



New York Berry News

CORNELL UNIVERSITY

Volume 05, Number 5

May 24, 2006



What's Inside

1. Currant Events

- a. 2006 NASGA Summer Tour
- b. Haygrove Hosts Series of "Grower to Grower" Meetings
- c. One Stop Shopping for Farm Energy Savings Tools
- d. Renewable Energy for Farms and Greenhouses- A Series of Twilight Meetings
- e. Market Planning Assistance for NY Horticultural Businesses
- f. Cornell Greenhouse Business Summary Program
- g. New York Farmland Viability Projects-Call for Proposals
- h. USDA Launches Farmers' Market Survey
- i. New EPA Partnership with Farmers to Grow Economy, Clean Up Environment

- 1. Focus on Arthropod Pests of Strawberry-Greg English-Loeb
- 2. What Fungicide Do I Choose for Disease Control in Strawberries?- Annemiek Schilder
- 3. Spraying Strawberries-Andrew Landers
- 4. Smart Distribution Strategies- Jude Barry
- 5. Weather Reports

UPCOMING MEETINGS

June 19-30, 2006- Post-Harvest Technology Short Course, University of California, Davis, Calif. (530) 752-6941.

August 10-13, 2006- Northeast Organic Farming Association (NOFA) Summer Conference, Amherst, Massachusetts. For more information: <http://www.nofa.org/conference/index.php>.

August 22-23, 2006- North American Strawberry Growers Summer Tour, Portland Maine. For more information: <http://www.nasga.org>.

October 6-7, 2006- U.S. Highbush Blueberry Council Fall Meeting, Regency, Bar Harbor, Maine. For more information: 207-288-9723.

December 5-7, 2006- Great Lakes Fruit, Vegetable and Farm Market Expo, DeVos Place, Grand Rapids, Michigan. For more information: <http://www.glexpo.com>.

December 11-13- New England Vegetable and Berry Conference. For more information: : www.nevbc.org.

(See news brief below for dates for Haygrove "Grower to Grower" meetings and UMASS "Renewable Energy for Farms and Greenhouses" twilight meetings scheduled between June and November 2006)



New and noteworthy describes for this month's edition, which contains lots of press releases, news briefs, and coming events, of a berry important nature! Some of these include dates and details for a series of high tunnel twilight meetings, more on energy savings on the farm, opportunities for assistance with marketing and business planning, details on the 2006 NASGA summer tour to Portland, Maine, funding opportunities, news from ag-related government agencies and more!

Our May issue includes a mini-series of in-depth articles on strawberry pest management, including fungicides for strawberry disease control, strawberry arthropod pests, and spraying strawberries. They are followed by an article on Smart Distribution. Also included in this issue are weekly weather reports.

2006 NASGA SUMMER TOUR AUGUST 22-23-24

Plan to join us for the 2006 Summer Tour, **in Beautiful Maine**. Hosted by Dr. David Handley, and the Maine Vegetable and Small Fruit Growers Association

The NASGA summer tour is a fabulous opportunity to meet other growers and get great new ideas. This 1.5 day tour features 8 stops which include research, production, blueberries, raspberries and of course strawberries. The third day is optional for those who wish to include some shopping as part of their trip.

Mark your calendars now! Thank you to David Handley for organizing this learning event.

NASGA Summer Tour 2006

Holiday Inn by the Sea, Portland, Maine

Tuesday, August 22 (begins at noon)

- Highmoor Farm, Maine Agricultural Experiment Station, Monmouth
Tree fruit, vegetable & berry research trials
- David Pike's Farm To You, Farmington
Plasticulture, innovative equipment
- Stevenson' Strawberries, Livermore (ice cream snack)
Premiere PYO strawberry operation, matted row, trickle irrigation



Wednesday August 23 (all day)

- Dole's Orchard (Earl Bunting)
PYO strawberry & raspberry operation, with nice stand and orchards
- Cherryfield Foods Wild Blueberries, Gray
Wild blueberry fields and packing plant
- Arrive Gillespie Farms, New Gloucester
Large strawberry & vegetable operation, wholesale market
- Chipman Farms, Poland Spring (lunch)
PYO strawberries, entertainment farming
- Maxwell's Farm, Cape Elizabeth
Historic coastal farm with PYO strawberries and retail stand
- Harbor/Dinner Cruises Portland harbor and serves lobster dinner

Thursday, August 24

Optional bus ride to Freeport, L.L. Bean & Outlet shopping on your own

See [registration brochure](#) or [NASGA website](#) for more information. Reserve your space on the bus now.

