New York Berry News

CORNELL UNIVERSITY

Volume 08, Number 7 July 10, 2009

What's Inside

CURRANT EVENTS

Aug. 6-9 2009. *46th Annual National Blueberry Festival*, South Haven, MI. For more information www.blueberryfestival.com.

Aug. 11-12, 2009. *NASGA 2009 Summer Strawberry Tour*. Chicago, IL. For more information contact Kevin Schooley, 613-258-4587, or http://www.nasga.org.

September 9, 16, 23, 2009. *Ag in Uncertain Times Webinar Series: Operating in the face of uncertain markets* is an interactive Extension webinar series designed to assist Ag professionals, including producers, to better understand the changing conditions in today's economy. The series is targeted towards providing information that helps producers make informed decisions and improves Ag professional's ability to work with their farm and ranch customers/clients. Each session is scheduled for 60 to 90 minutes with plenty of opportunity for the participants to interact with the presenters. All webinar start times are at 9AM Pacific. (10 AM Mountain, 11 AM Central, and 12 noon Eastern). For more information: email westrme@wsu.edu, call John Nelson, 509-477-2176 or visit : http://www.farmmanagement.org/aginuncertaintimes/

October 15, 2009. F*ourth Annual Raspberry and Blackberry High Tunnel Tour*, Ithaca, NY . For more details see the flyer that follows.

November 8-10, 2009. *Southeast Strawberry Expo*, Sheraton Imperial Hotel, Research Triangle Park, NC. For information, contact the NC Strawberry Association, phone 919-542-4037, info@ncstrawberry.com.

Dec. 8-10, 2009. *Great Lakes Fruit Vegetable and Farm Market Expo***.** DeVos Place Convention Center, Grand Rapids, MI. For more information www.gleexpo.com.

January 25-27, 2010. *Empire State Fruit and vegetable EXPO?NYS Farmer's Direct Marketing Association Annual Conference*. OnCenter, Syracuse, NY. Mark your calendars – berry session Wednesday January 27th. More information coming soon.

February 2-4, 2010. *Mid-Atlantic Fruit and Vegetable Convention*, Hershey Lodge, Hershey, PA. For more information visit http://www.mafvc.org/html/.

February 24-26, 2010. *North American Raspberry & Blackberry Conference*, Monterey, California, preceded by preconference tour.

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 University's College of Agriculture and Life Sciences

Raspberry and Blackberry High Tunnel Open House

Thursday, October 15, 2009, 1 to 4 PM

Cornell University invites you to attend the fourth annual Raspberry and Blackberry High Tunnel Open House to observe primocane-fruiting raspberries and blackberries, and the growth that can be obtained with black raspberries and thornless blackberries under a high tunnel.

Come by Cornell's East Ithaca farm on Thursday October 15th between 1:00 and 4:00 to meet with researchers, taste fruit, study this new technology and marketing opportunity, and hear results from year 4 of this research and demonstration trial.



The East Ithaca Farm is located on Maple Ave., adjacent to the Cornell Campus. Coming from Rt. 79 east, turn right onto Pine Tree Rd., go through the stop light by East Hill Plaza, and take the next left on to Maple Ave. The research farm is on the right, past the cemetery.

Coming from Rt. 13 north, take Rt. 366 towards Ithaca. Turn left onto Pine Tree Road at the flashing red light, just past Cornell Orchards. Take the next right onto Maple Ave. The farm is on the right, past the cemetery.

Coming west on 79, or south on 96 or 89, take Rt. 79 east through Ithaca and up the hill. Midway up the hill, bear left onto Rt. 366. At the first stoplight, take a soft right onto Maple Ave. (not a hard right). The farm is at the top of the hill on the left.

For more information contact Cathy Heidenreich, mcm4@cornell.edu, 315-787-2367.

IRRIGATION WATER QUALITY PROJECT

The National GAPs Program is developing an Irrigation Water Quality Database. We are looking for 34 farms in New York that use surface water in the production of fresh fruits and vegetables to participate in this project in 2009. If you participate, project collaborators will take at least 3 water samples from your surface water source(s) in 2009, have it analyzed for quantified generic *E.coli*, specific conductance, pH, and turbidity. Although the standard analysis requested is for quantified generic *E.coli* only, we are doing some additional analysis in an attempt to draw some correlations that might allow us to make better recommendations regarding water quality in the future. Participating growers will be provided with a copy of all of their water testing results. This will all be done at no cost to the farm. There may be additional funding next year to continue the project and participating farms this year will be given the first opportunity to participate next year.
In addition to the water sampling and analysis, interested growers will receive training on how to properly sample irrigation water. Fresh produce growers should know how to properly sample surface water and should be testing their surface water sources throughout the production season. This is particularly important if you plan to have a third party food safety audit.

The benefits of building an Irrigation Water Quality Database include:

1. A better understanding of the quality of surface water used in fresh produce production during irrigation, frost protection, and for protective sprays.
2. To determine surface water quality so that any decisions regarding national irrigation water quality standards have a better chance of being science-based.
3. Provide irrigation water quality data to growers so they can make decisions about the use of surface water based on its quality and so they can be prepared for third party audits.

All data collected from individual farms will be coded to maintain privacy. If you are interested in participating in this project or if you have any question regarding this project, please contact Betsy Bihn by email at eab38@cornell.edu or by phone at 315 787 2625.

AG IN UNCERTAIN TIMES WEBINAR SERIES

This is an interactive Extension webinar series designed to assist Ag professionals, including producers, to better understand the changing conditions in today's economy. The series is targeted towards providing information that helps producers make informed decisions and improves Ag professional's ability to work with their farm and ranch customers/clients. Each session is scheduled for 60 to 90 minutes with plenty of opportunity for the participants to interact with the presenters.

September 9, 16, 23, 2009. *Ag in Uncertain Times Webinar Series: Operating in the face of uncertain markets*.

October 7, 14, 21, 2009. *Ag in Uncertain Times Webinar Series: Families facing uncertainty in agriculture.*

November 4, 11, 18, 2009. *Ag in Uncertain Times Webinar Series: Operating in risky environments.*

December 2, 9, 16, 2009. *Ag in Uncertain Times Webinar Series: Pulling it all together: Managing Ag Enterprises in Uncertain times.*

All webinar start times are at 9AM Pacific. (10AM Mountain, 11 AM Central, and 12 noon Eastern).

For more information: call John Nelson, 509-477-2176, email westrme@wsu.edu, or visit : http://www.farmmanagement.org/aginuncertaintimes/.

UPCOMING GAPS ONLINE PRODUCE SAFETY COURSES

The next GAPs Online Produce Safety Courses are listed below. If you need training for a third party audit, this is a good way to fit the training into your work schedule. The cost is $50 because it is grant subsidized. If you want me to email you when registration is open, please send me an email at eab38@cornell.edu . If you have any questions, please let me know. I hope the summer is going well for everyone. Take care, Betsy Bihn, GAPS

Dates for Upcoming GAPs Online Produce Safety Courses.
August 5–26, 2009
September 2–23, 2009
September 30–October 21, 2009

About this course:
Implementing Good Agricultural Practices is a 3-week web-based course offered through the National GAPs Program.

Time Commitment
Within the three weeks you are expected to:

- Complete two online surveys (1 before and 1 after the course)
- Read all course materials
- Turn in 4 assignments for evaluation
- Complete 2 self-tests
- AND contribute to the discussion boards.

Most students spend 10 to 20 hours on this course, but depending on your knowledge, more or less time may be required. Below is the course outline so you can review the content areas.

Good Agricultural Practices Online Produce Safety Course Outline
Module One: Welcome to Implementing GAPs: A Key to Produce Safety
1.0.0 Module Home Page
    1.1.0 About This Course
Module Two: Shared Responsibility in Food Safety
2.0.0 Module Home Page
    2.1.0 Reasons for Engagement
    2.2.0 Module Wrap-Up
Module Three: Good Agricultural Practices
3.0.0 Module Home Page
    3.1.0 Worker Training, Hygiene, and Health
3.2.0 Water Use
    3.3.0 Postharvest Water Use
    3.4.0 Soil Amendments
    3.5.0 Cleaning and Sanitation
3.6.0 Traceback and Recall
    3.7.0 Crisis Management
    3.8.0 Other Important Practices
    3.9.0 Module Wrap-Up
Module Four: Implementing Change
4.0.0 Module Home Page
    4.1.0 Education and Training in Food Safety
    4.2.0 Building the Plan
    4.3.0 Module Wrap-Up
Module Five: Course Conclusion
5.0.0 Module Home Page
    5.1.0 Concluding Activities

JIM BARBER APPOINTED STATE USDA FARM SERVICE AGENCY EXECUTIVE DIRECTOR

Statement from NYS Ag and Markets Commissioner Patrick Hooker

June 30, 2009. Congratulations are in order for Jim Barber, who was appointed today by the Obama Administration as the New York State Executive Director for the USDA Farm Service Agency. Jim has served as a Special Assistant at the Department of Agriculture and Markets for over two years and also owns a very reputable and successful vegetable farm in Schoharie County.

His knowledge of the industry and the services required of USDA, as well as the challenges of doing business will be extremely useful in his new position. We are pleased to have one of our own in this prestigious position and I know Jim will be a fine advocate and leader for New York farmers. Congratulations Jim.

NEW BAIT LURES VARROA MITE TO ITS DOOM

Jan Suszkiw, USDA ARS, ARS Public Affairs Specialist, Room 1-2220-C, 5601 Sunnyside Ave., Beltsville, MD 20705-5129

July 1, 2009. Varroa mites could literally be walking into a trap—thanks to a new attractant developed by Agricultural Research Service (ARS) scientists in Gainesville, Fla.

The 1/16-inch long parasite, Varroa destructor, is a top pest of honey bees nationwide, hindering the beneficial insects' ability to pollinate almonds, blueberries, apples, zucchini and many other flowering crops.

Image Number K9544-1. The deadly parasitic Varroa mite on the back of this honey bee is one of many insect pests that sugar esters may be useful in controlling. Sucrose octanoate, a sugar ester, can kill the mite without harming the bee. Photo by Scott Bauer.

At the ARS Chemistry Research Unit in Gainesville, research leader Peter Teal and colleagues are testing a bait-and-kill approach using sticky boards and natural chemical attractants called semiochemicals.

