulture systems. Growing strawberries on black plastic mulch is commonplace for growers outside of the northeast, and is rapidly becoming more important for NYS growers as they raise more day neutral berries and also try to control weed pests with fewer herbicides. Cornell University entomologist Dr. Greg Loeb will also share information about controlling insects in the longer season day-neutral strawberry systems. Growers from across the state will share their experiences with plasticulture systems as well.

Bird control is one of the primary problems for berry growers nationwide. National experts Dr. Alan Eaton from the University of New Hampshire and Martin Lowney from the USDA Wildlife Service will share bird management strategies and make you aware of the legalities of bird control programs. Growers will share information about using netting in effectively in berry plantings.

Cornell University researchers Dr. Kerik Cox, Dr. Greg Loeb and Dr. Marvin Pritts will start the final session of the day with a discussion of some newer chemicals that have been introduced for use on berries in NYS. This discussion will also touch on some of the materials that may be used on Brown Marmorated Stink Bug and Spotted Winged Drosophila, 2 new invasive pests that were found this year in NYS.

The day will close with some new research information on High Tunnel production of raspberries and blackberries. Dr. Marvin Pritts, Dr. Courtney Weber and Dr. Greg Loeb, all from Cornell, will talk about the potential of bramble crops in high tunnel production.

A special feature of the Berry Day at the Expo is a Grower Roundtable. The topic for the informal ½ hour of discussion is 'Tools that make berry growing easier'. Growers are invited to bring photos, small equipment or any ideas to share with the group. Mr. John Shenk of Eco-Weeder fame will be present to talk about his equipment with the group.

Another addition this year is a small poster session which will be held in the East Ballroom where the main sessions are held. Cornell researchers will have posters that discuss their latest research on view for berry growers.

The EXPO berry session is brought to you by the New York State Berry Growers Association.

Thursday, January 26th, 2012 Berry Session Program

Morning Session

8:45 - 8:50 Welcome and Announcements

8:50 – 9:35 Strawberry Plasticulture Systems for Day Neutral and June Bearers – Dr. Barclay Poling, North Carolina State University

9:35 – 10:05 Arthropod Pest Management in Day Neutral Strawberry Systems – Dr. Greg Loeb, Cornell University

10:05 – 10:50 Fertility Management in Plasticulture Strawberries – Dr. Barclay Poling, North Carolina State University

10:50 – 10:55 What's New from Industry

10:55 – 11:15 Successes and Challenges with Plasticulture Strawberry Systems - Grower panel: Chuck Mead, Mead Orchards, Tivoli, NY; Keith and Nadyne Litchfield, Great Valley Berry Patch, Great Valley, NY

11:15 – 12:30 – Lunch Break

11:30 – 12:00pm **Roundtable Discussion** - Simple Tools for Berry Growers.

Mid-Day Session

12:30 – 12:35 What's New from Industry

12:35 – 12:45 NYSBGA Annual Meeting - Paul Baker, Executive Director; Dale Ila Riggs, President

12:45 – 1:30 Identifying Birds to Improve Control Strategies - Dr. Alan Eaton, University of New Hampshire

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1:30 – 2:10 Bird Management in Berry Crops – Strategies and Legalities - Martin Lowney, USDA Wildlife Services

2:10 – 2:30 Netting for Bird Control – a Grower Panel Discussion - Dale Ila Riggs, The Berry Patch, Stephentown, NY; Greg Spoth, Greg's Berry Patch, , Clarence Center, NY

2:30 – 3:30 Break

Afternoon Session

3:30 – 4:00 Pest Management Update – Dr. Kerik Cox, Dr. Greg Loeb, Dr. Marvin Pritts and Cathy Heidenreich, Cornell University

4:00 – 4:30 Growing Blackberries in High Tunnels – Dr. Marvin Pritts, Cornell University

4:30 – 5:00 Managing Arthropods in High Tunnels – Dr. Greg Loeb, Cornell University

5:00 – 5:30 Growing Raspberries in High Tunnels – Dr. Courtney Weber, Cornell University

5:30 Adjourn

On the Organic Side...

Cultural Practices for Disease Control in Organic Strawberry Production Systems - *Mike Ellis and Mizuho Nita, Ohio State University*

The use of any practice that provides an environment within the planting that is less conducive to disease development and spread should be used. The following practices should be carefully considered and implemented in the disease management program.

Use Disease-Free Planting Stock
Always start the planting with healthy, virus-indexed plants obtained from a reputable nursery. Remember that disease-free plants are not necessarily disease resistant: cultivar selection determines disease resistance.

Site Selection

Soil Drainage (Extremely Important)-Select a planting site with good water drainage. Avoid low, poorly-drained wet areas. Good water drainage (both surface and internal drainage) is especially important for control of Leather Rot and Red Stele. Both of these diseases require free water (saturated soil) in order to develop. If there are low areas in the field that have a tendency to remain wet, this is the first place that red stele will develop. Under Midwestern growing conditions, any time there is standing water in the field; plants are subject to leather rot infection.

Any site in which water tends to remain standing is, at best, only marginally suited for strawberry production and should be avoided. Any practice, such as tiling, ditching, or planting on ridges or raised beds, that aids in removing excessive water from the root zone will be beneficial to the disease management program.

Previous Cropping History

Select a site that does not have a history of Verticillium wilt in any crop. Select a site that does not have a history of red stele or black root rot. To minimize the risk of black root rot, do not replant strawberries immediately after removing an old strawberry planting. In general, it is also not a good practice (due primarily to Verticillium) to plant strawberries immediately after solanaceous or other Verticillium-susceptible crops. These include tomatoes, potatoes, peppers, eggplant, melons, okra, mint, brambles, chrysanthemums, roses, or related crops. If possible, select sites that have not been planted to any of these crops for at least 3 to 5 years. There should be no herbicide residual in the soil from previous crops.

Site Exposure

A site with good air circulation that is fully exposed to direct sunlight should be selected. Avoid shaded areas. Good air movement and sunlight exposure are important to aid in drying fruit and foliage after a rain or irrigation. Any practice that promotes faster drying of fruit or foliage will aid in the control of many different diseases.

Crop Rotation

First Planting of Strawberry - If the land has no recent (5 years or less) history of strawberry production or Verticillium diseases in other crops, soil-borne diseases such as red stele or Verticillium wilt should not be a problem.

Replanting Strawberries - Crop Rotation and Soil Fumigation. If strawberries are to be replanted in the same field, crop rotation must be used or the field should be fumigated. Fumigation is currently not an option in organic production systems. With rotation, the site should be plowed, worked down and planted to a crop that is not susceptible to Verticillium wilt for a minimum of 2 years. Many soil-borne pathogens form specialized survival structures and are capable of surviving for several years in soil, even when strawberries are not present. The longer the site can be rotated away from strawberries prior to replanting, the better.

The combination of crop rotation plus soil fumigation is a sound approach that is used by many conventional growers. However, for organic growers (that cannot use soil fumigation), crop rotation alone often provides acceptable control for most soil borne diseases, if the rotation is sufficiently long.

Neither crop rotation nor soil fumigation will reliably provide adequate control of red stele. With red stele, disease resistant varieties and improved soil drainage must be emphasized. Cultivars with resistance to red stele and Verticillium wilt should always be used.

Fertility

Fertility should be based on soil and foliar analysis. Soil should be analyzed and nutrient levels adjusted

About the Author:

Mike Ellis is professor of plant pathology at Ohio State University. In addition to his responsibilities in research and teaching Mike is a State Extension Specialist with The Ohio State University Extension. It is his duty to provide the most reliable and current information available on diagnosis and control of fruit crop diseases to Ohio fruit growers and other interested clientele.

On the Organic Side...(continued)

before planting. The use of excess fertilizer, especially nitrogen, should be avoided. Sufficient fertility is essential to produce a crop, but excess nitrogen results in dense foliage that increases drying time in the planting (stays wet longer) and also results in softer berries that are more susceptible to fruit rots. Avoid the application of nitrogen in the spring prior to harvest on medium to heavy soils. Excessive use of nitrogen has been shown to increase the level of Botrytis fruit rot (gray mold).

