New York Berry News

CORNELL UNIVERSITY

Volume 09, Number 6 June 10, 2010

What's Inside

CURRANT EVENTS

~~**June 17, 2010.** *NYSAES Strawberry Field Day*, Geneva, NY.~~ **CANCELLED**

July 28-29, 2010. *2010 Cornell Fruit Field Day*, Geneva, NY. Berry and Grape programs Wednesday, July 28th. Details and registration information follow below.

December 7-9, 2010. *Great Lakes Fruit Vegetable and Farm Market EXPO*, DeVos Place Convention Center, Grand Rapids, Michigan. For more information: http://www.glexpo.com.

June 22-26, 2011. *10th International Rubus and Ribes Symposium, Zlatibor, Serbia*. For more information contact: Prof. Dr. Mihailo Nikolic, Faculty of Agriculture, University of Belgr, Belgrade, Serbia. Phone: (381)63 801 99 23. Or contact Brankica Tanovic, Pesticide & Environment Research Inst., Belgrade, Serbia. Phone: (381) 11-31-61-773.

CORNELL STRAWBERRY FIELD DAY CANCELLED

Cornell University's New York State Agricultural Experiment Station Strawberry Field Day, previously scheduled for Thursday, June 17, 2010 at the Darrow Farm outside Geneva, has been cancelled. Dr. Courtney Weber, Cornell small fruits breeder and meeting host informed us that after assessing the strawberry plots after the last freeze event in Geneva, he has decided to cancel the field day. Bloom was well advanced across the planting during the early May frosts and most varieties had severe injury so there is not adequate fruit to have a field day. Dr. Weber plans on a strawberry field day in 2011.

CORNELL FRUIT FIELD DAYS TO BE HELD JULY 28-29

GENEVA, NY: Cornell University will host the 2010 Fruit Field Days at the New York State Agricultural Experiment Station in Geneva, NY, on Wednesday and Thursday, July 28 & 29, from 8:00 a.m. to 5:00 p.m. each day. Grapes and berry fruits will be the focus on July 28, and tree fruits will be addressed on July 29.

Fruit growers, consultants, and industry personnel are invited to tour field plots and learn about the latest research and extension efforts being carried out by researchers on the Geneva and Ithaca campuses, and on commercial farms elsewhere in the state. The focus will be on all commodities key to New York's $300 million fruit industry: apples, grapes, cherries, raspberries, strawberries, blueberries and other berry crops.

During lunch, equipment dealers and representatives from various companies will showcase their latest products and technologies to improve fruit crop production and protection.

The event will be held on the Experiment Station's Fruit and Vegetable Research Farm South, 1097 County Road No. 4, one mile west of Pre-emption Rd. in Geneva, NY. Signs will be posted. Attendees will be brought to the different research plots by bus to hear presentations by researchers on the work being conducted. The cost of registration is $15 per person for single-day attendance and $25 for both days; lunch will be provided each day.

Pre-registration is required, and can be done either online (via credit card) or by mailing in a check plus the registration form, available on the NYSAES home page under "Events" (http://www.nysaes.cornell.edu/), on the Cornell Fruit web page under "News and Events" (http://www.fruit.cornell.edu/), and through Cornell Cooperative Extension regional fruit program newsletters. More program information and the online pre-registration site are posted on the above web pages.

For sponsorship and exhibitor information, contact Debbie Breth at 585-798-4265 or dib1@cornell.edu.

KATHRYN BOOR NAMED DEAN OF AGRICULTURE AND LIFE SCIENCES

May 20, 2010. Kathryn J. Boor, professor and chair of the Department of Food Science at Cornell, has been named the Ronald P. Lynch Dean of Agriculture and Life Sciences, Cornell Provost Kent Fuchs announced today. She will begin her five-year term as dean of the College of Agriculture and Life Sciences (CALS) July 1.

"Kathryn Boor's history of scholarship and leadership in the College of Agriculture and Life Sciences and her strong affinity for the broad range of educational, research and outreach activities within her college make her an excellent choice for dean," said Cornell President David Skorton.

"Kathryn is a leader who can bridge the diverse intellectual streams within CALS, as well as relate to all the constituents of the college," said Fuchs. "She is genuinely focused on the role of the academy in serving the public interest."

Cornell, as New York's land-grant university, is unique in pursuing its land-grant mission within an Ivy League setting. CALS is known globally for its educational, research and extension programs and for developing the knowledge, technology and human capacity to address some of the most challenging issues facing society in the areas of the environment, food and energy systems, and community and economic development.

"I am deeply honored to have been selected as dean for the College of Agriculture and Life Sciences at this challenging and exciting time in the history of our university," said Boor. "I look forward to working closely with President Skorton, Provost Fuchs, the deans and CALS faculty to promote excellence in teaching, research and outreach at Cornell in 2015 and beyond."

As the chief academic and administrative officer for CALS, Boor will have the primary responsibility for developing and implementing the strategic direction of the college, which has about 370 faculty, 500 non-professorial academics, 140 postdoctoral associates, 1,300 staff and more than 3,300 undergraduate and 900 graduate students. In addition, she will share responsibility for leadership and advancement of Cornell Cooperative Extension throughout New York State with the dean of Cornell's College of Human Ecology. As dean, she will report to the provost and be a member Cornell's senior administration team, working closely with other deans and executive officers on behalf of the university.

Boor earned her B.S. in food science from Cornell (1980), her M.S. in food science from the University of Wisconsin (1983) and her Ph.D. in microbiology (1994) from University of California-Davis. She joined Cornell in 1994 and promptly established the Food Safety Laboratory. She is the director of Cornell's Milk Quality Improvement Program and serves as the secretary and scientific adviser of the New York State Cheese Manufacturers' Association. She also is a past president of the New York State Association for Food Protection and a member of the editorial boards of the Journal of Food Protection and Applied and Environmental Microbiology.

Her research focuses on identifying and characterizing mechanisms that allow pathogenic and spoilage organisms to persist in foods and cause disease in humans. Her research accomplishments in tracking bacterial contaminants in food processing systems also have been used to generate focused educational opportunities for the dairy industry.

Fuchs also recognized outgoing dean Susan Henry, who will step down June 30, for the positive impact her strong leadership of CALS has had on the university. "Susan has been an extraordinarily effective dean during her decade of service at Cornell," Fuchs said.

USDA ANNOUNCES INITIATIVE TO IMPROVE AG ENERGY CONSERVATION AND EFFICIENCY

Individual Energy Audits will Help Producers Reduce Energy Use

Washington, April 22, 2010 - Agriculture Secretary Tom Vilsack today announced an initiative designed to help agricultural producers transition to more energy efficient operations. This initiative will make funding available for individual on-farm energy audits designed to save both money and energy when fully implemented.

"Reducing energy use on America's farms and ranches will not only help our agricultural producers become more profitable, but also help the United States become more energy independent," said Vilsack. "Through this initiative, producers will be able to receive individual on-farm energy audit evaluations and assistance with implementation of energy conservation and efficiency measures."

Approximately 1,000 on-farm energy audit evaluations in 29 states will be funded by $2 million through the Environmental Quality Incentives Program (EQIP) in fiscal year 2010. The energy audits will be individually tailored to ensure coverage of each farm's primary energy uses such as milk cooling, irrigation pumping, heating and cooling of livestock production facilities, manure collection and transfer, grain drying, and similar common on-farm activities.

Participating states include: Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Florida, Georgia, Idaho, Louisiana, Maine, Maryland, Massachusetts, Mississippi, Nevada, New Hampshire, New Mexico, New York, Oklahoma, Pennsylvania, Rhode Island, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, West Virginia, and Wisconsin.

Implementation will occur in stages beginning with the short-term immediate goal of providing the on-farm energy audits to help identify how the operations can become more energy efficient. Longer term goals will involve development of agricultural energy management plans for cost effective implementation of the recommendations provided in their on-farm energy audits. More information about agricultural energy management plans is available at: www.nrcs.usda.gov/programs/eqip/cap.html.

