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

New York Berry News

Cornell University Berry Team

Inside this issue:

HELPING PEOPLE AND PLANTS BEAT THE HEAT – *Cathy Heidenreich*

The National Weather Service declares a heat wave when there are five or more consecutive days of 90-degree weather or three or more consecutive days of 95-degree temperatures.

Just such a heat wave brought stifling conditions to much of the United States breaking 55 record highs on July 20th, more than 1% of all temperature records in the country, the National Weather Service said. Another 60 records were tied on July 21st. Excessive heat watches, warnings and heat advisories were in effect over much of the central U.S., Ohio Valley and from the Carolinas northward into New England, according to the NWS. Triple-digit temperatures remained across the Eastern United States through July 23rd before cooling off slightly to the mid-90s by July 24th.

Almost half the U.S. population was affected, and 22 deaths have reportedly been attributed to the heat wave. Both people and plants need protection on the farm from excessive heat conditions.

Maintaining Worker Safety During Hot Weather
Outdoor workers can be especially vulnerable to excessive heat. Check weather forecasts ahead of time so that you can be better prepared. To protect your workers remember three simple words: water, rest, shade. Drinking water often, taking breaks, and limiting time in the heat can help prevent heat illness. Employers should include these prevention steps in worksite training and plans. Gradually build up to heavy work in hot conditions. This helps you build tolerance to the heat – or become acclimated. Employers should take steps that help workers become acclimated, especially workers who are new to working outdoors in the heat or have been away from work for a week or more. Gradually increase workloads and allow more frequent breaks during the first week of work. Also, it's important to know and look out for the symptoms of heat illness in yourself and others during hot weather. Plan for an emergency and know what to do — acting quickly can save lives! For more information and resources on this topic visit: http://www.osha.gov/SLTC/heatillness/.

Keeping Your Customers Cool
Develop a plan to protect your customers from excessive heat while they enjoy harvesting and/or purchasing the fruits of your labor. Post informational signs or set up a display on how to protect from heat exposure and how to recognize heat related illnesses in sales and/or rest areas. Add a stock of sunscreen, sunglasses, straw hats and/or other protective gear to your sales inventory. Have plenty of bottled water on hand for warm days. Arrange for seating in a shaded area to provide relief from the sun. No shade trees available? Consider or renting or purchasing a tent that could be moved to various harvest locations across the farm. Locate hand washing stations and restroom facilities nearby.

Preserving Quality of Harvested Fruit
Much time and effort can be expended to produce and harvest a good crop of berries, only to have the crop deteriorate before it is sold. This deterioration is caused by respiration of the fruit. Respiration occurs in all living organisms and is the process by which food reserves are converted into energy. Respiration of fruits results in shrinkage and reduced sweetness. A 10°F reduction in temperature reduces berry respiration rate by approximately 50%. Furthermore, at 77°F and 30% rela-

Upcoming Berry Events

August 16-17, 2011. *North American Strawberry Growers Annual Summer Tour*, Boston, Massachusetts. Details follow. Best Western Hotel Tria, Cambridge, Mass. Contact Kevin Schooley 613-258-4587 or www.nasga.org.

October 4-7, 2011. *US Highbush Blueberry Council Fall Meeting,* Caesars, Atlantic City, NJ. For more information: http://www.blueberry.org/calendar.htm#Meetings

October 11, 2011. *Southern Tier Commercial Berry Growers Workshop*, Belfast Fire Hall, Belfast, NY. Pre-registration required; to register contact Colleen Cavagna at 585-268-7644 ext. 12 or email cc746@cornell.edu. **Deadline for registration: Oct. 3rd, 2011.**

October 16-19, 2011. *ISHS Symposium on High Tunnel Horticultural Crop Production*, Ramada Inn and Conference Center, State College, PA. For more information contact Michael Orzolek at (814) 863-2251 or mdo1@psu.edu or visit http://horticulture.psu.edu/cms/ishs2011/.

November 6-8, 2011. *Southeast Strawberry Expo.* Sheraton Imperial Hotel, Durham, NC. Workshops, tour, educational sessions, trade show. For more information, email the NC Strawberry Association at info@ncstrawberry.com, call 919-542-4037, or visit www.ncstrawberry.com.

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.

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

USDA News

Agriculture Secretary Vilsack Announces Support for Small, Socially Disadvantaged Agricultural Producers and Cooperatives to Create Jobs by Becoming More Profitable and Efficient

WASHINGTON, June 29, 2011 – Agriculture Secretary Tom Vilsack today announced that USDA is accepting grant applications to assist small, socially disadvantaged agricultural producers and cooperatives in rural areas to spur job creation.

"The Obama Administration is working to help small-scale producers add profit and efficiency to their operations so they can grow, thrive and create jobs," Vilsack said. "These investments will provide small business owners with the assistance they need to serve their communities and train a new generation of rural Americans."

Almost $3.5 million in grants are available through USDA Rural Development's Small, Socially Disadvantaged Producer Grant Program (SSDPG), which was authorized in the Food, Conservation, and Energy Act of 2008 (Farm Bill). It is part of the Department's ongoing effort to expand outreach to rural residents to ensure that all communities have equal access to USDA programs and services. Funding is available to cooperatives or associations of cooperatives where at least 75 percent of the governing board or membership are small, socially disadvantaged producers. Grants can be used for product improvements, business plan development or economic development activities. The maximum grant award per applicant is $200,000.

The grants assist eligible producers like Frank Taylor who returned home after college and established the Winston County Self-Help Cooperative in Mississippi, a consortium of local farmers that pool their resources to receive training in business development, conservation and health. The Cooperative also has a youth program, which teaches skills to the next generation of Winston County farmers. For the last four years, Winston County Self-Help Cooperative, whose motto is "Saving Rural America," has received USDA funding to expand operations into the surrounding counties of central Mississippi. For more information about the success of this Cooperative, visit Deputy Under Secretary for Rural Development Cheryl Cook's blog post.

In southeastern Minnesota, with the help of an SSDPG, the Hillside Farmers Co-op of Northfield assisted Latino farmers by partnering with established farmers who, together, are committed to producing sustainable foods and building healthier communities. The co-op pairs immigrant families with established farmers in the area who rent out their land for gardening and poultry production. The SSDPG awarded in 2010, is helping the co-op conduct a feasibility study, develop a business plan, provide training and help pay for other related expenses in developing a coordinated network of local businesses in the free-range poultry industry. This is the first SSDPG awarded in Minnesota.

Applications for Small, Socially Disadvantaged Producer Grants are due **August 15, 2011**. Application materials may be obtained at the Rural Development website or by contacting the USDA Rural Development State Office. For additional information, see the June 29, 2011, Federal Register.

In June, the President signed an Executive Order establishing the first White House Rural Council chaired by Agriculture Secretary Tom Vilsack. In order to better coordinate Federal programs and maximize the impact of Federal investment, the White House Rural Council will work throughout government to create policies to promote economic prosperity and a high quality of life in our rural communities.

Since taking office, President Obama's Administration has taken significant steps to improve the lives of rural Americans and has provided broad support for rural communities. The Obama Administration has set goals of modernizing infrastructure by providing broadband access to 10 million Americans, expanding educational opportu-

USDA News

nities for students in rural areas, and providing affordable health care. In the long term, these unparalleled rural investments will help ensure that America's rural communities are repopulating, self-sustaining, and thriving economically.

USDA, through its Rural Development mission area, administers and manages housing, business and community infrastructure and facility programs through a national network of state and local offices. Rural Development has an existing portfolio of more than $150 billion in loans and loan guarantees. These programs are designed to improve the economic stability of rural communities, businesses, residents, farmers and ranchers and improve the quality of life in rural America.

Visit www.rurdev.usda.gov for additional information about the agency's programs or to locate the USDA Rural Development office nearest you.

USDA Invites Applications for Value Added Producer Grant to Assist Farmers

Investing In Rural America Essential to Job Creation and Business Growth

WASHINGTON, June 28, 2011 – Deputy Agriculture Secretary Kathleen Merrigan today announced that applications are being accepted for grants to provide economic assistance to independent producers, farmer and rancher cooperatives and agricultural producer groups through the Value-Added Producer Grant Program.

"By creating value-added products, farmers and ranchers can expand economic opportunities, create jobs and keep wealth in rural communities," Merrigan said. "These funding opportunities will promote business expansion and entrepreneurship by helping local businesses get access to capital, technical assistance and new markets for their products and services."

For example, in Caroline County, Md., Richard and Wenfei Uva owners of Seaberry Farm received a Value-Added Producer Grant to expand their processing capacity to produce beach plum jams and jellies, juice, and puree for retail and wholesale markets. The Beach plum, Prunus maritime, is a native fruiting shrub that grows in coastal sand dunes from southern Maine to Maryland. Seaberry Farm planted three acres of Beach plum in 2006 and will double the acreage in 2011.

Located in Oxnard, Calif., San Miguel Produce is owned by Roy Nishimori and Jan Berk, independent producers of organic and conventional cooking greens. In 2009, they received a Value-Added Producer Grant for socially disadvantaged farmers and ranchers. With this grant, San Miguel Produce has been able to expand markets for their "Cut 'n Clean Green" products and increase revenues.

Application deadline is August 29, 2011. For further details about eligibility rules and application procedures, see the June 28, 2011, Federal Register. Value-Added Producer Grants may be used for feasibility studies or business plans, working capital for marketing value-added agricultural products and for farm-based renewable energy projects. Eligible applicants include independent producers, farmer and rancher cooperatives, and agricultural producer groups. Value-added products are created when a producer increases the consumer value of an agricultural commodity in the production or processing stage. To see a video featuring Deputy Secretary Merrigan discussing the VAPG program click here.

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"By creating value-added products, farmers and ranchers can expand economic opportunities, create jobs and keep wealth in rural communities. These funding opportunities will promote business expansion and entrepreneurship by helping local businesses get access to capital, technical assistance and new markets for their products and services."

NASGA News

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FROM THE PRESIDENT'S OFFICE

Office of the NASGA President 455 Grand Rang St-Charles St-Paul-d'Abbotsford, Québec, Canada JoE 1Ao

Dear fellow growers,

The moment we have longed for and worked hard for all year long, has finally come... picking our dear fruits!

Today, growing strawberries has become more specialized and thus a real challenge for growers who wish to maintain themselves competitive and keep up with the new technological developments. This is why you should embrace all the opportunities to develop your network and meet with other growers who share the same questioning and doubts as you.

A chance to do so will be during our next summer meeting, which will be held on August the 16th and 17th in the Boston area, thanks to Nate Nourse, who is doing a wonderful job organizing this event. Many activities are planned such as visits to fabulous farms and markets, followed by an open house at Nourse Farms on the 18th, which promises to be unforgettable.

You shall even enjoy some extras such as the opportunity to assist a Red Sox game at the end of a day tour!

The next opportunity that offers you to learn from and with other growers is the NASGA Winter Annual Meeting, which will be held from February the 6th to the 9th 2012 in Las Vegas.

Indeed, in that occasion, not only will you be able to benefit from thousands of attractions in the surroundings of the venue, but you also will have the chance to learn from a very high-end technical program and enjoy many showcase farm presentations.

I wish you all a great picking season!