HAYGROVE HOSTS SERIES OF "GROWER TO GROWER" MEETINGS

Haygrove Tunnels will co-host "Grower to Grower" meetings at farms in eleven US states and Ontario. The Canadian meeting is the big one, featuring 22 acres of Haygrove tunnels covering tomatoes, raspberries, strawberries - and a barbeque. The meetings are scheduled during the growing season, so growers can see for themselves just how much difference Haygroves make, and they start at 6 PM unless otherwise noted.

- | | |
|---------|---|
| June 15 | Hellers Orchard, Wapwallopen PA, cherries |
| June 18 | Strawberry Tyme, Simcoe Ontario, tomatoes, raspberries, strawberries (2 PM)
(Call 519-426-3099 to register free <i>before</i> June 9 -- \$20 late registration fee) |
| July 6 | Michigan State University, Clarksville MI, cherries (11:30 AM) |
| July 11 | Schacht Farm, Canal Winchester OH, tomatoes, strawberries |

- July 14 Cedar Meadow Farm, Holtwood PA, tomatoes, **raspberries** (2:30 PM)
(Haygrove meeting in conjunction with a no-till and cover crop field day)
- July 14 Riverview Produce, Leola PA, heirloom tomatoes, various trial crops
- July 19 Penn State University, Rock Springs PA, PSU high tunnel day (all day)
(No Haygroves -- poly trials, Haygrove's Luminance poly vs. others)
- July 24 Kansas State University, trials of various crops
- July 25 Four Corners Farm, South Newbury VT, **strawberries, raspberries**
- July 25 Biver Farms, Edwardsville IL, tomatoes, **raspberries**
- July 26 Michigan State University, SW Research Farm, Benton Harbor MI,
numerous crops including tomatoes, **strawberries, cherries, raspberries**
- July 27 Stuckwisch Farms, Vallonia IN, tomatoes, specialty peppers
- July 28 Elmwood Stock Farm, Georgetown KY, various crops
- Aug 2 Peregrine Farm, Graham NC, heirloom tomatoes, cut flowers
- Aug 3 Weyanoak Farms, Charles City VA, cut flowers, **strawberries**
- Sept 7 Oyster Pond Farm, Orient NY (Long Island), **raspberries, strawberries**
- Sept 12 Mutual Farm Mgmt., Traverse City MI, wine grapes, includes wine tasting
- Oct 11 University of Kentucky, Lexington KY, colored peppers, tomatoes,
strawberries (3 PM)
- Nov 8 Virginia Tech, SPAREC Blackstone VA, **strawberries** (9 AM)

Call 866-HAYGROVE for directions to the meetings.

ONE-STOP SHOPPING FOR FARM ENERGY SAVINGS TOOLS

Farmers who are seeking ways to reduce their energy costs can now get helpful tools and information at one easy-to-use Web site. Farm energy calculators can help farmers assess their current energy use and costs. In some cases, farmers can determine how they can change their energy consumption by changing equipment or practices.

"NCAT's new [farm energy calculator Web page](#) is a work in progress," said Al Kurki, NCAT energy and agriculture specialist. "We intend to add more diverse, useful tools to the Web site as we test more of them and as more farm energy calculators are developed. Calculator users should keep in mind that not all of these tools are created equal. They are quite variable in terms of who they are intended to serve and how well they serve the user."

NCAT's farm energy saving efforts are supported in part by a grant from [Farm Aid](#) and through NCAT's ATTRA - National Sustainable Agriculture Information Service.

(Source: ATTRA Weekly Harvest Newsletter, May 10, 2006)

RENEWABLE ENERGY FOR FARMS AND GREENHOUSES - A SERIES OF TWILIGHT MEETINGS

Sponsored by the University of Massachusetts Extension Agriculture and Landscape Program, Community Involved in Sustaining Agriculture (CISA) and Donald Campbell Associates.