The 2008 Farm Bill provides authority to use EQIP financial assistance funds for payment of practices and conservation activities involving the development of an Agricultural Energy Management Plan (AgEMP) appropriate for the eligible land of a program participant. The Farm Bill statute allows EQIP payments for up to 75 percent of the estimated incurred cost of practice implementation for the development of an AgEMP meeting agency standards and requirements. Eligible producers in the above listed states may apply for the AgEMP through application at their local NRCS office. EQIP payments are made directly to program participants for development of an AgEMP by a certified Technical Service Provider (TSP) http://techreg.usda.gov/CustLocateTSP.aspx.

Information about how to apply for an AgEMP is available at www.nrcs.usda.gov/programs/eqip/EQIP_signup/2009_signup/index.html. Click on the State where the property that you are interested in obtaining an EQIP AgEMP is located. Dairy, beef, poultry, swine, and other agricultural operations are included in this energy efficiency initiative. USDA's Natural Resources Conservation Service, in partnership with USDA Rural Development, will implement the agricultural energy conservation and efficiency initiative.

For information about other NRCS conservation programs, online visit: www.nrcs.usda.gov, or visit the nearest USDA Service Center in your area. This year represents the 75th year of NRCS "helping people help the land." Since its inception the NRCS conservation delivery system has advanced a unique partnership with state and local governments and private landowners delivering conservation based on specific, local conservation needs, while accommodating state and national interests.

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SURVEY REPORTS LATEST HONEY BEE LOSSES

Kim Kaplan ARS News Service, Agricultural Research Service, USDA (301) 504-1637, kim.kaplan@ars.usda.gov –

April 29, 2010. Losses of managed honey bee colonies nationwide totaled 33.8 percent from all causes from October 2009 to April 2010, according to a survey conducted by the Apiary Inspectors of America (AIA) and the Agricultural Research Service (ARS). Beekeepers identified starvation, poor weather, and weak colonies going into winter as the top reasons for mortality in their operations.

This is an increase from overall losses of 29 percent reported from a similar survey covering the winter of 2008-2009, and similar to the 35.8 percent losses for the winter of 2007-2008.

The continued high rate of losses are worrying, especially considering losses occurring over the summer months were not being captured, notes Jeffrey Pettis, research leader of ARS' Bee Research Laboratory in Beltsville, Md. ARS is the U.S. Department of Agriculture's principal intramural scientific research agency. The survey was conducted by Pettis and past AIA presidents Dennis vanEngelsdorp and Jerry Hayes. The three researchers said that continued losses of this magnitude are not economically sustainable for commercial beekeepers. *Right*: A honey bee on broccoli, one of the many crops that benefit from honey bee pollination. *(Photo courtesy of Russ Ottens, University of Georgia).*

The 28 percent of beekeeping operations that reported some of their colonies perished without dead bees present--a sign of Colony Collapse Disorder (CCD)--lost 44 percent of their colonies. This compares to 26 percent of beekeepers reporting such dead colonies in the 2008-2009 winter and 32 percent in the 2007-2008 winter. Beekeepers that did not report their colonies having CCD lost 25 percent of their colonies.

As this was an interview-based survey, it was not possible to differentiate between verifiable cases of CCD and colonies lost as the result of other causes that share the "absence of dead bees" as a symptom. The cause of CCD is still unknown.

The survey checked on about 22.4 percent of the country's estimated 2.46 million colonies. The survey reports only winter losses and does not capture colony losses that occur throughout the summer when queens or entire colonies fail and need to be replaced. Those summer losses can be significant.

A complete analysis of the survey data will be published later this year. The abstract can be found at http://ento.psu.edu/pollinators/news/losses-2009-10.. More information about CCD can be found at www.ars.usda.gov/ccd.

FUNDING OPPORTUNITIES

Energy Audits and Renewable Energy Development Assistance Grants
The USDA's energy audits and renewable energy development assistance program is designed to help agricultural producers and rural small businesses reduce energy costs and consumption and help meet the nation's critical energy needs. The 2008 farm bill mandates that the recipient of a grant that conducts an energy audit for an agricultural producer or a rural small business require the agricultural producer or rural small business to pay at least 25 percent of the cost of the energy audit, which shall be retained by the eligible entity for the cost of the audit. **Proposals are due July 26, 2010.**

BARRIERS TO BEGINNING FARMER SUCCESS SURVEY

Erica Frenay, Cornell University and Dave Grusenmeyer, NY Farm Viability Institute

Starting a farm is difficult, and succeeding beyond the first few years may be even more so. According to a USDA definition, farmers are considered "beginners" until they have been in operation for 10 years. Many new farmers don't make it to that point. The focus of this survey is to identify how agencies, organizations and policy makers can best help farmers thrive beyond the start-up phase. What resources should be created, educational opportunities developed, resources made available, or policies changed that will help beginning farmers be successful? Your experience and input is essential to getting it right. Think about new farmers who are established in business and now may be looking to grow, diversify or expand. What are their highest priority research, education, service, policy or resource needs? As a beginning farmer, or if you are beyond the "beginning" stage remembering back, think about the items that appear in this survey in terms of what needs, concerns, or knowledge gaps you have identified or experienced. If you represent a beginning farmer service provider organization, think about farmer needs in terms of the support and services you or your organization provides, as well as farmer needs more broadly. Think about new farmers across the full gamut of small to large farms; organic and conventional farms; recently established farms and long-established farmers looking to diversify; farms in rural areas and farms in or near urban areas.

Completing the survey will take approximately 20 minutes. Again, we greatly appreciate your willingness to help identify key issues and concerns on behalf of the Northeast's beginning farmer population. The survey can be accessed at www.surveymonkey.com/s/BarrierID and easily completed online.

Should you have any questions, please feel free to contact Erica Frenay at 607-255-9911 or ejf5@cornell.edu; or Dave Grusenmeyer at 315-453-3823 or dgrusenmeyer@nyfvi.org.

PRODUCE SAFETY NEWS

Open Docket for FDA Produce Safety Rule Extended.

Betsy Bihn, GAPs Program Coordinator, Cornell University, Department of Food Science, Ithaca, NY 14853

The Food and Drug Administration (FDA) is extending to **July 23, 2010,** the comment period for a notice that appeared in the Federal Register of February 23, 2010. In that notice, FDA established a docket (FDA-2010-N-0085) to receive comments and

information about current practices and conditions for the production and packing of fresh produce. The Agency is extending this comment period to give all interested parties additional time to provide the information requested by FDA in that notice. Comments will inform the development of safety standards for fresh produce at the farm and packing house and strategies and cooperative efforts to ensure compliance. The Agency will use all comments and perspectives to develop a proposed rule on safety standards for fresh produce.

Many comments have already come in -- but there's still time to make your voice heard and to share with FDA your views and specific recommendations in categories such as:

--The role of the Good Agricultural Practice (GAP) guidelines, "Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables"

--How to coordinate produce food safety practices with:

- sustainable and/or organic production methods
- environmental and/or conservation goals or practices
- existing Federal, state, local and tribal government statutes and regulations

At the website below you can submit comments and view comments submitted by others. I have been told you can submit comments anonymously if you have concerns about your privacy. Please do comment. Now is the time to participate and have a voice in the development of this rule.

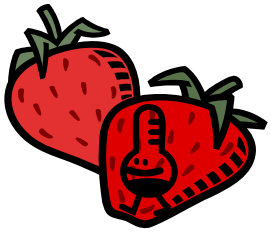
"Preventive Controls for Fresh Produce: Request for Comments"

- Proposed rule, reflecting all comments, expected before the end of 2010.
- Go to www.regulations.gov
- Enter the docket number in the "Keyword" field: FDA-2010-N-0085
- This takes you to the docket, *Preventive Controls for Fresh Produce: Request for Comments*
- You can type comments directly in the field and/or attach documents in support of your comments.
- Press submit.

JUNE BERRY BAROMETER

HELPING TO KEEP YOU UP TO THE MARK!

