New York Berry News

CORNELL UNIVERSITY

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What's Inside

CURRANT EVENTS

July 9-10, 2008: *Handling Berries and Other Perishable Produce for Quality*. Gro-Moore Farms, Rush, NY and Schoharie Valley Farms, Schoharie, NY, respectively. See next page for details.

July 10, 2008. *Berry Weed and Vegetable Fertilizer Management Meeting*, Candella Farms, Marcy, NY. See news brief below for details and registration information.

July 11, 2008. *Berry Weed and Produce IPM Meeting*, Tomion Farms, Penn Yan, NY. See news brief below for details and registration information.

July 16, 2008: *Strawberry Weed Management demonstration trial* 1:30 PM at Cornell Orchards, Route 366, Ithaca, NY followed by *High Tunnel Raspberry and Blackberry Tour*, 2:45 PM at Dept of Horticulture High Tunnels, Maple Avenue, Ithaca, NY. For more information: Cathy Heidenreich 315-787-2367, mcm4@cornell.edu.

July 14-16, 2008: *The 9th International Vaccinium Symposium* will be held at Oregon State University in Corvallis. For more information: http://oregonstate.edu/conferences/vaccinium2008/.

July 23, 2008: *Day Neutral Strawberry Workshop* held in conjunction with the Pennsylvania Vegetable Growers' Association's Vegetable and Small Fruit Field Day at Rock Springs, PA. For more information: Kathy Demchak, 102 Tyson Building, University Park, PA 16802 or email kdemchak@psu.edu.

August 6, 2008. *Currant Growing Workshop*. More details follow.

August 20-21, 2008. *NASGA Summer Tour*. Based out of Columbus, Ohio. News brief follows with details.

September 23, 30, October 7, 14, and 21: *Building a Successful Small Farm Operation* in Orleans County. Contact Paul Lehman of Niagara County CCE or Lynn O'Brien of Allegany/Cattaraugus County CCE for more information.

Nov. 6-8, 2008. *Southeast Strawberry Expo*, at the Hilton Charlotte University Place, Charlotte, NC. Includes Strawberry Plasticulture Workshop for New Growers, farm tour, educational sessions, and trade show. For more information, email info@ncstrawberry.com

Dec. 8-10, 2008. *North American Raspberry & Blackberry Conference*, in Grand Rapids, MI, as part of the Great Lakes Expo. More information, email info@raspberryblackberry.com.

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

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

BERRY VENDORS NEEDED FOR NYC FARMERS MARKETS

Harvest Home Farmers Market is looking for berry vendors for a wide variety of NYC Farmers Markets. Harvest Home has traditionally served neighborhoods that might not have been positioned for berry crops, but they are expanding to locations near hospitals and train stations where they expect a high volume of health conscious customers. Contact Maritza Owens at 646-808-7699 if you are interested. You can look up information about Harvest Home at http://www.harvesthomefm.org/.



BERRY WEED AND VEGETABLE FERTILIZER MANAGEMENT MEETING

Thursday July 10, 2008
12pm – 2pm
Candella's Farm 9256 Old River Road, Marcy, NY

Join area berry growers to see a demonstration in the use of biofilm under strawberries for weed control. Cathy Heidenreich NYS IPM berry specialist western NY will cover timely topics on pest management in berry crops.

Stephen Reiners, Cornell University, will discuss fertilizer management in vegetable production.

To register for the program and for directions call Cindy at 315-736-3394 ext 124.



BERRY WEED AND PRODUCE IPM MEETING

Friday July 11, 2008

6pm

Tomion Farms, 200 Route 14A, Penn Yan, NY

This meeting will begin with a presentation on weed control in strawberries. WNY Berry Specialist Cathy Heidenreich will review a killed-sod approach that Tomions tried this spring. Following the strawberry portion, Judson Reid will lead the group on a produce IPM walk through the tomatoes, peppers and other vegetables on the Tomion farm. 1.5 pesticide recertification credits in category 23.

The farm is located at 200 Route 14A Penn Yan, however please gather just west of the farm market on Ferguson Corners Road, near the strawberry patch.

STRAWBERRY HERBICIDE DEMONSTRATION TRIAL AND RASPBERRY HIGH TUNNEL TOUR

Wednesday, July 16, 2008

Strawberry Herbicide Demonstration Trial

Cornell Orchards
Route 366, Ithaca, NY, across from Vet School

1:30 pm- 2:30 pm — Planting year and fruiting year early season weed control with various herbicides, biofilm, and mechanical cultivation (EcoWeeder). (Dr. Marvin Pritts, Cathy Heidenreich, Mary Jo Kelly)

Raspberry and Blackberry High Tunnel Tour

Department of Horticulture High Tunnels
Maple Avenue, Ithaca, NY, off Route 366.

2:45 pm– 3:45 pm — Tour of high tunnel black and red raspberries and blackberries. (Dr. Marvin Pritts, Mary Jo Kelly)

For more information: Cathy Heidenreich, 315-787-2367 (or mcm4@cornell.edu).

COMMISSIONER ANNOUNCES THE ARRIVAL OF BERRY SEASON IN NYS

Strawberries are Ready to Be Picked; Health & Economic Benefits are Plenty

Jessica A. Chittenden, Director of Communications, NYS Department of Agriculture & Markets, 10B Airline Drive, Albany, NY 12235, 518-457-3136

June 13, 2008. New York State Agriculture Commissioner Patrick Hooker today celebrated the arrival of berry season in New York State. Berries are an important and expanding sector of the States agricultural industry.

While strawberries are the first of the season, blueberries, raspberries and others are not too far behind, the Commissioner said, and with the arrival of berries comes the arrival of summer. Berries are the perfect addition to nearly any meal and offer an abundance of health benefits. They can also provide an excellent source of exercise and education for families that opt to visit a farm and pick berries. The season is well on its way and we expect this season to be a great one for berries, so don't miss out and visit a local berry patch this summer.

The Commissioner made the announcement at Abbott Farms in Baldwinsville (Onondaga County), a farm that recently transitioned a portion of its grain and apple operation to u-pick berries. That transition or expansion of farm operations into berries is becoming more common, especially on fruit farms, where sales are concentrated in the fall. By adding berries to the mix of crops offered, farms can attract customers to their farm earlier and more often in the season, and by offering u-pick, have the opportunity to interact directly with customers.

Paul Baker, Executive Secretary for the New York State Berry Growers Association, said, "The excitement of the arrival of strawberries is that we are able to experience the first sweet tastes of the year. Strawberries are ruby red and sweet to the taste. We are seeing that many new patches are being developed to help expand the draw to the local farm stands. These farm markets, while in both small towns and in suburban green markets, reward everyone with tastes that are not only good for you, but taste so good as well. Strawberry time marks Father's Day and the beginning of a new season down on the farm."

The States strawberry harvest is now in full swing. The season typically starts during the beginning of June and lasts through mid-July. This year, the weather has been nearly perfect for berries with an adequate amount of rainfall and plenty of sun. Raspberries will be ready next in July with a second crop also available in September and October. Blueberries will pick up where raspberries leave off at the end of July, and will be available throughout August, along with blackberries and currants.

Beyond their delicious flavor, locally produced berries are among the most vitamin and antioxidant rich foods available, according to the Cornell Cooperative Extension. Strawberries are high in vitamin C, folic acid, potassium and fiber, while only containing 46 calories per cup. Blueberries have the highest level of antioxidants of any fruit or vegetable, advancing heart health, reducing the risk of cancer, boosting total body wellness, and reducing bad cholesterol. Raspberries are rich in vitamins A, C and E, folic acid, iron and potassium, as well as fiber, but are low in sugar.

New York State has nearly 1,000 berry farms with 3,000 acres of various berries planted. While strawberry production remains flat, the State is experiencing increased production in raspberries, blueberries, gooseberries, currants and blackberries.