Weed Control
Good weed control is essential to successful strawberry production. From the disease control standpoint, weeds in the planting prevent air circulation and result in fruit and foliage staying wet for longer periods. Gray mold, in particular, is a much more serious problem in plantings with poor weed control versus plantings with good weed control. In addition, weeds will reduce production through direct competition for light, nutrients, and moisture with strawberry plants and will make the planting less attractive to pick-your-own customers, especially if you have thistles!

Mulch
Research and grower experience has shown that a good layer of straw mulch is very beneficial for controlling fruit rots, especially leather rot. Bare soil between the rows should be avoided and a good layer of straw mulch is highly recommended. The mulch keeps berries from contacting the soil where the leather rot fungus overwinters. In addition, it also aids in preventing infested soil from splashing onto the berries. Recent research has shown that plastic mulch (a layer of plastic) under the plants and/or between the rows increases splash dispersal of the pathogens that cause anthracnose and leather rot. Especially where fruit rots have been a problem, the use of plastic mulch is not recommended.

Sanitation
Any practice that removes old leaves and other plant debris from the planting is beneficial in reducing the amount of Botrytis inoculum. Leaf removal at renovation is highly recommended.

Irrigation Practices
The application of supplemental water should be timed so that the foliage and fruit will dry as rapidly as possible. For example, irrigating early in the day is better than in the evening. If diseases, such as gray mold, leather rot, anthracnose or bacterial blight, become established in the planting, overhead irrigation should be minimized or avoided.

Control Movement of People and Machinery
Movement of people (pickers) and machinery from a field or area that is infested to a clean or uninfested field should be avoided. Diseases of primary concern are anthracnose, leather rot and angular leaf spot (bacterial blight). Diseases such as these are usually spread over relatively short distances by splash dispersal (rain or irrigation). Movement from one field to another field through the air (windblown spores) is generally not a problem with these diseases. However, pickers moving from a field where the disease is present to a non-infested field can transport fungal spores or bacteria very efficiently on shoes, hands, and clothing. If people or machinery are used in fields where these diseases are a problem, they should complete work in non-infested fields before moving to infested fields. In addition, any machinery that moves soil from one field to another can introduce soil-borne diseases, such as red stele, Verticillium wilt, leather rot, and nematodes, from infested into non-infested fields.

Harvesting Procedures
a) Pick fruit frequently and early in the day before the heat of the afternoon (preferably as soon as plants are dry). Picking berries as soon as they are ripe is critical. Overripe berries will cause nothing but problems during and after harvest.

b) Handle berries with care during harvest to avoid bruising. Bruised and damaged berries are extremely susceptible to rot.

c) Train pickers to recognize and avoid berries that have disease symptoms of gray mold and leather rot. If at all possible, have pickers put these berries in a separate container and remove them from the field.

Post-Harvest Handling
a) Always handle fruit with care during movement from the field to market to avoid any form of damage.

b) Get the berries out of the sun as soon as possible.

c) Refrigerate berries immediately to 35 to 40°F in order to slow the development of gray mold (Botrytis) and other fruit rots.

d) Market the berries as fast as possible. Encourage your customers to handle, refrigerate, and consume or process the fruit immediately. Remember that even under the best conditions, strawberries are very perishable.

(Excerpted and reprinted with permission from: OSU Organic Small Fruit Disease management Guidelines – Integrated Management of Strawberry Diseases.)

EnSave NYSEG RG&E

Earn a cash rebate and help reduce energy costs on your farm!

Upgrading to energy efficient equipment will save you money on your energy bills. The NYSEG and RG&E Commercial and Industrial Rebate program reduces your initial cost, so new equipment pays for itself sooner. Now is the time to act to take advantage of these limited-time rebates. If you're not sure which upgrades are best for your farm, we can help calculate the savings and rebate potential of various options for you.

To help jump-start your savings, **we are offering free engine block heater timers.** Using timers on your farm vehicles' engine block heaters during the winter months allows the heaters to run for just a few hours each morning rather than consuming electricity throughout the night (see reverse for details).

WANT TO LEARN MORE? Call EnSave, our program coordinator, at **1.800.732.1399** or e-mail **johnm@ensave.com** to get started today.

What equipment is eligible for rebates?

Rebates are available on a full range of energy-efficient electric or natural gas equipment, including:

- ☑ **Energy efficient lighting**
- ☑ **Variable speed drives for your milking vacuum pump, milk pump, and other motors**
- ☑ **Heat recovery**
- ☑ **Boilers, furnaces and thermostats**
- ☑ **Plate coolers**
- ☑ **Circulation and ventilation fans**
- ☑ **Scroll compressors**
- ☑ **Grain dryers**
- ☑ **Chillers**
- ☑ **Other projects—ask if you qualify!**

>>> more

NYSEG and RG&E are partnering with EnSave to bring these savings to you.

NYSEG and RG&E are working with EnSave, Inc., the leading designer and implementer of agricultural energy efficiency programs, to notify farmers of this opportunity and help guide you through the rebate process. Rebates are offered by NYSEG and RG&E.

EnSave

more info
1.800.732.1399

What if I'm not sure what equipment is most energy efficient?

We can help you determine the type of equipment that would be best for your operation. This consultation is risk-free.

How do I get started?

Call EnSave at **1.800.732.1399**, or send an e-mail message to **johnm@ensave.com**. EnSave will let you know whether your equipment qualifies, and how much of a rebate you can get. You will need to provide equipment quotes and an equipment invoice. A pre- and post-installation site inspection may be required. **This offer will only be available for a limited time, so contact us today!**

How much are the rebates?

Rebates will depend on what type of energy efficient equipment you install.

- Lighting, furnaces and boilers, and HVAC will require a prescriptive rebate, where you are paid a pre-determined amount.
- Other equipment is eligible for a custom rebate, where we will provide a rebate based on a cost analysis of your project. The custom rebate will pay up to 50% of your incremental cost.

How do I receive a free engine block heater timer?

Timers are available for up to four farm vehicles. To receive your free timers, call **1.800.732.1399** to receive an application form, or go to **ensave.com**, and click on "current projects." Timers are delivered within 30 days of application.

Who is eligible?

Any NYSEG or RG&E nonresidential customer who pays the System Benefit Charge (SBC) on their bills is eligible for this program.

Focus on Food Safety

November Produce Safety Alliance Update – *Gretchen Wall, Produce Safety Alliance Program Coordinator, Cornell University*

As we round the corner into winter, we've seen some great progress in the working committees. Several groups have already started to prioritize topics to be included in the PSA curriculum. We are hoping to begin assembling a draft curriculum so we can hit the road in 2012 to focus group the new curriculum in several locations across the country

It's not too late to sign up

There are 350 of you signed up on the general listserve, but only 160 actively participating in the discussions. Don't worry if you have not signed up for a committee yet. The PSA still needs your help! We are continually accepting applications and would be happy to have you join us. There is still time to join this process since some WCs have just started the process of identifying challenges in their focus areas. Working committees #1-6 are a bit further along in the process, as they have been meeting all summer long. However, WC's 7-10 are still in the midst of identifying challenges within their group. Please visit the website (http://producesafetyalliance.cornell.edu/working.html) to view committee objectives and access the application form.

Membership by the Numbers (Updated 10/31/11)

- **160** unique committee members
- **350** signed up for the general listserve
- **22** (14%) committee members are *farmers*
- **54** (34%) committee members are *educators*
- **84** (53%) committee members represent a wide variety of professionals in the *fresh produce industry*
- **34** states represented in the process
- **36** working committee meetings held to date

Produce Safety Alliance Website by the Numbers

Website has been accessed in **53 different countries** with top international visits from Canada, Brazil, Mexico, Spain, and China.
In seven months, there have been just over **5,000 visits** to the site with 16,500 page views from **March 15** - **October 15, 2011**.
Working committee web page represents **2,586** of the total hits to the site.
Over **800** people have accessed the **educational materials** posted online.
Visitors from New York, California, Washington, D.C., Florida, and Maryland represent the top five most frequent users of the site, although **all 50 states** have visited.

Check for updates!

The calendar is up and running on the PSA website (http://producesafetyalliance.cornell.edu/calendar.html). Please check the calendar for dates and times of PSA activities including WC meetings. In addition, WC meeting notes are being posted for download as they are received (http://producesafetyalliance.cornell.edu/wk-notes.html).