Cathy Heidenreich, NY Berry Extension Support Specialist, Department of Horticulture, Cornell CALS, Ithaca, NY 14853



Three weeks with daily highs in the mid to upper 80's followed our Mother's Day snow storm and ensuing frosts. The weather has been very hot and dry with below normal rainfall. That all changed early this week with some areas receiving 1 to 3 inches late last week and early this week. Buffalo topped the charts with a total of 4.83 inches. It appears now we are coming back to somewhat normal temperatures with predictions of breaks of clouds and sun, and slight possibilities of rain.

ALL BERRY CROPS:

1. **Fertilization –** Hopefully you have completed those split applications for established blueberries, currants, gooseberries, and raspberries.
2. **Weed management** – Hand-weeding or spot applications to control weeds. Get out that wick wiper, flame thrower, 2-gallon garden sprayer and walk those plantings- spot treatments now can prevent major problems later!
3. **Pest management** –After those torrential downpours fruit rots may be an issue. Be sure to re-apply if you had an instance of more than 1.5 to 2 inches of rain last week. Check preharvest intervals and REI's for any materials to be applied as harvest is right around the corner. Need help in identifying the culprits? Try out the newly updated berry diagnostic tool (http://www.fruit.cornell.edu/berrytool/ Need help with solutions? Check out the berry pest management guidelines for control strategies (http://ipmguidelines.org/BerryCrops/).
4. **Irrigation** – With last week's deluge we are somewhat back to normal after that 3 week dry spell. Keep water on berry crops as needed during fruit development and harvest. Strawberries and blueberries typically need 1-2 inches of water per week either in the form of rain or irrigation.
5. **Harvest/Post Harvest** – See articles in this issue by Craig Kahlke for more on this important topic. Getting ready now can save headaches later. Are all of the aisles easily accessible to equipment and/or customers? Scheduled delivery for portajohns and handwashing units yet? Sufficient harvest supplies on hand? Directional/informational signs in place? Temporary labor trained and ready to go?

STRAWBERRIES:

Established plantings:

1. **Diseases** – After the hot weather we experienced both anthracnose and gray mold may be an issue. See the article by Dr. Kerik Cox in this issue for more on anthracnose management. Gray mold is also a concern preharvest and harvest. Switch, Cabrio, Pristine, and others have a 0 DTH and 12 hr REI.
2. **Insects –**Reports of sap beetle activity are coming in. These insects chew small holes in ripening fruit, similar to slug injury. The beetles are about 1/8 inch long and dark brown in color. They are usually found in the holes they've chewed into ripe fruit, but they often drop to the ground when disturbed. The best management strategy for sap beetles is good sanitation. Keep the field free of overripe fruit by picking them thoroughly and regularly. Products labeled for sap beetle management include Brigade with 0 DTH interval and a 12 hour REI; Assail with 1 DTH and REI of 12 hours and Danitol with 2 DTH and a 24 hour REI.
3. **Slugs and Snails –** Moist conditions and mulch encourage the presence of slugs. Slugs usually feed at night. Evidence of slug and snail activity includes large holes and tunnels in ripening fruit and shiny slime trails on leaves. Options for slug management may be found in the berry pest management guidelines. Sluggo (iron phosphate), one of the products listed, is an OMRI approved product labeled for organic use. Slugs overwinter in the egg stage. If you have slug problems this season, plan to apply baits to fields in mid-September to reduce egg-laying.
4. **Harvest/Post harvest** – Got your market lined up? Your pickers? Plenty of harvest-related supplies in stock? Cold room fired up and ready to go?

New plantings:

1. **Plant establishment** – More of the same…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.

BLUEBERRIES:

Established plantings:

1. **Diseases** – If you had mummyberry shoot strikes, blossom and green fruit protection is a must. Anthracnose is the other fruit rot worry for blueberries, especially coming out of a period of warm temperatures and abundant rainfall. See the berry guidelines for more details and management strategies.
2. **Insects** – Insects of concern for the petal fall/post bloom period include fruitworms, leafrollers, Blueberry tip borer, and Plum curculio. Blueberry maggot is a concern as fruit begins to turn blue.
3. **Bird management** – Be sure to get your bird management tactics in place before fruit starts to ripen. Use more than one tactic at a time and change them up frequently to keep birds off guard.

New plantings:

1. **Plant establishment** – Continue to remove emerging flower buds by rubbing them off between the palms of the hands to promote good plant growth and establishment.
2. **Critter Patrol** – Watch for deer browse on new plants. Take immediate steps to deter feeding. For more information check out: "Managing Rabbit and Deer Damage in Blueberry Fields".

RASPBERRIES AND BLACKBERRIES:

Established plantings:

1. **Pollination –** Honey bee colonies are usually not needed for brambles as the flowers produced large quantities of nectar, attracting both wild and domesticated bees.
2. **Diseases** – Red and purple raspberries are most susceptible to this disease. Remember the first gray mold spray should go on at 5-10% bloom followed by a second at full bloom. If conditions persist for disease development subsequent applications should follow at 10-14 day intervals. Fungicide options include Cabrio, CaptEvate, Elevate, Pristine, Rovral, or Switch. Do not make more than 2 sequential sprays of any of these materials. Be sure to check PHI restrictions, REI's and maximum allowed rates per season. Hot humid weather may bring out powdery mildew on brambles. Watch undersides of leaves, flower buds, and developing fruit for white powdery mycelium (fungal growth).
3. **Insects –** Insects of concern during late pre-bloom to bloom include Raspberry fruitworm, Raspberry sawfly, Tarnished Plant Bug and Japanese Beetle. Pyrethrins and Sevin have activity against all 4 pests.
4. **Irrigation** – Did you know a raspberry plant in summer can use up to ¼" of water per day? Available moisture can be depleted in just a few days after a heavy rainfall. Brambles need a continuous (*but not excessive*) supply of water throughout the growing season – about 1-2" per week.

New plantings:

1. **Plant establishment** – Avoid cultivation or herbicides until plants are well-established. Apply a dilute liquid fertilizer once new growth appears.
2. **Irrigation** - same as for established plantings.

CURRANTS AND GOOSEBERRIES:

New and Established plantings

1. **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.
2. **Insects –** Preharvest insects of concern include Gooseberry Fruitworm, Currant Borer, Imported Currant Worm, Japanese Beetles, and Two-Spotted Spider Mites.
3. **Irrigation** - Ribes require less water than many other small fruit crops – about ½ -1" per week. On drought-susceptible soils more irrigation may be needed.

ANTHRACNOSE: A POTENTIAL CONCERN FOR STRAWBERRIES AND BLUEBERRIES THIS SEASON

Kerik Cox, Assistant Professor, Department of Plant Pathology and Plant-Microbe Biology, Cornell University's NY State Agricultural Experiment Station, Geneva, NY 14456.

With all of the early season heat and heavy rains last weekend, growers approaching harvest in the southern part of the state could be at risk for anthracnose infections in both strawberries and blueberries. Even if your operation isn't at harvest, anthracnose can still infect green fruit in both blueberries and strawberries resulting in unforeseen losses at harvest. Being proactive about anthracnose infections pre-harvest could help you avoid additional losses associated with anthracnose at harvest.

Strawberries: Anthracnose can manifest itself on strawberries in several forms including crown rots, fruit rots, and leaf spots. Of the species of *Colletotrichum* that attack strawberry, only *C. acutatum* is known to be prevalent in the Northeast, and it is not one of the species that causes crown rots. *C. acutatum* blights leaves, petioles, runners, flowers, and most importantly, rots the fruit. Lesions on petioles, stems, and runners start as small dark spots that elongate, coalesce, become sunken, and finally girdle the tissue. If runners become girdled, daughter plants may also wilt and die. Leaf infection for *C. acutatum* typically begins at margins, and then develops into large sunken brownish black spots. On fruit, green or red **(A, B)**, lesions will start as slightly depressed water-soaked spots that become sunken, larger (>3mm), brown, and finally black. Interestingly, *C. acutatum* needs copious amounts of free moisture and can drain water right out of the fruit, which causes them to become hard and shriveled. The primary sign of this pathogen is the salmon to orange colored ooze (spore masses) **(B)** that typically form in fruit lesions, but can potentially appear in any plant lesion.