Sincerely,

Simon Parent

EXECUTIVE DIRECTOR'S REPORT

We have a new look to our newsletter thanks to support from our newest Board member Liette Lambert. It is always nice to have a change but it is challenging sometimes for the ED who is not the most savvy when it comes to computer graphics. Let me know what you think.

The summer tour will be here before we know it.

Book your hotel early to make sure you have a reservation. This is a smaller hotel than what we have used in the past so make sure you get a room.

The tour has some wonderful stops as you will read about further into the newsletter and if you have a chance plan to spend an extra day to participate in the open house at Nourse Farms on the 18th. One other highlight of this event is that directly across from the hotel is a large Whole Foods store. Nate Nourse had a chance to visit the store and noted that the layout and concept was quite intriguing.

On my agenda is securing a facility for our annual meeting in Las Vegas. We have received several favorable quotes from some well established hotels right in the center of the strip. I hope to be able to view facilities and confirm our host hotel prior to the summer tour.

I look forward to visiting with many of you in Boston during the summer tour.

Kevin Schooley

NARBA News

NEW CONSUMER BROCHURES AVAILABLE

NARBA's new consumer brochures for raspberries and blackberries arrived at the NARBA office in 24 heavy boxes at the beginning of June and were promptly distributed to those members who pre-ordered.

Here are some of their comments:

"We received ours in the mail yesterday – they are BEAUTIFUL!!!! Can't wait to start giving them out to our berry customers."

"Just got 'em. They are in the market sitting next to my summer raspberries. They look great!!!!"

We have several thousand of each brochure on hand (and can reprint if needed). Contact the NARBA office at 919-542-4037 if you'd like samples sent to you or want an order form.

Since we had several requests for quantities less than the 500 minimum in the original order form, we have figured prices/ shipping for orders as low as 100. Large orders can be printed with your farm or company's contact information on the brochures.

Brochure Prices

100: $12 plus $5 shipping
300: $32 plus $10 shipping
500: $50 plus $10 shipping
1000: $90 plus $15 shipping

You can combine blackberry and raspberry brochures for your total, but there is a minimum of 100 for each type.

BLACKBERRY R&P UPDATE

The draft proposal to create a Blackberry Research and Promotion Program, which would be funded by grower assessments, similar to the processed raspberry program reported on page one, was presented at a number of meetings around the country this winter and spring, and reactions and suggestions have been collected both informally and via paper and web surveys. Initial analysis of the surveys shows that 68% of respondents said they would support the proposal as it now stands; 78% favoured including both processing and fresh market blackberries.

As uses of funds raised by the program, "Promotion: nutrition messaging, advertising, media relations, sales development, etc. to a variety of audiences" was selected by more than 93% of respondents.

Other options – research into packaging, production, food safety, and health benefits – were selected less often (3% to 30%). A more nuanced analysis, separating responses from different parts of the country and different segments of the industry (growers, importers, shippers) is underway, and the steering committee will be determining next steps to take. To learn more about the proposal or see the online survey, visit www.raspberryblackberry.com/blackberryRandP/

ANNOUNCING THE NORTH AMERICAN RASPBERRY & BLACKBERRY CONFERENCE

January 16-18, 2012 at the Kalahari Resort in Sandusky, Ohio, in association with the Ohio Produce Growers & Marketers Association. Mark your calendar! More information to come.

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USHBC News

USHBC Continuation Referendum Scheduled For JULY 5 TO JULY 26, 2011

As required by the U.S. Department of Agriculture, all research and promotion programs are subject to a continuation referendum every five years. The second continuation referendum for the **U.S. Highbush Blueberry Council** is scheduled for the three week period from July 5 to July 26, 2011.

All eligible blueberry growers and importers will be mailed a referendum ballot directly from the USDA. Those who have not received a ballot in the mail by July 5 are encouraged to contact the USDA or the USHBC office.

Continuance will be based on approval by a majority vote of growers and importers taking part in the mail ballot and by a majority of the volume voted.

Results from the last referendum in August of 2006 showed that 86.9 percent of those who voted favored continuation of the USHBC and those who voted in favor represented 93.9 percent of the volume of cultivated blueberries represented in the referendum.

BLUEBERRY PROMOTION, RESEARCH AND INFORMATION ORDER FOR CULTIVATED BLUEBERRIES U.S. HIGHBUSH BLUEBERRY COUNCIL

Background
The North American Blueberry Council (NABC) submitted a proposal for a national promotion program for blueberries (the **U.S. Highbush Blueberry Council**) on December 2, 1998. The program is implemented under the Commodity Promotion, Research and Information Act of 1996. The final rule implementing the order was published in the Federal Register on July 17, 2000.

Initial Referendum Results
Before the program could be implemented, it had to be approved by producers and importers. Approval was determined by a majority of producers and importers voting for approval who also represented a majority of the volume of blueberries represented in the referendum.

In order to be eligible to vote, a producer or importer must have produced or imported 2,000 pounds or more of cultivated blueberries during the period from January 1, 1999 to December 31, 1999 (representative period). The referendum was conducted by the USDA's Agricultural Marketing Service from March 13 through April 14, 2000.

Results of this referendum, announced on July 13, 2000, showed that 67.8 percent of those who voted favored implementation of the Blueberry Promotion, Research and Information Order. Those who voted in favor represented 73.2 percent of the volume of cultivated blueberries represented in the referendum.

Continuance Referendum Results
As required under the Order, a continuance referendum is conducted every five years to ascertain whether continuance of the Order is favored by producers and importers of blueberries. A referendum was conducted by mail from August 1 to August 22, 2006 with 86.9 percent of those who voted favoring continuation of the order. Those voting in favor represented 93.9 percent of the volume of cultivated blueberries represented in the referendum. Based on these results, the order will continue. In accordance with the provisions of the Order, blueberry producers and importers will be provided another opportunity to participate in a continuance referendum in the year 2011.

Assessments
The Order authorizes a fixed assessment to be paid by producers (collected by handlers) and

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http://www.blueberry.org/

USHBC News (continued)

importers (collected by the U.S. Customs Service) at a current rate of $12 per ton. Assessments are used to pay for: promotion, research, and information projects; administration, maintenance, and functioning of the U.S. Highbush Blueberry Council (USHBC); and expenses incurred by the Secretary of Agriculture in implementing and administering the Order, including referendum costs.

U.S. Highbush Blueberry Council
The current sixteen-member U.S. Highbush Blueberry Council (USHBC) administers the program under the supervision of the Secretary of Agriculture. The USHBC is represented by one member and alternate from each of the following regions:

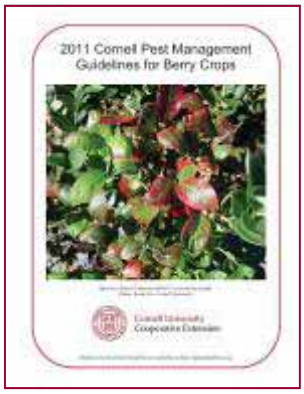
Western	Midwest	Northeast	Southern
Alaska	Illinois	Connecticut	Alabama
Arizona	Indiana	Delaware	Arkansas
California	Iowa	New York	Florida
Colorado	Kansas	Maine	Georgia
Hawaii	Kentucky	Maryland	Louisiana
Idaho	Michigan	Massachusetts	Mississippi
Montana	Minnesota	New Hampshire	North Carolina
Nevada	Missouri	New Jersey	Oklahoma
New Mexico	Nebraska	Pennsylvania	Puerto Rico
Oregon	North Dakota	Rhode Island	South Carolina
Utah	Ohio	Virginia	Tennessee
Washington	South Dakota	Vermont	Texas
Wyoming	Wisconsin	Washington D.C.	
West Virginia			

There is also one member and alternate from each of the top six blueberry producing states. For the current nomination and election period, state representatives are to be elected from Michigan, New Jersey, Oregon, North Carolina, Georgia and Washington. Three importers and alternates, one exporter and alternate, one first handler and alternate, and one public member and alternate also serve on the USHBC. Producers are nominated directly by state commissions or producers. All other members are nominated by the USHBC.

The duties of the USHBC include the following: develop annual budgets; appoint members of the USHBC to serve on committees; develop and evaluate projects of promotion, research, and information, and pay the costs of such projects; collect assessments; receive, investigate, and report to the Secretary complaints of violations of the Order; recommend amendments to the Order; employ a staff to administer the program; prepare and submit to the Secretary financial reports; and cause the books of the USHBC to be audited. The Secretary oversees the activities of the USHBC. In addition, the USHBC recommends to the Secretary regulations to carry out the terms of the Order.

Subsequent Referenda
Every five years, the Secretary of Agriculture will hold a referendum to determine whether producers and importers of cultivated blueberries favor the continuation of the Order. The Order will continue if it is favored by a majority of producers and importers voting for approval who also represent a majority of the volume of blueberries represented in the referendum. In addition, the Secretary may hold a referendum at any time after the effective date of the program. Additional referenda may be requested by the U.S. Highbush Blueberry Council or 10 percent of all cultivated blueberry producers and importers.

For more information contact: U.S. Highbush Blueberry Council, 80 Iron Point Circle, Suite 114, Folsom, California 95630
Ph: 916-983-0111, Fax: 916-983-9022, Website: www.blueberry.org



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

Pesticide Update

Cathy Heidenreich, Cornell University

ACTARA RECEIVES 2EE FOR USE IN MANAGING BMSB ON BUSHBERRIES

The NYSDEC has recently approved the following 2 (ee) recommendations for unlabeled pests: Brown marmorated stink bug – Actara Insecticide (EPA Reg. No. 100-938) – for use on bushberries at a rate of 4 oz/A. Do not exceed a total of 12.0 oz/Acre (0.188 lb. a.i./A) of Actara or 0.188 lb. a.i./A) thiamethoxam containing products per acre per growing season. Actara is a restricted-use pesticide in NYS and is not for sale or use on Long Island.

Bushberries listed on the federal Actara label include Aronia berry, Highbush blueberry, Buffalo currant, Chilean guava, Black currant, Red currant, Elderberry, European Barberry, Gooseberry, Highbush Cranberry, Huckleberry, Jostaberry, Juneberry, Native currant, Salal, Sea buckthorn, cultivars, varieties and/or hybrids of these.

Note: The user must refer to the federally approved Actara label and read and follow all directions for use, restrictions, and precautions. It is a violation of federal law to use this product in a manner inconsistent with its labeling. The user should have a copy of the 2(ee) label recommendation in their possession at the time of use.

Actara is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply Actara or allow it to drift to blooming crops while bees are foraging in/or adjacent to the treatment area. This is especially critical if there are adjacent orchards that are blooming (Refer to Spray Drift Precautions for additional information). After an Actara application, wait at least 5 days before placing beehives in the treated field. If bees are foraging in the ground cover and it contains any blooming plants or weeds, always remove flowers before making an application. This may be accomplished by mowing, disking, mulching, flailing, or applying a labeled herbicide.

CHANGES TO FUMIGANT LABELS NOW REQUIRE SOIL FUMIGANT MANAGEMENT PLANS, POST-APPLICATION SUMMARIES, BUFFER ZONES AND MORE

EPA is requiring important new safety measures for soil fumigant pesticides to increase protections for agricultural workers and bystanders – people who live, work, or otherwise spend time near fields that are fumigated. These measures are for the soil fumigants chloropicrin, dazomet, metam sodium/potassium, and methyl bromide.