In nature, Varroa mites rely on these semiochemicals to locate—and then feed on—the bloodlike hemolymph of both adult honey bees and their brood. Severe infestations can decimate an affected hive within several months—and rob the beekeeper of profits from honey or pollinating services. But in this case, the mites encounter a more heady bouquet of honey bee odors that lure the parasites away from their intended hosts and onto the sticky boards, where they starve.

In preliminary tests, 35 to 50 percent of mites dropped off the bees when exposed to the attractants. Free-roving mites found the semiochemicals even more attractive, according to Teal.

Moreover, the extra dose of semiochemicals wafting through hives didn't appear to significantly interfere with the honey bees' normal behavior or activity, added Teal who, along with postdoctoral associate Adrian Duehl and University of Florida collaborator Mark Carroll, reported the results this past January at the 2009 North American Beekeeping Conference in Reno, Nev.

The team hopes ARS' patenting of the Varroa mite attractants will encourage an industrial partner to develop the technology further.

Read more about the research in the July 2009 issue of Agricultural Research magazine.

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

FARMERS MARKET SURVEY REPORT RELEASED

Joan Shaffer (202)720-8998 joan.shaffer@ams.usda.gov and Billy Cox (202)720-8998 Billy.cox@ams.usda.gov

WASHINGTON, June 11, 2009 - The U.S. Department of Agriculture today announced the publication of the USDA National Farmers Market Survey, 2006. This report of a survey conducted by USDA's Agricultural Marketing Service (AMS) in 2006, in partnership with Michigan State University, draws a comprehensive picture of farmers markets in the United States in 2005, the year surveyed.

The report presents data from seven U.S. regions. It looks at such information as the number of vendors, the number of customers, the age of the market, the types of goods sold, and the way those goods were labeled, and analyzes the factors that contributed to the success of the markets. The survey also questioned market managers about the assistance they need; the most common request was for help with advertising and publicity.

Average sales at farmers markets in 2005 totaled about $245,000; average annual sales per vendor totaled $7,108. Marketing opportunities at farmers markets were sufficiently favorable in 2005 that, on average, 25 percent of vendors from surveyed farmers markets relied on these markets as their sole source of farm-based income.

With the help of such USDA programs as the Women, Infants and Children (WIC) Farmers Market Nutrition Program and the Senior Farmers Market Nutrition Program, farmers markets also provide low-income people with increased access to fresh foods. Fifty-nine percent of surveyed managers indicate their market accepted WIC Farmers Market Nutrition

Program vouchers, amounting to $17,696 in annual revenue in 2005. Forty-four percent of surveyed managers report their market accepted Senior Farmers Market Nutrition Program vouchers, amounting to an additional $15,654 in average annual revenue in 2005.

The USDA National Farmers Market Survey 2006 is available online at: www.ams.usda.gov/farmersmarkets or in print form on request from Shannon Ford, Marketing Services Division, Transportation and Marketing Programs, AMS, Room 2646-South, STOP 0269, 1400 Independence Ave., SW, Washington, D.C. 20250; by phone at 202/720-8317; fax at 202/690-0031; or e-mail to Shannon.Ford@usda.gov.

AGRICULTURE DEPUTY SECRETARY MERRIGAN ANNOUNCES U.S. – CANADA AGREEMENT FOR ORGANIC TRADE EQUIVALENCE

Trade Agreement Will Lead to Greater Market Opportunities, Economic Growth for Organic Industry Between Two North American Trading Partners

CHICAGO, June 17, 2009 -- Agriculture Deputy Secretary Kathleen Merrigan today announced that a first-of-its-kind agreement has been reached between the United States and Canada that will expand opportunities for organic producers in both countries. The "equivalency agreement" follows a review by both nations of the other's organic certification program and a determination that products meeting the standard in the United States can be sold as organic in Canada, and vice versa. Merrigan made this announcement at the All Things Organic Trade Show and Conference in Chicago this morning.

"The production of organic foods is a vibrant growth opportunity for American agriculture, and by agreeing on a common set of organic principles with Canada, we are expanding market opportunities for our producers to sell their products abroad," said Merrigan. "Today's agreement between the world's two largest organic trading partners is an important first step towards global harmonization of organic standards."

Under a determination of equivalence, producers and processors that are certified to the National Organic Program (NOP) standards by a U.S. Department of Agriculture accredited certifying agent do not have to become certified to the Canada Organic Product Regulation (COPR) standards in order for their products to be represented as organic in Canada. Likewise, Canadian organic products certified to COPR standards may be sold or labeled in the United States as organically produced. Both the USDA Organic seal and the Canada Organic Biologique logo may be used on certified products from both countries. The COPR goes into effect on June 30.

Canada is the largest U.S. trade partner and largest estimated export market for U.S. organic products. USDA's Foreign Agricultural Service office in Ottawa estimates that more than 80 percent of Canada's organic consumption comes from imports, and approximately 75 percent of those imports come from the United States. Organic produce and processed foods are estimated to make up the majority of U.S. organic products exported to Canada. Estimates of the total market for organic products in Canada range from $2.1 to $2.6 billion; meanwhile sales of organic products in the United States totaled $24.6 billion in 2008. Actual trade flows are difficult to track because the United States has not developed international harmonized system codes for organic products.

The two letters determining equivalence and Q & A's discussing the details of these actions can be found on the NOP website, under Today's News at www.ams.usda.gov/nop.

Consumer demand for organic food has risen quickly over the past ten years, triggered in part by the development and success of USDA's organic regulatory program and label, according to a recent study by USDA's Economic Research Service. As consumer demand for organic products has widened, organic retail sales have spread far beyond the 'natural products' market niche in urban areas and college towns and into big-box stores across the country.

Since the late 1990's, U.S. organic production has more than doubled, but the consumer market has grown even faster. Organic food sales have more than quintupled, increasing from $3.6 billion in 1997 to $24.6 billion in 2008. More than two-thirds of U.S. consumers buy organic products at least occasionally, and 28 percent buy organic products weekly, according to the Organic Trade Association.

SPRING 2009 CLEAN SWEEP NY PROGRAM A RECORD BREAKING EVENT!

Thanks to the efforts of the New York State Department of Environmental Conservation's Bureau of Pesticides Management staff and the collaboration of New York State's Department of Transportation by providing their garage facilities in Hudson, NY, Schenectady, NY and Oneonta, NY, over 104,920 pounds of unwanted, obsolete or unusable pesticides and other chemicals were safely and economically collected for disposal. Also collected for recycling were 850 plastic pesticide containers. This brings the total pounds of waste collected to over 850,000 pounds.

Future CleanSweepNY Collection Events

Planning has begun for a Fall 2009 CleanSweepNY program which will target the following counties: Broome, Cayuga, Chenango, Cortland, Madison, Onondaga, Oswego, Tioga and Tompkins.

Specific collection sites and dates are to be determined and will be posted on the website as soon as the information becomes available (http://www.cleansweepny.org/).

If you have questions or comments, please call 1-877-SWEEPNY (1-877-793-3769) or send email to: info@cleansweepny.org.

NYSDEC appreciates the collaboration of NYSDOT for allowing the use of their highway facilities for the safe collection and packaging of unwanted pesticides and school chemicals.

NEW BLUEBERRY APHID AND VIRUS PUBLICATION FROM MSU


Michigan Blueberry Facts

Blueberry Aphid and Blueberry Shoestring Virus

Introduction

Aphid identification

Aphid life cycle

Rufus Issacs, Annemiek Schilder, Timothy Miles and Mark Longstroth have produced a new bulletin titled “Blueberry Aphid and Shoestring Virus” which is MSU Extension bulletin E3050. This is available for purchase through the MSU Publications office, and/or can be downloaded as a printable version for free from this webpage: www.ipm.msu.edu/cat09fruit/E3050.pdf

There is also an excellent article by Rufus Issacs on management of blueberry aphids in the June 23, 2009 MSU FruitCat newsletter available here: http://www.ipmnews.msu.edu/fruit/Fruit.aspx.

News from the NYS Berry Growers Association

BE CAREFUL WHAT YOU SAY...

Dale Ila, Chair, The Berry Patch, Stephentown NY

It's early July, strawberry season is dwindling, and in the past three weeks, my strawberry planting has gone through 2 hailstorms, more torrential rains than I can count, and enough moisture to eliminate the 5 inch rainfall deficit for the year that we had just before strawberry season started. So what did I say when the newspaper reporter called and wanted to know how our strawberry crop was faring in this wet June?

I told her that the size was awesome, just about the biggest berries I've ever grown, and that it was a great year for people to make chocolate-dipped strawberries for graduation parties and other festivities. When she said, "other farms say they are wiped out, how come your farm is different?" I responded with "we use a lot of straw so the rain drains through the straw, leaving the berries on a good clean bed so the picking is really easy. The season might be a little shorter this year because of the weather - so it's important that people get out NOW to get their berries."

Sure I could have gone into a "woe is me" response, detailing how many berries, and, therefore, dollars I lost in the two hailstorms and rainy weather, but what would that have accomplished? I would have reduced my own sales even more – why would anyone come to a farm that has been "wiped out" to buy berries? And I would have destroyed sales at farms in the area that haven't been hit by hail and torrential rains. So not only would I shoot myself in the foot, but I'd harm everyone else in the industry.

So in this "challenging" year, help yourself and the berry industry. If a reporter calls you, ALWAYS put a positive spin on the situation at hand. We want the public to buy NYS produced berries from a NYS grower. Don't send them to the supermarket to buy shipped in berries by telling them your tales of woe! After all, at our town's Historical Society strawberry festival, those huge chocolate dipped strawberries were great, much better than anything shipped in could have tasted.

As A Berry Season Opener, Ag and Markets Commissioner Patrick Hooker Visits Coulter Farms

Paul Baker, Executive Secretary, Watertown, NY

Commissioner Hooker and Mrs. Coulter

Sampling the first fruits of berry season

NYS Berry Growers - outstanding in their fields!

TIPS ON SELLING

- ✓ Sell to licensed dealers who make prompt payment.
- ✓ Adhere to the prompt payment provision of the law. The law requires dealers to pay producers within 30 days of sale and delivery, unless you have a written agreement to extend the payment terms. Payment terms cannot exceed 120 days from the sale and delivery.
- ✓ Good business requires good records with clear terms of sale. Keep copies of receipts, invoices, delivery and/or weight tickets with a complete description of the terms of sale.
- ✓ Be conscious of the time limits to be eligible for financial protection under the Agricultural Producers Security Program.
- ✓ Discuss issues of nonpayment immediately with the dealer to resolve any problems.
- ✓ Do not continue to sell until your account is current. If you are unsuccessful in resolving the payment problem, notify the Department immediately and file a complaint by calling 1-800-554-4501.