Current Events in Produce Safety: October 2011

Guidance for Industry: Evaluating the Safety of Flood-affected Food Crops for Human Consumption
Information on the Recalled Jensen Farms Whole Cantaloupes

Thanks again to all the dedicated co-chairs and working committee members for your contribution to the Produce Safety Alliance! As always, please do not hesitate to contact myself or Betsy Bihn (eab38@cornell.edu) if you have any questions.

Focus on Pest Management

USDA to Survey Fruit Growers about Chemical Use

Data Used to Register Products, Assure Food Quality and Demonstrate Environmental Practices

ALBANY, NY –The U.S. Department of Agriculture's National Agricultural Statistics Service (NASS) will survey fruit growers in 12 states, including New York, for its biennial Fruit Chemical Use Survey.

The agency will collect information on pesticides used, acres treated and rates applied to more than 20 fruit crops. Growers benefit from providing this information because it is used to re-register products for their use, to illustrate the industry's environmental practices and to assure the quality of U.S. food to consumers here and around the world.

"Because this survey is the only publicly available source of pesticide use data, participation in this survey is vital," said King Whetstone, director of the NASS New York Field Office. "The Fruit Chemical Use Survey gives the growers the opportunity to demonstrate how they use agricultural chemicals responsibly to produce a safe, abundant, and high quality food supply."

The Fruit Chemical Use Survey will provide much needed information about the current crop production practices used in the United States. The results of this survey will paint a detailed picture of pesticide use, as well as other pest management practices used by the fruit growers across the nation.

"The information from the Fruit Chemical Use Survey is heavily relied upon in the decision-making process for the Food Quality Protection Act, which has an impact on pesticide registrations, re-registrations and product alternatives," said Whetstone. "It is also used by the U.S. Environmental Protection Agency to establish pesticide policy decisions."

Within the next few weeks NASS representatives will contact selected New York producers to arrange in-person interviews for conducting the survey. To safeguard all individual responses, NASS will publish only aggregate data, ensuring the confidentiality of all individual respondents.

Survey results will be published in NASS's online database, *Quick Stats*, in July 2012. This database and all NASS reports are available on the agency's web site: *www.nass.usda.gov*. For more information on NASS surveys and reports, call the NASS New York Field Office at 1-800 -821-1276.

Weed Science Society of America Launches Free Training Program on the Causes and Management of Herbicide Resistance in Weeds

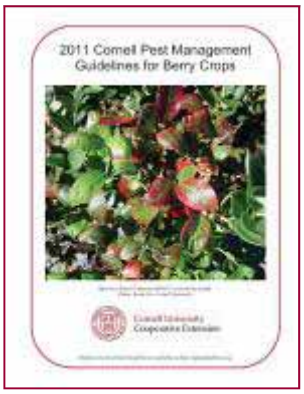
Weed Science Society of America (WSSA) is introducing a free training program designed to educate pesticide applicators, growers, agrichemical retailers, farm consultants and other stakeholders on herbicide resistance in weeds – a costly problem that threatens crop production across the U.S. and around the globe.

"A significant contributing factor in the evolution of herbicide resistance is the repeated use of a single chemical in the absence of other control methods," says John Soteres, Ph.D., a WSSA member and chairman of the global Herbicide Resistance Action Committee. "It is vital that we have the best possible materials to communicate what we know about resistance and how to manage it in order to preserve crop yields and promote the sustainability of our cropping systems."

WSSA established a task force of respected weed scientists from universities, industry and private consulting who volunteered to evaluate currently available materials and develop a new, updated training program. Led by Soteres, they spent 18 months pulling together the most current, science-based information available on the causes of herbicide resistance and effective management techniques.

The result is a peer reviewed, five-module program available as Web-based training, PowerPoint slides or video. WSSA plans to work with grower organizations, government agencies and others to disseminate the materials, with a special emphasis on reaching growers and agrichemical retailers. WSSA is also exploring continuing education credits for those who complete the courses.

"Knowledge is critical," says David Shaw, Ph.D., chairman of WSSA's Herbicide Resistance Education Committee. "When farmers have a better understanding of



PIMS

Product, Ingredient, and Manufacturer System:

http://pims.psur.cornell.edu/

OMRI

http://www.omri.org/omri-lists

Berry Diagnostic Tool

http://www.fruit.cornell.edu/berrytool/

Focus on Pest Management *(continued)*

herbicide resistance and how to manage it, they can adopt proactive management programs that delay or mitigate the evolution of herbicide-resistant weeds."

The new herbicide resistance education program initially is available from the WSSA website at http://wssa.net/LessonModules/herbicide-resistant-weeds and from the Pesticide Environmental Stewardship (PES) website at http://pesticidestewardship.org. Additional sites are expected to be added soon. A Spanish-language version is actively underway under the direction of Enrique Rosales Robles, Ph.D., of INIFAP-Mexico.

Development of the program was supported by the National Corn Growers Association, the National Cotton Council and the American Soybean Association. It was funded by WSSA and by the Herbicide Resistance Action Committee, an industry coalition focused on herbicide stewardship.

Plan Now for Winter Storage of Pesticides - *Christina Curell, Michigan State University Extension*
Now is the time for producers to plan their pesticide storage for the winter.

For farmers, the busiest time of the year is the fall. Adding something else seems to be intolerable, for those farms that have extra pesticides winter storage needs to be added to the long chore list. The best way to ensure that there is no chance of pesticide problems is to return any extra product to a pesticide dealer. If returning pesticide to a dealer is not an option, farms need to have proper pesticide storage. When pesticides are not properly stored there is a chance that products could freeze, containers could be compromised, posing a threat to people, livestock, and the environment.

The easiest way to reduce the risk of pesticide exposure to humans, livestock, and the environment is to have proper pesticide storage. The ideal storage is one that is separate from any other activities. The building should be locked, have a spill kit and a chemical fire extinguisher. The floor should be sealed, with concrete curbs to contain any spills. The building should be clearly marked as pesticide storage. If a farm is unable to dedicate a building for pesticide storage at the very least there should be a cabinet dedicated to storing pesticides. As with the building, the cabinet needs to be locked and clearly labeled as pesticide storage.

Once the storage location is set farmers need to be concerned with how they store pesticides. Shelving units should be metal or plastic with a lip. Wood should not be used since it will absorb spills. It is also important to put any dry formulations on the top shelves above any liquids to prevent cross contamination if liquid containers leak. Pesticides should be separated by type i.e. herbicides, insecticides, fungicides, etc. The oldest product should be in front so that it will be used first next spring. It is also very important that all pesticides are clearly labeled. If the label is missing or unreadable contact your chemical dealer or visit the Crop Data Management System to obtain a new label. Remember to affix the label on the container.

There are instances when a farm has outdated, unusable, or even banned pesticides. In these cases pesticides can be taken to a Clean Sweep site. Clean Sweep accepts unwanted pesticides and disposes of them properly. This is a free service funded through the Michigan Department of Agriculture and Rural Development to all residents in Michigan.

To find out more information on proper pesticide storage get a copy of "On-farm Agrichemical Storage and Handling", Michigan State University Extension bulletin E-2355 from the MSU Extension Bookstore.

For more information on storage of pesticides and a guide for proper storage temperature of common pesticides obtain a copy of University of Wyoming Extension bulletin MP-93.5, "Cold Weather Storage and Handling of Liquid Pesticides."

The weed Palmer amaranth (Amaranthus palmeri) has evolved resistance to glyphosate, a popular herbicide used to manage weeds growing in cotton and many food crops. Above, a cotton harvester is shown reaching a patch of Palmer amaranth in the field. There is no crop yield in areas heavily infested with the weed. Photo courtesy of Joseph LaForest, University of Georgia, Bugwood.org.

About the Author:

Christina Curell has worked for Michigan State University Extension as a water quality educator for 13 years. She has had county as well as state wide responsibilities.

Christina is a state wide water quality educator with an emphasis on water quality for agriculture and cover crops. She has a B.S. in Animal Science from Michigan State University.

Focus on Pest Management *(continued)*

Disease Snapshot - *Kerik Cox, Cornell University*

Disease Name: Phytophthora root rot of raspberry

Cause: *Phytophthora app.*

When to watch for it: Spring to fall

First line of defense: Site preparation to avoid standing water and promote soil drainage.