Fumigant labels changes to that went into effect in December 2010 require growers who fumigate their crops to make significant changes to their practices. Chief among these are requirements to have a detailed "Fumigant Management Plan" (FMP) in place before fumigating, and for at least two people at the fumigation site to have an appropriate respirator and be fit-tested and medically cleared to use. Even growers who have their fumigation done by custom work will need an FMP specific to their farm.

Soil Fumigant Management Plans

Soil fumigations are complex processes that require specialized equipment and practices to properly apply volatile and toxic pesticides. EPA's risk mitigation allows for site-specific decisions to address the conditions where the fumigant is applied. To address this complexity and flexibility, EPA is requiring that fumigant users prepare a written, site-specific fumigant management plan (FMP) before fumigations begin. Written plans and procedures for safe and effective applications will help prevent accidents and misuse and will capture emergency response plans and steps to take in case an accident occurs.

Post Application Summaries

Within 30 days of completing the application portion of the fumigation process, the certified applicator supervising the application must complete a post-fumigation application summary that describes any deviations from the FMP that have occurred, measurements taken to comply with GAPs as well

Focus on Pest Management *(continued)*

as any complaints and/or incidents that have been reported to him/her.

Currently FMP's and Post-Application Summaries are needed for those NYS small fruit growers applying products Telone-C17 and Telone-C35 (1,3 dichloropropene + chloropicrin).

Fact Sheets: 2010 Site-Specific Fumigant Management Plans and Post-Application Summaries (PDF) (5 pp., 260k)

Soil Fumigant Buffer Zones
EPA is requiring fumigant users to establish a buffer zone around treated fields to reduce risks to bystanders. A buffer zone provides distance between the application site (i.e., edge of field) and bystanders, allowing airborne residues to disperse before reaching the bystanders. This buffer will reduce the chances that air concentrations where bystanders are located will cause adverse health effects.

Fact Sheets: Buffer Zones (PDF) (3 pp, 276k), Posting Requirements for Buffer Zones (PDF) (3 pp, 474k)

Soil Fumigant Toolbox available at:

http://www.epa.gov/pesticides/reregistration/soil_fumigants/

Disease Snapshot - *Kerik Cox, Cornell University*

Disease Name: Powdery Mildew

Cause: *Sphaerotheca sp.*

When to watch for it: Bloom to harvest

First line of defense: Cultural practices to limit infection, such as pruning to increase ventilation and to promote the drying of foliage.

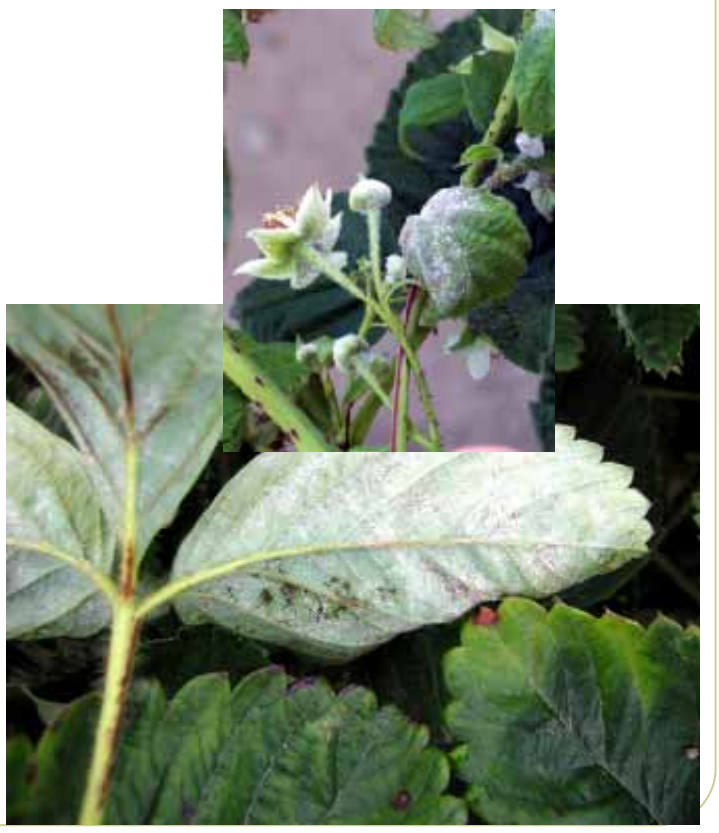
Summary: Powdery mildew infections typically start with humid weather around bloom.

Early infections appear as chlorotic spots on the leaf surface later sporulate to white powdery lesions. Leaves will become distorted and appear to have a red sheen later in the season. Spores produced on infected leaves can be spread via rain and wind.

Management is best accomplished by planting resistant cultivars.

Cultural practices to limit the incidence and spread of the pathogen include pruning to allow more ventilation and using drip irrigation to avoid wetting plant matter.

Most cases of the disease are not severe enough to merit treatment, but when severe cases arise, fungicides can be used. The sterol inhibitor (SI), sulfur, and paraffinic oil products are some of the more effective fungicides.



Focus on Pest Management *(continued)*

DUAL MAGNUM HERBICIDE LABEL EXPANDED

Dual Magnum herbicide just received a Special Local Need registration to control weeds in blackberries, red and black raspberries, direct seeded and transplanted broccoli, cantaloupe, muskmelon, watermelon, cucumbers, garlic, high bush blueberries and leafy brassica greens (subgroup 5b). However, this label does not allow Dual Magnum to be used in Nassau and Suffolk Counties, New York.

Users must have a copy of the Special Local Need (SLN) label with them in order to use Dual Magnum on the above mentioned crops.

According to the letter from NYS DEC, — The SLN labeling requires that the users of the SLN specified applications to the above listed crops, sign a waiver which releases Syngenta Crop Protection, Inc. from all liability and indemnification by the user and/or grower for failure to perform and for crop injury, crop yield reduction, and/or crops loss from use of the product in accordance with the SLN labeling.

RASPBERRY CANE BORERS AND CROWN BORERS LauraMcDermott

Recently I received many calls from folks concerned about their raspberry canes wilting. At this time of year, this is most likely due to insect activity, either raspberry cane borer or red necked cane borer.

Raspberry Cane Borer - (*Oberea bimaculata*) sometimes referred to as cane girdler, lays an egg in a d-shaped hole cut near the tip of primocanes, then girdles the cane both above and below the egg (right). This causes the primocane tips to wilt, and in some instances, to break. If tips are not removed below the girdle, then eggs will hatch and larvae will burrow down the cane into the crown.

Rednecked Cane Borer - (*Agrilus ruficollis*) lays its eggs on canes from mid-May to early July. Larvae burrow into canes where they tunnel in a spiral fashion. Swellings (below right) often develop around the tunnels. Infested canes wilt and die or become weakened. Girdled canes are also more susceptible to winter injury.

Both of these cane borers and other cane borers like the flatheaded cane borer can be controlled by cultural methods as long as you are very observant. Remove canes with swellings while you are pruning in the dormant season. Canes showing withered tips during the growing season should be clipped several inches below the affected portion of the cane.

For serious and persistent infestations of red-necked cane borer, use imidacloprid (Admire Pro or MANA Alias 4F). There are no known resistant cultivars, but 'Heritage' and 'Polka' are very susceptible.

Raspberry crown borers (*Pennisetia marginata*) damage floricanes (but NOT primocanes) at their base, causing them to wilt and die. Entire plants may be killed. Look for burrows at the base of canes and in the crown and roots.

Adult crown borers are clear-winged moths that resemble yellow jackets. They emerge from July to September. Crown borer eggs are laid singly on the undersides of leaves. Larvae burrow down individual canes into the crown. A single larva may kill several canes on one plant. Dark red pupal skins attached to the lower section of canes/crown are also a characteristic sign of crown borer infestation.
Cultural control includes trying to rid the area of wild berries as they may harbor this pest. During the growing season, check the crown of plants for signs of infestation.

Remove any plants – crown and all- if they are suspect.

There are no known organic control materials for this pest, but Brigade and Altacor are labeled for this pest. Brigade can be used post-harvest (August) or as a pre-bloom drench.

Raspberry Cane Borer damage

Rednecked Cane Borer damage

Potato leafhoppers (*Empoasca fabae*) are abundant now on raspberries. This pest, very common to many vegetable growers, causes yellowing and upward leaf curl along with overall growth reduction.

Focus on Pest Management *(continued)*

Pyganic can be used to control these insects, along with Assail, Sevin, Malathion and restricted use chemicals that contain imidacloprid.

Potato leafhopper damage on raspberry.

MUMMY BERRY IN BLUEBERRIES Laura McDermott

I've been working with blueberries for several years, and had not seen mummy berry in an eastern NY plantings until this year. And our area is not unusual according to berry specialists from New England, who reported seeing LOTS of mummy berry, caused by the Monilinia vaccinii-corymbosi pathogen, throughout the region. I never saw the early season shoot strikes which will cause new twigs and leaves to die back, have since seen many berries with infection. The photo below is what mummy berry will look like when first infected – before the fruit shows outward signs. As the fruit begins to ripen, you will see some pinkish gray berries that do not appear to be turning blue, also they may have a slightly ridgy look to them. This is due to the seed area of the berry filling up with the fungus, which, when you cut the berry open, looks like a star inside.

The mummies that now are hanging on the plant will soon fall to the ground. If left undisturbed, the mummies will fruit and send more spores out next year which will compromise shoot growth as well as berry yield.

The most important aspect of control is to get rid of the mummies from this year. Removing mummies will help, but if you try to rake them, be careful not to just rake them into the grass, because they will fruit there as well. Hand-picking the infected berries while pickers are going through the patch is a good first step. Then make sure to mulch. If you apply fall mulch, wait as long as possible so that the mummies dry out. You can also apply urea lightly to the mulched are under the bushes, and then put a good layer of mulch on – preferably in the spring, but just make sure to get it on. Another approach is to aim a lime-sulfur spray to the base of the plant in the spring, which kills the fruiting mummy. Lime sulfur has been in short supply recently – if you have this disease you might want to try now and locate some for next year. According to NJ sources, Miller Chemical in Hanover PA will ship a 55 gallon drum of lime sulfur to you. You can reach them at: (717) 632-8921.

The most resistant cultivars include 'Burlington', 'Collins', 'Jersey,' 'Darrow', 'Rubel', 'Bluetta', and 'Dixi'. Tolerant cultivars are 'Duke', 'Elliott', 'Lateblue', and 'Northsky'. Less resistant ate 'Rancocas', 'Weymouth', 'Berkeley', 'Bluecrop', 'Herbert', and 'Coville'. The most susceptible cultivars are 'Earliblue' and 'Blueray'.

If you do have this disease, plan also to spray Indar starting at green tip on an 8 -14 day interval. You can rotate with several other chemicals listed in the Berry Guidelines including Captan, Switch or Orbit. Organic growers can use Actinovate or Serenade Max, but realize that these materials may only suppress the disease – spring cultural management will be imperative.

Early signs of infection cause some of the berries to turn pinkish-gray.