AGRICULTURAL PRODUCERS SECURITY PROGRAM

Article 20 of the New York State Agriculture and Markets Law (AML) requires farm product dealers to be licensed. The law provides financial protection for producers against nonpayment for their products sold to licensed dealers from the dealer's security and the Agricultural Producers Security Fund.

The Agricultural Producers Security Program is administered by the New York State Department of Agriculture and Markets

For more information, call
1-800-554-4501
or call direct at 518-457-1954

Visit the Department's Website at www.agmkt.state.ny.us

AGRICULTURAL PRODUCERS SECURITY PROGRAM

As it relates to the New York State Agriculture & Markets Law Article 20 – Licensing & Sale of Farm Products

Learn about your financial rights as an agricultural producer and how to sell your products only to licensed dealers who make prompt payments.

AGRICULTURAL PRODUCERS SECURITY LAW

PURPOSE OF THE LAW

- To help ensure that producers are paid fully and promptly
- To better ensure payment to producers in the event of a farm product dealer's default
- To suppress and prevent any unfair and fraudulent marketing practices

ELIGIBLE PRODUCERS

Typically, any person who grows or sells farm products or livestock in New York is eligible to participate.

STATE PRODUCTS COVERED

All agricultural products grown or raised in New York State are generally covered by the law with the exception of dairy, eggs and timber.

WHO'S SUBJECT TO A LICENSE

Dealers, including commission merchants, net-return dealers, brokers and processors who buy or receive New York farm products from New York State producers for resale.

YOUR RESPONSIBILITIES AS A PRODUCER

1. Do business with a licensed dealer.

Only transactions involving the sale of farm products to a licensed dealer are covered under the law. Before selling your products to a dealer, make sure they are licensed by calling the Department at 1-800-554-4501 or consulting the Department's website at: www.agmkt.state.ny.us/programs/apsf.html

2. Do not continue to sell products to a dealer who has failed to make timely payments.

The law covers only transactions where the sale of farm products occurred within 120 days after the earliest transaction between you and the dealer, which remains unpaid at the time you file a claim, regardless of whether that earliest unpaid transaction is included in your claim.

The law requires dealers to pay you within 30 days of the sale and delivery of your products, unless a written agreement exists between you and the dealer that extends the term for payment up to a maximum of 120 days.

3. File a claim when a dealer has failed to make timely payments.

If a dealer has failed to pay you in a timely way for farm products you sold and delivered to the dealer, you should file a complaint with the Department. If the matter is not resolved or the Commissioner has reason to believe that there has been a default by a licensed dealer in making payment to producers, the Department will provide notice for producers to file claims within 30 days.

To be eligible for coverage, all claims must be filed no later than 365 days after the sale and delivery of the farm product, but in no event, beyond the expiration of the 30-day period provided in the notice published by the Department.

Claim forms may be obtained by contacting the Department at 1-800-554-4501 or by downloading the forms from the Department's website at: www.agmkt.state.ny.us/programs/apsf.html

***This pamphlet only highlights the requirements of the Agricultural Producers Security Law (Article 20). It is recommended that you or your attorney review the law in detail to fully understand what you must do to maximize its benefits for you, including additional protections like providing the dealer with notice that you have chosen to preserve the trust benefit provided by AML section 250-a.*

STATE-WIDE SMALL FRUIT IPM SCOUT TRAINING HELD IN WYOMING COUNTY

By Lutie Batt, Community Educator, Wyoming County CCE, Warsaw, NY

*(**Editor's Note**: Lutie Batt is Extension Community Educator for Wyoming CCE. Commercial berry crops are just one of the many commodities that she deals with on a day-to-day basis .Lutie became involved with the NYFVI berry production efficiency project in 2007 in an effort to provide more berry programming and assistance to commercial berry growers in her county and region. Since then she has attended various berry educational events herself, sponsored a very well-attended "Introduction to Commercial Berry Growing" workshop for new growers in her county, and applied for and received a travel grant to travel to Ohio to attend the 2008 North American Strawberry Growers' Summer tour to learn more about the berry industry. Recently Lutie applied for and secured funding for a Small Fruit IPM Scout Training Workshop which was held over a four month period from February to May 2009. The workshop was open to berry farm workers statewide. The article that follows is her first article (of many we hope) for New York Berry News detailing the results of that very successful workshop.)*

Sixteen berry growers, extension personnel, and volunteers attended the Small Fruit IPM Scouting Training sponsored by Cornell Cooperative Extension in Wyoming County. Two sessions were held in Wyoming County and two field sessions were hosted by Green Acres Farm in Rochester, NY. Sessions ran from 10 AM to 3 PM each day, with lunch provided.

Monday, February 16, was the date of the first session. Attendees from across the state met at the Wyoming CCE office in Warsaw, NY where they were provided with refreshments, name tags, and notebooks for the course. After a brief get acquainted activity, Dr. Marvin Pritts and WNY Berry Specialist Cathy Heidenreich held sessions on small fruit site selection and preparation, berry weed management, and berry nutrient management. Betsy Bihn, GAPS Program Coordinator, used humor to impress upon us the importance of food safety on our farms. Jim Ochterski, Extension Issue Leader, Ontario County CCE, enlightened us with new ways to market our farm produce.

Monday, March 16, was an eventful day showing the flexibility of our Cornell staff. Due to a car accident down the road from our office, the electric power was off in the center part of Warsaw, including our office. So all was picked up and moved to my church sanctuary where there was a computer and projector. Dr. Kerik Cox, Associate Professor, Tree Fruit and Small Fruit Pathology, entertained us with a moving PowerPoint presentation on berry disease management. Dr. Greg Loeb, Professor, Grape and Small Fruit Entomology, presented detailed slides and information on berry arthropod pest management (insects and mites). Dr. Juliet Carroll, NYS Fruit IPM Coordinator, rounded out the pest management portion of the program, presenting on IPM tactics for berry crops. And finally, for a change of pace, Agricultural Safety Specialist, James Carrabba presented general farm safety considerations for small fruit workers.

Both classroom days were filled with valuable information for all. The attendees also spend their lunch time and any other time they could grab networking with the other small fruit farmers and picking the brains of the Cornell University faculty and staff. Everyone knows how invaluable networking time can be to any business, so they all took full advantage of the time allotted.

Monday, April 20, we traveled to Green Acres Farm in Rochester for the first of our two field sessions. The weather was cold, about to rain at any minute, and windy. Dr. Marvin Pritts walked us through the various small fruit plantings demonstrating pruning techniques for blueberries and brambles and explaining the various bramble trellis construction possibilities. Lots of Q&A opportunities for everyone; lots of good information in return. Hands on field sessions like these are profitable for both the host farm owner and attendees. Everyone shared their methods and learned from one another what works and what does not. Just before the rain came we all made it to the greenhouse for lunch and afternoon workshops. Craig Michaloski, owner of Green Acres Farm discussed his methods and equipment for strawberry mulch application/removal. Fran Dellamano, co-owner and founder of Belle Terre Irrigation Inc. discussed irrigation system design and set up, water sources, pumps, system layout and construction. He also provided a display of various types of irrigation supplies and provided catalogs and further information as well as answering questions.


Pruning blueberries – up front and personal


Networking on the side


Scouting for strawberry pests

Monday, May 11, we again traveled to Green Acres Farm for the final session on production practices. The weather outlook was much better this time around; our time in the field was cool but our afternoon in the greenhouse away from the wind was more than warm. Cathy Heidenreich led a hands-on demo of scouting for berry pests. We all walked the berry fields with hand lens, notebook and white paper plate in hand, scouting for berry pests we could find and identify. Some interesting observations were made. Then we re-grouped in the greenhouse for a hands-on weed id workshop. Using the weed resource books given with our training manual kit and the various resources Cathy provided teams collected weeds around the greenhouse and in adjacent field and identified them. Some of them fooled us.

In the afternoon session Craig Michaloski took us to his second farm location (West Wind Farms LLC) and showed us his strawberry plantings and cultivation equipment. All were impressed with the machinery he has purchased or retrofitted to get the job done. Laura McDermott, Eastern New York Berry Extension Specialist, discussed pesticide application and safety, as well as demonstrating how to do sprayer calibration using Craig's modified boom sprayer /airblast equipment.


Checking out labor-saving equipment

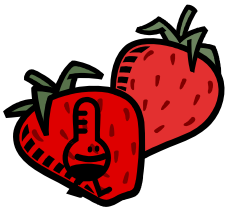

Seeing it in operation


Learning about pesticide safety and sprayer calibration

Upon completion of the program, all who attended were provided with a Small fruit IPM resource kit consisting of: A Production Guide in the small fruit of their specialty; Cornell Pest Management Guidelines for Berry Crops; Northeast Vegetable & Strawberry Pest Identification Guide; Weeds of the Northeast; Steel In The Field; plus the various handouts from the program sessions.

All hope to see this program or something equally enlightening held again next year.

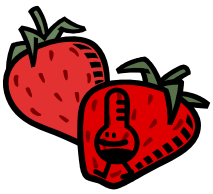
This training program was partially funded through a grant from the Agricultural Workforce Certification Program. The program was sponsored by: Cornell Cooperative Extension of Wyoming County in collaboration with Cooperative Extension offices of Allegany, Cattaraugus, Chautauqua, Livingston, and Ontario counties. Other participating sponsors included the New York Farm Viability Institute Berry production Efficiency project and Cornell University's College of Agriculture and Life Sciences Department of Horticulture.



JULY BERRY BAROMETER

HELPING TO KEEP YOU UP TO THE MARK!

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



Strawberry Growers Call to Arms!

Many growers across the state reported winter injury on strawberries this season, especially established plantings. Damage included death of daughter plants (runners), weakened mother plants, sparse foliage, poorly filled in planting rows, reduced crop loads, etc.

This injury may be due to late renovation of plantings last season. 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! See inset that follows for details.

ALL BERRY CROPS:

1. **Leaf Analysis –** Late this month would be the time to collect samples for leaf analysis. Results from this analysis will help with next year's fertilizer decisions. With blueberries it is often advisable to do a soil test at the same time; low leaf analysis levels may not adequately reflect soil levels if pH is a continuing problem.

Leaf Analysis

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.