New York is ranked seventh in the nation in strawberry production, harvesting 1,500 acres of strawberries in 2006, producing nearly 4.5 million pounds at a value of almost $7.5 million. Last year, New York growers also produced 2.2 million pounds of blueberries, a 42 percent increase from the year prior, and 1.6 million pounds of raspberries, a 14 percent increase.

To find a berry grower near you, visit the Pride of New York website at www.prideofny.com. The Pride of New York is the States marketing and promotion program for New York State food and agricultural products. The program assists farmers and food processors in branding their products by using the Pride of New York emblem, which also helps consumers identify New York berries and other food items in retail stores.

For more information on New York berries, visit Cornell Cooperative Extensions on-line Fruit Resource for Berries at http://www.fruit.cornell.edu/berry.html or visit the New York State Berry Growers Association at http://www.nysbga.org.

NEW YORK STATE FIRST TO ACHIEVE FDA NATIONAL FOOD SAFETY STANDARDS

New York State First to Achieve FDA National Food Safety Standards. Consistent Regulations from Feds and State Will Help Reduce Food-Borne Illness

Governor David A. Paterson today announced that New York is the first state in the nation to meet, and in many areas exceed, nationally recognized food protection program standards set by the U.S. Food and Drug Administration (FDA). New York was among five states asked by the federal government to pilot a new federal program designed to achieve uniformity and consistency between state and federal regulatory agencies for manufactured foods.
The Manufactured Food Regulatory Program Standards were initiated by FDA to bring about the adoption of more uniform, equivalent, and high quality regulatory programs by state and federal government agencies responsible for regulating facilities that manufacture, process, pack, or hold food under FDA's jurisdiction.

"Safeguarding our food supply is one of the most basic and important responsibilities government has," said Governor Paterson. "By completing this program before any other state in the country, it proves that New York's standards are on par with those at the federal level, and in some instances, exceed them. The residents of New York State should feel comfortable knowing that we have such a capable food safety unit here that works as proactively and diligently as they do to protect them."

Without uniform standards, differing food oversight and regulatory activities between state and the federal government can lead to inconsistencies that may jeopardize food safety. The adoption of standardized regulations and compliance with those regulatory programs will establish a uniform basis for measuring and improving the performance of manufactured food regulation and help authorities reduce potential illness hazards – like e-coli or botulism – in food facilities.
New York did not have to adopt any new food safety regulations in order to meet FDA's Manufactured Food Regulatory Program Standards. In some instances, New York's standards exceeded those of the federal government. For example, New York's smoked fish regulations identify the specific food safety critical control points to be followed by smoked fish manufacturers while the federal rule is non-specific. New York also has stricter temperature requirements for reduced oxygen packaged processed fish which has been implicated in botulism outbreaks in the past.

The FDA regulates about 80 percent of the U.S. food supply, which includes food for humans and animals, except meat products, poultry products, and egg products, which are regulated by the U.S. Department of Agriculture. The New York State Department of Agriculture and Markets regulates all food for humans and animals sold retail and wholesale in New York State. Its Division of Food Safety and Inspection conducted over 42,000 food safety inspections last year. As a result of those inspections, followed by analysis at the New York State Food Laboratory, 311 food recalls were initiated and 450,000 pounds of adulterated food was seized.
New York State Agriculture Commissioner Patrick Hooker said: "This is great news for New Yorkers who rely on our state inspection staff to ensure that their food supply is safe and wholesome. This program will help garner greater consumer confidence in our food supply by ensuring consistent protocols and common practices are utilized by all. I want to personally thank our Division of Food Safety and Inspection personnel for leading the country in this important matter."

The New York State Department of Agriculture and Markets' Division of Food Safety and Inspection Director Joseph Corby, who has more than 37 years in food safety enforcement said: "By achieving uniformity between the states and federal government, our ability to coordinate and then swiftly and effectively address food safety concerns is greatly enhanced. Our team here in New York prides itself on its diligence in safeguarding the public from potential food-borne illnesses and these uniform standards will enable us to improve our performance and work more cooperatively with the FDA in the future."

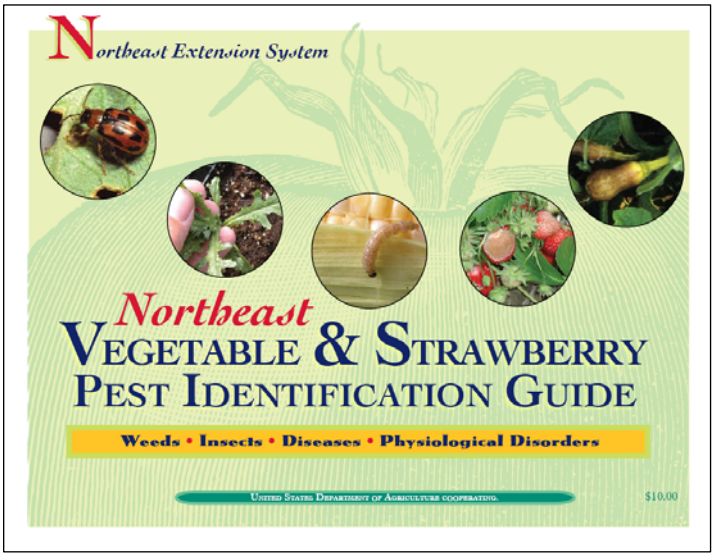
Also piloted in Missouri, North Carolina, Oregon and Wisconsin, New York is the first state to complete the FDA's standards, which define best practices for critical elements of state food safety programs. Those elements include: regulations, employee training, inspections, quality assurance, food-borne illness and incident investigations, enforcement actions, education and outreach, resource management, laboratory resources, and program assessment.

Northeastern IPM Center

NORTHEAST VEGETABLE AND STRAWBERRY PEST IDENTIFICATION GUIDE AVAILABLE

Edited by Richard Bonnano and specialists from across the Northeast, developed by the Vegetable IPM Working Group, 2007.

Growers and agricultural professionals can carry this comprehensive pest identification guide to the field to better identify pests and select appropriate control measures. It contains color photos of all of the insects, diseases, and weeds that are described in the region's various vegetable and strawberry management recommendations, including photos of weeds at the seedling stage and disease symptoms on different crops.



Available from the Univ. of Mass. Bookstore (413-545-2717), or on line from: http://umassextensionbookstore.com/catalog/product_info.php?products_id=678); Cost is $10.00/copy (bulk rate: 80 copies @ $5 apiece); 50 p.

(Editor's Note: Complimentary copies are available with the purchase of the 2008 Cornell Pest Management Guidelines for Berry Crops or Vegetable Crops - offer good while supplies last. The ID guide may also be viewed or printed on line from: http://www.nevegetable.org/pdf/PestGuide/Pest_ID_Guide.pdf.)

SMALL BUSINESS INNOVATION RESEARCH PROGRAM

The purpose of the SBIR program is to provide an opportunity for US-owned, for-profit small business firms to submit innovative, applied, research and development projects that address important problems facing American agriculture and have the potential to lead to significant public benefit if the research is successful. Research proposals are accepted in any of the following topic areas: 1) Forests and Related Resources; 2) Plant Production and Protection - Biology; 3) Animal Production and Protection; 4) Air, Water, and Soils; 5) Food Science and Nutrition; 6) Rural Development; 7) Aquaculture; 8) Biofuels and Biobased Products; 9) Marketing and Trade; 10) Animal Manure Management; 11) Small and Mid-Size Farms; and 12) Plant Production and Protection - Engineering. The SBIR program

exists in three phases. The purpose of Phase I is to prove the scientific or technical feasibility of the proposed research and development effort, and CSREES is currently accepting Phase I applications. For more information go to: http://www.csrees.usda.gov/funding/rfas/pdfs/09_sbir_phase1.pdf. **Proposals are due September 4, 2008.**

GOVERNOR PATERSON URGES FEDERAL GOVERNMENT TO DECLARE 23 NEW YORK COUNTIES AGRICULTURAL DISASTER AREAS

Declaration Would Pave Way for Low-Interest Emergency Loans from USDA Farm Service Agency New York Farmers Suffer Devastating Crop Losses from June 16th Hail Storm

June 27, 2008. Governor David A. Paterson today urged the federal government to declare 23 New York counties agricultural disaster areas. In a letter to Secretary of Agriculture Ed Schafer, Governor Paterson requested disaster assistance from the U.S. Department of Agriculture (USDA) for farms that experienced crop damage from severe hail storms on June 16th.