Star shaped infection inside blueberry infected with mummy berry fungus. Courtesy of The Ohio State Fact Sheet #HYG-3200-11.

This is what the mummies look like now – some will be still on the bush, but most will be on the ground.

This is NOT mummy berry, but rather heat injury caused from last week's heat wave. Notice that all the coloring and injury is on the TOP of the berry.

About the Author:

Brian Henehan is a senior extension associate and program leader of the Cooperative Enterprise Program at Cornell University. He is responsible for developing and delivering an educational program for senior management, directors, members, and staff of cooperative businesses. He conducts applied research on cooperative organizational behavior, marketing, and decision making.

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On the Organic Side

ORGANIC AGRICULTURE IN NEW YORK

Brian M. Henehan, Senior Extension Associate, Charles H. Dyson School of Applied Economics and Management, College of Agriculture and Life Science, Cornell University

Organic agriculture represents a growing segment, albeit small, of production and food processing in New York State. To gain a better understanding of what opportunities might yet be available to New York farmers and processors, a three year research project is looking at opportunities and barriers to growth of organic agriculture in New York. The first phase of the project was to document current organic agricultural production in New York.

In the Dyson School of Applied Economics and Management, Brian Henehan and Jie Li have compiled and released the most recent and most complete statistics about organic production in New York State published in a Dyson School Extension Bulletin titled *Organic Agriculture in New York State,* which is available online at: http://www.aem.cornell.edu/outreach/extensionpdf/2010/Cornell-Dyson-eb1013.pdf.

The authors acknowledge the National Agriculture Statistics Service (NASS) which collected this extensive data as well as the dedicated organic farmers who were interested and responded to the survey. In New York, 1,577 surveys were mailed to certified, exempt, and transitional organic farmers. An impressive 1,412 surveys were returned reporting on 2008 farm production and information.

The organic crops and farm products with the highest sales from certified and exempt farms are listed in the following table. Given the significant role dairy farming plays in New York agriculture, it is not surprising that four out of the top five farm crops or products include milk and dairy cows, hay and haylage, corn for grain or silage and soybeans. Vegetables, potatoes and melons ranked third on the list (berry crops 9th…).

Organic Agricultural Products Marketed from Certified and Exempt Farms

Rank in New York State.	Crop/Product	Total Certified & Exempt Sales
1	Milk & Dairy Cows	$ 62,615,402
2	Corn for grain and silage	$ 11,343,944
3	Vegetables, potatoes, & melons	$ 9,463,516
4	Hay & Haylage	$ 6,156,169
5	Soybeans	$ 4,607,897
6	All fruit and nuts	$ 1,441,939
7	Winter Wheat	$ 994,923
8	Maple Syrup	$ 755,498
9	All Berries	$ 511,737
10	Oats for grain or seed	$ 443,870
11	Floriculture and Bedding	$ 213,264
12	Chicken Eggs	$ 62,175
Total	Top 12 Farm Products	$104,756,502

On the Organic Side *(continued)*

Reprinted from "Smart Marketing", a marketing newsletter for extension publication in local newsletters and for placement in local media. It reviews elements critical to successful marketing in the food and agricultural industry. Past articles are available at http://marketingpwt.aem.cornell.edu/publications.html.

Excerpts from the Extension Bulletin: Berries

The survey results indicate that a variety of organic berries were grown in New York State in 2008. Sixty four certified and exempt producers reported total sales of $511,737. Strawberries, blueberries and raspberries accounted for the majority of berries produced. Table 7 describes the volume and sales of berries produced in more detail.

Table 7. Organic Berries Harvested from Certified and Exempt Farms in NYS.

	Harvested						Value of Sale			
	Farms		Acres		Quantity		Farms		Dollars	
	Certified	Exempt	Certified	Exempt	Certified	Exempt	Certified	Exempt	Certified	Exempt
all berries	37	27	96	49	(X)	(X)	36	23	$458,034	$53,703
blackberries and dewberries	6	4	3	1	1,658	626	6	2	(D)	(D)
blueberries, tame (lbs.)	10	13	(D)	(D)	26,947	9,584	10	11	$106,194	$31,052
raspberries, all (lbs.)	17	14	13	33	20,111	3,314	16	10	$ 73,730	$12,895
Strawberries (cwt.)	24	8	47	2	1,167	40	24	7	$263,342	$ 7,707
other berries (lbs.)	7	2	(D)	(D)	(D)	(D)	7	1	(D)	(D)

(D) withheld to avoid disclosing data for individual farms (X) not applicable. S*ource 2008 Organic Production Survey, USDA NASS).*

Organic Product Share of Total Farm Sales

Participants in the survey were asked what share of all farm products marketed did the sales of organic products represent. Table 10 shows that sixty-three percent (523) of certified or exempt farms participating in the survey reported that sales from organic production accounted for over 75 percent of all agricultural products marketed. Fifteen percent (127) respondents reported organic farm products sales accounted for less than 25 percent of all farm sales. Sixty-two percent of farms (509) reported that sales of organic farm product accounted for 100% of farm products sold. Clearly, for this group organic farming represents a significant share of farm income.

Table 10. Organic Sales as Percent of All Organic Agricultural Products Sold from Certified and Exempt Organic Farms in New York State.

	Farms by percent of total value of sales from organic production	
	Certified	Exempt
Farms (n=)	684	143
Less than 25 percent	112	15
25 to 49 percent	20	7
50 to 74 percent	29	4
75 to 99 percent	120	11
100 percent	403	106

Source 2008 Organic Production Survey, USDA NASS.

One question on the OPS focused on the share of total organic farm sales represented by value-added products. For the purpose of

On the Organic Side (continued)

this survey, "value-added" is defined as: *"Any activity or service occurring after agricultural production, transportation, or storage that adds value to the raw commodity. Value-added sales do not include handler or processor receipts. Reported value-added dollars may include the commodity level value."* Source: http://www.nass.usda.gov

Survey responses summarized in Table 11 indicate that only 56 certified and exempt farms reported sales of value-added products totaling $261,812. And so, marketing producing and marketing value-added organic farm products do represent a significant share of total sales for the respondents.

Table 11. Value-Added Organic Product Sales on Certified and Exempt Organic Farms in New York State

	Farms by percent of organic sales from value-added products	
	Certified	Exempt
Farms (n=)	36	20
Less than 25 percent	26	6
25 to 49 percent	5	2
50 to 74 percent	2	2
75 to 99 percent	2	2
100 percent	1	8
Total gross sales ($)	$236,613	$25,199
Total gross sales average per farm ($)	$ 6,573	$ 1,260

(D) withheld to avoid disclosing data for individual farms (X) not applicable. *Source 2008 Organic Production Survey, USDA NASS.*

Organic Product Share of Total Farm Sales
Participants in the survey were asked what share of all farm products marketed did the sales of organic products represent. Table 10 shows that sixty-three percent (523) of certified or exempt farms participating in the survey reported that sales from organic production accounted for over 75 percent of all agricultural products marketed. Fifteen percent (127) respondents reported organic farm products sales accounted for less than 25 percent of all farm sales. Sixty-two percent of farms (509) reported that sales of organic farm product accounted for 100% of farm products sold. Clearly, for this group organic farming represents a significant share of farm income.

Marketing Tip of the Month

FREE Marketing Resource: New York MarketMaker http://nymarketmaker.cornell.edu

Khin Mar Cho and Donald J. Tobias, Cornell University Cooperative Extension-New York City and Kristen Park, Dyson School of Applied Economics and Management, Cornell University

MarketMaker is a FREE online resource created to link farmers, processors, retailers, consumers, and other food chain participants. The national MarketMaker network, currently available in 20 states, contains one of the most extensive collections of searchable food industry related data in the United States.

Cornell University Cooperative Extension (CUCE) in New York City established the NY MarketMaker program in 2007 in cooperation with the University of Illinois. It is part of a national MarketMaker network of state websites that contain a total of 500,000 profiles of farmers and other food related businesses. The main objectives are to expand and improve the use of web tools to better supply markets and support buyers and sellers by sharing "market intelligence". The sites also hope to improve business-to-business, business-to-government, and business-to-consumer activities and increase the availability of regionally-grown foods in urban markets. Today, NY MarketMaker contains information on over 2,000 food producers representing vegetables, fruits and nuts, dairy, grains, herbs, wine, fish and seafood, and meat and poultry products from 56 New York counties. These numbers make New York the state with the most producer participation in the entire MarketMaker system.

Marketing Tip of the Month (continued)

F***eatures and Benefits of MarketMaker***
Conducting market research, locating targeted markets, and advertising and promoting products require significant expenditures, even for the largest New York agricultural businesses. MarketMaker provides some of this information for free. For example, producers, as well as other users, can search demographic and business data, and details can be summarized on a map to show concentrations of consumer markets and possible strategic business partners. You can search MarketMaker to locate Census tract populations with desired demographic characteristics and then target sales to retailers in those tracts. You can also search for potential customers or business partners in specific industry segments, such as Agritourism, Buyer, Eating & Drinking Places, Farmer/Producer (vegetables, fruits & nuts, grains, herbs, dairy, meat & poultry, and specialty products), Farmers' Market, Fishery, Food . Retailer, Processor, Wholesaler, and Winery. These also can be summarized on a map pinpointing their location and can be downloaded off the site.

Producers can also list their business on NY MarketMaker site for free, allowing them to be "found" by buyers, such as individual consumers, retailers, wholesalers, or institutions, such as schools, hospitals, faith based organizations (churches, synagogues, and mosques), senior dining sites, and food banks. Plus, producers can post ads for available or needed food products on MarketMaker's Buy & Sell forum.

Examples of MarketMaker Users:

- Direct sellers searching for buyers
- Farmers selling to restaurants
- Farmers selling to food processors
- Farmers selling specialty foods
- Farmers looking for other farmers to partner with
- Restaurant chefs looking for local products
- Buyers looking for local/specific products from farmers
- Retailers looking for local products
- Wholesalers looking for local products
- Buyers finding local farmers markets
- Community Supported Agriculture (CSA)
- U-pick operations
- On-farm and roadside markets

MarketMaker Training and Outreach
We support educational outreach programs that teach food entrepreneurs how to use the site and the basics of marketing value-added food products. We developed MarketMaker online training curricula and "How-to" manuals. New York MarketMaker informs producers at growers meetings and many conferences in New York state and the Northeast region. Though the program is producer-centered, the awareness and involvement of retail food enterprises, processors and manufacturers is key to linking retail food actors and local producers. We conduct outreach with trade shows and retail organizations to inform and increase access to New York producers. MarketMaker presentations are given at growers meetings and Extension conferences, examples include the Hudson Valley Fruit Growers School, tradeshows, expos, farm days, Farmers' Markets Federated Conference, Eat Smart New York Nutrition Conference, the International Restaurants and Food Service Expo, Summer Fancy Food shows, CSA Annual Conference, the Culinary Institute and culinary schools, New York city farmers' markets, and faith based organizations of New York city.

Training manuals and training schedules are available online at http://nyc.cce.cornell.edu, and training can be scheduled by contacting Dr. Khin Mar Cho at 212-340-2918 or kc458@cornell.edu. Other publications, including brochures, fact sheets, annual reports, PowerPoint presentation slides, harvest calendar, Adobe-connect online training curriculum, and "How-to" manuals are also available online at http://nymarketmaker.cornell.edu and http://nyc.cce.cornell.edu.