Instructions for collecting and preparing leaf samples for testing follow this article. Enclose a check for $28, along with the proper form (also follows)

Soil Test- Obtain instructions and sample bags from your local Cooperative Extension Office or from Cornell University, Nutrient Analysis Lab, 804 Bradfield Hall, Ithaca, NY 14853 or call 607-255-4540, or visit http://cnal.cals.cornell.edu/or email soiltest@cornell.edu.

2. **Weed management** – Hand-weeding or spot applications to control weeds in new plantings.
3. **Pest management** –Stay the course- the end is in sight! Make applications promptly when environmental conditions are conducive to disease development/build-up or economic thresholds are exceeded for insect pests. Options for control may be found in the berry pest management guidelines for control strategies (http://ipmguidelines.org/BerryCrops/).
4. **Irrigation** – Yes it's been raining but don't give up the ship! Continue to keep water on berry crops, especially during harvest and while new plantings are getting established. Check lines for leaks. Run drip irrigation overnight to minimize losses due to evapotransporation.
5. **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.

CORNELL NUTRIENT ANALYSIS LABORATORY
G01 Bradfield Hall, Ithaca, NY 14853
Phone: (607)255-4540; Fax: (607)255-7656
Email: soiltest@cornell.edu Web: http://cnal.cals.cornell.edu

SF

Submission Form
SMALL FRUIT ANALYSIS
$28.00

Name _____ Sample # _____

Street _____ Field #/name _____

City _____

State _____ Zip _____

Telephone _____

Extension Agent _____ Date Sampled _____

County _____ Collected by _____

.....

Background Information

Select One: ○ Strawberry ○ Raspberry ○ Blueberry ○ Other _____
○ Fall Bearing
○ Summer Bearing Variety: _____

Sampled area (acres) _____

Age of planting _____

General health of sampled planting _____

Soil Type: ○ Sand ○ Clay ○ Loam ○ Muck ○ Gravel ○ Other _____

Soil reaction (pH) _____

Fertilizer program (last year and this year) _____

_____

If problem area:

Herbicide program (last year and this year) _____

_____

Fungicide program (last year and this year) _____

_____

Insecticide program (last year and this year) _____

_____

Describe any unusual or abnormal appearance of plants, trends, or patterns in the field _____

_____

_____

Important: Please make a copy of this form for your own records.

Additional submission forms for download are available on our website: http://cnal.cals.cornell.edu.

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Instructions for Leaf Sample Collection
SMALL FRUIT

1. Time to sample.

Strawberries: Sample the first fully expanded leaves after renovation or within the first 6 weeks after harvest.

Raspberries: Sample healthy leaves on non-fruiting canes between August 1st and 20th.

Blueberries: Sample healthy leaves between July 1st and August 30th.

2. What to sample.

Sample healthy leaves that are well exposed to light. These should represent the average condition of the planting and should not be damaged by: disease; insects; weather or mechanical injury.

AVOID mixing leaves from different cultivars.
DO NOT mix leaves from plants of different ages.

A minimum of 30 leaves are needed per sample. If possible, each leaf should be taken from a different plant within the sampled area. Since an accurate recommendation is dependant upon a pH reading, we strongly suggest that you test the pH at this time and record it on the appropriate line of your information sheet.

Plants sampled should represent the average condition within the planting unless special samples are being taken to determine cause(s) of a distinct problem or condition.

3. Soil conditions, past fertilizer practices and spray program.

Soil conditions, past fertilizer practices and spray program should be uniform (similar) over the entire sample area. If any of these conditions differ in different parts of the planting, it will be necessary to sample these areas separately.

4. Collecting and handling samples.

Detach leaves and remove the petioles. Place leaves in a dry paper bag or perforated plastic bag and immediately label the bag so that you will know the area this sample represents. Wash the leaves before they wilt to remove spray residues and dirt. Gently rub the leaves together in a mild detergent solution (dish washing detergent in tap water). See **Washing leaf samples** below for washing instructions. Place sample into dry paper bag with the top open and let dry at room temperature until the leaves are brittle.

5. Submission Form.

Fill out the small fruit submission form and return with all copies intact. You will be mailed a copy with your analysis. Be sure that the leaf sample bag and the information sheet have been marked with the same identification number.

6. Packaging, payment, and mailing instructions.

Please make check or money order payable to: Cornell Nutrient Analysis Lab, 804 Bradfield Hall, Cornell University, Ithaca NY 14853.

7. Washing leaf samples.

Wash the leaf samples while still fresh, **before they wilt**. If a large number of samples need to be prepared, they may be stored overnight in a cold storage, refrigerator or ice chest to keep them drying out.

Use distilled water, available at most drug stores, for washing and rinsing the samples. Change the water if it becomes dirty **or** after 8 to 10 samples (whichever occurs first). **Gently** and **lightly** scrub the leaves together in a mild detergent solution (most dish washing detergents are satisfactory).

Shake to remove excess water and immediately rinse the sample in clean distilled water. Again shake to remove excess water.

Shake to remove excess water and immediately rinse the sample in clean distilled water. Again shake to remove excess water.

Transfer sample to paper bag, with top open and dry at room temperature until the leaves are brittle.

NOTE: DO NOT let leaves to stand in water – complete the washing and rinsing process in one minute or less.

Additional submission forms for download are available on our website: http://cnal.cals.cornell.edu.

STRAWBERRIES:

Established plantings:

1. **Renovation** - See insert left for detailed instructions.
2. **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 and buried or burned). Promoting god 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.

3. **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:

1. **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.

BLUEBERRIES:

Established plantings:

1. **Diseases** – Anthracnose continues to be the major concern during harvest.
2. **Insects** – Blueberry maggot, Japanese beetle and blueberry stem borer are pests of concern.
3. **Birds** –Did you know turkeys can be some of the biggest offenders (no penalty, no fowl...). Deterring birds before berries ripen is always a better strategy than trying to scare them off after they've had that first yummy bite... or two...or three...

New plantings:

1. **Plant establishment** – Hand –weeding and spot treatments.
2. **Critter Patrol** – Watch for deer browse on new plants. Take immediate steps to deter feeding.
3. **Irrigation** – Perhaps moot at this point after the recent rains, but don't let your hose down on this one!

RASPBERRIES AND BLACKBERRIES:

Established plantings:

1. **Diseases –** Keep an eye out for gray mold on ripening fruit if the weather continues to be wet, warm, and humid.
2. **Insects –** Insects of concern during petal fall to ripening include Sap Beetle and Tarnished Plant Bug.
3. **Irrigation** –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.

Step-by-Step Strawberry Renovation

(Reminder: Not for planting year berries!)

Renovation – A thinning process to prevent overcrowding caused by the rooting of too many runner plants.

Steps in Renovation

(Note: If conditions are dry, irrigate to offset stress of herbicide application and leaf removal before beginning the renovation process.)

1. *Weed control* should be done immediately after last harvest. Apply 2,4-D then wait 5 days. Mow leaves.

2. Leaf removal (optional) should be done one week after last harvest. Helps prevent disease, aids in penetration of miticides, and allows applications of herbicides that would otherwise burn foliage.

(Note: Leaf removal from plantings with unhealthy root systems, such as those damaged by root weevils or root rot, or water stress is NOT recommended.)

3. *Narrow rows* within 1 day of leaf removal to an 8-10 inch width using a disk harrow or rototiller. Plants benefit from a light layer of soil over crowns at this point, *not more than 1 inch.*

4. *Fertilize and irrigate* after leaf removal to promote growth of new runners

5. *Weed control* – Sinbar may be applied before new leaf growth occurs.

6. *Leaf sampling* should be done when newly formed leaves are fully expanded.

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 (already reported in the Hudson Valley region), 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.

CONTROLLING JAPANESE BEETLES IN FRUIT CROPS

Rufus Isaacs and John Wise, Department of Entomology, Michigan State University

(Editor's note: *This is an excellent overview on Japanese beetle control for fruit crops. Please note some of the products discussed are not labeled for use on fruit crops in NYS. Check NYS product labels for both the pest (Japanese beetle) and the fruit crop before applying any products.)*

Japanese beetles have only one generation per year, but these beetles emerge over a long period from late June through August and can live for over 30 days. They feed on the foliage and fruit of various fruit crops grown in Michigan, causing damage to the plant and increasing the risk of fungal diseases. Their emergence during mid-summer can also result in their presence during harvest of some fruit crops, creating a risk of contamination. They are also highly mobile insects and can fly into fields from surrounding areas. This article provides information on insecticide options based on tests over the past few years conducted at the Trevor Nichols Research Complex and at grower's farms.

A few thoughts about trapping...

Traps are sold widely for Japanese beetle monitoring and control. However, these insects are very easy to see so they can be monitored by looking on the crop – you will know when they are present from the feeding damage and the beetles. Traps are highly attractive and draw beetles to them over large distances, so putting a trap anywhere near your crop fields will draw beetles from the surrounding landscape. Many of the attracted female beetles do not get trapped and end up laying eggs in the soil near the trap, so this creates a hot-spot for next season. Mass trapping of beetles is also not economically feasible in commercial fruit plantings, and there is little evidence that this strategy will work to reduce beetle populations and crop injury. The take-home message is that traps should be avoided because they will not help reduce Japanese beetle damage in fruit crops.

Broad-spectrum insecticide options for control

The carbamates Sevin and Lannate provide immediate kill of beetles present during the application. They are also stomach poisons, so if beetles eat treated foliage they will also receive a higher dose. This can be a good property for control of Japanese beetles since they eat so much that a strong dose of insecticide is taken up. Lannate has a short residual activity of a few days, whereas Sevin provides a week or more of protection. Sevin has a three or seven day PHI depending on the crop, and Lannate ranges from three to 14 days. The organophosphates Guthion and Imidan (buffer Imidan to pH 6.0) both provide excellent lethal activity on adult beetles, although it can take a few days for their effects on Japanese beetles to be seen as the beetles take up the insecticide. They provide 10 to 14 days of activity, with three to 21 day PHI, depending on the crop. The pyrethroids Danitol, Asana, Brigade, Baythroid, Mustang Max, and Capture give instant knockdown and mortality of adult beetles with seven to 10 days of activity. Beetles that do not receive a lethal dose of pyrethroid may also be repelled from treated fields, providing an additional mode for reducing infestation of crops. Use of pyrethroids in tree fruits may also result in mite flaring because of toxicity to mite predators. PHI's for pyrethroid insecticides vary from one to 14 days and can be different in different crops, so check the label before use or consult the table at the back of the 2009 edition of the *MSU Fruit Management Guide* to compare PHI's.