If the requested counties receive a disaster designation from the USDA, farmers within those counties, and the counties contiguous to them, will be eligible to be considered for low-interest emergency loans from the USDA Farm Service Agency (FSA). FSA considers each loan application on its own merits, taking into account the extent of losses, security available, repayment ability, and other eligibility requirements.

"The hard working farm families of New York State who suffered severe losses last week need this assistance," said Governor Paterson. "While it is still not clear just how much damage this storm caused, or what the total losses will be for these families, it is clear that they will need federal assistance to sustain their businesses this year. I call on Secretary Schafer to act in the best interest of all New Yorkers and make these declarations."

Twenty-three counties across New York State were hit with large sized hail, high winds and excessive rain. Counties included in the Governor's disaster assistance request are: Albany, Cattaraugus, Cayuga, Columbia, Dutchess, Erie, Fulton, Genesee, Greene, Monroe, Onondaga, Ontario, Orange, Orleans, Putnam, Rensselaer, Rockland, Schoharie, Schuyler, Seneca, Ulster, Wayne and Westchester Counties.

The storms damaged strawberries, which have just come into season, and cherries that are near ripening. Immature tree fruits - such as apples, peaches, pears and plums - were permanently damaged by puck marks and no longer have value on the fresh market. Fruit is also more susceptible to disease when hail breaks through its skin. More time will be required to assess damage to vegetables such as onions, cabbage and squash because of their variable stages of growth. Most vegetables in the field were shredded from the hail and then lay in excess water, exposing them to rot.

In most cases, June is too late to replant if the crop is destroyed beyond recovery. If the crop is able to recover, it is still unlikely to be ready for an early season harvest and farmers will lose that market opportunity as well.

Governor Paterson also directed New York State Agriculture Commissioner Patrick Hooker to travel to several parts of the State last week to personally assess the damage on farms. Commissioner Hooker found significant damage to fresh fruit and vegetables. While some of that damage is cosmetic, there are many crops that will probably end up a complete loss for farmers.

U.S. Senator Hillary Rodham Clinton said: "New York's farmers are the economic backbone of the state, and federal aid will be critical in helping them recover from the disastrous effects of last week's hail storm. With fields of strawberries, apples, pears, peaches, and other crops left unsellable, our hard working farmers are now facing the stark reality of deep financial losses. I fully support Governor Paterson's request for federal assistance, and I hope that the USDA does everything possible to help our farmers recover and salvage what is left of this growing season."
Commissioner Hooker said: "While traveling around the State last week, I saw devastation, not only in the fields, but on the faces of many farmers who had high hopes of a successful growing season this year. With such serious damage and the potential for significant crop losses from the recent hail storms, farmers are going to need as much help financially as they can. I appreciate Governor Paterson's diligence and support to help our farmers receive the federal assistance they need at this time."

Agriculture is one of New York's largest and most vital industries, encompassing 25 percent of New York's landscape and generating more than $3.6 billion for the State's economy each year. New York has 7.6 million acres of farmland with 35,000 farms. The State is also a leader in a variety of farm products, ranking first in cottage cheese, second in apples and cabbage, and third in milk, maple syrup, grapes, sweet corn, snap beans, and cauliflower.

NEW FARMERS' GUIDE TO DISASTER ASSISTANCE AVAILABLE

For more information contact: Jill Krueger, jkrueger@flaginc.org or 651-223-5400

ST. PAUL, MINN. - A familiar resource has been thoroughly revised and updated for farmers who are struggling in the face of natural disaster, and for farmers who want to learn more about the disaster assistance programs included in the 2008 Farm Bill. Farmers' Legal Action Group, Inc. (FLAG) announces that the sixth edition of its book, *Farmers' Guide to Disaster Assistance*, is now available.

"This updated sixth edition of *Farmers' Guide to Disaster Assistance* provides farmers current information on important legal issues such as program eligibility, obligations of farmers who participate in the programs, and appeal rights," says Jill Krueger, a FLAG staff attorney and one of the book's authors. "We were able to include an overview of provisions from the 2008 Farm Bill in the introduction, and to add key points in the discussion of each affected program. But we won't know all of the details until USDA publishes regulations for the programs."

Farmers' Guide to Disaster Assistance includes an easy-to-use chart that provides an overview of federal disaster assistance for farmers. Individual chapters provide detailed descriptions of programs offered by the Federal Emergency Management Agency (including housing assistance and disaster unemployment), federal crop insurance, the Noninsured Crop Disaster Assistance Program (NAP), the Emergency Conservation Program (ECP), disaster assistance programs for livestock producers, Emergency Loans from the Farm Service Agency, the Disaster Set-Aside program for existing loans from Farm Service Agency, Small Business Administration disaster loans (including both home and business loans), as well as brief discussions of bankruptcy and federal income tax issues as they relate to losses caused by natural disaster. A new appendix addresses considerations unique to organic farmers.

The book uses clear language and detailed citations to applicable laws to help farmers and their advisors understand and obtain federal disaster assistance. Updated information will be posted on the FLAG website.

The book can be downloaded by chapter at no charge from FLAG's website. A bound copy of the book is available without cost to financially distressed Minnesota farmers by calling 1-877-860-4349. For other persons, the charge is $40 per book, and orders can be placed by calling FLAG's office at 651-223-5400 or by visiting the FLAG website at www.flaginc.org. The book is also available on CD for $10.

HAIL DAMAGE: TRYING TO MAKE THE BEST OF A BAD SITUATION

Laura McDermott, Berry Extension support Specialist, Eastern NY

Late spring and early summer 2008 has been fraught with hailstorms throughout the state. Hail is sporadic and unpredictable and can devastate an entire region or just a few rows in a specific field. This year, in addition to smaller hail events, a large storm swept through the center part of the state on June 16th and left millions of dollars of damage in its wake. From Niagara County to Columbia County, fruit and vegetable growers suffered massive losses to crops that had withstood repeated frost threats, dry early spring weather and late spring deluges. In light of the expected interest in locally grown produce and what had appeared to be an excellent crop, these losses were particularly devastating.

What is Hail? Hail usually occurs on days that are hot and humid, resulting in strong upward convection of air, creating large thunderclouds. The temperature in the upper levels of these clouds are well below freezing, and water droplets that are carried into the middle and upper layers of the clouds quickly turn into ice balls. The ice ball grows as it falls down through the cloud and then is tossed back up by the convective action of the warm air from earth. Each trip up and down through the cloud allows more water vapor to condense and then freeze on the growing ice ball. The result of this action is easily seen if you cut a hailstone open and observe its “onion-like” layering. The strength of the air currents in the cloud helps determine how large the ice ball will be before it finally gives in to gravity. A single trip through a thundercloud can cause a hailstone to enlarge by ½”, so several trips are necessary to create large hail. Hailstones usually are less than ½” in diameter, but sizes over 1.5” are not uncommon. (1)

What does hail damage look like? Hail damage can appear as bruising and/or pitting on fruit, leaves that are tattered or shredded, complete defoliation of the plant and stem pitting. In fruit that is close to maturity, these wounds can look very similar to bird damage. Stem pitting can cause problems for bud formation and thus have an impact on the following

year's crop. Hail damage is easy to tell immediately after a hail event, but as callous tissue develops over the wounds it may become more challenging to recognize. Pay attention to the pattern of damage, both on the plant itself and within the field and larger area. Look for bruises or wounds on one side of the damaged plant or plant part. Evidence of hail damage on woody plants will persist for years – these wound sites may show secondary infection problems later on. (2)

What are the effects of hail damage? Depending upon the severity of the storm, the obvious effects are the complete loss of the crop and perhaps the death of the plant. Immediate loss of fruit is extremely disappointing, but the secondary damage is the real problem as wounds caused by hail can serve as the infection sites for fungi and bacteria.