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About the Author:

Mark Longstroth is a Small Fruit Extension Educator for Michigan State University Extension. He has served in his position since 1993. Originally, Mark covered all fruit crops but under the new reorganization of MSU Extension his efforts are now focused on small fruit. Mark is based in Paw Paw and is Southwest Michigan's resource for the berry industry. He is the lead field educator for blueberries and cranberries. Mark's focus is to maintain a healthy Michigan fruit industry, helping growers remain profitable and adapt to changes in agriculture. Most of his work deals with horticultural and pest management. He also does farm financial management. Mark has degrees in Biology and Plant Science from Boise State University and the University of Idaho. He worked for the University of Idaho from 1976 to 1988 as a Research Associate and Orchard Manager.

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Be Careful Using Roundup and Other Glyphosate Herbicides — Mark Longstroth, MSU

Mystery symptoms in blueberries may be glyphosate injury. Shoot removal may be the best option if symptoms are severe.

Many fruit growers, especially small growers use Roundup (glyphosate) herbicide, and its generic cousins for weed control. This spring I am seeing lots of symptoms of glyphosate injury from glyphosate use last fall. Glyphosate materials interfere with amino acid synthesis and disrupt protein synthesis. They are nonselective postemergent materials that work well against both annuals and perennials. Glyphosate is absorbed by the green tissues of the plant and poisons the plant's biochemical machinery.

Above: This shoot shows the full range of glyphosate herbicide injury symptoms; small tufts of leaves, short shoots with strap-like leaves, excessive branching, and normal shoots with narrow willow-like leaves. Note the healthy leaves and shoots on the bush behind it. This

Be Careful Using Roundup and Other Glyphosate Herbicides
(continued)

was the only affected branch on this bush so the affected shoot should be removed.

It is translocated with the sugars from photosynthesis to actively growing tissues where it poisons them. Glyphosate materials cause little damage if they not do drift on to green tissues such as green leaves and young stems. If it is applied in the fall when there is little growth you probably will not see any symptoms from drift on to desirable plants. You may not even remember that you used an herbicide in the fall when you wonder what is causing the stunted growth in your plants in the spring. Growers forget that this powerful herbicide can kill most plants at low doses and begin to think that it is safe to use around blueberries.

Right: Tufts of tiny leaves are a symptom of a large dose of glyphosate last fall. Note the healthy plants in the next row. This young plant will probably not survive since the whole plant is affected.

Glyphosate is easy to apply with a hand sprayer and can be used to spot treat problem weeds. Some farmers and homeowners are using glyphosate as a total weed control program with several applications per year to kill weeds. This eliminates the use of soil active materials that require accurate sprayer calibration to avoid damaging the blueberry plant. I often recommend Roundup or other materials in the fall to kill invasive perennials in blueberry plantings. This is because the fall is

Be Careful Using Roundup and Other Glyphosate Herbicides
(continued)

the best time to kill perennial weeds with glyphosate materials. This is the most effective way I know of to kill problem perennial weeds. I usually caution that extreme care be used, because this is an excellent time to kill any plant (including blueberries) with this broad-spectrum plant killer. The herbicide is taken up by the plant and stored in the bark and wood of the stems as well as the root system. When the plant begins growth in the spring the herbicide stunts new growth and if the dose was high enough it can kill the plant.

Left: This low branch received some drift from a glyphosate application last fall. Note the thin strap-like leaves and short shoots in comparison to the healthy leaves in the upper left. There is no reason to save this shoot on a mature bush.

The symptoms I am seeing vary depending on the dose of glyphosate drift that the plant received last fall. The worst case is extreme stunting of the growing points with only small tufts of tiny leaves instead of new shoots. Less extreme are short shoots with small thin leaves. I see a wide range of short shoots crowded with narrow leaves, a symptom that I think is dose related. I am also seeing thin willow like leaves on normal looking shoots that I assume are from a very low dose of the herbicide.

What to do depends on the extent of the injury. I often see only a few canes affected in the bush. These canes were the ones that received drift last year and the herbicide was stored in the cane and perhaps in the portion of the root system that feeds that shoot. If the symptoms are severe I do not believe that that shoot will ever become a normal shoot and should be removed. Where the symptoms are less severe I think the grower can wait and see if the shoot grows out of the symptoms. If the symptoms persist, cut out the shoot and grow a new one. In cases where most of a small plant are affected you would be best severed to cut out most of the severely affected shoots and hope the bush recovers. If not, replace it.

Right: This shoot in the center of the photo with narrow leaves crowded on the growth probably received a small dose of glyphosate to the green bark at the base of the shoot last fall. This shoot may recover.

Be Careful Using Roundup and Other Glyphosate Herbicides
(continued)

Left: Most growers might wonder what caused the narrow willow like leaves on this bush. Excessive branching is another symptom of glyphosate injury. The newest leaves at the tips of the shoots show less damage than the first shoots out at the base of the shoots. This shoot is recovering from a small dose of glyphosate last fall.

Time to Renovate Strawberries *(Eric Hanson, Mark Longstroth, and Bob Tritten, Michigan State University)*

Developing a strong stand early with fertilization and irrigation while managing weeds and insects insures a strong start on next year's strawberry crop.

Strawberry beds to be carried over for another harvest season need to be renovated. Deciding whether to renovate or remove a bed differs with every grower's circumstances, such as market demand, land availability and production costs. As strawberry fields age, yields and berry size decline while weeds and diseases problems increase. Growers with high market demand, but limited available acreage, will retain beds longer. The decision requires knowledge of your production costs and net returns over the preceding seasons. If you decide to renovate, start after harvest as soon as possible. The earlier runner-plants develop, the higher they yield the following year, so delaying renovation will reduce yields next year. Keep in mind that renovated beds need abundant water in July and August to ensure good growth this year and good returns next year.

Effective strawberry renovation ensures a healthy productive field in the fall.

Time to Renovate Strawberries *(continued)*

In renovating matted-row strawberries, the fields are mowed and the rows narrowed. Fertilizers and herbicides are applied and the fields are irrigated to develop a strong stand for next year's crop.

Mow off the leaves just above crown height if the plants are healthy. Mowing may not be desired if the plants are stressed by drought or root diseases because weak plants have difficulty developing new leaves. Also, do not mow the leaves if renovation is delayed for more than a few weeks after the end of harvest.

Mowing is often the initial step in renovation.

Narrow the rows to 8 to 10 inches by cultivating with a rototiller or disk. Rototillers with tines removed above the row work very well because they toss some soil on top of remaining plants, encouraging additional rooting. More than an inch of soil may smother the plants.

Some growers have success narrowing rows by treating the row middles with directed or shielded sprays of Gramoxone (paraquat). Gramoxone is a contact weed killer that is not mobile in plants, so it only kills treated tissues. This effectively narrows the plant row and does not expose new weed seeds by disturbing the soil. One problem with this approach is that it does not provide a loosely tilled soil for the rooting of runner plants. It also does not throw soil back over crowns.

Herbicides. Renovation is also a useful time to treat broadleaf weeds with amine forms of 2,4-D, such as Amine or Formula 40. Straw-

Time to Renovate Strawberries (continued)

berry plants tolerate 2,4-D after harvest because they are not actively growing. If broadleaf weeds are a serious problem, apply 2,4-D a few days before mowing. This herbicide must be absorbed by the weed leaves to be effective, so don't mow off the weed leaves before applying 2,4-D.

Sinbar can also be applied at renovation for pre-emergent weed control. Apply 3-6 oz. of Sinbar 80W per acre, using the lowest rates on sandy ground or weaker plant stands. Mow plants and narrow the rows first, so the Sinbar is applied uniformly to the soil. Irrigate to rinse the herbicide off the plants and into the soil. Michigan has a Section 18 label for the preemergent herbicide Spartan (**Editor's note**: Spartan is not labeled for use in NYS). Spartan is effective on common groundsel, field pansy, mayweed, white campion (white cockle) and pigweeds. Apply 4 to 8 oz. Spartan 4F per acre after plants have been mowed.

Fertilizing. Another step in renovation is to fertilize the planting to encourage new growth and runnering. On heavier loamy soils, apply enough fertilizer to supply 50 lb. N per acre. On sandy soils, apply 30 to 40 lb. N at renovation and again in early August.

Irrigating. Do not neglect watering the field at renovation and during the remainder of the summer. Plants need water to grow and all your other efforts are wasted if the renovated plants do not get off to an early strong start. Runner-plants that develop during July and August need adequate moisture to root and maintain a healthy leaf canopy to store food reserves for next year's crop. The amount of water available to strawberries is the product of the water holding capacity and the rooting depth, usually considered 8 to 12 inches (Table 1). Irrigate when about half of the available water has been used. During hot weather, this means strawberries may need irrigation every two to three days (sandy soils) to every four to five days (heavier soils).

Table 1. Available water in a strawberry root zone as affected by soil texture.

	Available water In root zone (inches)	
Soil texture	**Per inch of depth**	**(8-12 inch depth)**
Loamy sand	0.07	0.6 – 0.8
Sandy loam	0.13	1.0 – 1.6
Loam	0.17	1.4 – 2.0
Silt and clay loams	0.18	1.5 – 2.2

Pest control. Normal care should be taken to protect the new growth from leaf diseases. Renovation also allows the treatment of some root diseases such as red stele. Growers should be prepared to control potato leafhoppers. This insect causes hopper burn on the leaves and stunts strawberry growth.

Time to Renovate Strawberries *(continued)*

Potato leafhoppers burn on strawberry leaves. Healthy leaf on the left and affected leaf in the center. Note the yellowing at the margin of the leaf and the yellow streaks spreading out to the leaf edge marking the sites of feeding where the insect injected a toxin into the plant.

(Reprinted from: Michigan State University Extension News*, July 12, 2011.. Dr. Hanson's work is funded in part by MSU's AgBioResearch.*

July Berry Barometer – Cathy Heidenreich, Cornell University

HELPING TO KEEP YOU UP TO THE MARK!

Strawberry Growers –Renovate!

When renovation is delayed longer than 1-2 weeks after harvest, (some growers reported renovation dates the last week of July or even mid to late August) carbohydrate reserves may be greatly reduced, making plantings susceptible to winter injury. Now is the time to renovate- don't put it off! Dr. David Handley of University of Maine advises, "Early renovation allows more time for runner plant development, leading to larger crowns and more flower buds for next year. Early renovation also improves weed management by tilling in many weeds before they go to seed, and can help with insect and foliar disease control by interfering with life cycles at a critical stage of development." See the article that follows by Eric Hanson, Mark Longstroth and Bob Tritten, Michigan State University Extension, for a review of this important step in strawberry production.

Blueberry Growers – Sound Battle Cry!