Reduced-risk insecticides

The labeling of the neonicotinoids Provado, Actara, Assail, Venom, and Clutch for use in some fruit crops provides selective options for Japanese beetle management. These insecticides provide two to five days of lethal activity from

contact with surface residues before being absorbed into the foliage. Thereafter, beetles must eat treated foliage to get a dose of the insecticide. Once inside the foliage, these locally-systemic insecticides are relatively rainfast and provide anti-feedant and knockdown activity, but with much less direct mortality. These neonicotinoids will also provide some control of aphids and leafhoppers. The rate of these insecticides allowed in different crops will have a large impact on their effectiveness, and growers should consider the higher end of the rate range to achieve some lasting control of Japanese beetles. Most labels will provide guidance on the rate that is appropriate for control of this pest. Avaunt is now labeled for use in grapes, with Japanese beetle, grape berry moth and leafhoppers (suppression only) on the label. Trials underway this season will determine its performance in Michigan vineyards.

Pre-mixed insecticides such as Voliam Flexi and Leverage contain one or more active ingredient that is active on Japanese beetles. In the case of Voliam flexi, thiamethoxam is the same active ingredient (AI) as in Actara. In the case of Leverage both AI's, imidaclorpid and cyfluthrin, have activity on Japanese beetle. It is prudent to examine the rates of each active ingredient in these pre-mixes to determine whether a pre-mix is right for your needs.

Short PHI and organic options

For growers looking for beetle control immediately before harvest or in organically grown fruit crops, some selective insecticides with zero day PHI's can provide a tool to repel beetles and help achieve beetle-free fruit during harvest. Compounds containing neem (Azadirect, Ecozin, Neemix etc.) have a zero day PHI and pyrethrum (Pyganic) has a 12-hour PHI. These compounds are labeled for organic use, and have a short but effective impact on adult Japanese beetles with some mortality, some knockdown off the crop, and some repellent activity. Typically there is only one to two days of activity against beetles because the residues do not remain active for long. The non-organic form of Pyganic, called Evergreen, also has a 12-hour PHI, and is much more effective against Japanese beetle than Pyganic due to the addition of a chemical that inhibits the beetle's ability to break down the insecticide.

A final option for protection against Japanese beetle is SURROUND WP, a white clay material applied to create a white coating on the surface of foliage and fruit to provide protection against insects. When applied to provide a good coating (typically requiring two or more applications), SURROUND has performed very well against Japanese beetle in trials conducted in blueberry and grape. If considering this approach to Japanese beetle control, be aware that the white coating on the fruit may require some removal after harvest to make the fruit marketable. This may be challenging for some types of fruit. For example, in blueberries the white residue was removed well from the surface during processing, but deposits in the calyx cup were not completely removed even after running berries through a typical wet processing line with food grade detergents.

Soil-applied insecticides

Japanese beetles typically lay their eggs in moist grassy areas and many fruit farms have a large amount of this highly suitable habitat. An additional approach to reducing the impact of Japanese beetles in a farm is to reduce the overall population by targeting the grub stage of this pest to reduce the abundance of beetles in the following year. If the location of high grub densities near fruit fields is known, these areas could be treated with a soil insecticide to get maximum return on this treatment. Our experience in Michigan blueberry fields has been that application of Admire (16 oz/acre) to grassy field perimeters in late June or early July reduced the abundance of beetles on bushes for the first few weeks of their flight period in the next growing season. After that, beetles flying into the area from outside overwhelmed this effect, so there is only a short-lived benefit from targeting the grubs in fields surrounded by infested grassy areas. However, as part of an overall integrated pest management (IPM) program to minimize the impact of Japanese beetle, this approach can help reduce the number of beetles growers must control. Platinum is another soil-applied insecticide that can be used for this grub control strategy.

(Reprinted with permission from: MSU FruitCAT Newsletter, June 30, 2009)

DEALING WITH HIGH SOLUBLE SALT LEVELS IN HIGH TUNNELS

Elsa Sánchez, Department of Horticulture, Penn State University

Some growers in our area have expressed concern about soil test analysis revealing abnormally high soluble salt levels in their high tunnels. We have seen soluble salt levels increase in the high tunnels at Penn State's High Tunnel Research and Education Facility, regardless of whether inorganic or organic nutrient sources have been used. In the spring of 2008 levels ranged from 0.37 to 9.38(!!) mmhos/cm.

Nutrient management can be tricky because of the unique environment within high tunnels. High tunnels exclude environmental factors (such as rain, snow and winds) that facilitate leaching and may lead to a build-up of salts that can negatively affect plant growth. In addition, most high tunnels are equipped with drip irrigation, which also limits leaching. Different crops respond differently to soluble salt levels as illustrated in the table below.

Salinity Tolerance of Selected Vegetable Crops

High	Medium	Low
4-6 mmhos/cm	**2-4 mmhos/cm**	**<2 mmhos/cm**
Asparagus	Broccoli	Beans
Beets	Melons	Cabbage
	Cauliflower	Carrots
	Spinach	Pepper
	Tomato	Strawberry
	Squash	Lettuce
		Onion
		Radish
		Turnip

Adapted from: The Nature and Properties of Soils, pg 417

In a two-year nutrient management study at the Penn State High Tunnel Research and Education facility (Burkhart, 2002). Inorganic fertilizer was applied through drip irrigation lines to supply 75 lbs N, 150 lbs phosphate and 75 lbs of potash per acre per year. Compost was soil incorporated to a depth of 1 ft at rates of 1 or 2 inches in the fall prior to planting. Applying 1 inch of compost supplied 441 lbs of N, 1345 lbs of phosphate and 1559 lbs of potash per acre per year. Applying 2 inches of compost roughly doubled the amount of nutrients added. Recommended rates of N, phosphate and potash are 100, 100 and 100 per acre (Commercial Vegetable Production Recommendations guide) indicating that excessive nutrients were applied to the soil with compost. The baseline soil soluble salt level was 0.15 mmho/cm. Soluble salt levels remained constant after one year of applying inorganic fertilizer. After two years, they increased to 0.30 mmho/cm. Soluble salt levels tripled to 0.45 mmho/cm after one year and increased over six times to 0.81 mmho/cm after two years when 1 inch of compost was applied. Applying 2 inches of compost resulted in soil salt levels increasing about 5½ times to 0.95 mmho/cm and 13 times to 1.9 mmhos/cm each year of the study, respectively. At the soluble salt levels as a result of applying 2 inches of compost, pepper yield declined.

Eight Ideas for Preventing or Dealing with High Soluble Salt Levels

1. **Monitor the soluble salt levels of the soils.** Soluble salt levels of a soil sample can be analyzed by Penn State's Agriculture Analytical Lab. It is an optional test costing $5. Request the test with your soil analysis. By monitoring the soluble salt level of your high tunnel soil, you will know when you need to act.

2. **Only place high tunnels in areas with good drainage.** If you already have sited your tunnel, it may be too late for this idea. However, when selecting a site for any new high tunnels, choose an area with good soil drainage. Good soil drainage will facilitate leaching of soluble salts.

3. **Avoid the over application of nutrients.** Soluble salt levels can be limited to some extent by applying only the amount of nutrients plants need. Use soil test reports or the Commercial Vegetable Production Recommendations guide to get current recommendations for application rates.

4. **Select fertilizers with low salt indexes; limit the use of organic nutrient sources containing animal manures.** When possible, select fertilizers with low salt indexes (see table below) to help limit the accumulation of soluble salts. Depending on availability and cost, this may be difficult to do. In Missouri, it is reported that many high tunnel tomato growers are using calcium nitrate and another fertilizer high in potassium to meet nutrient needs (Watering and Fertilizing Tomatoes in a High Tunnel). If you use organic nutrient sources, try to avoid or limit those containing animal manures. Animal manures tend to be high in salts.

Salt Indexes of Various Fertilizers

Fertilizer	Salt Index
Ammonium Nitrate (34-0-0)	102
Sodium Nitrate (16-0-0)	100
Urea (45-0-0)	73
Ammonium Sulfate (21-0-0)	69
Calcium Nitrate	65
Diammonium Phosphate (18-46-0)	29
Monoammonium Phosphate (11-55-0)	27
Superphosphate (0-45-0)	10
Superphosphate (0-20-0)	8
Potassium Chloride (0-0-60)	116
Potassium Nitrate (14-0-47)	74
Potassium Sulfate (0-0-54)	46

Adapted from: Soil Fertility 2nd Ed

5. **Use irrigation water with low salt levels.** Irrigation water can be a source of salts. Penn State's Agriculture Analytical offers water testing for a fee. Based on that test, 0.0 – 0.6 mmho/cm is considered normal.

6. **Use a sprinkler irrigation system to establish seedlings.** Seedlings are more sensitive to high soluble salt levels than mature plants. If your soluble salt levels are high consider using a sprinkler irrigation system to establish seedlings. This will facilitate leaching of salts around the plants.

7. **Rotate crops based on salinity tolerances.** The table above, "Salinity Tolerance of Selected Vegetable Crops", can be used with soil test analysis of soluble salt levels to rotate crops in high tunnels. As the soluble salt levels increase, select crops with a higher salt tolerance.

8. **Leach out salts.** As a general guideline for leaching out soluble salts from the top foot of soil, apply 6 inches of water to leach about 50% of the salts, apply 12 inches to leach about 80% of the salts and 24% to leach about 90% of the salts (Western Fertilizer Handbook, 8th Ed). Out at the high tunnel facility I've been managing 4 high tunnels since 2003. In the fall of 2007 the soluble salt level was on average 0.40 mmho/cm. This was starting to get into the range where plant yields of salt sensitive crops could decline. That November the tops of the tunnels ripped off due to high speed winds and because the plastic was getting old. We decided to leave the tops off until the spring to see what would happen to the soluble salt levels. In April of 2008 we put new tops on and had the soluble salt level of the soils analyzed. On average, the soluble salt level decreased to 0.09 mmho/cm or about 77%. Between November of 2007 and April of 2008 we got about 11.5 inches of rain.

If the tops of the tunnels cannot be removed, leaching soluble salts with irrigation is also an option. This can be accomplished with any irrigation system. However, since most high tunnels are outfitted with drip/trickle irrigation systems the table below is included. It shows the hours required to apply 1 inch of water through a trickle irrigation system depending on the width of the mulched bed.