Blueberries: Anthracnose on blueberries is also caused by *C. acutatum*. On blueberries, *C. acutatum* may infect flowers, fruit, bud scales, and even blight young shoot tissue if conditions are favorable. Although shoot and bud blights can be quite devastating to blueberry operations, anthracnose fruit rot is the most commonly encountered form of the disease in NY production operations.

Infection occurs when spores, produced on infected fruit spurs and buds, are dispersed by rain to flowers and developing green fruit. Infection is highly dependent on the availability of free water and may occur at sub optimal temperatures (< 75 °F) if the period of surface wetting is long enough (> 8 hours). Infected flowers can be blighted when inoculum levels are high and the wetting period is long enough. However, blossom and green fruit infections often remain latent until fruit ripening when sugar content is highest. Flowers and fruit with latent infections will appear symptomless, but will begin to rot and become shriveled as the pathogen resumes colonization during ripening **(C)**. If there is enough free moisture or high relative humidity, orange to salmon-colored spore masses will be produced over the surface of the fruit **(D)**. The spore masses are composed of countless numbers of spores, which are capable of infecting neighboring berries during rains at harvest and during the sorting and packing process post-harvest.

Managing Anthracnose: The battle against anthracnose in both strawberries and blueberries is best won by attacking on several fronts. Consider each of the following topics before planning your strategy for anthracnose management.

1. *Resistance*: Resistance to *C. acutatum* does exist in strawberries and blueberries and some cultivars are reported to differ in susceptibility to anthracnose **(Table 1.)**. Unfortunately, some of the most widely planted blueberry and strawberry cultivars are susceptible to anthracnose fruit rot.

Table 1. Varietal susceptibility to anthracnose in strawberries and blueberries

Strawberry		
Cultivar	**Susceptibility**	**Season**
Honeoye	Extremely Susceptible	Early Season
Earliglow	Moderately Susceptible	Early Season
Kent	Extremely Susceptible	Middle Season
Allstar	Extremely Susceptible	Late Season
Tribute	Extremely Susceptible	Day Neutral
Seascape	Resistant	Day Neutral

Blueberry		
Cultivar	**Susceptibility**	
Bluecrop	Susceptible	N/A
Blueray	Susceptible	N/A
Earliblue	Susceptible	N/A
Patriot	Susceptible	N/A
Toro	Susceptible	N/A
Bluetta	Susceptible	N/A
Duke	Resistant	N/A
Elliot	Resistant	N/A

2. *Slowing the spread of secondary infections:* The spores of the pathogen are water-dispersed, which allows the disease to spread easily with any form of moving water. Avoid overhead irrigation (which mimics rain infection events) and use drip irrigation instead. To further reduce the spread of the disease, decrease planting and canopy density to minimize contact between susceptible and infected tissues. Also, it's important to remove infected and dead plant material, as they are the sources of disease inoculum.

3. *What to spray:* Once the disease is established in a planting, even the most effective fungicide program won't completely eliminate the problem. Also, many of the recommended fungicides such as Captan 80 WDG and CaptEvate WDG are either protectants or only have moderate post-infection activity (e.g. Cabrio EG). To be on the safe side, apply all fungicides before rain events. Give fungicides at least 3-6 hours to dry on the fruit and foliage

before a rain event. Table 2 below provides several fungicide program recommendations listed in order from highest potential level of control and application cost to the lowest potential level of control and cost. Begin all programs at 10% bloom and repeat on a 14-21 day interval depending on the amount of rain occurring between applications. If you are implementing a fungicide program for mummyberry disease of blueberry there is no need to make additional applications for anthracnose fruit rot at similar application timings.

Table 2. Recommended anthracnose management programs, relative efficacy and application costs

Cost/Efficacy[a]	Program[b]
1	Pristine[c] WG (23oz./A) alternated with Switch 62.5WG (11oz/A)
2	Pristine[c] WG (23oz./A) alternated with CaptEvate WDG (11oz/A)
3	Pristine[c] WG (23oz./A) alternated with Captan 80 WDG (3.75lbs/A)
4	Captan 80 WDG (3.75lbs/A) alternated with CaptEvate WDG (11oz/A)
5	Captan 80 WDG (3.75lbs/A) alternated with Switch 62.5WG (11oz/A)
6	Captan 80 WDG (3.75lbs/A) full season

[a] Level of potential efficacy and cost in order from most potentially effective and most expensive (1) to the least (6)
[b] Begin the programs at 10% bloom and repeat on a 14-21 day interval.
[c] Abound 2.08F (6.2fl. oz./A) or Cabrio EG (14oz./A) may be substituted for Pristine WG, an identical level of efficacy may not be achieved.

STRAWBERRY HARVEST AND STORAGE/SHIPPING CONSIDERATIONS

Craig Kahlke, Area Extension Educator - Fruit Quality Management, Lake Ontario Fruit Program – Niagara County Cornell Cooperative Extension, 4487 Lake Ave., Lockport, NY 14094

Strawberry harvest will soon be underway, so now is a good time to discuss handling of the fruit associated with harvest and post-harvest activities. Strawberries are among the most perishable of all fruits, and thus it is critical that marketing channels are open before harvest starts. Strawberries are extremely susceptible to bruising, and rough handling at harvest and during any time thereafter will encourage fungal growth and decay. It is critical that personnel be trained in the careful picking and handling of fruit. In addition, fruit quality declines as the season progresses, so the highest quality fruit will be earliest in the season. With varying degrees of ripeness in single plantings, it is also extremely important that the fruit is harvested as near peak ripeness as possible.

Strawberries Destined for Direct Markets

Since most strawberry markets in the Northeast are consumed very close to the farms in which they are produced, many growers lack and may not need the cooling methods and storage facilities used by long-distance shippers such as those employed by the production areas in California and Florida. Direct market channels are ideal for many growers in the Northeast, as fruit loss is further accentuated from shipping from the farm to wholesalers, and from the wholesalers to retail markets. By bypassing wholesale shipping, fruit loss due to bruising and fungal decay can be reduced by an average of 20%. For optimum quality, it is critical that direct market fruit is harvested at or very near peak ripeness. Top quality strawberries should be fully ripe, with a uniform red color, be firm, flavorful, and show no signs of decay or disease.

Temperature is the single most important factor affecting shelf life of strawberries.

If cooling down to the recommended 32 F is an issue for growers, research shows that strawberries held at 50F storage at high humidity will benefit storage life greatly as compared to room temperature storage. In addition, strawberries at 50F tend to retain their color and glossy appearance better than berries stored at 32F. Many direct-market local growers claim approximately 90% of their strawberries are consumed the day they are harvested, thus in these cases, it is very critical that the berries be at peak ripeness. The berries are most often harvested in morning only when field heat is low, are usually then shipped out to markets on refrigerated trucks the same morning, reach the retail shelves by afternoon, and are bought and consumed within a day or two.

Strawberries Destined for Long-Distance Markets

For strawberries that are being transported beyond local markets, there are two factors that impact on maximum shelf life potential. First, the fruit will hold up better if they are harvested at the white tip stage, rather than fully ripe. Second, cooling is critical. As soon as harvest occurs, it is imperative that field heat is removed from the fruit. It is recommended that cooling is started within an hour of harvest. Ideally, 32F forced-air cooling with high humidity (90-95% RH) is recommended. Refrigeration without forced air can also be used, however, shelf-life will be shortened. Proper forced-air cooling removes field heat from fruit in around 90 minutes, while simple refrigeration without forced air can take about 9 hours. Proper ventilation around, below, and above the fruit is essential for removing field heat quickly. Covering containers with plastic prior to cooling, and not removing plastic until berries are at room temperature for several hours after reaching market shelves will prevent condensation buildup on the inside of the bag and delay fungal growth. It is estimated that for each hour delayed in cooling the fruit results in reducing shelf life of fruit by one day.