Charge! Blueberries are coloring – birds are abundant. Get those bird management tactics in place and operational **BEFORE** they get their first bite! Use a variety of tactics, and move them/mix them up to keep birds on their toes and out of your blueberries. For more on this topic:

- ⇒ Bye Bye Birdie: Bird Management Strategies for Small Fruit
- ⇒ Bird Damage Prevention for Northern New England Fruit Growers – *University of New Hampshire*
- ⇒ Northeast Wildlife Damage Management Cooperative
- ⇒ Internet Center for Wildlife Damage Management- *University of Nebraska*
- ⇒ Wildlife Pests-*University of Missouri*

ALL BERRY CROPS:

Leaf Analysis – Late this month would be the time to collect samples for leaf analysis. Use a leaf analysis (supplemented with a soil test) to determine fertilizer needs after the planting is established.

Strawberries: Collect 30 leaflets after renovation in July or August.
Raspberries: Collect 30 newly expanded leaflets from primocanes in early August.
Blueberries: Collect 30 newly expanded leaves from well-exposed branches in late July.
Currants and Gooseberries: Collect 30 newly expanded leaves from well-exposed branches in late July
Cranberries: Collect upright tips only (no more than top 2" of growth), mixing flowering and vegetative uprights for about 1 cup material between mid-August and mid-September.
Juneberries: Collect 30 newly expanded leaves from well-exposed branches in early August.

Contact Agro-One (http://www.dairyone.com/AgroOne/) for detailed instructions, submission forms, and fees for leaf analysis.

Irrigation – Our spring deluge has become a summer dirth – get your irrigation up and running to keep plants thrifty and fruit size up during hot weather. Strawberries and blueberries prefer 1 –2" of water (irrigation and/or rainfall) per week. Brambles need a continuous (*but not excessive*) supply of water throughout the growing season – about 1-2" per week. Ribes require less water than many other small fruit crops – about ½ -1" per week. **Note:** On drought-susceptible soils or raised beds more irrigation may be needed for raspberries. Using drip irrigation systems: Blueberries and strawberries: the rule of thumb for young plantings is 20 gal/day/100 ft row; for mature plantings 35 gal/day/100 ft row. *(NRAES-55 Highbush Blueberry Production Guide, M. Pritts, personal communication)*. Raspberries: the rule of thumb for young raspberry plantings (sandy loam) is 18 gal/day/100 ft row; for mature plantings 27 gal/day/100 ft row. *(NRAES-35 Raspberry and Blackberry Production Guide).*

Harvest/Post Harvest – Hot summer months are no time for harvested berries to be left sitting in the field. Set up a do-it-yourself forced air cooler and keep those berries moving into the cold chain ASAP! Plans for one do-it-yourself "Forced Air Produce Cooler" are available from Virginia Cooperative extension at: http://pubs.ext.vt.edu/442/442-060/442-060.pdf.

Critter Patrol – Watch for deer browse on new plants. Take immediate steps to deter feeding.

STRAWBERRIES:

Established plantings:

Diseases – Leaf diseases (*leaf spot, leaf scorch, leaf blight and powdery mildew*) take the forefront after renovation. Mowing and incorporating of leaves after renovation is the cultural approach to reducing populations (alternatively, leaves may be collected

B

July Berry Barometer – (continued)

and buried or burned). Promoting good air circulation (plant spacing and weed control) will reduce foliage drying time and limit infections. A post-renovation fungicide application made to newly expanding leaves may be of some benefit in plantings with a history of disease or when conditions are favorable for disease development.

Insects – *Two-Spotted Spider Mite* is probably the chief insect pest of concern after renovation. As with leaf diseases, mowing and incorporating of leaves after renovation is the cultural approach to reducing populations. Regular leaf monitoring is necessary for assessing population growth; a threshold of 5 mites/leaf or 15 out of 60 fully expanded leaflets infested with 1 mite or more merits control action. Remember good coverage is critical for adequate protection.

New plantings:

Plant establishment –Runners need good soil contact to root. Keep the 18" planting strip weed free by hand weeding or using cultivation equipment for good runner establishment. Direct runner plants from aisles back into planting row area. Remove blossoms as they open to encourage good plant establishment and growth.

Diseases - Leaf diseases (*leaf spot, leaf scorch, leaf blight and powdery mildew*). Protect your new plantings from infection prior to when conditions are favorable for disease development.

Insects – *Two-Spotted Spider Mite* may also be a problem in new plantings. Monitor populations carefully and take action before threshold levels are exceeded.

BLUEBERRIES:

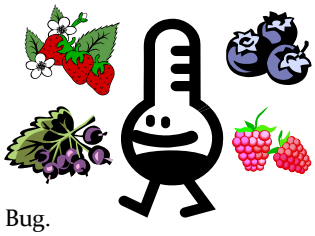
Established plantings:

Diseases – Anthracnose continues to be the major concern during harvest, especially with the warm temperatures we have been experiencing. Take measures to protect fruit now before problems occur.

Insects – Blueberry maggot, Japanese beetle and blueberry stem borer are pests of concern.

New plantings:

Plant establishment – Hand –weeding and spot treatments.



RASPBERRIES AND BLACKBERRIES:

Established plantings:

Diseases – Reports of gray mold are coming in – keep fruit protected during wet weather. Check DTH and REI carefully before making applications.

Insects – Insects of concern during petal fall to ripening include Sap Beetle and Tarnished Plant Bug.

New plantings:

Plant establishment – Avoid cultivation or herbicides until plants are well-established. Apply a dilute liquid fertilizer once new growth appears.

CURRANTS AND GOOSEBERRIES:

New and Established plantings

Diseases – Watch for leaf diseases such as white pine blister rust (yellow-orange powdery spots), powdery mildew (white powdery spots), or leaf spots (black necrotic spots) on leaves. Be sure to check both upper and lower leaf surfaces.

Insects –Harvest/postharvest insects of concern include Japanese beetles, and Two-spotted spider mites.

Weather Reports

NEW YORK CROP WEATHER SERVICE NOTES

Erratum: Our apologies, please note we did not observe there was a change in location for one of the entries in the weather tables previously reported from 5/23/11 to date. 'Angelica' has been changed to 'Hornell Almond Dam'.

Week ending June 19th: Temperatures averaged below normal in most regions. The high was 86 degrees in Massena and the low was 60 degrees in Boonville and Franklinville. Departures from normal ranged from minus 4 to plus 2 degrees. Growing Degree Day accumulations were above normal in all locations by as much as 326 in Dansville. Rain fell in all areas. Amounts

Weather Reports (continued)

varied from 0.08 inches at Niagara Falls to 2.35 inches in New York City. Totals since April 1st were well above normal across the state. . Strawberry condition was 9 percent poor, 24 percent fair, 47 percent good, and 20 percent excellent. In Broome County, the u-pick strawberry season was already curtailing after only a week of picking. Stressed plants were not producing for a second picking and berries were short lived because of excess moisture.

Week ending June 26th: Temperatures and precipitation generally averaged above normal for the week across much of the state, although precipitation was below normal across portions of Long Island. Despite temperatures averaging above normal for the week, daytime highs actually averaged below normal for much of the central, eastern and southeast New York and Long Island due to persistent clouds and rainfall, while nighttime lows averaged above normal. The week started with high pressure across eastern Canada extending southward into the state. A low pressure system developed across the central plains by Tuesday and then tracked slowly northeast into the Great Lakes from Wednesday through Friday, and across northern New England Saturday. A warm front associated with this low very slowly tracked northeast across the state Wednesday through Friday, triggering widespread showers and thunderstorms, some of which produced locally heavy rainfall. A cold front then moved east accompanied by additional scattered to numerous showers and thunderstorms, although the coverage was more isolated across extreme southeast New York and Long Island. Strawberry condition was 18 percent poor, 30 percent fair, 37 percent good, and 15 percent excellent. Adult blueberry maggot emergence has begun and will continue through the summer. In Albany County, strawberry season ended with a short harvest. In Ontario County, strawberry harvest was well underway.

Week ending July 3rd: The first full week of summer 2011 provided temperatures at or slightly below seasonable normals with rainfall amounts offering a variety of results. Portions of western New York were drier than normal with portions of eastern New York averaging near normal. Severe weather reports were notable on Tuesday, June 28th across upstate New York. We began the period rather cool and unsettled with an upper level low in our region. This was replaced with a region of high pressure for the early part of the week as a storm system was developing over the center of the nation. This storm approached on Tuesday with showers and thunderstorms. By Wednesday a slightly cooler and more stable airmass filtered across the Great Lakes region and into portions of New England. This region of high pressure remained dominant for the remainder of the week with little additional rainfall. Strawberry condition was 26 percent poor, 31 percent fair, 37 percent good, and 6 percent excellent. Strawberry harvest was almost complete in parts of central and eastern New York.

Week ending July 10th: The week started out with showers and thunderstorms moving across the region ahead of a warm front followed by a cold front which passed through the region during the following night. Rainfall was highly variable as is typical with convection with some sites getting over two inches while others had little or no rainfall. High pressure then moved into the region resulting in dry weather for most of the region for the Independence Day holiday along with Tuesday and much of Wednesday. Another frontal system moved across the region Wednesday afternoon resulting in some more showers and thunderstorms, followed by another mostly dry day on Thursday. A surface low moving along the frontal boundary just south of the region set off more convection mostly from the Mohawk Valley south. High pressure then moved into the region as the low moved east out to sea bringing a beautiful summer day to the region Saturday with mostly clear skies and seasonable temperatures. The week was fairly warm over most of the region with the temperature at Albany and Poughkeepsie averaging 3.5 degrees above normal. It was a bit cooler north with Glens Falls only 1.5 degrees above normal due to cooler nighttime lows. Rainfall varied a great deal with nearly four inches for the week at Cobleskill in Schoharie County with no rain for the entire week at several sites in western New York including Niagara Falls, Geneva and Honeoye.

Week ending July 17th: The week started out with high pressure over the region and above normal temperatures. A cold front tracked through the region Tuesday afternoon through Wednesday morning with most areas seeing less than two tenths of an inch of rain and many areas receiving a few hundredths of an inch of rain or less. Parts of the northern New York including the Adirondacks received up to a half inch locally. High pressure and dry weather returned to the area later Wednesday through Saturday with normal temperatures at the end of the week trending to above normal by Saturday. Blueberry picking was underway with good yields expected.