Hours Required to Apply 1 Inch Water to Mulched Area

Trickle Tube Flow Rate		Mulched Width (ft)				
gph/100 ft	gpm/100 ft	2.0	2.5	3.0	3.5	4.0
8	0.13	15.5	19.5	23.5	27.0	31.0
10	0.17	12.5	16.5	18.5	22.0	25.0
12	0.20	10.5	13.0	15.5	18.0	21.0
16	0.27	8.0	10.0	11.5	13.5	15.5
18	0.30	7.0	8.5	10.5	12.0	14.0
20	0.33	6.0	8.0	9.5	11.0	12.5
24	0.40	5.0	6.5	8.0	9.0	10.5
30	0.50	4.0	5.0	6.0	7.0	8.5
36	0.60	3.5	4.5	5.0	6.0	7.0
40	0.67	3.0	4.0	4.5	5.5	6.0
42	0.70	3.0	4.0	4.5	5.0	6.0
48	0.80	2.5	3.0	4.0	4.5	5.0
50	0.83	2.5	3.0	4.0	4.5	5.0
54	0.90	2.5	3.0	3.5	4.0	4.5
60	1.00	2.0	2.5	3.0	3.5	4.0

Source: 2009 Commercial Vegetable Production Recommendations guide, Pg C3

To use the table, select the trickle tube flow rate (yellow columns) in gallons per hour per 100 ft of trickle tape (gph/100 ft) or in gallons per minute per 100 feet of trickle tape (gpm/100 ft). Then select the width of the mulched row (pink columns). The value you get will be the number of hours the irrigation systems should run in hours to apply 1 inch of water. If you want to apply 12 inches of water, multiply this value by 12.

In the high tunnels at Penn State's Center for Plasticulture we use a trickle tape with a 0.40 gpm/100 ft flow rate and mulched beds that are 2.5 ft wide. So, we need to run the irrigation system for 6.5 hours to apply 1 inch of water and 78 hours to apply 12 inches of water.

Soil texture (i.e., sand, loamy sand, sandy loam, clay loam, silt loam) is another factor affecting the length of time that an irrigation system needs to be on to apply 1 inch of water. Table C-5 on page C3 of the 2009 Commercial Vegetable Production Recommendations guide lists the maximum number of hours for trickle irrigation systems to apply 1 to 1.5 inches of water based on soil texture.

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ELDERBERRY PRUNING: A RESEARCH BRIEF

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A recent scientific journal article has been published on pruning American elderberries. The research brief that follows is a summary of the findings presented. For those wishing to read the article in its entirety, a full citation follows the brief that provides author names, article title, and source.

The journal article, written by Thomas, Byers, and Ellersieck (2009), discusses the effect of 4 pruning methods on productivity and characteristics of American elderberry. As noted by the authors, elderberry is increasingly being cultivated in North American for its edible fruit and flowers. It also remains relatively undeveloped as a commercial horticultural crop. Producers establishing elderberry are taking a risk due to the substantial lack of commercial production information for this crop.

Elderberry is rather a unique shrub as it produces fruit on both primary (current season) and secondary (older woody) shoots. Primary shoots arise each spring from spreading underground rhizomes. They end in a single large flower cluster (cyme) that opens a few to several days before those on the secondary shoots. Flower clusters on secondary shoots tend to be smaller and more numerous than those on primary shoots.

The authors hypothesized that the simplest and least costly method of pruning elderberries may be to prune the plants to the ground each spring, perhaps with a motorized or tractor mounted sickle-bar. Well managed plantings pruned in this manner should produce good (although slightly lower) annual yields they projected, than those managed in a more selective annual pruning system. A selective pruning system they thought would be more labor-intensive in terms of both pruning and harvest. Their study was designed to test this hypothesis.

Details of the Study - The researchers examined elderberry flowering, fruit yield, phenology, plant growth, and incidence of disease and arthropods pests in response to 4 pruning methods over a five year period. The pruning methods

included in the research trial were: 1) *annual removal of all shoots* - all shoots cut to the ground in early spring, 2) *biannual removal of all shoots* – pruning to the ground every other spring, 3) *annual selective pruning* – removal of all unproductive or poor quality stems and tipping back of strong stems to approx. 3 ft., and 4) *no pruning*.

The researchers applied these pruning methods to 3 cultivars ('Adams II', 'Bob Gordon', and 'Netzer') at two sites in Missouri. Experimental plots consisted of 3 plants each, planted approximately 4 ft apart in row. Individual plots were separated by 8 ft in row. Between row spacing was 10 ft (total plants/site = 144; approx. 0.25 acres). Treatments were applied and cultivars were assigned to plots in a complete randomized block design with 4 replications for each cultivar x pruning method combination.

Sites were initially prepared by killing existing vegetation with glyphosate prior to planting; at one site shrubs were established on a 20 cm raised soil ridge; on the second site flat, undisturbed ground. Alleyways were seeded with tall fescue that was maintained and mowed at both locations.

Hardwood and softwood cuttings were used to establish plantings. Plantings were fertilized each spring with ammonium nitrate (NH_4NO_3) at a rate of 50 lb/a N. Plants were provided with approx. 1 to 1.5 inches water/week either by rainfall or drip irrigation. Weeds were managed by mulching, hand-weeding and herbicide application (glyphosate).

The study began after a 2-year establishment period; all flowers were removed during this period to encourage root and structural growth. No other pruning was done during the establishment period. All plants in the study were pruned to the ground in early spring the year the study began.

Plant data collected included fruit yield, cyme number and size, individual berry weight (50 random ripe berries per plot), and plant height. Phenology data included bloom time, fruit ripening, and harvest dates.

Disease and arthropod (insect and mite) incidence data was also collected, using a scale of 1 to 5 where 1 = severe damage and 5 = no occurrence. Eriophid mites (*Eriophidae*) and bacterial leaf spot (*Pseudomonas viridiflava*) were the two pest problems observed and rated.

Study Results - Both plantings survived and performed well during the course of the 5 year study; part of the 'Netzger' fruit crop was lost to birds during first year of the study at one site.

Yield - 'Bob Gordon' yielded nearly 3 times more then 'Adams II' and over 4 times more than 'Netzger'. Annually pruned plants and unpruned plants yielded significantly less than those pruned selectively or biannually. Annually pruned plants consistently produced fewer, larger cymes compared to the other 3 treatments. Berry size was unaffected by pruning method but did vary by cultivar, location, and year. 'Bob Gordon' had the largest mean berry weight. Annual and biannual pruned plants were slightly but significantly shorter than selectively pruned or unpruned plants.

Disease and arthropod pest incidence - Eriophid mites are a very common pest of elderberry; little is known about their taxonomy, life cycle, or management. It has been reported by one researcher that the mites overwinter within and beneath leaf buds in the Czech Republic. This same mite species has been shown to occur on American elderberry in North America. The authors hypothesized annual removal and destruction of stems might remove a significant source of mite buildup. This hypothesis was not substantiated by the results of the study. Mite occurrence was unaffected by pruning but varied by location, cultivar ('Adams II' more affected than the other 2 cultivars), and year. Many eriophid mites are known to be wind-disseminated; the authors speculated re-infestation by mites of annually pruned plots may have occurred either from neighboring unpruned plots or other sources.

The authors indicate it is important to note two other important elderberry insect pests not evaluated during the course of this study might also be managed through annual removal of stems: elder shoot borer (*Achatodes zeae*) which overwinters as eggs on stems, and elder borer beetle (*Desmocerus palliates)*, which overwinters as pupae in the crown and lower stem areas. Because flowers and fruit may be produced reliably with annual removal of stems, this approach to elderberry pest management needs to be studied further.

Pruning method had no effect on bacterial leaf spot as reported in this study. However, the authors suggest the effect of various pruning methods on plant structure and air movement through the canopy still needs investigation in relationship to this disease and various fungal diseases attacking elderberry.

Phenology - Pruning method had a significant effect on phenology. Pruning plants to the ground delayed flowering (anthesis) and fruit ripening by several days. Delay of ripening due to pruning plants to the ground tended to reduce the number of harvests, focusing the harvest window into a narrower time frame. Greater uniformity of flowering, fruiting,

and ripening was achieved with pruned-to-the-ground plants because all growth on these plants were primary shoots. This would be of particular importance for the development of mechanical harvest for elderberries.

Some producers may consider the potentially lower overall yield for pruned-to-the-ground plants a fair trade off for greatly simplified pruning and consolidated harvest. Other producers with limited labor/resources for harvest may prefer the annual selective pruning method, allowing for a more prolonger, gradual harvest. Another consideration mentioned by the authors in respect to annual selective pruning and its longer more gradual harvest is the possibility of longer exposure of ripe fruit to the effects of birds, insects, diseases, and weather (i.e. hail).

Other considerations - During the course of their study the authors observed pruning may have an effect on bird predation. Birds tended to prefer fruit born on stiff upright stems (secondary stems). Less woody and rigid primary stems with their large heavy-fruited cymes tended to bend down toward the ground where birds seemed less inclined to attack them.

Final thoughts - The authors indicate while their study provides new information on potential elderberry pruning strategies, questions on the long-term impact of such methods remain. They identified what seem to be multiple short-term benefits to annual pruning to the ground. However, they suggest some quantity of stored carbohydrates may be lost when plants are pruned in such a manner. Long-terms effects of annual shoot removal on vigor, productivity, and planting longevity remain to be determined.

To read the original journal article in its entirety see: Thomas, Andre L., Byers, Patrick L., and Ellersieck, Mark R. 2009. Productivity and Characteristics of American Elderberry in Response to Various Pruning Methods. *HortScience* Volume 44 No. 3 June 2009, pages 671-677.

DOES YOUR MARKETING PROGRAM HAVE A GPS? PART II

Debra Perosio, Ph.D., Lecturer, Applied Economics and Management, Cornell University

In the previous article the first part of your marketing plan was discussed which focuses on the business as it stands today. What type of business is it? What is its mission, vision? What are the businesses strengths and weaknesses? Who is your competition? What is the industry like your business is part of...growing, declining??

This article focuses on the second part of the marketing plan. This component is centered around drawing out the opportunities and needs for the business and articulating them into an objective that will guide your marketing plan and future marketing efforts.

By answering the following questions, you will have the second part of your marketing plan off to a great start!