Following field heat removal, shipping on refrigerated trucks to market destinations is essential. If cold storage will be limited at market destination, as stated in the section on direct marketing, research shows 50F storage at high humidity will benefit storage life greatly as compared to room temperature storage. If all precautions are taken from harvest to cooling to storage, shelf life from harvest to market and on the consumer's table is about 10-14 days maximum for strawberries.

For growers interested in exploring the potential of longer distance markets, including more information on how to set up an inexpensive forced-air cooling system for berries and many other types of perishable produce, please contact Craig Kahlke at 585-735-5448, or email at cjk37@cornell.edu.

Acknowledgments – I wish to thank the late Jim Coulter, Marvin Pritts and Chris Watkins for their help in providing information for this article.

Resources:

1. Strawberry Production Guide for the Northeast, Midwest, and Eastern /Canada, NRAES-88. 2008 Pest Management Guidelines for Berry Crops, Cornell University, Cooperative Extension.
2. Shin, YJ, Liu, R.H., and Watkins, C.B. Temperature and relative humidity effects on quality, total ascorbic acid, phenolics and flavonoid concentrations, and antioxidant activity of strawberry. *Postharvest Biology and Technology* 45: 349-357, 2007 (Online 5/3/07).
3. USDA, ARS Agriculture Handbook Number 66, The Commercial Storage of Fruits, Vegetables, and Florist and Nursery Stocks.

ANNUAL PRE-HARVEST CHECKLIST FOR PICK-YOUR-OWN

David T. Handley, Vegetable & Small Fruit Specialist, University of Maine Cooperative Extension, Highmoor Farm, Box 179, Monmouth, Maine 04259

It's that time again! As harvest approaches, we like to remind you to take a moment and make sure that your farm is prepared to give your customers an enjoyable experience. Take our annual review below to evaluate your customer readiness.

√ Signs to the farm are neat and easy to read.

√ There is easy access to the fields and plenty of parking.

√ Someone is ready to greet customers and offer parking instructions and directions to the field.

√ Access to the field is free of hazards.

√ Transportation is provided for the elderly and disabled.

√ The rules regarding picking are clearly posted.

√ Someone is in the field to show customers where to pick and to answer questions.

√ There are plenty of picking containers available.

√ Clean restroom and hand washing facilities are available.

√ Someone is available to help customers carry fruit out of the field.

√ The checkouts are fast and efficient.

√ Beverages are available.

√ Shade and seats are available for customers wanting to rest.

√ The help are friendly and knowledgeable.

A friendly, clean, and organized atmosphere will leave a lasting impression on your customers, encouraging them to come back and to recommend your farm to their friends.

(Reprinted with permission from: Strawberry IPM Newsletter No. 5, June 4, 2010. Picture courtesy D. Handley)

FORCED-AIR COOLING TO IMPROVE BERRY QUALITY & SHELF-LIFE

Craig Kahlke, Area Extension Educator - Fruit Quality Management, Lake Ontario Fruit Program – Niagara County Cornell Cooperative Extension, 4487 Lake Ave., Lockport, NY 14094

Berries are an extremely perishable crop, mainly due their brittle nature and high respiration rates. This is especially true of raspberries and strawberries, while blueberries, currants, and gooseberries are somewhat hardier. For every one hour delay in cooling of fruit after harvest, it is estimated that your produce will lose one day of shelf-life. Therefore it is critical to remove field heat from your fruit as quickly and efficiently as possible. If you put a pallet of strawberries in a 33 F cooler right after harvest, it will take approximately 9 hours for the temperature to get within 3 F of your cooler temperature. If you set up an inexpensive forced-air cooling unit (Figure 1), that same pallet of fruit will be cooled in around 90 minutes.

Figure 1. An inexpensive, home -made, forced-air cooling set up.

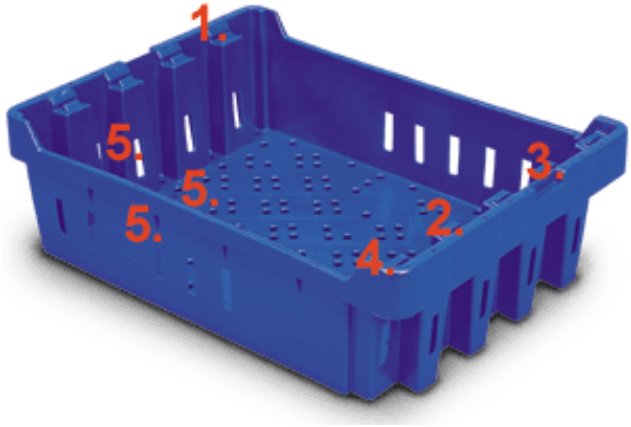


Figure 2. A container for use in forced-air cooling. Note adequate air holes on all sides, and nesting ability.

There are a few key considerations in the use of forced-air cooling. You should use containers that have adequate air holes in them to allow good air flow (Figure 2). You need to maintain high humidity (90-95% RH). You should have a temperature probe that can be inserted into the fruit flesh to monitor temperature. Turn off fan(s) when temperature is within 3-5 F of cooler. The last few degrees take too long to justify leaving the fan(s) on, and will to dry out your berries. It is also critical that the air be pulled **through** the product, not across it. Cover top and any air spaces below product. You want to force as much air through the actual product as possible. If you are doing this on a small scale, you may tinker with large fans such as that in Figure 1. If you are looking at large, multiple pallets of fruit and different kinds of berries, you may want to contract a local refrigeration company. They can design a unit with the right air flow capacity to meet your needs. If your fan is too small, you may stall it and burn out the motor. A fan that is too large will dry out your fruit. A larger custom unit is only in the $500 dollar range. Grower testimonials remark that they have seen a definite increase in quality and shelf-life.

For growers interested in more information on how to set up an inexpensive forced-air cooling system for berries and many other types of perishable produce, including additional resources such as do-it-yourself plans and refrigeration company contacts, please contact Craig Kahlke at 585-735-5448, or email at cjk37@cornell.edu.

THE LOWDOWN ON LINGONBERRIES

Cathy Heidenreich, Small Fruit Extension Support Specialist, Department of Horticulture, Cornell University, Ithaca, NY 14853

Several inquiries have come in about lingonberries and their potential as a new NY small fruit crop. What follows is an overview of lingonberries and their commercial production.

Lingonberry, a member of the blueberry and cranberry plant family (Ericaceae), is a low-growing, perennial semi-evergreen woody shrub with relatively small berries. This native to arctic and subarctic regions of the world is widely distributed across cold climates of Northern hemisphere including the Canadian Pacific Northwest, Northeastern Canada, the Northern US (Alaska, Washington, Oregon), Greenland, northern Europe, Germany, and Scandinavia. It is also found in mountainous regions of central and southern Europe and Asia. Lingonberry's natural habitat includes densely wooded areas, heath, grass moorland, raised bogs, rocky exposed cliffs, and mountain peaks.

Vaccinium vitis-idaea or lingonberry is known by several other common names including partridgeberry, foxberry, northern mountain cranberry, cowberry, wolf-berry, dry ground cranberry, rock cranberry, and ling berry among others. In parts of Scandinavia it's also known as "tyttebaer".

There are two types of lingonberry: the wild or American lingonberry, and its cultivated cousin the European lingonberry. The American or wild lingonberry (*Vaccinium vitis-idaea var. minus*) generally produces one 1 crop per year in summer. These plants tend to be short (7 inches or less) and have single blooms. The European or cultivated lingonberry (*V. vitis-idaea*) produces 2 crops per year, summer (August) and fall (late October – mid-November). These plants range from 2 to 16 inches in height with branches 3 -4 inches long. Leaves are bright green, oval and alternate. Lower leaf surfaces are matt below and covered with small black dots. New growth is covered with fine hairs. Plants may spread 3 feet in width, forming dense mats.