(Editor's note: This series of meetings is being held in Massachusetts but I have listed them here as they cover many of the energy alternatives New York fruit growers may be interested in exploring to reduce on –farm energy costs. I have confirmed with Sonia Schloemann from UMASS Amherst and others sponsoring the meetings that New York growers are welcome to attend.)

We will be exploring renewable energy systems for farms and greenhouses this summer and fall through a series of twilight meetings. Plan to join us for one or all meetings to learn how alternative energy sources might fit into your business. These meetings will provide information on funding opportunities and feature vendors and experts with a wealth of knowledge and experience. For more information, including opportunities for sponsorship, or to pre-register, contact Tina Smith, Extension Floriculture Program, 413-545-5306, tsmith@umext.umass.edu or Ruth Hazzard, Extension Vegetable Program, 413-545-3696, rhazzard@umext.umass.edu.

Solar Energy

Wednesday, July 26, 2006, 4:00 pm – 7:00 pm.

Riverland Farm, Sunderland, MA. Host: Scott Reed

Riverland Farm grows 11 acres of organic vegetables and U-pick cut flowers on the banks of the Connecticut River in Sunderland, MA. This past winter, Riverland installed solar panels (photovoltaic modules, also known as PV) as an awning to generate solar electricity to power their coolers and farmstand, as well as to provide a dry, shady area for customers. Other local farmers will be present to discuss their use of PV to power remote water stations, electric fences and drip irrigation.

Additional Speakers:

Mike Kocsmiersky of Kosmo Solar installed the system and will share his expertise. Bruce Howden, Howden Farm, Sheffield - Howden Farm currently uses a 1.1 kilowatt solar electric system to power drip irrigation for growing fruits and vegetables on their farm 17 Elizabeth Smith, Caretaker Farm - Caretaker Farm uses stand-alone solar power systems to pump water for their livestock and to supply power for electric fencing. Don Campbell, Consultant, Donald Campbell Associates - Don will talk about the process of fitting a farm's needs to the types of renewable energy systems currently available including solar hot air systems to supplement heat for greenhouses.

Wind and Solar Energy

Thursday, September 7, 2006, 3:00 PM – 6:00 PM

Lion Spring Farm, 236 Dedham, St. Dover, MA. Host: Bob Loebelenz

Lion Spring is a small diversified farm, now engaged in the breeding of Massachusetts Thoroughbred horses. The farm also grows vegetables and herbs for local gourmet restaurants and have a collection of chickens who supply farm fresh eggs for retail sales. On site there is a 4.8 kilowatt photovoltaic system and 3.1 kilowatt wind turbine all feeding a battery bank.

Additional Speakers:

Henry Dupont, Lorax Energy Systems on licensing and choosing turbines Warren Leon, Renewable Energy Trust on state funded opportunities for renewable energy Don Campbell, Consultant, Donald Campbell Associates Don will talk about the process of fitting a farm's needs to the types of renewable energy systems currently available.

Field Corn Biomass for Heating Greenhouses

Wednesday, October 4, 2006, 3:00 PM – 6:00 PM

Kosinski Farm, Westfield, MA. Host: Mike Kosinski, Kosinski Farm

Kosinski Farm grows 140 acres of blueberries, apples, grain corn, vegetables and tobacco. Five greenhouses provide flower and vegetable plants for retail sales at their farm stand and use in the field. Blueberries, apples and butternut squash are major wholesale crops. Mike began heating one greenhouse with his own corn three years ago and has been expanding his use of corn for heat each year. This year he is installing two larger stoves with automated auger stoking systems. Field corn fits well into his vegetable rotation. The corn is dried off-site and trucked back to the farm. His production costs are about \$60-\$65 per ton of corn, which is about one-third of the cost of heating oil (\$2.45 per gal.) based on energy costs per BTU.

Additional Speakers:

Rob Rizzo, Mt. Wachusett Community College - Rob uses a variety of renewable energy sources including wood chips, wind and solar power and has reduced the energy costs at the college by 5%. Bill Llewelyn, Five Point Farm, Northfield - Bill grows and sells corn for energy use. This season he harvested 1,000 tons of corn. Christine Serrentino, From Field to Table - Christine will talk about the science and economics of burning corn. Don Campbell, Consultant, Donald Campbell

Associates - Don will talk about the process of fitting a farm's needs to the types of renewable energy systems currently available.