Summary: Phytophthora root rot decline in raspberries will begin in the spring as the soil warms and plants begin to put out new growth. Unlike winter injury, which primarily affects the floricanes, both the floricanes and primocanes of plants infected with Phytophthora will become stunted, wilted, and chlorotic due to impaired root function. Below ground, Phytophthora will have destroyed many of the fine/feeder roots, and will eventually colonize the larger primary roots and crown. If one excavates a dying plant and scrapes away the epidermis from the crown and primary roots, they may find that infected roots are a deep chocolate brown, and uninfected roots are healthy and white. Once the infection has progressed to the point where the plant has died, other saprobic fungi will rapidly colonize the dead tissues, confounding diagnosis. Phytophthora is an aquatic organism, and the best means of managing it are avoiding planting in low-lying fields, selecting well-drained sites, and planting on raised beds. Pesticides such as mefenoxam and phosphorous acid-based products can help manage the disease when used in conjunction with the aforementioned cultural practices.

Water Works!

Winterizing Your Drip Irrigation System - *Bill Lamont, The Pennsylvania State University*

Pumpkin, broccoli, potato and apple harvest signals to me that cooler weather is coming around the corner. Having worked many years with irrigation systems and drip irrigation systems in particular, I wanted to share with you some tips on winterizing irrigation systems so that it will be ready for next spring. Drip irrigation systems all use valves, filters, plastic fittings, PVC pipe, poly pipe, or layflat hoses that can easily burst if water freezes inside any of these components. I know this from personal experience and it can drive you crazy. This can prove costly to replace or repair.

Winterizing a drip irrigation system will take about fifteen minutes to an hour, and is best done before the first freeze. A little of your time spent now will result in a low maintenance irrigation system that will reduce the need for replacing frozen parts. In extremely cold winters, freezing temperatures can severely damage your irrigation system and all the main water lines.

Water Works! (continued)

The goal in winterizing your drip irrigation system is to shut off the water supply to the system, and flush all of the water that is left in the system from the backflow device, valves, filters, main lines, sub-lateral lines, sprinklers, drippers, and drip line.
One way to make sure that the system will not freeze (flat terrain) is to install automatic drain valves in the lowest point of the system. The drain valve assures that any water in the line will drain out. This is extremely important. Also in a drip irrigation system, I like to run some chorine (2 PPM) through the system and then flush it out thoroughly to clean everything up before storing it for the winter.

Pumps

Always drain a pump by opening the lowest plug or drain outlet (replace with drain valve). Make sure to check that no water is left inside.

Drain plugs usually are extremely difficult to remove, not to mention difficult to get to, making an unpleasant project out of a simple task.

For some of our portable drip irrigation trailer units (engine and pump located on a trailer) and with drip irrigation systems fed from a pond or a stream, drain the suction line. That is pull it out of the water, drain it and cover the open ends to prevent creatures from making it a winter home. Also the open end of the pump where the suction line connects needs to be covered so that rocks, pebbles, nutshells, leaves, and animals from mice to snakes can find their way into the impeller. Simply covering open ends will save time and headaches. This I also know from personal experience.

Valves and valve assembly

I also know from personal experience that gate and ball valves will not tolerate freezing. A gate valve, when closed, traps water in the bonnet. A ball valve holds water inside the ball. If the valve is closed when water is in the line and the line is drained without opening this valve, the water trapped above the gate or inside the ball will freeze and have no place to expand. The signs of freezing are very distinctive: a ball valve will burst the side out, and a gate valve will split its bonnet, packing nut, or have a hairline crack down its side. To replace a three-inch brass gate valve is not cheap.

With solenoid valves it is best winterized by leaving them open for the winter. The manual bleed lever on the valves varies by model and manufacturer, but is usually a thumb type screw on top of the valve or lever on the side of the bonnet (cover).

Automatic control valves such as pressure reducing, pressure relief or combination valves, containing external control tubing, pilots, and other parts will require special care to thoroughly drain. If the entire unit can be easily removed from the pipe, it may be simple to store the unit in an inside location for the winter. This is the method that I prefer. If removing the valve or valve assembly is not practical, then from the pressure-reducing valve remove the control tubing connections in the lower part of the valve to drain all the parts of water. The valve bonnet should also be loosened or removed to remove all the water from the top of the diaphragm by untightening the screws on the top of the bonnet.

Valve assemblies such as battery operated controllers or AC valves with filter, pressure regulator, and swivel adapter; also require special care to thoroughly drain. If the entire assembly can be easily removed from the pipe, it may be simple to store the assembly unit from the controller to the pressure regulator in an inside location for the winter. If removing the filter assembly or valve assembly is not practical, the valve bonnet should be loosened or removed to remove all the water from the top of the diaphragm, the filter cap should be removed from the filter, and remove the filter cover and screen to make sure that no water is left inside any part of the assembly.

Drip Tape

First disconnect the drip tape from the laterals and in most cases it is disposed of as it is considered an annual expensed item.

Poly pipe hose and vinyl layflat hose

Poly pipe and layflat hose have to be drained. Layflat or poly pipe hose can be lifted few feet at a time and section-by-section, making sure that any water left in the hose will drain out. After you finish draining the layflat hose or poly pipe hose and the micro tubing or connectors, make sure to close the ends of the hoses using the hose ends. The layflat hose definitely is easier to roll up and can be automated on a spool than the poly pipe hose.

Water Works! (continued)

The best prevention I have found once the system is drained completely is to take those parts of the system that are prone to damage inside a building. That is the nice thing with our trailer mounted portable pumping and filtering units used at the Horticulture Farm, which can be drained and then moved into a building for storage during the winter. The vinyl layflat hose or poly pipe hose with connectors is cleaned up and rolled up and stored so the mice and rodents will not bother it. We are ready for the spring.

(Reprinted with permission from: The Penn State Extension Vegetable and Small Fruit Gazette, Vol. 15, No. 10, October 2011.)

A Hip Pocket Guide for Irrigators

The *California Micro irrigation Pocket Guide* is a 150-page "take-to-the-field" guidebook that packs an impressive amount of how-to information into a small format. One half of the book explains how to manage and maintain a micro-irrigation system—irrigating at the right times, and with the right amounts of water, for optimal plant growth and quality.

The other half of the book gives exceedingly detailed recommendations for maintaining pumps, motors, and engines. The book will be useful to beginning and experienced irrigators alike—whether or not they live in California. To order: https://attra.ncat.org/attra-pub/summaries/summary.php?pub=367.

Business Management Spotlight

Interviewing Employees on the Way Out - *Phil Durst, Michigan State University Extension*

Exit interviews with departing employees can provide valuable information to farm managers to help sharpen management, correct mistakes and retain employees

Managing a business means that information is gathered and used to make decisions to improve the operation. Agricultural business managers do that with yield changes, health problems, cost changes and more. However, in the very important area of labor management, we often neglect to gather information, and as a result, the business suffers. This is the case when we don't understand what factors were involved in employees' decisions to leave.

Operating an agricultural business successfully usually means that we achieve goals through quality employees. Hiring and keeping good employees, and helping them become better, is critical to that success. When productive employees leave, we often miss the opportunity to gather information from them that will help improve labor management and possibly, farm profitability.

Michigan State University Extension suggests exit interviews as a strategy to collect information with which managers could improve the performance of all present and future employees. However, exit interviews are rarely used among agricultural producers.

Will employees provide honest feedback to their employer when they decide to leave? They may not, which is why businesses typically utilize a third-party interviewer such as a personnel director or employment service. The interview should be about gathering objective information, not defending the way things were done.

There are several areas that managers could gain good information about through exit interviews starting with questions about the employee's understanding of farm mission, goals and how they contributed to them. What did they believe were their roles and responsibilities? The perception of roles and responsibilities gets to the issue of communication and consistency in management.

Sometimes managers assume that employees know the goals and how their performance relates to those. But assuming that doesn't make it so.

Find out about the adequacy of employee training and development. Were operations and policies clear to employees? Was adequate training provided and support in place to learn the necessary skills?