Lingonberry flowers on the previous year's growth. Flowers are similar in shape to those of blueberry and may be white or pink in color. Lingonberries (¼ to ½" in diameter) are bright to dark red in color. They are considered highly flavored but not as tart as cranberries.

Their high benzoic acid content gives them a long shelf life; 8 – 12 weeks in the refrigerator, and several years in the freezer. Unpicked ripe fruit may persist on plants into spring, birds permitting.

Commercial production

Harvest of wild populations - Approx. 10% of the wild crop is harvested annually. Newfoundland wild populations are harvested commercially as wild partridgeberries (212,750 lb/year). Harvest of wild fruit can no longer keep up with demand.

Europe - Commercial production of lingonberries is well-established in Sweden, Finland, Germany, Austria, and Switzerland. Additional acreage is now being planted in Latvia, Lithuania, parts of former Soviet Union, Bulgaria, and Poland. Yield in Europe is approximately 80 million pounds per year.

North America – Commercial planting of this small fruit crop essentially got its start in Wisconsin during the 1990s through the efforts of Dr. Elden Stang of University of Wisconsin. Its production is expanding into the colder areas of Canada and the US.

Site selection and preparation

Lingonberries prefer light, well drained soils such as sand or silt loams with 2 to 6% organic matter and a pH range between 4.3 and 5.5. As with blueberries, high soil calcium content may have a toxic effect on plants. Avoid soils with high salt content, especially sodium and chloride.

If soil pH needs adjustment, begin lowering it the fall prior to planting by applying elemental sulfur. If planting on heavier soils or soils lacking in organic matter, also incorporate peat, leaf mold, sawdust, or finely shredded pine bark before planting at a rate of approximately 10 tons (4 inches) per acre. Organic matter should be incorporated into the top 3 to 4 inches of soil.

Select a site in full sun with good air and soil drainage. Tile installation or soil ripping may be needed to improve drainage prior to planting on wetter soils. Plantings may also be made on raised beds to improve drainage. Raised beds should be 4 to 8 inches high and 2 to 3 ft wide.

Lingonberries are noted for surviving winter cold, summer heat, and windy exposures. Winter snow cover, however, is preferable. Plants in Wisconsin have survived winter temperatures as low as 2 ^{o}F. In areas where winter temperatures drop below 10 ^{o}F and snow cover is marginal, protect plants with straw much, floating row cover or overhead irrigation. Spring frost protection using floating row cover or over head irrigation may also be needed.

Test irrigation water also for pH, chloride, sodium, and calcium. Trickle irrigation is recommended. Bury drip lines in raised beds before planting.

Plant Selection

For best berry size and yield, interplant desirable varieties with pollenizer cultivars such as 'Red Pearl' or 'Sussi'. These pollinator cultivars, although somewhat lower yielding, should make up 10% of each planting to obtain good fruit size and yield. Pollination is done by honey and bumblebees.

Varieties

'**Koralle**' (1969) First released in Holland as an ornamental ground cover, then later cultivated for its fruit. Now a popular Dutch cultivar making up almost all of European production. Upright, strongly branched, vigorous. Uprights 12 inches. Produces light red to dark red somewhat tart, highly flavored fruit at a young age. Fruit may remain on the vines for several weeks without deteriorating.

'**Red Pearl'** (1981) Dutch cultivar. Fast-growing, wide, bushy, upright plant. Uprights to 13 inches. Dark red, round fruit larger (1/3 inch diameter) and more mildly flavored than 'Koralle'. Most tolerant of less than ideal soil conditions. Two flower periods.

'**Suissi**' (1985) Swedish cultivar producing abundant large globular dark red fruit. Spreading but short uprights 6 – 7 inches. Heavy yields of medium to large berries.

'**Erntedank**', '**Erntekrone**', '**Erntesegen**' – three German cultivars found by Albert Zimmer on a German heathland, vigorous growers, mild-flavored fruit.

'**Scarlet**' – Norwegian cultivar, produces some fruit. Best used as pollinator for 'Koralle'.

'**Ida**' (1997) Vigorous, upright Swedish cultivar with large red berries (to 1 ¾ oz).

'**Linnea**' (1997) A smaller berried Swedish variety than 'Ida'. Vigorous, upright, heavy cropper.

'**Regal**' (1994) first of 2 introductions from University of Wisconsin-Madison from seed collected in Finland. Uprights 7-8 inches. Berries 1/3 inch in diameter, 1 1/3 oz. Two bloom periods.

'**Sanna**' (1988) Swedish cultivar with uprights to 12 inches. Heavy cropper, excellent berry quality. Recorded yields 1 ¼ lb/bush or 6 tons/acre.

'**Splendor**' (1994). University of Wisconsin-Madison. From the same seed source as 'Regale'. Vigorous, modest spread, uprights 6 – 8 inches. Matures in 2nd year, often producing a crop. Brillant red fruit 1/3 inch diameter, 1 ½ oz.

Propagation

Lingonberries reproduce by seed or underground rhizomes. Commercial methods include tissue culture or stem cuttings. Cuttings are taken in late summer from the current year's growth and rooted in a 1:1 mix of moistened peat and sand. Raised polyethylene covers or overhead mist is needed to maintain high humidity. Cuttings may also be propagated much like cranberries. Runners sliced off during bed narrowing are gathered and incorporated into soil using agricultural discs. Overhead irrigation is needed for this method to allow for good root development and establishment.

Plant Establishment

Planting - Planting is generally done in spring or fall with one year rooted cuttings or plugs. Suggested spacing is 4 to 5 ft between rows and 12 to 18 inches between plants in-row. Recommended plant density is 8,700 plants per acre. Plants will fill in rows much liked matted row strawberry plantings.

Mulching - Mulch plants after planting with a 4 to 6 inch layer of peat or other organic matter to encourage root growth and promote higher harvest yields. Reapply mulch every 3 to 6 years as needed.

Irrigation – Irrigate through the first summer to help plants establish and reduce sunburn at a rate of ½ to ¾ of an inch of water per week. Do not allow soil to dry out between waterings. Avoid overwatering on heavier soils which increases risk of Pythium or Phytophthora root rot development.

Fertilizer - Nitrogen should be applied in the ammonium form as urea or ammonium sulfate (Table 1).

Pruning – No pruning is needed until plants reach 5 years of age or older. Then mow alternate rows every 3 to 6 years to increase shoot density and stimulate 1 year old growth.

Table 1. Recommended fertilization rates for lingonberries

Plant age (years)	Actual N (lb/A)	Nitrogen Source	Comments
1 to 6	20 – 40	Urea Ammonium nitrate	Use only chloride free fertilizers. If pH is high, use ammonium sulfate.
6+	40 lb	Urea Ammonium nitrate	Nitrogen rates above 60 lb/A actual N can cause excessive vegetative growth and reduce flowering and yield

Pest Management

Weeds - Relatively few pest or weed management products have been labeled for lingonberries as they are still a relatively new minor crop. This makes it imperative to establish new plantings in "clean" soils – those where preplant perennial and annual weed management has been thoroughly done prior to plant establishment.

Good weed management is critical during plantings years 1 through 3. Management methods include in-row hand weeding, and mechanical cultivation. Cultivation needs to be shallow and done with extreme care to avoid damaging roots. Plant grass sod between rows to help minimize weeds. Mow to keep grasses from seeding.

Harvest

Smaller summer crops are generally not harvested in favor of heavier fall crops. Berries are said to be best picked after a sharp frost. Harvesting may be done much like lowbush blueberry or cranberry using hand-held scoops. Machine harvest is also possible using mechanical harvesters similar to those used for dry harvesting cranberries. Plants reach full production 4 to 5 years after planting. Yield is approximately 10 lb fruit per square yard of row. Average yield per acre is 4-5 tons. Newer varieties have the potential to produce up to 10 tons/acre.