Weather Data for Week Ending Sunday, June 19, 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	84	48	66	-2	113	827	+252	0.17	-0.8	11.81	+3.09
Glens Falls	84	46	64	-2	96	678	+202	0.46	-0.29	11.08	+2.42
Poughkeepsie	83	48	66	-2	116	882	+257	1.30	+0.42	12.38	+2.11
Mohawk Valley											
Boonville	78	47	60	-2	74	478	+130	0.34	-0.77	17.30	+5.29
Champlain Valley											
Plattsburgh	83	47	64	-3	99	579	+92	0.86	+0.10	16.05	+8.40
St. Lawrence Valley											
Canton	83	46	63	0	96	588	+171	0.59	-0.18	13.90	+6.00
Massena	86	45	66	+2	111	654	+201	0.28	-0.49	11.08	+3.95
Great Lakes											
Buffalo	81	50	65	-2	105	704	+167	0.15	-0.69	14.51	+6.22
Wales	77	44	61	-3	76	564	+151	0.19	-0.79	14.01	+4.00
Niagara Falls	83	48	65	-2	103	657	+102	0.08	-0.76	12.44	+4.13
Rochester	83	48	66	0	110	725	+181	0.08	-0.62	1.75	+3.52
Watertown	83	43	63	0	94	596	+183	0.32	-0.31	11.65	+4.65
Central Lakes											
Dansville	84	46	66	0	116	859	+326	0.30	-0.61	10.60	+2.46
Geneva	82	48	66	+1	111	707	+194	0.14	-0.77	11.27	+3.00
Honeoye	81	44	63	-4	93	710	+179	0.17	-0.74	11.33	+3.16
Ithaca	80	42	62	-3	86	666	+207	0.38	-0.53	14.70	+6.09
Penn Yan	82	50	65	0	110	763	+250	0.11	-0.80	9.71	+1.44
Syracuse	84	50	67	+2	119	893	+342	0.33	-0.58	12.93	+3.96
Warsaw	77	46	61	-2	77	543	+166	0.29	-0.75	15.88	+6.26
Western Plateau											
Hornell Almond Dam	80	41	62	-2	84	613	+196	0.35	-0.56	14.93	+6.94
Elmira	82	46	64	-2	97	731	+239	0.10	-0.81	12.98	+4.71
Franklinville	79	41	60	-2	75	564	+242	0.31	-0.73	17.11	+7.57
Jamestown	79	45	62	-1	86	632	+250	0.47	-0.65	16.34	+5.67
Eastern Plateau											
Binghamton	78	47	63	-2	91	679	+205	0.36	-0.48	16.78	+8.01
Cobleskill	80	49	62	-2	88	607	+174	0.63	-0.35	11.63	+2.03
Morrisville	80	47	61	-3	76	553	+148	0.29	-0.69	13.00	+3.59
Norwich	83	46	62	-2	87	634	+200	1.32	+0.34	15.86	+6.12
Oneonta											
Coastal											
Bridgehamton	81	52	65	-2	106	597	+203	1.38	+0.54	10.31	+0.19
New York	84	59	70	-2	144	991	+164	2.35	+1.51	12.34	+2.48

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, June 26, 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	84	53	69	+0	132	959	+253	2.00	+1.16	13.81	+4.25
Glens Falls	83	45	66	-1	115	793	+201	1.58	+0.88	12.66	+3.30
Poughkeepsie	84	53	70	+2	144	1026	+268	2.53	+1.69	14.91	+3.80
Mohawk Valley											
Boonville	78	47	63	-1	91	569	+130	4.02	+2.97	21.32	+8.26
Champlain Valley											
Plattsburgh	79	48	65	-3	107	686	+78	0.78	+0.08	16.83	+8.48
St. Lawrence Valley											
Canton	81	47	66	+2	113	728	+206	1.74	+0.97	14.84	+6.17
Massena	84	48	68	+3	129	783	+220	1.25	+0.48	12.33	+4.43
Great Lakes											
Buffalo	84	58	70	+3	144	848	+186	2.77	+1.94	17.28	+8.16
Wales	80	52	67	+3	120	684	+169	1.54	+0.56	15.55	+4.56
Niagara Falls	84	53	70	+3	141	798	+120	1.73	+0.96	14.17	+5.09
Rochester	83	52	69	+3	138	863	+202	1.20	+0.50	11.95	+4.02
Watertown	84	47	68	+4	129	725	+210	1.65	+1.06	13.30	+5.71
Central Lakes											
Dansville	87	54	73	+6	158	1017	+362	0.97	+0.06	11.57	+2.52
Geneva	84	50	69	+3	136	833	+200	1.02	+0.17	12.37	+3.25
Honeoye	83	51	69	+2	135	845	+189	2.46	+1.60	13.79	+4.76
Ithaca	85	47	69	+4	135	799	+231	0.52	-0.38	15.09	+5.58
Penn Yan	84	51	70	+4	143	906	+273	0.86	+0.01	10.57	+1.45
Syracuse	88	52	72	+5	153	1046	+376	2.60	+1.69	15.53	+5.65
Warsaw	79	50	66	+3	110	653	+181	1.50	+0.52	17.38	+6.78
Western Plateau											
Hornell Almond Dam	84	50	68	+4	128	732	+213	1.31	+0.42	16.19	+7.31
Elmira	85	50	70	+4	140	871	+264	0.50	-0.40	13.48	+4.31
Franklinville	82	54	67	+5	122	686	+277	2.48	+1.50	19.59	+9.07
Jamestown	82	57	69	+6	134	776	+298	2.20	+1.15	18.54	+6.82
Eastern Plateau											
Binghamton	81	52	69	+4	135	814	+228	1.73	+0.89	18.51	+8.90
Cobleskill	83	46	65	+0	108	715	+177	1.97	+0.99	13.60	+3.02
Morrisville	84	48	67	+4	121	673	+169	2.44	+1.50	15.29	+4.94
Norwich	83	46	67	+3	121	755	+218	3.19	+2.26	19.05	+8.35
Oneonta	83	46	67	+3	118	745	+256	2.56	+1.58	18.50	+7.07
Coastal											
Bridgehamton	82	54	69	+2	133	830	+213	1.55	+0.73	11.86	+0.92
New York	83	63	73	+0	162	1153	+164	0.58	-0.26	12.92	+2.22

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, July 3, 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	86	54	70	+0	144	1103	+254	0.36	-0.43	14.17	+3.82
Glens Falls	83	53	69	+2	133	926	+207	1.02	+0.33	13.68	+3.63
Poughkeepsie	85	51	71	+1	148	1174	+273	0.55	-0.35	15.46	+3.45
Mohawk Valley											
Boonville	77	51	63	-2	91	660	+120	0.46	-0.53	21.78	+7.73
Champlain Valley											
Plattsburgh	84	53	68	+0	129	815	+77	0.30	-0.40	17.13	+8.08
St. Lawrence Valley											
Canton	83	55	67	+0	118	846	+209	0.58	-0.19	15.42	+5.98
Massena	86	55	70	+3	141	924	+240	0.09	-0.64	12.42	+3.79
Great Lakes											
Buffalo	84	54	69	-2	132	980	+182	0.02	-0.73	17.30	+7.43
Wales	84	49	65	-2	104	788	+163	0.10	-0.81	16.01	+4.11
Niagara Falls	83	50	68	-2	129	927	+114	0.00	-0.71	14.17	+4.38
Rochester	87	51	69	+2	137	1000	+210	0.00	-0.67	11.95	+3.35
Watertown	85	52	68	+2	126	851	+221	0.06	-0.45	13.36	+5.26
Central Lakes											
Dansville	90	52	71	+2	146	1163	+378	0.05	-0.77	11.62	+1.75
Geneva	86	55	69	+0	132	968	+205	0.37	-0.42	12.25	+2.34
Honeoye	87	49	67	-3	119	957	+166	0.39	-0.38	14.18	+4.38
Ithaca	85	46	66	-2	111	912	+266	1.38	+0.54	16.31	+5.96
Penn Yan	87	54	70	+2	139	1045	+282	0.42	-0.37	10.99	+1.08
Syracuse	88	56	71	+3	148	1194	+395	0.25	-0.66	15.78	+4.99
Warsaw	82	52	64	-2	99	752	+176	0.35	-0.56	17.73	+6.22
Western Plateau											
Hornell Almond Dam	86	45	65	-2	106	836	+205	0.18	-0.66	16.58	+6.86
Elmira	87	43	67	-1	123	994	+261	0.01	-0.83	13.49	+3.48
Franklinville	83	44	63	-1	93	779	+274	0.07	-0.86	19.66	+8.21
Jamestown	84	48	66	+2	112	888	+304	0.02	-0.99	18.56	+5.83
Eastern Plateau											
Binghamton	82	51	67	-2	118	932	+224	0.86	+0.02	19.37	+8.92
Cobleskill	82	52	66	+0	114	828	+175	0.12	-0.80	13.72	+2.22
Morrisville	82	50	65	-1	109	782	+169	0.09	-0.81	15.38	+4.13
Norwich	84	46	65	-2	109	864	+213	1.36	+0.47	20.41	+8.85
Oneonta	83	46	66	+1	112	857	+261	0.91	-0.04	19.41	+7.03
Coastal											
Bridgehamton	83	55	72	+3	153	983	+230	0.05	-0.70	11.91	+0.22
New York	84	66	76	+2	184	1337	+176	0.03	-0.84	12.95	+1.38

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, July 10, 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	89	59	73	+3	163	1266	+267	0.84	+0.11	15.01	+3.93
Glens Falls	88	56	71	+2	146	1072	+217	0.58	-0.05	14.26	+3.58
Poughkeepsie	91	58	74	+3	167	1341	+290	1.05	+0.14	16.51	+3.59
Mohawk Valley											
Boonville	82	54	67	+2	117	777	+129	0.30	-0.61	22.08	+7.12
Champlain Valley											
Plattsburgh	89	53	71	+2	148	963	+87	0.11	-0.52	17.24	+7.56
St. Lawrence Valley											
Canton	83	54	69	+2	133	979	+219	0.49	-0.23	15.91	+5.75
Massena	89	54	71	+4	154	1078	+264	0.80	+0.10	13.22	+3.89
Great Lakes											
Buffalo	83	58	72	+2	156	1136	+194	1.03	+0.34	18.33	+7.77
Wales	83	53	68	+2	127	915	+171	0.00	-0.84	16.01	+3.27
Niagara Falls	85	57	72	+2	155	1084	+126	0.00	-0.63	14.17	+3.75
Rochester	87	56	72	+3	155	1155	+228	0.05	-0.57	12.00	+2.78
Watertown	86	54	70	+3	141	992	+237	0.15	-0.27	13.51	+4.99
Central Lakes											
Dansville	90	57	73	+4	165	1328	+405	0.09	-0.65	11.71	+1.10
Geneva	87	58	72	+3	158	1126	+225	0.00	-0.71	12.25	+1.63
Honeoye	85	53	69	-2	135	1092	+157	0.00	-0.67	14.18	+3.71
Ithaca	88	50	69	+2	136	1049	+237	0.46	-0.33	16.63	+5.49
Penn Yan	90	57	73	+4	161	1206	+305	0.01	-0.70	11.00	+0.38
Syracuse	92	59	74	+5	166	1360	+423	1.53	+0.62	17.31	+5.61
Warsaw	81	55	68	+3	128	880	+192	0.02	-0.79	17.75	+5.43
Western Plateau											
Hornell Almond Dam	86	50	68	+1	127	963	+212	0.20	-0.58	16.78	+6.28
Elmira	91	47	71	+2	145	1139	+273	0.41	-0.40	13.90	+3.08
Franklinville	84	47	67	+3	118	897	+289	0.20	-0.66	19.85	+7.54
Jamestown	83	51	68	+2	129	1013	+317	0.26	-0.67	19.41	+5.75
Eastern Plateau											
Binghamton	86	56	70	+3	143	1075	+237	0.09	-0.74	19.46	+8.18
Cobleskill	84	51	68	+2	130	958	+183	3.91	+3.07	17.63	+5.29
Morrisville	85	54	69	+4	138	920	+191	0.31	-0.53	15.69	+3.60
Norwich	87	51	69	+2	131	995	+222	2.00	+1.17	22.41	+10.02
Oneonta	87	50	68	+2	126	983	+272	1.63	+0.72	21.04	+7.75
Coastal											
Bridgehamton	87	59	75	+6	180	1163	+266	1.92	+1.22	13.83	+1.44
New York	90	68	79	+4	205	1542	+201	0.74	-0.17	13.69	+1.21