Employees who are leaving should be questioned about whether they felt they received feedback about their performance frequently enough and whether or not it was useful feedback. Was the feedback specific enough to allow them to improve performance? Ask your

Business Management Spotlight *(continued)*

About the Author: Phil Durst is an MSU Sr. Extension Dairy Educator with emphasis on cattle health. He has started and works with two groups of young dairy producers known as Young, Savvy & into Dairy who meet monthly to discuss ideas, issues and challenges and work together to help each other succeed. He is an Extension affiliate of the MSU College of Veterinary Medicine. He reminds readers that berries and dairy go together nutritionally and tastefully!

employees. Employees who don't feel their work is noticed, appreciated or recognized will not be long-term employees.

There are areas of agricultural operations that need to be evaluated and can only be evaluated by asking employees. Did they feel free to make suggestions about improving operations? Were their ideas sought and valued? Was the personal safety of employees a priority? Were the working conditions suitable? Were all employees treated equitably and was compensation fair?

Ask about specific changes that would have improved the work experience in those areas. Finally, ask why the employee is leaving and what key factors resulted in the decision to leave.

The truth is that farm managers can be blind to some things. These blind spots become weaknesses. Employees can help fill in those areas we don't see well.

Managers often struggle with labor management yet don't learn from those who could best provide valuable input. Exit interviews don't take the place of evaluations and getting feedback from employees on a regular basis, but they can provide valuable information through which you can become a better manager.

Think about what you want to know about and start drafting questions. You might try them out on current employees to let them know that you are interested in their opinions. If you have input on this topic, experience to share or questions, please email me at durstp@msu.edu.

When you ask and listen, you'll learn.

Strawberry Variety Review — Dr. Courtney Weber, Cornell University

The most critical aspect of establishing a healthy berry planting is obtaining high quality planting stock that has a vigorous root system and is free from disease and insect pests. The plants should be obtained from a reputable nursery that participates in a certification program to ensure plants are free from diseases such as viruses and root diseases. Mother plants or stock plants derived from tissue culture for starting propagation fields provide the best source of disease and pest free plants. Plants should be ordered well in advance of planting to ensure an adequate supply the desired varieties and plant sizes.

Strawberries are one of the most variable and temperamental of the fruit crops and the choice of varieties is extensive because individual varieties are often adapted to a relatively small growing region. The most commonly grown varieties in the northeastern U.S. are June-bearing types and new varieties are constantly being developed. Most varieties have weaknesses so growers are advised to try new ones on a limited scale to determine how they will perform in each situation.

Variety Descriptions

Early Season

AC Wendy (Nova Scotia) produces large blocky/conic fruit with very good quality and flavor and higher yields than most early season varieties. Ripening tends to be uneven leaving white tips and/or shoulders. Establishment of new plantings has been uneven. It is susceptible to leaf spot late in the season.

Annapolis (Nova Scotia) is a large fruited early season variety. The fruit is pale red and soft with good flavor. Suitable for local retail. It yields well. It is susceptible to powdery mildew and *Verticillium* wilt.

Daroyal (France/Spain) produces large, blocky fruit in the Honeoye season. It is new to the U.S. and little information is available at this time.

Earliglow (USDA, MD) is still considered the best tasting berry around. Primary berries are large and attractive and are suitable for retail or wholesale. Berry weight drops off quickly after the primary berries and yields are relatively low. It is susceptible to powdery mildew after harvest.

Evangeline (Nova Scotia) fruit is long conical in shape with a pronounced neck and generally small with low yields. The interior is pale, and it is susceptible to red stele. The fruiting laterals are stiff and upright which keeps the fruit off the ground and clean.

Honeoye (Cornell University, NY) has reigned as the yield king for many years and produces an abundance of large, attractive, firm, berries that are suitable for all markets. Closer to an early mid-season, the look of this berry sells it, but taste is the major drawback as it can be tart and can develop disagreeable aftertastes when over ripe or in heavy soils. It is susceptible to red stele disease but is manageable.

Itasca (MNUS 138, University of Minnesota) is a cross between Seneca and Allstar. It fruits early to early-midseason in New York. The fruit is larger than that of Annapolis, conic to blunt wedge shaped. Fruit flesh is orange-red with an average to good flavor. Itasca is resistant to five races of red stele, and its foliage is highly resistant to mildew.

L'Amour (Cornell) produces very attractive heart shaped berries with bright red color. The fruit has a very good, aromatic flavor with good eating quality. The plants are vigorous and disease resistant and remain productive for many years. The fruit is larger than most early season varieties.

Northeaster (USDA, MD) was billed as a replacement for Earliglow and out performs it in all ways except flavor. Yield is higher and fruit size and attractiveness are equal to Earliglow but the flavor is unusual. The grape Kool-Aid like aftertaste can be a turn off to many customers.

Sable (Nova Scotia) is slightly earlier than Earliglow and is equal or better in flavor. Unfortunately it lacks fruit size and firmness. This variety is only suitable for direct retail and u-pick operations. Frost damage can be a problem because the flowers open very early.

Mid-Season

Brunswick (Nova Scotia) has fruit weight and yield similar to Honeoye. However, it has a squat, round shape and tend to be dark and bruise easily. The flavor is good but can be tart when under ripe.

Cavendish (Nova Scotia) is a high yielding, high quality berry in a good year. However, high temperatures during ripening can cause uneven ripening that can be a real problem.

Chandler (University of California) is a standard southern variety grown for wholesale markets in plasticulture. High yields have been experienced throughout the Carolinas and California. Not well suited for planting north of the mid-Atlantic region due to lack of winter hardiness. Chandler is also susceptible to anthracnose disease.

Strawberry Variety Review (continued)

Darselect (France) is a large fruited, high yielding variety. The berries are attractive and bright red with a long conical shape. The flavor is very good. However, it tends to be soft. It is susceptible to powdery mildew, which can be a problem in areas with morning fog.

Elsanta (Netherlands) is one of the most widely planted varieties in northern Europe. It is June-bearing with high yield potential. Fruit is firm and aromatic. It is susceptible to red stele, anthracnose, and *Verticillium* wilt.

Herriot (Cornell University, NY) is a new mid-season variety from the Cornell University breeding program. It produces large, bright red fruit that are uniformly conic in shape. The fruit is firm with good flavor. The plants renovate better than Jewel and are disease resistant.

Jewel (Cornell University, NY) continues to be the favorite in this season. The high quality berries are large and attractive with good flavor. Yields are moderate. On a good site, it's hard to beat. It is susceptible to red stele and can have vigor problems in poor or cold sites.

Kent (Nova Scotia) produces medium sized berries with very good yield, especially in new plantings. Hot weather can cause skin toughness. It is very susceptible to leaf spot and scorch and to angular leaf spot. It is very sensitive to Sinbar herbicide. It does not do well in hot weather.

L'Amour (Cornell University, NY) is an early mid-season type with excellent fruit quality. Berries are bright red and firm but not hard, with excellent eating quality and flavor. Fruit is long round conical with a fancy calyx, which makes them very attractive. No significant disease or insect problems have been noted to date.

Mesabi (University of Minnesota) is a very high yielding berry with large berries and good flavor, but does not store well. It is resistant to red stele and tolerant to leaf diseases and powdery mildew.

Raritan (Rutgers University, NJ) is productive with the fine taste of an heirloom strawberry. Raritan is very flavorful. Its small, deep-red berries are easy to pick. Plants are susceptible to a wide range of diseases.

Sapphire (University of Guelph, Ontario) is a late mid-season variety with bright red and large berries. It is reported to be tolerant of the herbicide Sinbar (terbacil).

Late Season

AC Valley Sunset (Nova Scotia) produces large conic fruit into the late season. The conic fruit tends to be a bit rough in shape but still attractive. As with all late season varieties, tarnished plant bug can become a problem and extra care at renovation is warranted.

Allstar (USDA, MD) is good yielding, high quality variety with good flavor. Unfortunately, the color is pale to orangish and is unacceptable to an uninformed consumer.

Cabot (Nova Scotia) produces impressive berries. Average fruit weight is larger than any variety currently available. Primary berries often top 40-50 g. The color can be pale throughout the berry and primary berries are often irregular in shape. Yields are very high. It is resistant to red stele but is susceptible to virus infection and cyclamen mites.

Clancy (Cornell University, NY) was developed through a joint venture with the USDA breeding program in Beltsville, MD. Its parents were resistant to red stele root rot. The fruit is a round conical shaped with darker red color and good flavor. The flesh is very firm with good texture and eating quality. The fruiting laterals are strong and stiff, keeping the fruit off the ground until they reach full size. No significant disease or insect problems have been noted to date.