MARKETING PLANNING ASSISTANCE FOR NEW YORK HORTICULTURAL BUSINESSES - FROM THE NY AG INNOVATION CENTER AT CORNELL UNIVERSITY

Supported by a grant from the New York Farm Viability Institute (NYFVI), this project is designed to provide free marketing planning assistance to New York horticultural businesses. The technical support and consultation services provided by this project include marketing planning, feasibility and profit potential analysis, and strategic implementation. If you are a New York horticultural business owner looking to explore value-added marketing opportunities to improve business viability, you may be eligible to receive assistance for conducting an economic analysis, or assistance in developing marketing plans to add value and expand your business.

Adding value to a business is more than processing. Value-added projects could include adding new crops, developing new products (through processing, packaging, branding, etc.), building new marketing channels, adopting new marketing formats, providing special services, and establishing strategic alliances.

Taking on new value-added projects often means additional investment and added risks to the business. The ability to develop a comprehensive marketing plan and economic analysis for the project is critical for the success of the project and the farm's overall viability. However, growers are faced with limited resources of labor, time, and money. During 2004-05, the Value-Added Horticultural Business Marketing Planning Program in the NY Ag Innovation Center was contacted by about 150 horticultural businesses for marketing assistance and has provided in-depth marketing planning consultation to more than 20 New York horticultural businesses.

To Apply for Marketing Planning Assistance

You should:

- Be a horticultural business in New York State;
- Be involved in or considering a value-added project;
- Demonstrate a desire and ability to launch specific business activities in two years.

Complete the **Request for Assistance Form** below and mail it to 307 Warren Hall, Cornell University, Ithaca, New York 14853-7801.

For further information on horticultural business marketing planning assistance, please contact:

Bob Weybright, Extension Specialist, Cornell Cooperative Extension - Dutchess County at 845-677-8223, ext. 122, e-mail: RW74@cornell.edu;

Wen-fei Uva, Senior Extension Associate, Dept. of Applied Economics and Management, Cornell University at 607-255-3688, e-mail: WL32@CORNELL.EDU; or

Angela Gloy, Research Associate, Dept. of Applied Economics and Management, Cornell University at 607-254-4939, e-mail: AMG69@CORNELL.EDU.

The Cornell Horticultural Business Management and Marketing Program: <http://hortmgt.aem.cornell.edu/>.

The NY Ag Innovation Center: <http://www.nyfarmviability.org/aic/>, or <http://www.nyaic.org>.

Request for Marketing Planning Assistance Form

- Yes, I am interested in the Marketing Planning Assistance for Horticultural Businesses. Please contact me at:

Name: _____

Business Name: _____

Mailing Address: _____

Business Address (if different from above): _____

Phone: _____

Fax: _____

E-mail: _____

Type of Business: _____

Please complete this form and mail it to Wen-fei Uva, Department of Applied Economics and Management, Cornell University, 307 Warren Hall, Ithaca, New York 14853, e-mail to WL32@CORNELL.EDU, or fax 607-255-9984.

CORNELL GREENHOUSE BUSINESS SUMMARY PROGRAM

Cornell University is again offering business analysis services for greenhouse operations The Greenhouse Business Summary Program. The purpose of this program is to help greenhouse operators evaluate financial performance of a business in relation to industry standards and use this information to improve bottom-line and make management decisions (pricing, investment, business changes, etc.).

Supported by a grant from the New York Farm Viability Institute (NYFVI), this program will be FREE to New York greenhouse growers in 2006 and 2007. A Cornell greenhouse business specialist will work with the greenhouse operator to conduct a profitability analysis for the business. The business will receive a customized financial analysis report and a performance comparison with others in the industry.

All information about the individual business will be kept confidential.

To participate in the Greenhouse Business Summary Program you will need:

- Record of receipts & expenses
- Asset inventory
- General business Info (labor, production area etc.)
- Average 2 hours of interview time

For more information or to participate, contact:

Wen-fei Uva, Senior Extension Associate, Department of Applied Economic and Management, Cornell University at 607-255-3688 or e-mail: WL32@CORNELL.EDU.