How can I minimize the effects of hail damage? Due to the unpredictable nature of hail, it's hard to recommend not planting in "hail prone" areas, but that is mentioned in the literature. For those with berry crops in the ground, there are a few strategies to employ that might help reduce current or future damage.

- Salvage the ripe fruit as quickly as possible. Get rid of ruined fruit - it becomes a real mess, and is a HUGE sugar source for fungal diseases. If you can clean up the fields within a few days of the hail event, you have a decent chance of salvaging the remaining crop. Green berries will often heal well enough to have very minor appearance problems and might still be satisfactory for U-Pick.

- According to Dr. Kerik Cox, Cornell University Fruit Pathologist, growers must consider the type of damage, the fruit, and the primary disease threat at the time the hail event to decide which fungicide to spray. Fungicide use helps reduce the growth of opportunistic fungi that take advantage of the wounded tissue to colonize the berry. For instance, if the hail damage was to blueberries and it removed all fruit and caused severe stem pitting, the grower would remove fruit as best she could, then spray to help prevent canker diseases on the blueberry shoots. Try to use materials that will provide a broad spectrum of defense and give you some ongoing protection. For example, rather than use Elevate, which does a great job on Botrytis, the grower should consider a strobilurin fungicide which would give a longer period of protection from a greater number of pathogens. **Apply this spray as soon after the damage as possible, ideally within 24 hours of the event**.

- If you are an organic grower, even a spray of Stylet oil might help with diseases like leaf rust and powdery mildew. Keep an eye out for diseases that should be removed by hand, like fireblight on raspberries or even Botrytis on ripe fruit. Prune out injured tissue where possible.

- Don't be too quick to throw in the towel. Plants look especially poor immediately after the damage, but in a few days they will look much better. Baby the plants for a while. Keep them well watered, control weeds, prune and destroy damaged canes on woody plants. Make sure mulch is in place in proper amounts.

- Explore the use of hail netting which might also solve existing bird problems. I don't know anyone that has hail netting on berries, but if you start pricing this material, you should also be considering growing your crop in a high tunnel

- According to Marie Ulrich, CCE Orange county Vegetable Extension Specialist, "Growers need to TAKE PICTURES of damage ASAP and report even the tiniest amount of damage to FSA and/or crop insurance adjustor. Accurate, timely damage assessments can only be taken now, even while waiting for them to "grow out of it" production loss might be down and growers will need paper back-up for insurance and or NAP payments."

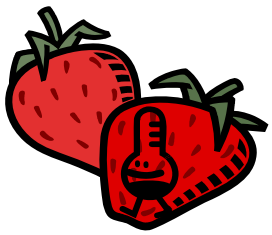
References:

1. **Schaefer, V.J., and J.A. Day. 1981**. A Field Guide to the Atmosphere, Peterson Field Guide Series, No. 26. Houghton Mifflin Company, Boston. P. 197, 244-245.

2. **Schubert, T. 1991.** Hail Damage to plants, Plant Pathology Circular No. 347, Fla. Dept. Agric. & Consumer Serv., Division of Plant Industry.

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

All hands on deck for berry harvest! Strawberries are winding down as blueberries, raspberries, currants and gooseberries gear up. It will be fall raspberry and plasticulture strawberry time before we know it. Keep a steady course, mates, and an eye on the sky as you sail along!

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 below on collecting and preparing leaf samples for testing. Enclose a check for $28, along with the proper form (also below)

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! Keep those hand lens moving up and down the field. Make applications promptly when environmental conditions are conducive to disease development/build-up or economic thresholds are exceeded for insect pests.
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! Attend one of the workshops listed in the calendar above for more information.

STRAWBERRIES:

Established plantings:

1. **Renovation** – Now is the time- see inset below 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. Options for control may be found in the

berry pest management guidelines for control strategies (http://ipmguidelines.org/BerryCrops/).Remember good coverage is critical for adequate protection.

New plantings:

1. **Plant establishment** – You know what to do! (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. Options for control may be found in the berry pest management guidelines for control strategies (http://ipmguidelines.org/BerryCrops/).
2. **Insects** – Blueberry maggot, Japanese beetle and blueberry stem borer are pests of concern. Options for control may be found in the berry pest management guidelines for control strategies (http://ipmguidelines.org/BerryCrops/).
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: – More of the same for this month!

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. See the 2008 Pest Management Guidelines for Berry Crops to review your control options (http://ipmguidelines.org/BerryCrops/).
3. **Irrigation** –Brambles need a continuous (*but not excessive*) supply of water throughout the growing season – about 1-2" per week.

New plantings: – More of the same for this month!

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

CURRANTS AND GOOSEBERRIES:

New and Established plantings

1. **Diseases –** Watch for leaf diseases such as white pine blister rust (yellow-orange powdery spots), powdery mildew (white powdery spots), or leaf spots (black necrotic spots) on leaves. Be sure to check both upper and lower leaf surfaces. See the 2008 Pest Management Guidelines for Berry Crops to review your control options (http://ipmguidelines.org/BerryCrops/).
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.

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.

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

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.

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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

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 _____

_____

_____

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

LABOR-SAVING DEVICES FOR STRAWBERRY PRODUCTION

By Cathy Heidenreich, Western NY Berry Extension Support Specialist, Department of Horticulture, Cornell CALS and Craig Michaloski, Green Acres Farm, Latta RD., Greece, NY

Craig Michaloski grows a bounty of small fruit, tree fruit, and pumpkins at his Green Acres third generation family farm, and Westwind Farms (purchased later) in Greece, NY. His berry crops include 18 acres of strawberries, 3 acres of blueberries, 7 acres of raspberries, and smaller plantings of blackberries, currants, and gooseberries. Along with these, Craig grows 42 acres of tree fruit (apples, peaches, nectarines, apricots), and pumpkins. Add to that a large farm stand, corn maze, and wagon rides in the fall, and he has his work cut out for him.

Labor has been one of the biggest challenges in running his business successfully. Craig and farm manager Larry Beneway have come up with some ways to keep their strawberry operation labor needs to a minimum using tractor driven equipment.

Craig recently hosted a strawberry equipment demonstration meeting on his Westwind Farm for interested growers to see how these machines work. What follows is a synopsis of his presentation at the meeting and information on these handy gadgets for the berry farm.

Applying and Removing Winter Mulch

One piece of equipment Craig had available for viewing was a Kasco Strawberry DeMulcher that mechanically removes straw mulch from strawberry rows for spring regrowth. Straw removal for his 12 acre planting can be done with just one person with the tractor-driven demulcher! His 7-person crew would need a least a week to complete the same job by hand.

According to the company web site, a pull type model is available with a 5 HP Briggs & Stratton engine that drives a hydraulic pump. A brush is available for removing straw mulch cover from the top of black plastic mulch when strawberries are planted through plastic.

Craig and Larry streamlined their straw application technique as well by changing from a single square bale straw mulcher to a self-loading round bale mulcher. It required a crew of 4 and a week of time to cover 12 acres with the single bale mulcher. Their new round bale mulcher with 2 people operating it can accomplish the same task in 2 days! It also allows them to spread a larger area at one time and reduces the number of passes needed to cover each field.

The Haybuster Round Bale Straw Mulcher (pictured left) is available in a one or two bale model for high capacity mulching. They are self loading and spread 50' wide. It requires a 60HP tractor with a 1000 speed PTO.

A source for these implements is Market Farm Implement - 257 Fawn Hollow Road - Friedens, Pa. 15541, Phone: (814)-443-1931. Their website is found at: http://www.marketfarm.com/.