Donna (France/Spain) produces large blocky fruit in the late season. The fruit is darker than Darselect with similar quality. It is new to the U.S. and has not been widely trialed.

Eros (Italy) is a light colored late season variety with large but somewhat squat berries that are not particularly attractive. Yields are adequate in good stands but it does not renovate exceptionally well. It is susceptible to cyclamen mites.

Ovation (USDA, MD) is extremely late. It doesn't flower until after most others are past their peak bloom. Fruit quality is average but there is little to compare it to in its season. Yields are moderate.

Record (Italy) produces large fruit in the late season with good yields reported. The color is darker than Idea which it replaced but still considered light to slightly orange, similar to Allstar.

Seneca (Cornell University, NY) is probably the firmest variety available for the east. The fruit is large, bright red and attractive but the flavor is only average. It does not runner heavily and can be adapted to plasticulture.

Serenity (University of Guelph, Ontario) is a late season variety that is also tolerant to Sinbar (terbacil). The fruit is large and bright

Strawberry Variety Review– (continued)

red. The skin tends to be soft. It reported to be moderately resistant to scorch and mildew.

Winona (University of Minnesota) has very large berries and average yields but cannot compete with Jewel for fruit appearance. It has good vigor though and might be useful where Jewel does poorly.

Day Neutral

Albion (University of California-Davis) produces large attractive berries with good flavor. The color is bright red with little interior color. They are only weakly day-neutral and do not fruit heavily in the fall in temperate climates. Developed for plasticulture systems, overwinter potential and root rot resistance are unknown but doubtful.

Evie 2 (U.K.) produces medium large beet-shaped fruit that are bright red. Fruit production in the fall in temperate climates has been moderate. This variety in relatively unknown and needs to be trialed more extensively for a temperate climate.

Seascape (University of California) is a day neutral that is seeing some success in the east. The fruit is large and very attractive. It is firm and good quality. It does not runner and is only suited for plasticulture. Over wintering can be a problem with this one.

Tribute and **Tristar** (USDA, MD) have been the standard day neutral varieties for the northeast for the last 20 years. They are disease resistant, vigorous and runner enough for matted row production. Both are relatively small fruited and low yielding but off-season fruit may pay off. Of the two, Tribute has better size and Tristar has better flavor.

Weather Reports

NEW YORK CROP WEATHER SERVICE NOTES

Week ending October 2nd: The period started out with well above normal temperatures and dry conditions as a ridge of high pressure was positioned along the Atlantic Seaboard through Tuesday. Then a sprawling cut off low pressure system over the Midwest slowly moved eastward into the Great Lakes and northeast, resulting in a prolonged cloudy and wet period from Wednesday through Friday. The entire state received rainfall at some point during this stretch with one to as much as five inches of rain falling. The highest rainfall totals occurred across the southern tier of New York. On Saturday, a cold surge of northerly flow dropped temperatures well below normal but with damp conditions continuing which provided for a very raw day.

Week ending October 9th: The week started out wet as a cut off low moved gradually eastward over the region. The low finally opened up and moved off to the northeast by mid-week allowing high pressure to build in at the surface and aloft. The high built in and shifted eastward during the latter part of the week. Temperatures moderated with well above normal readings on Saturday. .

Week ending October 16th: High pressure dominated the first half of the week with dry weather and above normal temperatures. High pressure moved east of New England by the mid-week and low pressure passed south of Long Island with some rain Wednesday into Thursday. A strong low pressure system moved into the Great Lakes region on Friday. The occluded front and strong upper level low gave periods of moderate to heavy rain across the state to close the week. Temperatures for the week finished above normal and precipitation was normal to above normal except across extreme northern New York where precipitation was below normal near Massena.

Week ending October 23rd: Temperatures for the week averaged above normal with precipitation amounts across the state highly variable. Fast moving weather systems produced rapidly changing weather conditions across the region. However, despite the rapid changes, temperatures across the state averaged 5 to 15 degrees above normal with the warmest day on Thursday as a frontal boundary moved across the region. Showers occurred over some part of the region just about every day. There were thunderstorms across the region as well especially Wednesday and Thursday. The convective nature of the rainfall produced a slightly variable rainfall pattern across the state. Weekly precipitation amounts were between a quarter and three-quarters of an inch at about half the reporting locations, but ranged as high as two inches at the far ends of the state, Buffalo in western New York and Bridgehampton on the eastern end of Long Island.

Week ending October 30th: Temperatures for the week averaged several degrees below normal with precipitation amounts across the state highly variable. High pressure over the northeast resulted in mainly dry conditions across the state on Sunday. A fast moving cold front brought scattered mainly light showers to the state on Monday with a return to high pressure and dry conditions on Tuesday. Temperatures from Sunday through Tuesday were near normal to slightly above normal. The weather became unsettled across the state on Wednesday and Thursday as a low pressure system moved from the eastern Great Lakes Wednesday morn-

Weather Data for Week Ending Sunday, October 2, 2011

Station	Temperature (°F)				Growing Degree Days Base 50° 1/			Precipitation (Inches) 1/			
	High	Low	Avg	Dep. from Norm	Week	Season	Dep. from Norm	Week	Dep. from Norm	Season	Dep. from Norm
Hudson Valley											
Albany	83	46	66	+10	111	3009	+587	1.35	+0.72	34.21	+14.41
Glens Falls	81	45	64	+11	99	2620	+522	1.82	+1.15	32.22	+12.57
Poughkeepsie	83	46	68	+11	127	3174	+619	2.73	+2.01	39.63	+16.86
Mohawk Valley											
Boonville	78	36	59	+8	73	1947	+312	1.47	+0.34	37.40	+9.12
Champlain Valley											
Plattsburgh	75	43	60	+7	76	2423	+298	1.88	+1.25	30.26	+11.06
St. Lawrence Valley											
Canton	78	40	60	+8	80	2418	+508	1.03	+0.23	29.33	+8.60
Massena	81	44	63	+10	95	2625	+632	1.13	+0.41	22.05	+3.13
Great Lakes											
Buffalo	83	42	63	+6	95	2890	+539	1.58	+0.87	28.32	+7.82
Wales	79	39	60	+6	80	2331	+431	0.90	-0.07	24.54	+0.42
Niagara Falls	85	42	62	+6	91	2798	+443	1.74	+1.01	23.30	+3.22
Rochester	81	43	63	+6	95	2826	+544	2.09	+1.49	23.57	+6.00
Watertown	82	43	63	+9	98	2535	+571	2.83	+2.16	26.05	+9.50
Central Lakes											
Dansville	82	43	63	+7	97	3087	+801	1.47	+0.77	21.23	+1.89
Geneva	79	42	62	+7	90	2701	+437	1.55	+0.85	24.91	+5.82
Honeoye	81	41	61	+4	88	2618	+234	1.12	+0.42	25.92	+7.03
Ithaca	79	40	62	+7	84	2510	+467	2.70	+1.93	32.58	+11.95
Penn Yan	79	42	62	+7	89	2893	+629	1.65	+0.95	20.49	+1.40
Syracuse	83	43	65	+9	110	3157	+856	1.45	+0.64	32.29	+10.56
Warsaw	77	36	58	+5	65	2220	+478	1.23	+0.39	27.97	+5.29
Western Plateau											
Hornell Almond Dam	80	38	59	+6	72	2357	+465	2.51	+1.82	27.96	+9.52
Elmira	81	42	62	+7	86	2727	+571	2.13	+1.44	28.44	+9.10
Franklinville	80	37	58	+6	68	2226	+648	1.66	+0.78	31.81	+8.90
Jamestown	79	39	60	+6	76	2477	+690	0.69	-0.32	29.45	+3.68
Eastern Plateau											
Binghamton	79	39	61	+7	86	2562	+479	4.83	+4.11	47.22	+26.75
Cobleskill	80	41	62	+8	88	2371	+433	1.90	+1.11	37.68	+15.60
Morrisville	84	38	61	+8	85	2354	+512	2.28	+1.41	34.16	+11.95
Norwich	83	41	63	+9	94	2404	+465	1.62	+0.82	42.02	+20.08
Oneonta	81	42	62	+10	90	2389	+615	1.57	+0.80	41.83	+18.44
Coastal											
Bridgehamton	82	57	70	+11	144	2994	+544	1.05	+0.28	25.33	+3.82
New York	80	50	70	+7	139	3715	+456	1.41	+0.70	41.06	+18.47

1/ Season accumulations are for April 1st to date. Weekly accumulations are through 7:00 AM Sunday Morning. Data courtesy NY NASS.