Marketing

Portions of the harvested lingonberry acreage are direct marketed as fresh fruit to consumers. That said, lingonberries, like their cranberry cousins, are mainly marketed for their use in valued-added products such as sauces and juices. Other value-added lingonberry products include wines, liqueurs, syrups, jams, jellies, trifle, cheesecake, cocktail, soufflé, sherbet, ice cream, candies, and pickles. They are also used as an ornamental ground cover in landscape gardens. Lingonberries are rich in antioxidants, containing high levels of benzoic acid, vitamins A and C, and magnesium. Lingonberry extracts have several medicinal uses such as a component for cough syrups. They are also used for treatment of blood disorders and urinary tract infections.

References

1. USDA, NRCS. 2010. The PLANTS Database (http://plants.usda.gov, 10 June 2010). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.
2. Burt, L. and Penhallegon, R. 2003. Economic Evaluation of Lingonberry Production in Oregon. Oregon State University Extension Service Publication EM 8847. Available on line: http://extension.oregonstate.edu/catalog/pdf/pnw/pnw583-e.pdf.
3. Hendrickson, P.A. 1997.Ten years experience in *lingonberry production*. Acta Horticulturae 165:269-271.
4. Penhallegon, R. 2006. Lingonberry Production Guide for the Pacific Northwest. Oregon State University Extension Service Publication PNW 583-E. 12 pp. Available on line: http://extension.oregonstate.edu/catalog/pdf/pnw/pnw583-e.pdf.
5. Stang, J. 1994. Lingonberry Cultivars – Building Blocks for an Industry? Fruit Varieties Journal 48(1): 3-6.
6. Stang, E.J. 1994. Lingonberry Culture Management Research in Wisconsin. Fruit Varieties Journal 48(1): 3-6.
7. Stang, E.J., G.G. Weis, and J. Klueh. 1990. Lingonberry: Potential New Fruit for the Northern United States. p. 321-323. In: J. Janick and J.E. Simon (eds.), Advances in New Crops. Timber Press, Portland, OR.
8. Trehane, J. 2004. Lingonberries. Chapter 2 in: Blueberries, Cranberries and Other Vacciniums. Timber Press, Portland, Oregon. pgs. 75-83.
9. Torrey, G.S. 1914. The Partridge Berry – A Report. Department of Agriculture and Mines. pgs. 1-12.

(All photos courtesy Dr. Marvin Pritts, Cornell University. Drawing courtesy USDA, NRCS Plants Database; original illustration found in: Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions.* Vol. 2: 697.*)*

WEATHER NOTES

(Courtesy NY NASS)

Week ending May 23rd: The week started warm and dry with temperatures near or slightly below normal on the 16th and 17th. High temperatures were in the 70's in most areas both days. Lows were the 40's with some 30's in the mountains. An area of low pressure brought rain and below normal temperatures on the 18th and 19th. High temperatures were in the 50's and 60's with lows ranging from the upper 40's to mid 50's. Rainfall ranged from a quarter inch or less in western and northern areas to between three quarters of an inch and an inch in southern areas. Sunny and dry weather returned for the rest of the week, the 20th through the 22nd, with temperatures in the upper 70's to mid 80's and low temperatures in the 40's and 50's.

In Ontario County, producers were monitoring the effects of last week's frost, and damage to strawberries has been reported. Saratoga County fruit growers were still assessing yield loss due to frost damage on May 10th, 11th, and 13th. In the Hudson Valley, spotty damage from last week's frost and high winds was reported by fruit producers. Some strawberries were doing fine, while others died from frost damage.

Week ending May 30th: The period started out dry with high pressure anchored just off the New England coast Sunday the 23rd into Monday the 24th with temperatures running above normal throughout the state. The high pressure system then moved westward and covered much of New York State by Tuesday the 25th resulting in continued dry conditions and increasingly warm temperatures. An unseasonably warm air mass settled in for the middle of the week with temperatures around 15 to 20 degrees above average on Tuesday. Wednesday the 26th was the warmest day of the week for most of the region with record or near high temperatures across the eastern half of the state. High temperatures reached into the 80's and 90's, which is more typical of midsummer than late spring. A back door cold front moving southwestward from northern New England pushed through much of eastern New York Wednesday night into Thursday the 27th accompanied by scattered thunderstorms Wednesday night. Some areas received over one quarter inch of rain, however, many areas remained dry. This frontal passage signified the end of the well above normal temperatures. The cold front continued to push southward through the state on Thursday the 27th, resulting in additional scattered thunderstorms for southeast New York. High pressure built back in for Friday the 28th and Saturday the 29th with dry conditions returning and temperatures remaining above normal.

In the Lake Ontario fruit region, blueberries were in bloom, with some fruit set. Eastern Washington County experienced violent winds on Wednesday night, along with some hail. No damage has been reported yet. In Rensselaer County, the earlier freeze caused some strawberries to be lost. Up to 90 percent of apples were reported lost due to freeze. On Long Island strawberries were in season, and quality was good.

Week ending June 6th: The week started out very warm and dry with high pressure dominating. The pattern changed by mid week with a fast zonal flow developing resulting in an active pattern with three systems moving through the region triggering showers and thunderstorms. Conditions were very wet across western New York.

Strawberries and rhubarb were being harvested in Ontario County. Warm temperatures ripened strawberries faster than expected in Broome County. U-pick operations opened during the week.

Questions or comments about the New York Berry News?

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

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

NY NASS WEATHER REPORTS OF TEMPERATURES AND PRECIPITATION THROUGHOUT NEW YORK STATE FOR WEEK ENDING SUNDAY 8:00am, May23rd, 2010

	Temperature				Growing Degree Days (*Base 50*)			Precipitation (*inches*)			
	High	***Low***	***Avg***	***DFN*[1]**	***Week***	***YTD*[2]**	***DFN***	***Week***	***DFN***	***YTD***	***DFN***
Hudson Valley											
Albany	85	40	62	4	86	333	142	0.20	-0.57	3.02	-2.44
Glens Falls	83	35	60	3	71	256	110	0.24	-0.60	3.61	-2.03
Poughkeepsie	86	39	62	2	82	381	155	0.64	0.34	3.51	-3.19
Mohawk Valley											
Utica	80	40	60	6	71	197	96	0.05	-0.93	4.82	-3.05
Champlain Valley											
Plattsburgh	81	37	60	3	69	227	80	0.01	-0.62	3.33	-1.54
St. Lawrence Valley											
Canton	81	37	60	5	74	240	115	0.00	-0.68	3.46	-1.57
Massena	81	38	62	6	84	254	112	0.09	-0.47	2.57	-1.92
Great Lakes											
Buffalo	84	45	62	5	88	306	130	0.27	-0.43	4.91	-0.23
Colden	81	39	58	3	59	235	108	0.34	-0.47	5.30	-1.09
Niagara Falls	81	43	62	5	87	316	125	0.08	-0.57	4.82	-0.48
Rochester	80	42	63	5	90	355	158	0.26	-0.37	4.05	-0.55
Watertown	84	35	62	7	87	261	132	0.01	-0.62	2.91	-1.57
Central Lakes											
Dansville	82	38	59	2	65	290	110	0.48	-0.16	4.57	-0.32
Geneva	83	41	62	5	84	314	145	0.20	-0.48	4.40	-0.66
Honeoye	83	36	61	4	80	329	156	0.22	-0.41	4.67	-0.33
Ithaca	83	36	60	4	71	291	146	0.22	-0.55	4.65	-0.65
Penn Yan	84	41	62	5	87	353	184	0.31	-0.37	4.19	-0.87
Syracuse	84	41	63	5	94	358	161	0.02	-0.72	3.72	-2.01
Warsaw	81	42	58	5	62	229	118	0.32	-0.46	6.04	0.13
Western Plateau											
Alfred	82	39	59	5	63	251	141	0.59	-0.08	5.55	0.71
Elmira	85	36	60	4	74	317	157	0.47	-0.26	4.93	-0.06
Franklinville	82	35	56	3	45	186	100	0.37	-0.42	5.95	0.12
Sinclairville	82	43	58	4	57	236	124	0.93	0.02	6.58	-0.09
Eastern Plateau											
Binghamton	81	44	61	4	77	344	192	0.30	-0.47	4.75	-0.86
Cobleskill	82	37	59	4	68	240	106	0.32	-0.52	3.93	-1.99
Morrisville	84	40	60	5	74	245	119	0.02	-0.82	5.49	-0.27
Norwich	84	36	60	4	68	231	92	0.05	-0.79	5.01	-1.09
Oneonta	83	38	59	5	68	247	127	0.22	-0.76	5.41	-1.24
Coastal											
Bridgehampton	79	42	60	4	74	306	157	1.64	0.80	5.17	-1.65
New York	85	51	65	3	106	588	259	0.95	0.11	5.42	-1.23

1. *D*eparture *from N*ormal 2. *Y*ear *to D*ate: Season accumulations are for April 1st to date. Weekly accumulations are through 7:00 AM Sunday Morning.