Taking a Bite Out of Renovation

The Hillside cultivator Craig purchased, which he found a little too aggressive for cultivating new strawberries, is just what the doctor ordered for strawberry renovation. In one pass it narrows the rows to 8 inches, clips runners, works in straw,

subsoils, and mounds soil onto crowns. Craig says he wouldn't use anything else now for this important step in strawberry production. Craig has his Hillside cultivator adjusted to strawberry row width; rolling cultivators and discs are both used for this operation.

Several models of this cultivator are available from Hillside Cultivator Co. The tool bars are designed to be easily adjusted for versatility in cultivating many crops including strawberries, raspberries, blueberries, potatoes and crops grown on plastic mulch. The blueberry version of this cultivator has a telescoping frame with rolling cultivators mounted to the outside of the toolbar. These remove weeds and throw soil toward the plant row. Gauge wheels control the depth of cultivation


These are available from Hillside Cultivator, Co. LLC, 911 Disston View Drive, Lititz, PA 17543, Phone (717) 626-6194, e-mail: sales@shenkberryfarm.com, their website is: www.hillsidecultivator.com.

Oh those weeds, Weeds, WEEDS!

Mechanical weeders have definitely been a life-saver in terms of weeding first year strawberries. Craig and his crew planted 6 acres of new berries this spring. He and Larry demonstrated 2 mechanical weeders at the meeting in May in the new planting. Pictured below is the Eco (Regii) Weeder. This mechanical weeder slightly disturbs the soil and uproots weeds as it moves down the row. The operator sits on the weeder behind the tractor and moves the rotating fingers in and out between the plants as the tractor pulls it down the row. This weeder reduces what would be a 7 person/acre job down to 2! It works better on *slightly larger* weeds than the Buddingh finger weeder.

The EcoWeeder by Univerco comes in single, double, and multi-row models. Attachments for the single row model pictured above include a straw-demulcher and between-row discs, which allow both weeding operations to be performed at once. It can also be used for other crops including raspberries, blueberries, cucurbits (pumpkins, squash, crucifers (cabbage, cauliflower, and broccoli), tomatoes, peppers, beets and turnips.


Hillside Cultivator Co. is also a licensed dealer for the Univerco Eco Weeder. See their contact information above. The website for Univerco is: http://www.univerco.com/weeder.htm.

The Buddingh fingerweeder is mounted under the belly of one of the older farm tractors at Green Acres. Occasionally an old-fashioned cultivator may be pulled along behind at the same time. The fingerweeder covers or smothers smaller weeds

as they are emerging. The best on-farm record for weeding strawberries with this machine occurred this summer in the new planting. Craig's son was able to weed all 6 acres in 1.5 days, reducing the labor need from 7 people per acre/day for hand-weeding/hoeing, down to 1!


This finger weeder and others are available from the Buddingh Weeder Company. For more information and pricing contact Philip Sarver, 7015 Hammond Ave Dutton MI 49316, e-mail: phs2002@sbcglobal.net, phone: (616) 698-8613. Their web site is located at: http://www.buddinghweeder.com/. There is a free DVD offer for the EcoWeeder on their homepage. See web site for details.


Another time and money saving device used at Green Acres Farm for strawberry production was custom built. Rather than purchasing a smaller separate spray unit for the strawberries, Craig simply modified the airblast sprayer used for tree fruit by constructing and fitting on a custom built boom. The 15-ft long boom has 12 nozzles and covers five rows of berries at once.

A BERRY FARM(ER) IS BORN

Cathy Heidenreich, Western NY Berry Extension Support Specialist, Department of Horticulture, Cornell CALS and Daniel Clement, Dan's Berry Patch, Ithaca, NY

Daniel Clement, owner/operator of "Dan's Berry Patch", Ithaca, NY, joined the ranks of New York berry growers this season when he put in 1/3 acre of new berries including summer and fall red raspberries (550), blueberries (42) and a handful of currants, gooseberries, and elderberries. Dan recently hosted a grower twilight meeting at his new planting where he shared his experiences in getting a new berry farm up and running.

"This year is an investigation into berry farming for me. I intend to learn more about growing berries, analyze markets, experiment with value-added products, consider expansion, work on a business plan, investigate the availability of labor, and to see how well I like farming after doing it a year"

A Berry Difficult Decision?

Dan, recently retired from his 25 year career as art restoration specialist (paper), has always had an interest in farming. He has especially fond memories of his father's collection of Gravely cultivators and tillers, some of which are still in use on

Dan's farm today. The decision to grow raspberries on a larger scale stemmed from his love both of the fruit and of outside work but Dan was determined from the get go not to have to spend as much time hand –weeding/hoeing his commercial planting as he had the raspberries in his home garden (oh my aching back...).

Getting a Toe in the Water

Checking out available resources...planning out the planting...attending an introduction to berry growing meeting and other workshops, having a soil test done – Dan spent a lot of time doing the legwork before he ever put a plant in the ground. He relied heavily upon the NRAES *Bramble Production Guide* for information. Dan began preparing his new planting (previously a lawn area) in late October 2007 by killing the sod with glyphosate herbicide and tilling the soil.

Dan's 6' Woods rotary tiller with JD 4120 tractor. Note killed sod, right.

Rye was planted after soil preparation was complete to add organic matter to the soil and help suppress weeds. The following spring glyphosate was applied to the rye. The killed cover crop was then cultivated into the soil to add organic matter. Planting began on May 6th and was completed on May 8th.

Only the Berry Best Will Do

Dan spent a lot of time reading up on various varieties and getting advice on which ones to plant in his area. Fall-bearing raspberries he selected for his planting include Jaclyn and Himbo Top. Summer-bearing raspberries include Nova, Prelude, Kilarney, and Encore. Blueberries include Blueray, Patriot, and Jersey. Other berries in the planting are Ben Sarek black currant, Hinnonmaki red gooseberries and Samdahl elderberries.

Convinced he needed to be able to provide adequate moisture for his new berry planting; Dan began to think bout possible sources of water. The main source of water for the berry patch is primarily pond water, hauled ½ mile by tractor and trailer, 500 gallons at a time. Water from an old farm well serves as a secondary source. In early June this well was producing about 150 gallons a day, which Dan pumps into holding tanks until sufficient water is accumulated to water the berry patch. Approximately every 3 days the well provides sufficient irrigation water for the planting, saving Dan one of the daily ½ mile trips to the pond for water.

Modified soil subsoiler

Trench for supply line

Supply pipes were laid 4-6" deep using a subsoiler custom-modified by Dan to bury hose. This was done by welding galvanized electrical conduit with a 90 degree angle bend to the subsoiler. The general idea for this is described in the NRAES publication "Trickle Irrigation".

Water is piped through a ¾" poly hose 400 feet to the field where it is delivered to the berry plants through heavy wall, pressure compensating dripper tubing on 17 mm x 24-inch spacing at a rate of 0.4 GPH. Irrigation feed lines were set in a small trench cut by the Gravely and later buried.

Irrigation feeder lines

Completed irrigation system

Gravely used for furrows

Hand valves for irrigation zones

Dan designed the irrigation system to be divided into 3 irrigation zones controlled separately by hand valves so each section may be irrigated independently of the others if necessary. He included a removable filter in the line to help prevent clogging of dripper tubes.

Wanting to get off on the right foot with fall raspberries, Dan decided to install a removable T trellis system for their support. Using a post hole digger Dan dug 24-30-inch deep holes every 25 feet down the rows destined for fall raspberries. Sections of 10-ft x 4" PVC pipe were cut to 30" and set into the holes. These in-ground pipes will hold 3 x 4 PT landscape timber uprights (or 4 x 4s). When not in use, they may be capped with tapered cement plugs to keep them open. This whole trellis may be lifted up out of the in-ground PVC holders and set aside so canes may be mown down in late winter/early spring.