Walt Nelson, Horticulture Extension Specialist, South Central New York, Cornell Cooperative Extension, at 607-734-4453 or e-mail: wnn1@cornell.edu.

You can find more information on the Cornell Greenhouse Summary Program at <http://hortmgt.aem.cornell.edu/programs/hortbusiness.htm>.

NEW YORK FARMLAND VIABILITY PROJECTS – CALL FOR PROPOSALS

The New York State Department of Agriculture and Markets invites proposals that seek to improve the profitability and efficiency of participating farms. The program provides financial assistance in the form of matching grants to applicants for projects which contribute to overall farm profitability and sound environmental management. For more information/applications go to: <http://www.agmkt.state.ny.us/RFPS.html>. **Proposals are due June 20, 2006.**

USDA LAUNCHES FARMERS' MARKET SURVEY

WASHINGTON D.C., May 5, 2006 — The U.S. Department of Agriculture announced it will survey more than 3,400 farmers market managers nationwide for its 2006 USDA Farmers Market Survey. The data collected will show how farmers markets have changed since USDA last conducted a poll in 2001, quantifying many areas of the industry. Additional questions were added this year to chart emerging market trends.

"The survey information has proved to be extremely useful to farmers' market managers and vendors, especially when they're making strategic business decisions," said Administrator Lloyd Day of the Agricultural Marketing Service (AMS), the USDA agency publishing the survey. "In addition to helping raise the income of farmers, these markets also promote nutrition education, wholesome eating habits and better food preparation, and boost the economies of their communities."

The survey will gather information on the current state and economic impact of farmers markets throughout the country, and is designed to help farmers' market managers and vendors of farm products make strategic business decisions. Data gleaned from the survey will answer many questions, including:

1. How important are farmers markets as a source of income for farmers?
2. What changes are taking place in the mix of goods sold at farmers markets?
3. What draws customers to farmers markets?
4. How are farmers markets administered and promoted?
5. What are the primary challenges faced by farmers market managers.

The resulting study will highlight emerging trends in farmers markets, including organic sales, and "eco-labeling," the acceptance of electronic benefit transfer technology, and consumer participation in USDA's Women, Infants, and Children Farmers Market Nutrition Program and the Senior Farmers Market Nutrition Program.

AMS will collect, analyze, and disseminate survey data, posting the results on its website. Published copies will also be available on request. The 2006 Farmers Market Survey may be accessed on the Internet at <http://www.farmersmarketsurvey.com>.

NEW EPA COLLABORATIVE PARTNERSHIP WITH FARMERS IN GROWING ECONOMY, CLEANING UP THE ENVIRONMENT

Washington, D.C. - May 8, 2006. EPA today released its National Strategy for Agriculture to initiate a closer partnership with agriculture in fulfilling the agency's mission of protecting human health and the environment.

"President Bush understands that agriculture is a vital part of our nation's economy and a vital partner in protecting our nation's environment," said EPA Administrator Stephen L. Johnson. "By working together on our shared challenges, EPA and the farming community can do what's good for agriculture, good for our environment, and good for the American people."

EPA intends to use communication, collaboration and innovation to strengthen its relationship with the agricultural community. The agency considers agriculture a producer of solutions to environmental problems.

EPA looks to positive engagement with the industry, going beyond the traditional regulatory approaches. The new plan builds upon farmers' natural interest in protecting natural resources and the environment, and it seeks to address complex issues through locally-based, collaborative efforts.

The goals of the National Strategy for Agriculture include:

- Increasing EPA employee awareness of how their actions affect agriculture and how farming benefits human health and the environment.
- Working with the agricultural industry - including production, processing and distribution - in developing and demonstrating environmental protection solutions that express to the public the value of farmland environmental stewardship activities;
- Coordinating research and technology development and real world application so the needs of agriculture and EPA can be more efficiently met; and,
- Identifying existing environmental improvement measures for agriculture and developing new ones, where needed.