A. Marketing Plan Objective

1. Think carefully about your SWOT analysis and answer the following questions:
    a. What are the identified strengths?
    b. What are available opportunities that the business should consider? Specifically, describe 3 possible opportunities.
    c. What can the business do to improve its weaknesses?
    d. What can the business do to defend against the threats?

2. Now you are ready to zero-in on the objective for your business's marketing plan. An objective is derived from your SWOT analysis and addresses the "business need" you identified in Component 1. This really defines what your plan will ultimately focus on.

    A. Develop one objective for your plan. The objective must be one of the 3 opportunities you identified in 1b above.

    B. Each Objective MUST be:
        a. Specific
        b. Measurable
        c. Implementable and realistic (i.e., feasible for the particular business)
        d. Specify a time frame

Below are examples of objectives...yours should be in this format!

Increase the purchases of jams and jellies at my farm stand by 20% during 2009 by developing 3 new flavors, new signage at the market and through advertisements in the local weekly newspaper.

Increase customers to my corn maze during the fall of 2008 by 25% by increased advertising, development of group rates and three special theme nights at the maze.

C. How will you assess and measure your success/failure in achieving your objective? Survey? Focus groups? Changes in funds raised? Other?

While there are many ways to evaluate the success/failure of a marketing objective, typically a survey is a critical evaluation method. The survey can be telephone, in person, via the mail or using the internet. For a survey, think about the following:

1) who and how many will be surveyed
2) the specific data to be collected (Provide several sample questions)
3) how the data will be collected (e.g. mall intercept, phone survey, etc.)
4) how the data will be analyzed (i.e. manually or by computer)

5) specifically how the data will be used as a measure of success

3. Target Market(s)

- In the objective you just developed you have identified a target market or markets. Now you have to describe this market in detail. If is it the same target market you described in Component 1 you can simply refer to the previous section in your marketing plan for a complete description. By getting to know this target market really well you will be much better prepared to more accurately predict the types of advertising and promotions that will most likely appeal to them.

4. Points of Difference

- What, currently distinguishes the business in the marketplace? What makes you different?
- Through the development of your objective, will there be a new or additional point of difference? Why or why not? (there should be...that is why you are doing a marketing plan!)

Next time I will discuss the last part of your marketing plan. This will focus on developing this new objective fully and creating and advertising and promotional campaign to help "spread the word" to your target market.

WEATHER NOTES

NEW YORK CROP WEATHER SERVICE NOTES

Week ending June 14th: The period began with a passage of a cold front as a ridge of cool Canadian high pressure built into the eastern Great Lakes and western New England. However, a storm system approached from the central plains and brought showers and thunderstorms to the region Tuesday. This system and its associated frontal system slowly moved south for the mid week period keeping most of the rainfall south of the region. Another wave of low pressure developed along the front and impacted the region by Friday with more showers and thunderstorms. This was followed by tranquil weather for the start of the weekend, although, western New York did observe an increase in shower and thunderstorm activity toward the afternoon hours on Saturday. With a pronounced northwest flow regime across the region, this kept temperatures at or below normal through the period with rainfall amounts near to slight above normal.

Strawberries were 6 percent poor, 17 percent fair, 64 percent good, and 13 percent excellent. In the Lake Ontario fruit region, plum curculio activity continued in blueberries. Blueberries were at petal fall in many varieties. In Madison and Albany Counties, strawberry harvest began, and a very nice crop was expected.

Week ending June 21st: It was a wet and cool stretch of weather with precipitation well above normal except across extreme western and northern New York. Temperatures were below normal. A strong upper level disturbance produced showers and thunderstorms Sunday night and Monday. Some of the thunderstorms on Monday brought large hail ranging from penny to golf ball size to parts of east central New York with hail accumulating to a few inches in portions of the Capital Region. Some locations received in excess of 2 inches of rainfall from the slow moving thunderstorms. High pressure briefly dominated over the northeast Tuesday and Wednesday before another storm system brought rainfall from the Midwest. The area of low pressure and its associated warm front produced a soaking rain fall on Thursday. The upper low brought some more showers on Friday. The heaviest rainfall Thursday into Friday occurred from the Capital Region

southward down the Hudson River Valley. Another low pressure system approaching from the Great Lakes region brought more rainfall on Saturday.

Strawberries were 5 percent poor, 14 percent fair, 71 percent good, and 10 percent excellent. In the Lake Ontario fruit region, plum curculio and oriental fruit moth activity subsided. Raspberries were in bloom and growers were applying fungicide to protect against botrytis. Strawberry harvest across the state was at peak. However, rain in many areas put a damper on progress. Hail storms in Albany, Columbia and Ulster Counties damaged tree fruit and small fruit crops. Some damage was quite severe.

Week ending June 28th: Generally wet conditions continued for the entire week. At the start of the week, an area of low pressure was situated off the coast of Long Island. This storm system was nearly stationary through Wednesday allowing for several rounds of showers and thunderstorms, mainly across eastern parts of the state. Another cold front approached the region for Thursday and Friday allowing for additional showers and thunderstorms. Some thunderstorms were severe across western and central New York on Thursday and thunderstorms also produced wind damage and hail across eastern and southern parts of the state on Friday as well. The upper level disturbance responsible for the cold front remained situated for the area on Saturday allowing for a few more light rain showers over the eastern half of the state. Temperatures were generally cool to start the week with associated coastal low and cloud cover. Temperatures warmed for Wednesday and Thursday ahead of the cold frontal boundary but became cool once again behind the passage of the boundary as an upper level storm remained over the area for Saturday.

Strawberries were 19 percent poor, 25 percent fair, 44 percent good, and 12 percent excellent. Strawberry harvest continued throughout the state, and both Madison and Albany Counties reported a good season. In Broome County, excessive rains limited strawberry picking and caused some to rot in the fields.

Week ending July 5th: A persistent upper level disturbance brought bouts of showers and thunderstorms to New York State for much of the period. Wetter than normal conditions were noted across western New York, the St. Lawrence Valley, and eastern New York. Near normal rainfall occurred across much of central New York with drier than normal conditions observed across Long Island. The heaviest rainfall occurred across eastern New York on July 1st where Albany recorded a record rainfall for the date of 2.76 inches. Daily rainfall totals in excess of 5 inches were observed in Washington County on July 1st as well. Accompanying these heavy downpours were reports of hail, some as large as 1.50 inches in diameter. The upper level disturbance kept temperatures below normal across the state. Weekly departures from normal were generally 3 to 5 degrees, although departures across the northern tier were about 2 degrees below normal.

Strawberries were 17 percent poor, 37 percent fair, 35 percent good, and 11 percent excellent. In the Lake Ontario fruit region, rain severely damaged the strawberry crop. In the Hudson Valley, fruit continued to take a hit due to excessive moisture.

Questions or Comments about the New York Berry News?

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

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WEATHER REPORTS OF TEMPERATURES AND PRECIPITATION THROUGHOUT NEW YORK STATE FOR WEEK ENDING SUNDAY 8:00am, June 14th, 2009

	Temperature				Growing Degree Days (*Base 50*)			Precipitation (*inches*)			
	High	***Low***	***Avg***	***DFN*[1]**	***Week***	***YTD*[2]**	***DFN***	***Week***	***DFN***	***YTD***	***DFN***
Hudson Valley											
Albany	80	54	66	0	114	588	100	1.45	0.57	7	-1.12
Glens Falls	77	48	63	-2	91	452	52	2.01	1.24	6.84	-1.29
Poughkeepsie	82	57	67	2	121	635	98	3.35	2.44	9.94	0.29
Mohawk Valley											
Utica	75	47	60	-1	69	271	-18	2.61	1.49	12.23	1.01
Champlain Valley											
Plattsburgh	74	38	60	-5	73	372	-36	1.33	0.59	7.08	-0.03
St. Lawrence Valley											
Canton	73	44	60	-3	71	326	-23	1.37	0.6	9.4	2.05
Massena	77	39	61	-3	75	384	3	0.59	-0.13	6.88	0.3
Great Lakes											
Buffalo	73	51	63	-3	92	521	66	0.56	-0.28	5.6	-2.09
Colden	73	46	60	-2	74	389	42	1.29	0.31	7.53	-1.78
Niagara Falls	76	48	62	-3	88	502	29	0.37	-0.46	7.06	-0.65
Rochester	75	50	62	-3	88	496	29	1	0.3	6.46	-0.27
Watertown	76	46	61	-1	80	369	22	0.47	-0.21	9.18	2.63
Central Lakes											
Dansville	78	48	63	-2	92	522	69	1.15	0.24	4.95	-2.54
Geneva	80	49	64	0	101	482	47	1.5	0.61	6.57	-1.05
Honeoye	80	47	64	-1	98	499	50	2.34	1.45	8.42	0.9
Ithaca	84	49	64	1	97	432	45	1.47	0.57	7.41	-0.55
Penn Yan	81	51	65	2	108	565	130	2.28	1.39	5.59	-2.03
Syracuse	83	53	66	2	113	582	109	2.76	1.88	8.6	0.28
Warsaw	71	48	60	-2	70	357	42	1.29	0.27	7.3	-1.58
Western Plateau											
Alfred	77	41	61	1	80	348	40	0.76	-0.34	5.81	-2.06
Elmira	85	51	66	3	113	517	101	0.99	0.1	5.9	-1.72
Franklinville	76	41	61	2	80	355	89	0.5	-0.51	6.81	-1.98
Sinclairville	77	46	64	3	96	450	131	1.38	0.3	7.87	-2
Eastern Plateau											
Binghamton	81	52	65	2	106	527	126	1.68	0.84	7.77	-0.4
Cobleskill	78	51	65	3	104	428	63	1.5	0.52	6.74	-2.16
Morrisville	78	43	62	1	85	358	17	1.09	0.11	8.95	0.24
Norwich	83	50	65	3	107	416	49	1.55	0.57	10.51	1.47
Oneonta	76	53	65	4	103	431	101	1.15	0.17	8.57	-1.18
Coastal											
Bridgehampton	78	57	65	0	103	504	90	1.56	0.71	13.4	3.88
New York	82	59	68	-3	126	815	96	2.6	1.79	12.83	3.57

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

The information contained in this weekly release is obtained in cooperation with Cornell Cooperative Extension, USDA Farm Service Agency, the National Weather Service, Agricultural Weather Information Service and other knowledgeable persons associated with New York agriculture. Their cooperation is greatly appreciated. Visit our website at www.nass.usda.gov/ny and click on "subscribe to ny reports" for instructions on subscribing electronically. you may also visit our website to access all our reports which are available for free online.