Weather Data for Week Ending Sunday, October 9, 2011

Station	Temperature (°F)				Growing Degree Days Base 50° 1/			Precipitation (Inches) 1/			
	High	Low	Avg	Dep. from Norm	Week	Season	Dep. from Norm	Week	Dep. from Norm	Season	Dep. from Norm
Hudson Valley											
Albany	79	36	56	+3	45	3054	+596	0.35	-0.28	34.56	+14.13
Glens Falls	73	31	52	+1	19	2639	+516	0.05	-0.58	32.27	+11.99
Poughkeepsie	77	36	55	+1	40	3214	+618	0.43	-0.27	40.06	+16.59
Mohawk Valley											
Boonville	74	31	50	+2	16	1962	+309	0.58	-0.43	37.98	+8.69
Champlain Valley											
Plattsburgh	70	32	52	+1	22	2445	+295	0.34	-0.22	30.60	+10.84
St. Lawrence Valley											
Canton	75	30	50	0	16	2434	+500	0.03	-0.74	29.36	+7.86
Massena	78	30	53	+3	29	2654	+637	0.02	-0.62	22.07	+2.51
Great Lakes											
Buffalo	77	39	57	+3	50	2940	+547	0.57	-0.12	28.89	+7.70
Wales	78	33	52	-1	22	2353	+422	0.44	-0.42	24.98	+0.00
Niagara Falls	75	36	56	+2	43	2841	+443	0.78	+0.14	24.08	+3.36
Rochester	80	37	56	+2	45	2871	+547	0.72	+0.16	24.29	+6.16
Watertown	73	30	52	+1	23	2558	+564	0.06	-0.57	26.11	+8.93
Central Lakes											
Dansville	84	36	56	+3	44	3131	+804	0.64	+0.01	21.87	+1.90
Geneva	77	38	54	-1	27	2728	+426	0.90	+0.23	24.81	+5.05
Honeoye	82	34	52	-3	22	2641	+242	0.51	-0.15	26.76	+7.21
Ithaca	80	31	51	-2	17	2524	+449	0.31	-0.46	33.79	+12.39
Penn Yan	80	37	56	+3	42	2935	+633	0.75	+0.08	21.24	+1.48
Syracuse	81	37	57	+3	49	3206	+864	0.39	-0.37	32.68	+10.19
Warsaw	78	37	53	+3	29	2248	+482	0.70	-0.07	28.75	+5.30
Western Plateau											
Hornell Almond Dam	80	32	51	-2	16	2373	+452	0.47	-0.14	28.43	+9.38
Elmira	80	32	53	+1	22	2749	+559	0.35	-0.28	28.79	+8.82
Franklinville	78	31	51	+1	17	2244	+644	0.57	-0.27	32.25	+8.50
Jamestown	78	32	53	+2	28	2505	+692	0.52	-0.40	29.97	+3.28
Eastern Plateau											
Binghamton	75	35	52	0	23	2585	+471	0.20	-0.46	47.42	+26.29
Cobleskill	79	33	53	+2	24	2395	+429	1.28	+0.57	38.96	+16.17
Morrisville	81	34	52	+2	20	2374	+507	0.40	-0.39	34.56	+11.56
Norwich	77	31	51	0	13	2417	+453	0.25	-0.50	42.27	+19.58
Oneonta	76	31	51	+1	17	2406	+608	0.20	-0.57	42.03	+17.84
Coastal											
Bridgehamton	74	37	57	+1	53	3047	+543	0.29	-0.41	25.62	+3.41
New York	80	49	61	0	77	3792	+456	0.10	-0.57	41.16	+17.90

1/ Season accumulations are for April 1st to date. Weekly accumulations are through 7:00 AM Sunday Morning. Data courtesy NY NASS.

Weather Data for Week Ending Sunday, October 16, 2011

Station	Temperature (°F)				Growing Degree Days Base 50° 1/			Precipitation (Inches) 1/			
	High	Low	Avg	Dep. from Norm	Week	Season	Dep. from Norm	Week	Dep. from Norm	Season	Dep. from Norm
Hudson Valley											
Albany	83	49	63	+13	93	3147	+664	1.52	+0.89	36.08	+15.02
Glens Falls	78	44	59	+12	67	2706	+567	1.46	+0.83	33.73	+12.82
Poughkeepsie	82	47	63	+12	89	3303	+679	0.79	+0.14	40.85	+16.73
Mohawk Valley											
Boonville	75	40	56	+10	52	2014	+349	2.48	+1.50	40.46	+10.19
Champlain Valley											
Plattsburgh	77	41	59	+11	62	2507	+340	1.22	+0.66	31.82	+11.50
St. Lawrence Valley											
Canton	76	45	57	+10	54	2488	+538	1.60	+0.90	30.96	+8.76
Massena	79	44	60	+13	71	2725	+693	0.87	+0.24	22.94	+2.75
Great Lakes											
Buffalo	80	48	62	+11	89	3029	+606	1.38	+0.73	30.27	+8.43
Wales	77	43	58	+9	61	2414	+463	2.71	+1.89	27.69	+1.89
Niagara Falls	80	47	61	+10	81	2922	+493	0.94	+0.34	25.02	+3.70
Rochester	81	47	61	+10	82	2953	+599	1.17	+0.65	25.46	+6.81
Watertown	76	47	61	+13	79	2637	+624	2.50	+1.94	28.61	+10.85
Central Lakes											
Dansville	83	43	61	+10	79	3210	+853	1.18	+0.60	23.05	+2.50
Geneva	80	43	59	+9	66	2794	+466	1.22	+0.59	26.03	+5.64
Honeoye	81	43	59	+8	68	2709	+248	1.54	+0.91	28.30	+8.12
Ithaca	79	46	59	+10	61	2585	+487	1.43	+0.67	35.22	+13.06
Penn Yan	81	48	61	+11	79	3014	+686	0.98	+0.35	22.22	+1.83
Syracuse	81	48	62	+11	88	3294	+922	0.90	+0.20	33.58	+10.39
Warsaw	77	39	57	+10	58	2306	+524	3.10	+2.36	31.85	+7.66
Western Plateau											
Hornell Almond Dam	80	42	56	+8	49	2422	+481	1.41	+0.85	29.84	+10.23
Elmira	80	43	59	+10	66	2815	+601	1.27	+0.64	30.06	+9.46
Franklinville	79	41	56	+9	45	2289	+674	1.90	+1.06	34.15	+9.56
Jamestown	79	41	57	+9	55	2560	+730	1.63	+0.74	31.58	+4.00
Eastern Plateau											
Binghamton	78	45	59	+10	67	2652	+519	1.47	+0.84	48.89	+27.13
Cobleskill	78	45	59	+10	65	2460	+476	1.38	+0.70	40.34	+16.87
Morrisville	79	42	58	+11	63	2437	+554	2.11	+1.34	36.67	+12.90
Norwich	83	39	58	+10	60	2477	+496	1.25	+0.55	43.52	+20.13
Oneonta	78	42	58	+11	57	2463	+648	1.66	+0.92	43.69	+18.79
Coastal											
Bridgehamton	80	53	64	+10	100	3147	+603	0.59	-0.12	26.21	+3.29
New York	85	55	67	+9	117	3909	+514	0.76	+0.13	41.92	+18.03

1/ Season accumulations are for April 1st to date. Weekly accumulations are through 7:00 AM Sunday Morning. Data courtesy NY NASS.