NY NASS WEATHER REPORTS OF TEMPERATURES AND PRECIPITATION THROUGHOUT NEW YORK STATE FOR WEEK ENDING SUNDAY 8:00am, May 30th, 2010

	Temperature				Growing Degree Days (*Base 50*)			Precipitation (*inches*)			
	High	***Low***	***Avg***	***DFN[1]***	***Week***	***YTD[2]***	***DFN***	***Week***	***DFN***	***YTD***	***DFN***
Hudson Valley											
Albany	94	54	71	11	153	486	216	0.12	-0.70	3.14	-3.14
Glens Falls	92	44	68	9	127	383	171	0.04	-0.79	3.65	-2.82
Poughkeepsie	95	53	69	8	135	516	206	0.00	-0.98	3.51	-4.17
Mohawk Valley											
Utica	89	50	67	12	122	318	170	0.00	-1.02	4.75	-4.14
Champlain Valley											
Plattsburgh	94	46	69	10	131	358	144	0.24	-0.46	3.57	-2.00
St. Lawrence Valley											
Canton	90	49	68	11	129	369	187	0.12	-0.58	3.58	-2.15
Massena	96	50	71	13	148	402	198	0.01	-0.59	2.58	-2.51
Great Lakes											
Buffalo	85	57	72	12	153	459	210	0.00	-0.76	4.91	-0.99
Colden	82	53	68	11	127	362	178	0.00	-0.86	5.30	-1.95
Niagara Falls	87	56	71	11	149	465	199	0.03	-0.67	4.85	-1.15
Rochester	88	53	70	10	143	498	228	0.00	-0.63	4.05	-1.18
Watertown	85	50	68	11	128	389	203	0.07	-0.56	2.98	-2.13
Central Lakes											
Dansville	90	50	70	11	144	482	230	0.00	-0.72	3.67	-1.94
Geneva	88	52	71	12	145	459	220	0.00	-0.74	4.40	-1.40
Honeoye	89	49	69	10	136	465	220	0.00	-0.70	4.67	-1.03
Ithaca	87	50	68	10	130	421	213	0.02	-0.78	4.67	-1.43
Penn Yan	89	56	71	12	145	498	259	0.00	-0.74	4.19	-1.61
Syracuse	90	57	71	12	149	507	235	0.00	-0.77	3.72	-2.78
Warsaw	82	53	68	12	128	357	193	0.00	-0.86	6.04	-0.73
Western Plateau											
Alfred	86	51	68	12	131	382	220	0.04	-0.76	5.59	-0.05
Elmira	89	49	69	10	131	448	221	0.01	-0.77	4.94	-0.83
Franklinville	85	45	66	12	116	302	171	0.00	-0.86	5.95	-0.74
Sinclairville	85	51	69	13	133	369	205	0.00	-0.95	6.58	-1.04
Eastern Plateau											
Binghamton	87	56	70	11	139	483	265	0.00	-0.77	4.75	-1.63
Cobleskill	90	46	68	9	124	364	170	0.03	-0.86	3.96	-2.85
Morrisville	88	52	69	12	134	379	196	0.00	-0.91	5.49	-1.18
Norwich	92	50	69	11	132	363	164	0.00	-0.89	5.01	-1.98
Oneonta	90	53	68	12	129	376	202	0.00	-0.99	5.41	-2.23
Coastal											
Bridgehampton	89	50	66	7	112	418	201	0.07	-0.77	5.24	-2.42
New York	94	58	70	6	143	731	295	0.02	-0.82	5.44	-2.05

1. *D*eparture *from N*ormal 2. *Y*ear *to D*ate: Season accumulations are for April 1st to date. Weekly accumulations are through 7:00 AM Sunday Morning.

NY NASS WEATHER REPORTS OF TEMPERATURES AND PRECIPITATION THROUGHOUT NEW YORK STATE FOR WEEK ENDING SUNDAY 8:00am, June 6th, 2010

	Temperature				Growing Degree Days (*Base 50*)			Precipitation (*inches*)			
	High	***Low***	***Avg***	***DFN[1]***	***Week***	***YTD[2]***	***DFN***	***Week***	***DFN***	***YTD***	***DFN***
Hudson Valley											
Albany	87	56	72	10	159	645	282	0.72	-0.12	3.86	-3.26
Glens Falls	84	51	69	8	135	518	226	1.16	0.38	4.81	-2.44
Poughkeepsie	89	54	74	11	172	688	279	0.22	-0.71	3.73	-4.88
Mohawk Valley											
Utica	84	50	64	7	102	420	213	2.30	1.25	7.05	-2.89
Champlain Valley											
Plattsburgh	82	47	65	4	108	466	170	1.26	0.56	4.83	-1.44
St. Lawrence Valley											
Canton	81	50	66	6	112	510	257	2.12	1.38	5.71	-0.76
Massena	82	50	66	6	115	517	238	1.37	0.70	3.95	-1.81
Great Lakes											
Buffalo	85	56	69	8	137	596	259	4.83	4.00	9.74	3.01
Colden	85	50	67	8	119	481	228	2.21	1.27	7.51	-0.68
Niagara Falls	88	58	71	9	147	612	257	2.76	1.99	7.61	0.84
Rochester	88	54	71	9	146	644	289	2.88	2.18	6.93	1.00
Watertown	88	52	69	10	132	521	266	2.26	1.60	5.24	-0.53
Central Lakes											
Dansville	88	50	70	8	139	621	283	2.57	1.73	6.24	-0.21
Geneva	89	54	70	9	142	601	278	3.23	2.42	7.63	1.02
Honeoye	89	51	71	9	147	612	280	3.26	2.45	7.93	1.42
Ithaca	88	50	69	10	138	559	275	1.41	0.57	6.08	-0.86
Penn Yan	90	57	72	11	153	651	328	2.22	1.41	6.41	-0.20
Syracuse	92	56	72	10	155	662	303	1.91	1.09	5.63	-1.69
Warsaw	85	55	68	10	129	486	258	4.37	3.42	10.41	2.69
Western Plateau											
Alfred	87	49	69	11	134	516	292	2.49	1.51	8.08	1.46
Elmira	90	45	71	11	150	598	290	1.90	1.06	6.84	0.23
Franklinville	86	43	67	10	119	421	233	2.49	1.54	8.44	0.80
Sinclairville	87	50	68	10	130	499	269	2.23	1.21	8.81	0.17
Eastern Plateau											
Binghamton	86	55	70	10	144	627	331	1.72	0.89	6.47	-0.74
Cobleskill	84	51	68	8	129	493	226	1.38	0.41	5.34	-2.44
Morrisville	88	51	69	10	136	515	265	3.13	2.21	8.62	1.03
Norwich	89	50	68	9	129	492	221	1.56	0.63	6.57	-1.35
Oneonta	86	52	69	11	137	513	273	1.75	0.76	7.16	-1.47
Coastal											
Bridgehampton	84	59	72	10	153	571	270	0.08	-0.80	5.32	-3.22
New York	90	65	80	13	209	940	380	0.01	-0.83	5.45	-2.88

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