PVC in-ground holder and trellis upright

Tapered cement plugs for PVC trellis holders

Another must for the berry patch, Dan decided, was deer fence. The fence is 8 ft high with 4 foot high 2" x 4" welded wire at the bottom to keep out smaller mammals. Above that is smooth high tensile wire installed at 1-ft intervals to discourage deer traffic. Some posts are black locust cut from Dan's property and others are pressure treated 4 x 4's. Horizontal and vertical corner supports are done with inexpensive 8-ft pressure treated semi-rounded landscape timbers from Home Depot (3 x 4-in.). The posts are set in the ground from 30-42" depending on how many rocks were encountered! Each post was set in concrete: 1 80-lb bag for corners and shallow set posts; ½ bag for all other line posts. Dan noted that he had already had one deer run into the fence, making a nice dent in the welded wire, but apparently leaving the deer [apparently] unscathed. He added flagging tape to the top of the welded wire fencing as a warning to the resident deer population.

Dan and Molly Shaw, South Central Ag Program, discuss the deer fence.

Welded wire fencing lines the bottom of the deer fence.

Raspberry Killed Cover Crop Planting

As if first year berry farm operations were not enough of a challenge, Dan volunteered to participate in a raspberry killed cover crop demonstration sponsored by the NYFVI and NY Berry Growers Association. The no-till raspberry trial is one part of a larger research and extension project on improving berry crop production efficiency in NYS. Since Dan had already planted a rye cover crop the previous fall, everything was in line to try out a no-till raspberry planting method. The fall-bearing raspberries were his choice for this trial. Side-by-side plantings were made with one row each of Himbo Top and Jaclyn planted conventionally or in killed cover crop.

Side-by-side comparison at planting.

Side-by-side comparison, week 2.

Dan noted that the soil moisture was higher in the no-till area at the time of planting. He did not observe a difference in growth rate or improved weed suppression, but says that his rye was planted late and was probably too thin to be a fair test of the theory that mulch from the rye could be used to advantage.

Many thanks to Dan for participating in the NYFVI project, hosting the twilight meeting, and sharing details and photos of his new berry operation with us. Details on the raspberry killed sod planting method follow below.

RASPBERRY KILLED COVER CROP PLANTING METHOD

Year before planting

Do a soil test, prepare the soil, add amendments, and establish a rye cover crop (40Lb/A) the fall before planting raspberries.

Planting year

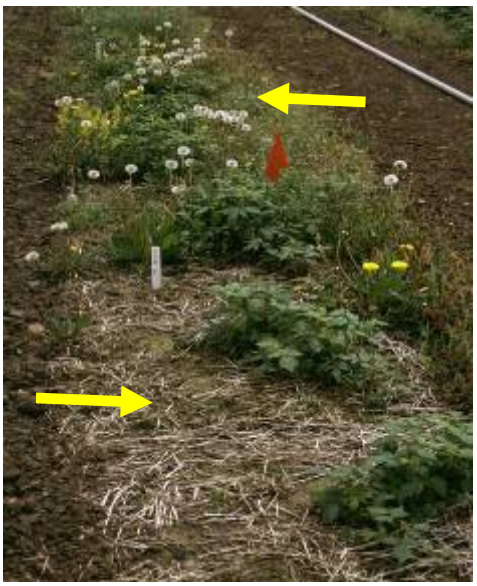
In spring, use glyphosate herbicide to spray out 3 foot wide strips in rye 2-3 weeks prior to planting. *Note: If rye is very tall (3-4 ft) mow prior to spraying strips; the rye should be mowed high, 8-10".*

Open a furrow down the center of the killed sod strip. Plant dormant raspberry canes into the furrow. Water plants in well.
A light covering of straw mulch may be applied over residue after planting to help keep weeds down. *Note: If tissue culture plug plants are used, a re-chargeable drill with wood drill bit the diameter of the plug plant can be used to open planting holes instead of using furrows to further reduce weed growth.*

Mow rye middles once or twice to prevent them from going to seed. After the rye is dead, disc alleyways to loosen soil. Overseed prepared middles with a perennial rye or short fescue to establish permanent sod middles in late summer to early fall.
Roll or disc after seeding to work seed down into soil.

Research trial before planting, bare ground and killed cover crop

At planting, tissue culture plug plant in killed cover crop



Raspberries growing up out of killed cover crop. Year 2 killed cover crop (front), few weeds. Very weedy conventional planting, rear.

THE NYFVI BERRY PRODUCTION EFFICIENCY PROJECT NEEDS YOU!

If you are planning to plant raspberries in 2009 we would welcome your participation in a raspberry killed sod and/or biofilm demonstration project.

For more information please contact Cathy Heidenreich (Western NY) at 315-787-2367, mcm4@cornell.edu, or Laura McDermott (Eastern NY), 518-746-2562.

WEATHER NOTES

NEW YORK CROP WEATHER SERVICE NOTES

Week ending June 8th: This was a transitional period for the region as we leaped from spring right into summer. We initially began the period tranquil with high pressure in control. Than a cold front approached which became nearly stationary during the mid week period with showers and thunderstorms. Then this frontal boundary lifted north by the end of the period with temperatures soaring well above normal along with another round of showers and thunderstorms. Generally speaking, temperatures averaged near to slightly above normal with a wide variety of precipitation amounts. This was due to the nature of the showers and thunderstorms and areas impacted. Areas impacted by those storms received up to 1 inch of rain.

In the Lake Ontario fruit region, warm weather triggered anthracnose fruit infections in strawberries and blueberries. In Albany County, thunderstorms brought some hail, but no damage was reported. The strawberry harvest also began with the warm weather.

Week ending June 15th: The period started off with well above normal temperatures across the entire state with high temperatures ranging from the upper 80's in the north to near 100 degrees around New York City. A strong cold front barreled across the state on Tuesday, which sparked numerous reports of severe thunderstorms causing wind damage and large hail. Behind the frontal boundary on Wednesday and Thursday, temperatures dropped down to near average in many areas. Another frontal boundary approached the region for the end of the week. This allowed temperatures to return to slightly above normal levels, as well as another round of thunderstorms for Saturday mainly across southern and eastern portions of the state. Due to convection on both Tuesday and Saturday, precipitation was highly variable across the state during the week. While some areas received little rainfall during the week, less than a tenth of an inch, some areas that received heavy thunderstorms, especially on Saturday, saw in excess of two inches of rainfall.

In the Lake Ontario fruit region, blueberries were at or approaching petal fall.

Week ending June 22nd: A series of cold fronts brought cooler than normal temperatures to much of the state during the period. Showers and thunderstorms accompanying these fronts brought above normal precipitation to much of central and western New York State, with near to slightly below normal precipitation to southeast New York where areal coverage was more scattered. Reports of a severe hail event Monday afternoon, June 16th were widespread.

Hail on Monday devastated several growers from Lake Ontario to the Hudson Valley. Wayne, Monroe, and Ontario counties received reports of severely damaged fruit trees. Wayne County reported much of the stone fruit and berry crop now unmarketable, while as much as 80 percent of fresh fruit apples may have to be sent to the processing market. The Hudson Valley also reported severe damage to fruit trees, with many apples at 100 percent loss. Strawberries in Monroe and Albany counties showed spotty damage.

Week ending June 29th: While the mid week period was tranquil with seasonable temperatures, we did experience a few episodes of showers and thunderstorms as we began the official start of summer. A cold front moved across the region late Monday into Tuesday with a round of showers and thunderstorms. Thereafter, high pressure took control until the end of the week. A rather strong storm system impacted the center of the nation of which its impacts were being felt by Friday and into the weekend across New York State. This resulted in periods of showers and thunderstorms, some severe with very heavy rainfall, as we started the last weekend of June 2008.

Fruit growers continued assessing damage from earlier hail storms.