For more information on the National Strategy for Agriculture: epa.gov/agriculture/agstrategy.html

(Source: NYS Department of Agriculture & Markets)

FOCUS ON IMPORTANT ARTHROPOD PESTS OF STRAWBERRY

Greg English-Loeb, Associate Professor of Entomology, NYSAES, Cornell University, Geneva, NY 14456

The field season is upon us and it is time to review the potential insect and mite pests that might show up in your strawberry planting. At any time during the season even a cursory look at your plants will reveal a number of different kinds of insects present; some of them will be potential pests, some beneficial, and the rest more or less harmless. It can be overwhelming to try to sort out the good guys from the bad. Hopefully this review will help focus in on the major threats to be on the watch for. Before getting into the specific pests, I have a few notes on changes in pesticide availability for strawberries.

There is a new miticide now labeled for use in strawberries, Zeal Miticide or a newer formulation called Zeal Miticide 1 (etoxazole). Zeal is predominantly toxic to the eggs and young immature mites. Hence, you need to use it a bit earlier during the population build up to achieve control before reaching an economic threshold. The current economic threshold is five mites per leaf or about 25% of leaves infested (see below for more information on spider mites). Zeal has a 12 hour re-entry interval and one day to harvest restriction. Zeal will not control cyclamen mite. In insecticide news, Entrust, the organic formulation of Spintor (spinosad), has a label for strawberries, specifically for use against leafrollers and thrips. Neither leafrollers nor thrips are typically serious issues in strawberries, however.

During the prebloom period the **strawberry bud weevil (clipper) (Fig. 1)** is the main arthropod pest to watch out for. As I write this on May 12, the Earliglow and Cavendish in my planting in Geneva, NY are at about 10% bloom and therefore, given a bit of heat, will be mostly past the vulnerable bud stage. By the time this article reaches you, your plantings may also have advanced enough to escape this **potential** pest. I emphasize potential pest since in recent years we have learned that many strawberry cultivars, such as Jewel and Seneca, can tolerate a fair amount of bud loss before showing yield reduction. However, at sufficient densities, clipper can still be a problem. As a rough rule of thumb, treat

for clipper when you observe more than one clipped primary or secondary flower bud or more than 2 tertiary buds per truss, on more than one truss per foot of row or more than one injured truss per foot of row (see **Fig. 2** for example of clipped buds). Clipper often is a more severe problem along borders of plantings, near woods. When monitoring for clipper, check 2-foot sections of rows in five different areas and average the results. Lorsban [chlorpyrifos], Brigade [bifenthrin], and Danitol [fenpropathrin] are labeled for clipper in New York. These are all broad-spectrum materials that will kill beneficial insects so use only when necessary.



Fig. 1



Fig. 2

Also during the prebloom period (and extending through harvest and sometimes after renovation) **two-spotted spider mite (Fig. 3)** can be a problem in some plantings. Look for whitish or yellowish stippling on leaves (**Fig. 4**). When monitoring for spider mites, you should sample 60 leaflets from a cross section of the planting and inspect for mites. Current threshold is 5 mites per leaf or about 25% of leaflets have at least 1 mite. This is likely a conservative threshold for a healthy planting. There are several compounds labeled for mites on strawberries in New York: Kelthane [dicofol], Vendex [hexakis], Agri-mek [abamectin], Savey [hexthiazox], Zeal (etoxazole). Acramite (non bearing crops), Danitol [fenpropathrin] and Brigade. Agri-mek label calls for 2 applications, 2 weeks apart. For all these materials, coverage is very important, especially on the underside of leaves.



Fig. 3



Fig. 4

Tarnished plant bug (TPB) is the key insect pest of strawberries during bloom to near harvest. Both adult bugs (**Fig. 5**) and the nymphs (**Fig. 6**) cause injury (**deformed fruit, Fig. 7**) but nymphs are probably of the greatest concern for June-bearing cultivars in upstate NY. The economic threshold is half a nymph per flower cluster (you sample by tapping cluster over a white plate and counting nymphs that fall off; sample 3 clusters at five different sites in the planting). It is worth sampling for this pest on a regular basis since it varies in population size from place to place and from one year to the next. Indeed, populations of TPB seem particularly low in my plantings in Geneva this year. Spraying a pesticide when nymph counts are below threshold costs you money and can kill beneficial arthropods unnecessarily. Good weed management can help reduce problems with TPB.