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, July 17, 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	91	56	75	+4	177	1443	+290	0.12	-0.58	15.13	+3.35
Glens Falls	90	51	72	+2	152	1224	+229	0.05	-0.58	14.31	+3.00
Poughkeepsie	92	57	75	+3	177	1518	+312	0.01	-0.90	16.52	+2.69
Mohawk Valley											
Boonville	85	52	68	+3	128	905	+145	0.17	-0.71	22.25	+6.41
Champlain Valley											
Plattsburgh	89	53	71	+1	148	111	+94	0.45	-0.19	17.69	+7.37
St. Lawrence Valley											
Canton	87	51	71	+3	147	1145	+257	0.50	-0.24	16.74	+5.84
Massena	91	51	73	+4	162	1240	+291	0.52	-0.18	13.74	+3.71
Great Lakes											
Buffalo	89	57	74	+4	169	1305	+216	0.00	-0.63	18.33	7.14
Wales	88	50	71	+3	146	1061	+193	0.00	-0.78	16.01	+2.49
Niagara Falls	89	52	74	+3	168	1250	+147	0.00	-0.62	14.17	+3.13
Rochester	94	53	74	+5	172	1327	+258	0.00	-0.56	12.00	+2.22
Watertown	90	50	72	+4	157	1149	+262	0.28	-0.12	13.79	+4.87
Central Lakes											
Dansville	92	53	75	+5	174	1502	+438	0.00	-0.69	11.71	+0.41
Geneva	91	53	73	+3	165	1291	+247	0.01	-0.64	12.26	+0.99
Honeoye	91	45	71	-1	147	1239	+155	0.01	-0.62	14.19	+3.09
Ithaca	89	49	71	+3	149	1197	+253	0.02	-0.75	16.47	+4.56
Penn Yan	92	54	75	+5	173	1379	+335	0.00	-0.65	11.00	-0.27
Syracuse	93	57	75	+6	180	1540	+460	0.01	-0.84	17.32	+4.77
Warsaw	86	53	71	+4	145	1025	+220	0.00	-0.77	17.75	+4.66
Western Plateau											
Hornell Almond Dam	91	49	70	+3	142	1105	+228	0.00	-0.73	16.78	+5.55
Elmira	93	48	73	+3	159	1298	+292	0.00	-0.77	13.90	+2.31
Franklinville	87	46	68	+4	132	1029	+316	0.00	-0.81	19.85	+6.73
Jamestown	88	52	71	+5	149	1162	+347	0.00	-0.91	19.41	+4.84
Eastern Plateau											
Binghamton	87	56	73	+4	162	1237	+266	0.02	-0.75	19.48	+7.43
Cobleskill	85	52	70	+3	145	1103	+202	0.00	-0.77	17.63	+4.52
Morrisville	86	54	71	+4	149	1068	+218	0.05	-0.75	15.74	+2.85
Norwich	88	51	69	+2	136	1133	+234	0.00	-0.77	22.26	+9.10
Oneonta	88	51	69	+3	138	1121	+291	0.00	-0.91	21.04	+6.84
Coastal											
Bridgehamton	89	61	75	+4	178	1341	+292	0.00	-0.66	13.83	+0.78
New York	92	66	80	+4	211	1753	+227	0.00	-0.93	13.69	+0.28

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

Helping People and Plants Beat the Heat (continued from page 1)

tive humidity, fruit will lose water 35 times faster than it would at 32°F and 90% relative humidity. Prompt cooling, and maintenance of proper temperatures and humidity, is essential to preserving fruit quality. Growers (and customers) should take advantage of night cooling by harvesting fruit as early in the morning as possible. Harvested fruit should not be left in the sun but should be moved to a shaded area or cooler immediately.

Provide a Free Informational List of Instructions to Customers on how to Maintain Berry Quality:

⇒ Harvest berries during early morning or evening when temperatures are cooler for best results. Do not harvest fruit during the heat of the day.

⇒ Do not allow berries to sit in the car or in the sun. Refrigerate them as soon as you get them home. To keep berries freshest keep your refrigerator set between 34 and 38°F.

⇒ Check the berry containers for berries that were bruised or damaged en route from the farm and use these berries first.

⇒ Keep berries as dry as possible by storing them in a sealed container in the refrigerator. Exposure to moisture will make them decay more quickly.

⇒ Eat berries quickly after purchasing them to enjoy the best taste. Consume strawberries within 2 to 5 days, raspberries within 1 to 2 days, blackberries within 1 to 3 days and blueberries within 5 to 7 days to enjoy them while they are most fresh.

⇒ Wash berries just before you're ready to eat them (and not before), by rinsing them gently with cool water. Do not remove the green, leafy caps and stems from strawberries until ready to eat. Rinse strawberries with the green caps still intact. This prevents the fruit from absorbing water while washing. After they are rinsed, gently pat berries dry or drain in a colander.

⇒ Freeze rinsed and drained berries in a single layer on a cookie sheet or tray, then transfer them to bags or containers once they are frozen for later use.

Invest in a Produce Cooler to Maintain Quality of Harvested Berries for Retail Marketing

The cooling process for berries should occur in two stages. Simply setting harvested berries in a cold room is not adequate because the field heat is not removed fast enough. Rapid movement of cold, humid air through the berries is essential during the first few hours after harvest. Brokers contend that for every hour delay in cooling, shelf life is reduced by one day.

Large growers may have a separate pre-cooling facility specifically designed for removing the field heat, but inexpensive, effective improvisations can be adapted for any cold storage. If a grower only has a walk-in cooler, recently picked flats of berries can be set into a cardboard box that is opened at both ends. A household fan is then placed at one end of the box to draw air through the flats. Once the berries are cool, flats are removed from the cardboard and wrapped in plastic. The plastic will reduce water loss during storage, and prevent condensation on the berries when flats are removed from the cooler. The plastic should not be removed until the temperature of the berries warms to near the temperature of the display. Condensation will then form only on the outside of the plastic, while the berries inside will remain dry. The selection of a cooling unit is very important when designing a cooler. If the temperature difference between the air and the cooling unit is large, then the condensers will accumulate ice from moisture in the air. This drying of the air would not cause a problem for dry goods, but will severely dehydrate fruit. The atmosphere around the fruit should be humid to prevent shrinkage, so a cooler should be selected which can maintain a relative humidity of 90-95% at 32°F.

The storage room itself can be maintained as low as 30°F. Berries will not freeze at or above this temperature because the sugars in the fruit depress the freezing point. One may want to maintain the storage at a slightly warmer temperature (32°F) to allow some room for error.

Plans for Do-It-Yourself Coolers:

DYI Forced Air Produce Cooler (Virginia Tech Cooperative Extension)
http://pubs.ext.vt.edu/442/442-060/442-060.html

Low-Cost Cold Storage Room for Market Growers (University of Kentucky Cooperative Extension)
http://www.ca.uky.edu/agc/pubs/aen/aen96/aen96.pdf

Materials List and Cost for Low Cost Cold Storage Room (University of Kentucky Cooperative Extension)
http://www.bae.uky.edu/ext/Specialty_Crops/PDFs/Material_and_Price_List_for_Low-Cost_Cold_Storage_Room_for_Market_Growers.pdf

Protecting Plants from Drought and Heat Stress

Why Irrigate?

A consistent source of soil moisture through rainfall and/or irrigation is essential to maintain good plant growth and development.

Helping People and Plants Beat the Heat *(continued)*

Total rainfall statistics in many regions cause growers to assume irrigation of small fruit crops to be unnecessary. However, rainfall distribution is typically uneven, with long dry periods (such as we are experiencing now) occurring periodically during warm summer months. These months are also the months when plants lose the most water through evapotranspiration.

In the Northeast region, an average period of 5 days occurs between significant rainfall events. In 1 out of every 2 years, a 10 to 15-day period without rainfall is likely. Just one water application during these periods could provide significant yield benefits. This is especially true if these events fall during the bloom - fruit set – berry enlargement period. The increase in berry size from fruit set through ripening is due to an increase in cell size, rather than cell division. This increase, called cell expansion, is highly dependent on water availability. Periods of 20 to 30 days without significant rainfall may occur 2 or 3 times every 20 years somewhere in the Northeast. A drought lasting this long during the peak growing season would cause catastrophic yield losses without irrigation.

Overhead (Sprinkler), Trickle, Both?

Both systems have different uses; both have advantages and disadvantages. Trickle irrigation is used exclusively for irrigation/fertigation/chemigation. Sprinkler irrigation is used for the same, but may also be used for frost/freeze protection and evaporative cooling during periods of heat stress. That said trickle irrigation systems have significant advantages as compared to overhead irrigation systems:

Irrigation Factor	Trickle as compared to Overhead (Sprinkler)
Water storage capacity	Trickle irrigation requires about ½ the water needed by overhead. Water is used more efficiently as it is applied only to the root zone.
Pump and pipe network	Trickle requires lower flow rates and operating pressures, so less energy is required for pumping. Smaller pumps and pipes are required.
Water use efficiency	Plants are supplied with the water they need, not an excessive amount.
Disease/weed management	Diseases that develop when free water is on the leaf and fruit surfaces do not develop with trickle irrigation, since water is applied directly to the root zone. Weeds are less problematic between rows or in non-irrigated areas. However, weeds can occur at the emitters.
Labor/automation	Trickle irrigation generally requires less labor (particularly when compared to portable overhead pipe, which needs to be moved periodically) and can be extensively automated.
Wind	Water can be applied efficiently under windy conditions
Fertilizer	Trickle requires less fertilizer, since fertilizer is distributed only near plant roots.
Rodents/insect/people damage	Though trickle systems may be eaten/damaged by rodents and insects and damage by routine field operations they are relatively easy to repair.

(Source: Bushway, Pritts and Handley, 2008. Blackberry and Raspberry Production Guide)

Resources:

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Burt, C.M. and Styles, S.W. 2009. Drip and Micro Irrigation Design and Management for Trees, Vines and Field crops Practice plus Theory, 4th ed. Irrigation Training and Research Center, California Polytechnic State University, San Luis Obispo, CA. 396 pp.

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New York Berry News is a monthly commercial berry production newsletter provided by Cornell Berry Team members.

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USDA News

(continued from page 3)

dent Obama's Administration has taken significant steps to improve the lives of rural Americans and has provided broad support for rural communities. The Obama Administration has set goals of modernizing infrastructure by providing broadband access to 10 million Americans, expanding educational opportunities for students in rural areas, and providing affordable health care. In the long term, these unparalleled rural investments will help ensure that America's rural communities are repopulating, self-sustaining, and thriving economically.

USDA, through its Rural Development mission area, administers and manages housing, business and community infrastructure and facility programs through a national network of state and local offices. Rural Development has an existing portfolio of more than $150 billion in loans and loan guarantees. These programs are designed to improve the economic stability of rural communities, businesses, residents, farmers and ranchers and improve the quality of life in rural America.

Visit http://www.rurdev.usda.gov for additional information about the agency's programs or to locate the USDA Rural Development office nearest you.