WEATHER REPORTS OF TEMPERATURES AND PRECIPITATION THROUGHOUT NEW YORK STATE FOR WEEK ENDING SUNDAY 8:00am, June 2st[h], 2009

	Temperature				Growing Degree Days (*Base 50*)			Precipitation (*inches*)			
	High	*Low*	*Avg*	*DFN*[1]	*Week*	*YTD*[2]	*DFN*	*Week*	*DFN*	*YTD*	*DFN*
Hudson Valley											
Albany	77	53	65	-4	106	694	83	2.41	1.57	9.41	0.45
Glens Falls	76	46	63	-3	93	545	37	1.82	1.09	8.66	-0.2
Poughkeepsie	80	53	65	-3	106	741	79	3.46	2.6	13.4	2.89
Mohawk Valley											
Utica	71	47	59	-4	61	332	-41	1.78	0.69	14.01	1.7
Champlain Valley											
Plattsburgh	78	47	63	-3	95	467	-54	0.39	-0.35	7.47	-0.38
St. Lawrence Valley											
Canton	78	46	62	-3	87	425	-21	0.6	-0.17	9.84	1.72
Massena	79	47	64	-1	98	482	-1	0.27	-0.5	7.15	-0.2
Great Lakes											
Buffalo	81	53	66	-2	110	631	60	1.29	0.45	6.89	-1.64
Colden	76	48	62	-3	83	472	31	1.96	0.98	9.49	-0.8
Niagara Falls	81	52	66	-2	112	614	25	1.53	0.71	8.59	0.06
Rochester	77	51	64	-3	98	594	18	3.11	2.41	9.57	2.14
Watertown	77	44	62	-2	87	456	15	0.45	-0.18	9.63	2.45
Central Lakes											
Dansville	77	47	62	-5	87	609	42	2.25	1.34	7.2	-1.2
Geneva	76	49	63	-4	91	573	27	2.56	1.66	9.13	0.61
Honeoye	76	44	63	-4	91	590	25	2.38	1.47	10.8	2.37
Ithaca	75	46	62	-4	83	515	26	1.86	0.95	9.27	0.4
Penn Yan	76	51	64	-3	98	663	117	2.62	1.72	8.21	-0.31
Syracuse	77	50	63	-3	93	675	91	1.79	0.88	10.39	1.16
Warsaw	74	49	61	-3	78	435	32	2.05	1.03	9.35	-0.55
Western Plateau											
Alfred	78	41	59	-4	66	414	20	1.59	0.47	7.4	-1.59
Elmira	77	44	64	-2	99	616	92	1.28	0.37	7.18	-1.35
Franklinville	79	39	61	-2	76	431	85	1.63	0.6	8.44	-1.38
Sinclairville	78	45	63	-1	90	540	132	2.4	1.3	10.27	-0.7
Eastern Plateau											
Binghamton	74	52	61	-4	80	607	102	2.5	1.66	10.27	1.26
Cobleskill	75	47	60	-4	75	503	41	3.03	2.05	9.77	-0.11
Morrisville	72	46	58	-6	60	418	-14	2.32	1.34	11.27	1.58
Norwich	78	49	62	-3	83	499	37	2.44	1.46	12.95	2.93
Oneonta	75	50	61	-3	78	509	90	2.04	1.06	10.61	-0.12
Coastal											
Bridgehampton	78	45	63	-5	90	594	66	3.34	2.5	16.74	6.38
New York	79	56	66	-7	114	929	57	2.83	1.99	15.66	5.56

1. *D*eparture *from N*ormal
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WEATHER REPORTS OF TEMPERATURES AND PRECIPITATION THROUGHOUT NEW YORK STATE FOR WEEK ENDING SUNDAY 8:00am, June 28th, 2009

	Temperature				Growing Degree Days (*Base 50*)			Precipitation (*inches*)			
	High	*Low*	*Avg*	*DFN*[1]	*Week*	*YTD*[2]	*DFN*	*Week*	*DFN*	*YTD*	*DFN*
Hudson Valley											
Albany	86	60	71	3	150	844	98	0.8	-0.04	10.21	0.41
Glens Falls	85	55	70	3	139	684	57	0.31	-0.39	8.97	-0.59
Poughkeepsie	84	60	71	3	151	892	94	1.9	1.04	15.3	3.93
Mohawk Valley											
Utica	83	53	65	2	109	441	-26	0.42	-0.62	14.43	1.08
Champlain Valley											
Plattsburgh	84	55	70	3	140	607	-37	0.27	-0.43	7.74	-0.81
St. Lawrence Valley											
Canton	86	54	68	4	127	552	-2	0.7	-0.07	10.54	1.65
Massena	90	51	71	5	146	628	31	1.66	0.89	8.81	0.69
Great Lakes											
Buffalo	85	59	71	3	148	779	79	0.6	-0.21	7.49	-1.85
Colden	84	52	66	2	112	584	39	0.72	-0.24	10.21	-1.04
Niagara Falls	88	57	73	5	159	773	57	1.16	0.4	9.75	0.46
Rochester	86	56	70	4	143	737	40	0.83	0.13	10.4	2.27
Watertown	87	50	69	5	137	593	46	0.09	-0.48	9.72	1.97
Central Lakes											
Dansville	86	54	67	-1	124	733	42	0.77	-0.12	7.97	-1.32
Geneva	86	56	69	2	135	708	39	0.38	-0.46	9.51	0.15
Honeoye	86	50	68	-2	125	715	21	0.73	-0.1	11.53	2.27
Ithaca	87	50	66	0	114	629	28	0.94	0.06	10.21	0.46
Penn Yan	87	57	70	3	139	802	133	0.25	-0.59	8.46	-0.9
Syracuse	87	57	70	3	141	816	110	0.1	-0.81	10.49	0.35
Warsaw	83	55	67	4	120	555	54	0.72	-0.25	10.07	-0.8
Western Plateau											
Alfred	85	47	64	1	102	516	27	1.74	0.64	9.14	-0.95
Elmira	89	50	67	1	123	739	97	0.35	-0.53	7.53	-1.88
Franklinville	85	46	65	3	106	537	102	1.34	0.36	9.78	-1.02
Sinclairville	86	54	68	4	125	665	157	0.38	-0.67	10.65	-1.37
Eastern Plateau											
Binghamton	85	56	68	3	127	734	114	0.74	-0.1	11.01	1.16
Cobleskill	86	57	68	4	128	631	61	0.79	-0.19	10.56	-0.3
Morrisville	86	53	67	3	119	537	3	1.53	0.61	12.8	2.19
Norwich	88	51	67	3	124	623	54	0.7	-0.21	13.65	2.72
Oneonta	85	57	68	4	126	635	116	1.3	0.32	11.91	0.2
Coastal											
Bridgehampton	81	61	68	0	127	721	66	0.41	-0.39	17.15	5.99
New York	85	65	73	-1	163	1092	55	1.22	0.38	16.88	5.94

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.

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WEATHER REPORTS OF TEMPERATURES AND PRECIPITATION THROUGHOUT NEW YORK STATE FOR WEEK ENDING SUNDAY 8:00am, July 5th, 2009

	Temperature				Growing Degree Days (*Base 50*)			Precipitation (*inches*)			
	High	*Low*	*Avg*	*DFN*[1]	*Week*	*YTD*[2]	*DFN*	*Week*	*DFN*	*YTD*	*DFN*
Hudson Valley											
Albany	83	53	68	-3	130	974	83	3.58	2.81	13.79	3.22
Glens Falls	80	47	66	-3	114	798	41	1.82	1.15	10.79	0.56
Poughkeepsie	84	55	70	-2	139	1031	88	1.25	0.35	16.55	4.28
Mohawk Valley											
Utica	75	46	61	-4	81	522	-48	1.35	0.39	15.78	1.47
Champlain Valley											
Plattsburgh	78	54	67	-3	122	729	-47	1.37	0.69	9.11	-0.12
St. Lawrence Valley											
Canton	81	52	66	-1	113	665	-6	1.47	0.7	11.12	1.46
Massena	79	53	67	-2	121	749	29	1.42	0.71	10.23	1.4
Great Lakes											
Buffalo	77	50	65	-6	106	885	47	1.23	0.5	8.72	-1.35
Colden	74	48	63	-5	89	673	14	1.36	0.47	11.57	-0.57
Niagara Falls	79	50	66	-4	116	889	36	0.41	-0.27	10.16	0.19
Rochester	78	48	65	-5	108	845	17	1.97	1.32	12.37	3.59
Watertown	79	49	66	-2	112	705	40	1.16	0.69	10.88	2.66
Central Lakes											
Dansville	77	47	65	-5	105	888	65	1.26	0.46	9.24	-0.85
Geneva	79	51	66	-4	111	819	18	0.97	0.21	10.48	0.36
Honeoye	77	46	64	-7	100	815	-16	2.06	1.32	13.59	3.59
Ithaca	80	45	65	-3	108	737	15	1.56	0.72	11.77	1.18
Penn Yan	79	51	66	-4	113	915	114	1.68	0.92	10.14	0.02
Syracuse	83	53	67	-3	122	938	101	0.76	-0.15	11.25	0.2
Warsaw	72	47	61	-5	79	634	26	2.43	1.55	12.5	0.75
Western Plateau											
Alfred	73	42	60	-6	71	587	-6	1.47	0.48	10.61	-0.47
Elmira	80	46	66	-3	115	854	83	0.79	-0.05	8.32	-1.93
Franklinville	71	44	61	-4	77	614	81	2.09	1.18	11.87	0.16
Sinclairville	75	47	63	-4	92	756	140	2.25	1.26	12.9	-0.11
Eastern Plateau											
Binghamton	79	50	65	-4	105	839	95	0.86	0.02	11.87	1.18
Cobleskill	79	53	66	-2	109	740	53	1.58	0.7	12.14	0.4
Morrisville	79	48	65	-2	105	642	-3	1.53	0.65	14.33	2.84
Norwich	82	44	64	-3	103	726	41	0.65	-0.22	14.3	2.5
Oneonta	79	49	65	-1	108	743	115	1.4	0.47	13.31	0.67
Coastal											
Bridgehampton	82	58	70	2	145	866	73	0.8	0.07	17.95	6.06
New York	84	64	74	-2	170	1262	51	1.03	0.14	17.91	6.08

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