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

	Temperature				Growing Degree Days (*Base 50*)			Precipitation (*inches*)			
	High	***Low***	***Avg***	***DFN[1]***	***Week***	***YTD[2]***	***DFN***	***Week***	***DFN***	***YTD***	***DFN***
Hudson Valley											
Albany	94	50	68	5	131	513	105	1.87	1.03	6.02	-1.37
Glens Falls	92	44	65	3	104	349	18	0.67	-0.10	5.35	-2.13
Poughkeepsie	94	50	68	4	128	543	88	1.00	0.09	7.70	-1.18
Mohawk Valley											
Utica	84	47	64	5	98	263	27	1.83	0.75	9.18	-1.09
Champlain Valley											
Plattsburgh	87	49	62	-1	87	328	-8	1.55	0.85	6.38	-0.11
St. Lawrence Valley											
Canton	84	52	65	5	110	356	69	0.74	-0.03	6.85	0.13
Massena	87	50	65	4	102	342	27	1.70	1.00	6.89	0.91
Great Lakes											
Buffalo	88	52	69	6	134	468	89	0.37	-0.47	4.99	-2.01
Colden	86	43	67	7	120	322	36	0.05	-0.92	4.96	-3.53
Niagara Falls	89	49	69	6	134	430	33	0.07	-0.71	4.68	-2.33
Rochester	92	49	71	9	149	528	133	0.32	-0.38	3.67	-2.48
Watertown	85	50	66	7	116	359	71	0.51	-0.18	6.89	0.90
Central Lakes											
Dansville	91	46	69	7	137	429	50	0.04	-0.84	3.00	-3.76
Geneva	94	52	70	7	138	423	60	0.12	-0.72	4.39	-2.50
Honeoye	93	46	68	5	127	403	29	0.22	-0.62	3.58	-3.20
Ithaca	93	44	68	8	131	366	45	0.06	-0.79	4.12	-3.10
Penn Yan	95	52	72	1	157	525	162	0.05	-0.79	3.26	-3.63
Syracuse	92	52	70	8	144	479	79	0.99	0.15	6.18	-1.39
Warsaw	87	48	66	7	116	329	70	0.15	-0.83	4.70	-3.34
Western Plateau											
Alfred	89	37	66	7	112	256	2	0.17	-0.86	5.07	-1.92
Elmira	95	45	69	8	137	420	73	0.19	-0.65	4.97	-1.92
Franklinville	89	39	66	8	111	269	54	0.27	-0.71	6.01	-1.95
Sinclairville	89	40	67	7	116	304	42	0.22	-0.83	4.98	-3.99
Eastern Plateau											
Binghamton	90	46	68	7	129	431	97	0.05	-0.79	5.24	-2.23
Cobleskill	90	49	66	5	110	335	33	1.23	0.25	6.28	-1.82
Morrisville	87	46	65	6	108	324	41	0.50	-0.45	6.06	-1.86
Norwich	91	46	67	7	118	303	-2	0.38	-0.58	5.42	-2.82
Oneonta	94	48	69	9	132	408	136	0.50	-0.48	5.65	-3.30
Coastal											
Bridgehampton	82	49	65	3	110	386	45	0.92	0.03	6.54	-2.25
New York	96	58	72	4	153	690	74	0.74	-0.09	7.05	-1.51

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

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WEATHER REPORTS OF TEMPERATURES AND PRECIPITATION THROUGHOUT NEW YORK STATE FOR WEEK ENDING SUNDAY 8:00am, June 15th, 2008

	Temperature				Growing Degree Days (*Base 50*)			Precipitation (*inches*)			
	High	***Low***	***Avg***	***DFN[1]***	***Week***	***YTD[2]***	***DFN***	***Week***	***DFN***	***YTD***	***DFN***
Hudson Valley											
Albany	96	53	76	11	186	699	177	0.49	-0.39	6.51	-1.76
Glens Falls	95	45	73	9	161	510	80	0.34	-0.43	5.69	-2.56
Poughkeepsie	96	53	76	11	187	730	159	1.62	0.71	9.33	-0.47
Mohawk Valley											
Utica	88	49	68	8	128	391	79	0.78	-0.34	9.96	-1.43
Champlain Valley											
Plattsburgh	90	48	72	8	152	480	41	1.36	0.60	7.74	0.49
St. Lawrence Valley											
Canton	88	49	70	8	140	496	121	2.53	1.76	9.38	1.89
Massena											
Great Lakes											
Buffalo	89	58	73	8	159	627	140	0.91	0.07	5.90	-1.94
Colden	87	51	70	8	138	460	87	1.48	0.50	6.44	-3.03
Niagara Falls	90	56	73	8	160	590	85	0.95	0.11	5.63	-2.22
Rochester	93	59	74	10	172	700	203	0.61	-0.09	4.28	-2.57
Watertown	89	50	71	9	145	504	131	0.46	-0.20	7.35	0.70
Central Lakes											
Dansville	96	53	73	9	164	593	108	0.85	-0.06	3.85	-3.82
Geneva	93	55	73	9	161	584	119	0.50	-0.41	4.89	-2.91
Honeoye	92	53	72	7	156	559	78	2.09	1.18	5.67	-2.02
Ithaca	94	51	72	9	156	522	107	0.31	-0.60	4.43	-3.70
Penn Yan	97	56	75	11	180	705	240	0.20	-0.71	3.46	-4.34
Syracuse	95	53	75	10	174	653	150	0.34	-0.56	6.52	-1.95
Warsaw	87	51	69	8	133	461	122	1.59	0.55	6.29	-2.79
Western Plateau											
Alfred	90	49	70	10	140	396	64	1.31	0.19	6.38	-1.73
Elmira	96	50	73	9	162	582	136	0.31	-0.60	5.28	-2.52
Franklinville	89	50	68	9	129	397	109	0.84	-0.19	6.85	-2.14
Sinclairville	91	52	71	10	151	455	112	0.85	-0.25	5.83	-4.24
Eastern Plateau											
Binghamton	89	56	73	10	162	593	164	0.85	0.01	6.09	-2.22
Cobleskill	91	47	71	9	151	486	95	1.58	0.60	7.86	-1.22
Morrisville	88	51	70	9	143	467	101	1.22	0.24	7.28	-1.62
Norwich	95	48	72	10	153	456	63	0.06	-0.92	5.48	-3.74
Oneonta	94	50	73	12	164	572	218	0.16	-0.82	5.81	-4.12
Coastal											
Bridgehampton	94	53	75	11	179	565	120	0.66	-0.18	7.20	-2.43
New York	100	65	82	12	226	916	156	1.96	1.14	9.01	-0.37

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

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WEATHER REPORTS OF TEMPERATURES AND PRECIPITATION THROUGHOUT NEW YORK STATE FOR WEEK ENDING SUNDAY 8:00am, June 22nd, 2008