Fig. 5



Fig. 6



Fig. 7

Cy

Cyclamen mite is a potentially serious pest that seemed to show up in more fields than usual three years ago but was not very prevalent recently. The mites get active in the spring with populations peaking after bloom. The mites like to feed on young leaf tissue (just as the leaves are unfolding). The mites themselves are difficult to see without a good hand lens (**Fig. 8**). Examine the base of a young leaflet just as it begins to unfold. Cyclamen-damaged leaves tend to be stunted and crinkled (**Fig. 9**). Note that sometimes herbicide damage can resemble damage symptoms from cyclamen mite so it's important to confirm mites are present. Prior to bloom or after renovation are good times to treat for this pest. Kelthane and Thiodan [endosulfan] are labeled for use against cyclamen mites. Use lots of water for thorough coverage.

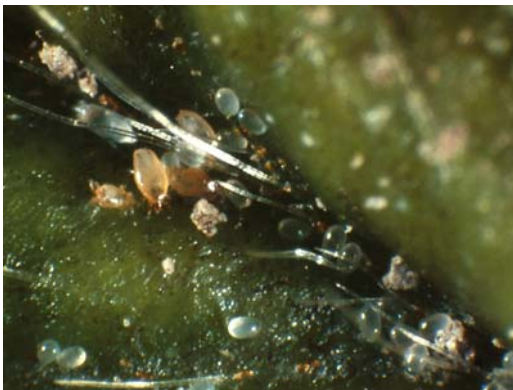


Fig. 8



Fig. 9

Spittlebug starts appearing on leaves, stems, and flowering racemes about bloom time and extending into harvest. They overwinter as eggs in the soil and hatch out as temperatures rise in the spring. The nymphs crawl up the plant and begin feeding on the xylem tissue (the water conducting vessels of the plant). There are not a lot of nutrients in xylem and therefore nymphs need to process a lot of sap, extracting the few nutrients out for their use and excreting the remaining water. This water is frothed into white spittle (**Fig. 10**), which helps protect the nymphs from desiccation and natural enemies. You can often find several nymphs within spittle mass. Feeding by spittlebugs, if extensive, can stunt plants and reduce berry size. Perhaps more importantly, the spittle masses are a nuisance to pickers. Threshold for spittlebug masses is 1 mass per foot row. Thiodan, Brigade, Danitol, and Provado are labeled for use against spittlebugs. Weedy fields tend to have more problems with spittlebugs.



Fig. 10

Root weevil There are several species of weevils that can be pests of strawberry (in order of decreasing size: black vine weevil, rough strawberry weevil, and strawberry weevil). The adults (**Fig. 11**) are black in color with small indentations along their elytra (outer, hardened wing that covers the back of the beetle below the head region). The larvae (**Fig. 12**) feed on roots and crowns (**Fig. 13**) and when abundant can cause serious damage to plantings. Beds with heavy infestations show distinct patches or spots that appear stunted and have reduced yields (**Fig. 14**). Drought stress

aggravates the injury from larval feeding. Chemical control (Brigade) is targeted at the adults that emerge in mid- to late June. Look for characteristic adult feeding damage on leaves (notching from the edge) to help determine timing (**Fig 15**). The adults feed for a few days before starting to lay eggs. Some growers have also had success controlling root weevil larvae using parasitic nematodes. These can be applied either in the spring (late April and early May) and/or in the fall. Use sufficient water to get good penetration. Rotation out of strawberries is the best remedy for root weevils. They are wingless and do not move a great distance. However, new plantings should be placed 50 meters or more from an infested planting.