Weather Data for Week Ending Sunday, October 23, 2011

Station	Temperature (°F)				Growing Degree Days Base 50° 1/			Precipitation (Inches) 1/			
	High	Low	Avg	Dep. from Norm	Week	Season	Dep. from Norm	Week	Dep. from Norm	Season	Dep. from Norm
Hudson Valley											
Albany	70	42	56	+8	46	3193	+694	0.26	-0.37	36.34	+14.65
Glens Falls	71	42	54	+8	28	2734	+587	0.26	-0.38	33.99	+12.44
Poughkeepsie	71	43	57	+8	50	3353	+711	0.76	+0.06	41.61	+16.79
Mohawk Valley											
Boonville	59	38	46	+2	0	2013	+341	1.68	+0.69	42.14	+10.88
Champlain Valley											
Plattsburgh	67	32	51	+6	18	2525	+349	0.65	+0.08	32.47	+11.58
St. Lawrence Valley											
Canton	61	39	48	+4	5	2488	+530	1.00	+0.30	31.96	+9.06
Massena	59	36	50	+5	5	2730	+689	0.53	-0.09	23.47	+2.66
Great Lakes											
Buffalo	59	39	50	+1	12	3041	+598	2.06	+1.36	32.33	+9.79
Wales	59	34	47	0	4	2418	+454	1.57	+0.73	29.26	+2.62
Niagara Falls	60	36	49	-1	9	2931	+482	1.19	+0.56	26.21	+4.26
Rochester	61	38	51	+2	12	2965	+592	1.75	+1.20	27.21	+8.01
Watertown	65	45	52	+5	15	2652	+627	1.16	+0.54	29.77	+11.39
Central Lakes											
Dansville	64	38	51	+2	15	3225	+849	0.79	+0.23	23.84	+2.73
Geneva	63	39	50	+2	9	2803	+458	0.79	+0.16	26.82	+5.80
Honeoye	63	35	50	-1	8	2717	+234	1.13	+0.50	29.43	+8.62
Ithaca	66	37	50	+3	11	2596	+483	1.38	+0.68	36.60	+13.74
Penn Yan	63	38	51	+4	17	3031	+686	0.63	+0.00	22.85	+1.83
Syracuse	65	45	54	+5	29	3323	+932	0.56	-0.14	34.14	+10.25
Warsaw	56	33	45	-2	0	2304	+512	1.96	+1.23	33.81	+8.89
Western Plateau											
Hornell Almond Dam	59	31	46	-2	1	2416	+461	1.54	+0.98	31.37	+11.20
Elmira	65	32	50	+3	11	2826	+597	1.17	+0.54	31.23	+10.00
Franklinville	62	31	45	-1	2	2291	+667	1.72	+0.94	35.87	+10.50
Jamestown	66	31	47	+1	5	2565	+724	1.07	+0.16	32.65	+4.16
Eastern Plateau											
Binghamton	61	38	49	+3	11	2663	+518	1.11	+0.48	50.00	+27.61
Cobleskill	68	39	51	+4	14	2471	+476	0.60	-0.04	40.94	+16.83
Morrisville	63	35	47	+2	6	2443	+551	0.79	+0.07	37.46	+12.97
Norwich	64	33	50	+4	7	2483	+493	0.72	+0.02	44.24	+20.15
Oneonta	64	37	50	+4	9	2471	+646	0.56	-0.21	44.25	+18.58
Coastal											
Bridgehamton	69	43	58	+6	58	3205	+633	2.04	+1.27	28.25	+4.56
New York	69	49	60	+5	73	3982	+542	1.10	+0.42	43.02	+18.45

1/ Season accumulations are for April 1st to date. Weekly accumulations are through 7:00 AM Sunday Morning. Data courtesy NY NASS.

Weather Data for Week Ending Sunday, October 30, 2011

Station	Temperature (°F)				Growing Degree Days Base 50° 1/			Precipitation (Inches) 1/			
	High	Low	Avg	Dep. from Norm	Week	Season	Dep. from Norm	Week	Dep. from Norm	Season	Dep. from Norm
Hudson Valley											
Albany	60	30	42	-5	0	3193	+686	1.28	+0.62	37.62	+15.27
Glens Falls	62	25	40	-4	0	2734	+584	0.72	+0.02	34.71	+12.46
Poughkeepsie	62	26	45	-3	3	3356	+703	1.61	+0.89	43.22	+17.68
Mohawk Valley											
Boonville	55	21	36	-7	0	2013	+338	1.01	-0.07	43.15	+10.81
Champlain Valley											
Plattsburgh	61	25	41	-4	1	2526	+345	0.13	-0.50	32.60	+11.08
St. Lawrence Valley											
Canton	64	22	39	-5	4	2517	+554	0.17	-0.58	32.56	+8.91
Massena	67	20	40	-4	6	2736	+689	0.14	-0.49	23.61	+2.17
Great Lakes											
Buffalo	59	27	44	-4	6	3047	+592	0.90	+0.16	33.23	+9.95
Wales	58	24	40	-6	0	2418	+447	1.07	+0.18	30.33	+2.80
Niagara Falls	59	26	43	-5	5	2936	+474	0.75	+0.09	26.96	+4.35
Rochester	58	28	44	-4	2	2967	+582	1.12	+0.56	28.33	+8.57
Watertown	62	21	41	-4	4	2656	+624	0.30	-0.35	30.07	+11.04
Central Lakes											
Dansville	63	28	44	-3	5	3230	+841	0.72	+0.16	24.56	+2.89
Geneva	63	30	43	-4	2	2805	+449	1.43	+0.76	28.25	+6.56
Honeoye	61	27	43	-6	2	2719	+222	1.15	+0.49	30.58	+9.11
Ithaca	65	26	44	-3	4	2600	+479	1.17	+0.47	37.77	+14.21
Penn Yan	65	31	44	-3	6	3037	+681	0.77	+0.10	23.62	+1.93
Syracuse	63	28	44	-4	5	3328	+925	1.16	+0.41	35.30	+10.66
Warsaw	58	25	39	-5	0	2304	+505	1.23	+0.46	35.04	+9.35
Western Plateau											
Hornell Almond Dam	59	24	40	-5	0	2416	+454	0.98	+0.42	32.35	+11.62
Elmira	63	28	43	-3	3	2829	+592	0.66	+0.03	31.89	+10.03
Franklinville	58	22	39	-5	0	2291	+661	1.15	+0.32	37.02	+10.82
Jamestown	61	27	41	-4	0	2565	+717	1.15	+0.22	33.80	+4.38
Eastern Plateau											
Binghamton	59	27	42	-4	0	2663	+511	0.90	+0.23	50.90	+27.84
Cobleskill	60	29	42	-4	0	2471	+469	1.03	+0.33	41.97	+17.16
Morrisville	60	23	39	-6	0	2443	+545	1.30	+0.53	38.76	+13.50
Norwich	62	25	41	-4	0	2483	+486	1.20	+0.44	45.44	+20.59
Oneonta	61	24	41	-4	0	2471	+639	1.30	+0.53	45.55	+19.11
Coastal											
Bridgehamton	61	34	48	-4	6	3211	+620	2.30	+1.44	30.55	+6.00
New York	63	34	52	-3	29	4011	+539	2.36	+1.63	45.38	+20.08

1/ Season accumulations are for April 1st to date. Weekly accumulations are through 7:00 AM Sunday Morning. Data courtesy NY NASS.

Department of Horticulture-Geneva Campus
NYSAES Cornell University
630 West North Street
Geneva, NY 14456

Phone: 315-787-2367
Fax: 315-787-2389
E-mail: mcm4@cornell.edu

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Questions or comments about the New York Berry News?
Ms. Cathy Heidenreich
Cornell University Dept. of Horticulture – Geneva Campus
630 W. North Street, Geneva, NY 14456
315-787-2367
mcm4@cornell.edu

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Weather (continued)

ing to the southern New England Coast on Thursday. The precipitation initially fell as rain across the state, but changed to snow in many areas on Thursday as colder air moved in from Canada. Many areas in the Hudson Valley and surrounding higher terrain received a half inch to several inches of snow. Behind this system skies cleared out late Thursday night and brought an end to the growing season across parts of the state where the growing season had not yet ended with most areas having low temperatures in the mid 20's to lower 30's. Friday was a dry but cold day across the state as a ridge of high pressure built across the northeast. A major Nor'easter impacted the eastern and southern portions of the state on Saturday with little if any precipitation falling across northern and western portions of the state. Heavy wet snow fell across the eastern and southern portions of the state knocking down trees, tree limbs, and power lines in many areas. The heaviest snow fell from the Catskills east to the Taconics with snowfall totals ranging from several inches to a foot and a half.

This is the last edition of the New York "Weather and Crops" for the 2011 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.