	Temperature				Growing Degree Days (*Base 50*)			Precipitation (*inches*)			
	High	***Low***	***Avg***	***DFN*[1]**	***Week***	***YTD*[2]**	***DFN***	***Week***	***DFN***	***YTD***	***DFN***
Hudson Valley											
Albany	85	49	66	-2	117	816	167	2.14	1.30	8.65	-0.46
Glens Falls	83	47	63	-4	90	600	59	0.04	-0.67	5.73	-3.23
Poughkeepsie	88	53	67	-2	123	853	153	1.17	0.33	10.50	-0.14
Mohawk Valley											
Utica	78	47	60	-3	69	460	61	0.59	-0.48	10.55	-1.91
Champlain Valley											
Plattsburgh	81	48	62	-5	86	566	11	1.15	0.43	8.89	0.92
St. Lawrence Valley											
Canton	82	51	63	-2	93	596	120	1.10	0.33	10.19	1.93
Massena	82	50	63	-2	96	585	70	1.45	0.68	8.58	1.09
Great Lakes											
Buffalo	80	49	63	-5	91	718	111	2.25	1.41	8.15	-0.53
Colden	80	48	60	-4	75	535	65	2.49	1.51	8.93	-1.52
Niagara Falls	82	49	63	-5	93	683	59	1.47	0.67	7.10	-1.55
Rochester	84	51	65	-2	106	806	196	0.89	0.19	5.17	-2.38
Watertown	81	52	63	-1	96	600	130	0.61	-0.01	7.96	0.69
Central Lakes											
Dansville	84	50	63	-5	91	689	88	1.56	0.65	5.10	-3.48
Geneva	82	49	63	-4	95	679	99	1.40	0.52	6.29	-2.39
Honeoye	81	49	63	-5	91	650	49	1.43	0.54	7.10	-1.48
Ithaca	82	47	62	-3	88	610	90	2.41	1.50	6.84	-2.20
Penn Yan	84	53	66	-1	114	819	239	1.05	0.17	4.51	-4.17
Syracuse	83	52	65	-2	107	760	142	0.93	0.02	7.45	-1.93
Warsaw	81	46	59	-5	65	526	96	2.40	1.40	8.69	-1.39
Western Plateau											
Alfred	81	43	59	-4	67	463	43	1.39	0.27	7.77	-1.46
Elmira	83	45	63	-3	95	677	121	1.84	0.93	7.12	-1.59
Franklinville	80	47	60	-3	73	470	100	1.25	0.24	8.10	-1.90
Sinclairville	82	48	61	-3	83	538	102	1.46	0.38	7.29	-3.86
Eastern Plateau											
Binghamton	80	47	61	-5	81	674	137	1.39	0.55	7.48	-1.67
Cobleskill	80	42	61	-4	79	565	73	1.17	0.19	9.03	-1.03
Morrisville	78	45	60	-4	72	539	79	1.70	0.73	8.98	-0.89
Norwich	84	48	62	-2	89	545	53	1.04	0.08	6.52	-3.66
Oneonta	86	50	66	3	113	685	238	1.14	0.16	6.95	-3.96
Coastal											
Bridgehampton	81	52	66	-2	112	677	114	1.12	0.28	8.32	-2.15
New York	85	60	72	-1	153	1069	152	0.27	-0.57	9.28	-0.94

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

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WEATHER REPORTS OF TEMPERATURES AND PRECIPITATION THROUGHOUT NEW YORK STATE FOR WEEK ENDING SUNDAY 8:00am, June 29th, 2008

	Temperature				Growing Degree Days (*Base 50*)			Precipitation (*inches*)			
	High	***Low***	***Avg***	***DFN[1]***	***Week***	***YTD[2]***	***DFN***	***Week***	***DFN***	***YTD***	***DFN***
Hudson Valley											
Albany	88	58	72	3	156	972	186	0.86	0.04	9.51	-0.42
Glens Falls	86	48	68	0	126	726	63	2.20	1.50	7.93	-1.73
Poughkeepsie	90	55	72	3	152	1005	167	1.53	0.65	12.03	0.51
Mohawk Valley											
Utica	79	52	65	2	108	568	73	2.19	1.17	12.74	-0.74
Champlain Valley											
Plattsburgh	82	53	67	-2	117	683	2	1.07	0.37	9.96	1.29
St. Lawrence Valley											
Canton	80	54	68	3	125	727	141	0.71	-0.06	10.77	1.74
Massena	80	51	67	1	123	708	77	0.56	-0.19	9.14	0.90
Great Lakes											
Buffalo	79	57	69	1	138	856	118	0.96	0.17	9.11	-0.36
Colden	78	52	66	2	116	651	74	0.46	-0.48	9.39	-2.00
Niagara Falls	81	54	70	3	144	827	73	0.67	-0.07	7.77	-1.62
Rochester	83	56	72	5	155	961	228	0.38	-0.32	5.55	-2.70
Watertown	80	53	68	3	128	728	149	0.89	0.35	8.85	1.04
Central Lakes											
Dansville	85	54	70	3	143	838	110	0.75	-0.12	5.69	-3.76
Geneva	83	55	70	3	140	819	113	0.55	-0.27	6.84	-2.66
Honeoye	83	53	70	2	139	789	57	0.90	0.09	8.00	-1.39
Ithaca	82	49	69	3	136	746	111	1.54	0.68	8.38	-1.52
Penn Yan	87	59	73	6	164	983	277	0.12	-0.70	4.63	-4.87
Syracuse	83	55	71	4	149	909	167	1.00	0.09	8.45	-1.84
Warsaw	79	52	67	3	118	644	113	0.74	-0.21	9.43	-1.60
Western Plateau											
Alfred	79	45	65	1	103	566	48	0.97	-0.11	8.74	-1.57
Elmira	84	47	70	3	144	821	143	0.57	-0.29	7.69	-1.88
Franklinville	80	48	66	3	111	581	118	1.23	0.27	9.33	-1.63
Sinclairville	83	52	68	4	128	664	126	2.42	1.38	9.71	-2.48
Eastern Plateau											
Binghamton	79	54	69	3	134	808	154	0.69	-0.15	8.17	-1.82
Cobleskill	83	54	68	3	126	691	89	1.60	0.64	10.63	-0.39
Morrisville	80	51	66	2	116	655	90	1.00	0.09	9.98	-0.80
Norwich	82	51	67	3	123	668	67	0.84	-0.07	7.36	-3.73
Oneonta	86	50	70	6	138	823	274	0.95	-0.03	7.90	-3.99
Coastal											
Bridgehampton	85	61	72	5	158	835	142	0.00	-0.78	8.32	-2.93
New York	90	68	78	5	200	1269	184	0.31	-0.53	9.59	-1.47

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ON THE LIGHTER SIDE

WILD ABOUT WEEDS

How many of these strawberry weed management related terms can you find? Watch out for those weeds and weeds - oh my-oh my!

P R E E M E R G E N T O P R T F C X G R A S S E S Q M
E O S P R E P L A N T L L W E R A M O N G N I W O M A
R A S E D Y T O S P A S A E S C L W E E D S D U T O P
E P T T C G E O D I D S S E D W I C K W I P E R A P P
N O R S E A Z E N E S D T D E D B S D E E W A T E R I
N S A D S M E N E X D E I S E C R V W E E D S Q U I N
I T W E D W E W F S E E C J W G A H K S E H C L U M G
A P I E O I P R L D E W S W E E T C O R N S D E E W W
L L U W B Y T R G E W N O Z Z L E S W E E D S E W Q E
I A B A N D E D F E R T I L I Z E R F S W E E D S S E
G N W E E D S H K W N L P L A N T I N G Y E A R B M D
H T D G A D J U V A N T A W E E D S S D E E W N I P S
T W E E D S W E E D S U V R B R E Y A R P S M O O T A
X C S T N E I R T U N K W E E D S O W E E D S R F R N
S C O U T I N G A N S D U D W E E D C I I I D
T Z W S A S D F A G E J L E G U M E S H E R R D L C W
R Y E D U I O R P B L K W E E E D S L E E W O E M K E
A L E E T W E E D S O O H W E E D S W V P E P N A L E
W L D E W T E E R C U L T I V A T I O N O E R T R E D
B I S W N A E Q W E E D S I N M X C B Y S D O I I I S
E T D I P S D E E W X C V G W E E D S T T S T F G R O
R P W B E H G F D S U M M E R A N N U A L D A I O R H
R I F L A M E T H R O W E R W E E D S A G E T C L I M
I R A N M L T N E M E G A N A M D E E W R E I A D G Y
E T J K C O M P E T I T I O N W E E D S S W O T S A O
S S H A N D W E E D I N G W E E D S R K H D N I B T H
T A E H W K C U B A R A E Y G N I T I U R F C O J I M
B R A S S I C A S O Z Z S P O T T R E A T M E N T O Y
W E E D S O W E E D S E E R F D E E S D E E W T I N C

adjuvant
banded fertilizer
biennial
biofilm
boom sprayer
brassicas
buckwheat
calibrate
competition
cover crop
cultivation
crop rotation
flame thrower
fruiting year
grasses
hand weeding
identification
legumes
light
mapping
marigolds
mowing
mulches
nozzles
nutrients
oats
perennial
planting year
plastic
postemergent
postplant
preemergent
preplant
Regii weeder
rye
scouting
spot treatment
stale seed bed
straw
strawberries
strip till
summer annual
sweet corn
trickle irrigation
water
weed management
weed seed free
weeds
wick wiper
winter annual

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Email: mcm4@cornell.edu

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