Fig. 11



Fig. 12



Fig. 13



Fig. 14



Fig. 15

Strawberry sap beetle (SSB). This small, brownish beetle (**Fig. 16**) seems to be increasing as a pest in New York strawberries. Both the adult beetles and the larvae (**Fig. 17**) feed on ripe and overripe fruit, although the larvae are particularly problematic since they contaminate the fruit. SSB overwinters as adults along the edge of woods or hedgerows, moving into strawberry fields as the fruit begins to ripen. The adults are quite secretive, spending time on the under side of fruit touching the ground and scampering away when disturbed. After completing development on the overripe fruit, the larvae drop into the soil to pupate, emerging as adults later in the summer. In July and August SSB moves to other fruit crops like raspberries, cherries, blueberries, peaches and melons. They are generally not considered serious pests on these alternative crops since they tend to restrict their activity to cull fruit on the ground, although melons are vulnerable since they sit on the ground and we have observed SSB up in the raspberry canopy feeding on fruit. We still are exploring the best ways to control SSB. The first line of defense is sanitation in the strawberry field and other fruit crops. The less overripe and damaged fruit left in the field the less opportunity there is for successful SSB reproduction. However, keeping fields free of overripe fruit is difficult to achieve in practice, especially for U-pick operations. There are two pyrethroids that are labeled in New York for SSB control: Danitol and Brigade. Note that Brigade does not have a preharvest interval while for Danitol it is 2 days. However, Brigade is more expensive. For both materials, good coverage is likely to be important for its control. Note that SSB probably does not move into strawberry fields in significant numbers until fruit begins to ripen.



Fig. 16



Fig. 17

WHAT FUNGICIDE DO I CHOOSE FOR DISEASE CONTROL IN STRAWBERRIES?

Annemiek Schilder, Department of Plant Pathology, Michigan State University

There are more choices for disease control in strawberries than ever before. This can be a rather bewildering experience, as growers have to consider the disease control spectrum, efficacy ratings and cost per acre for each product. This article aims to help strawberry growers in the decision-making process by outlining unique aspects of several strawberry diseases and characteristics of the newer fungicides. A few notes on specific diseases:

- 1) Control of leaf diseases, such as common leaf spot, scorch, *Phomopsis* leaf blight and angular leaf spot may only be needed on susceptible cultivars. Some leaf diseases can spread to the berries (e.g., *Phomopsis* can also cause a fruit rot), or berry caps (angular leaf spot and scorch). If these have been a problem in the past, start fungicide sprays well before bloom, especially in rainy seasons.
- 2) Leather rot (*Phytophthora cactorum*) is best controlled by growing strawberries in well-drained soil and by applying straw mulch between the rows to prevent the berries from touching the soil (where the pathogen resides) and prevent soil from splashing up onto the berries. If there still is a problem, use Ridomil Gold or Aliette for control. Phosphorous acid products such as Phostrol or ProPhyt are also effective, but have to be applied more frequently than Ridomil. In addition, strobilurins like Abound and Cabrio have been found to be effective against leather rot in studies in Ohio. Spray during bloom and fruit development.
- 3) Angular leaf spot is a bacterial disease that is characterized by reddish brown leaf spots, which are angular and translucent when leaves are held against the light, and blackening of the berry caps. It is favored by cool, wet weather and nights with temperatures close to freezing. The bacteria are spread by rain splash or by irrigation water. Copper (e.g., Kocide, Cuprofix, Bordeaux mixture, etc.) is the only chemical that works against this disease. Some labels suggest adding lime as a safener to reduce the risk of crop injury. In susceptible varieties, start spray applications before bloom to prevent multiplication of the bacteria on the leaves before they spread to the berry caps.
- 4) *Botrytis* gray mold is the predominant fruit rot in most areas where strawberries are grown. The gray mold fungus (*Botrytis cinerea*) is ubiquitous and can produce numerous spores on dead leaves and decaying plant parts. The spores are easily spread by wind. The fungus primarily enters the berries through the blossoms, which means that chemical control should be focused on the bloom period. Make sure to protect the king blooms especially, since these provide the largest berries. The other period for control is pre-harvest, since *Botrytis* can spread rapidly from infected berries to ripe and overripe berries, either by wind, berries touching each other or on pickers' hands. Pre-harvest sprays reduce post-harvest rots and increase shelf life of the berries.
- 5) Most other fruit rots, including anthracnose, tend to infect the berries somewhat later in the season, i.e. during the green fruit or ripening stage. Anthracnose fruit rot is favored by warm, humid conditions and can spread rapidly during rains or frequent irrigation. In cool seasons, it tends to appear closer to harvest or may not show up at all. Anthracnose fruit rot can be identified by black sunken lesions with wet, orange (or sometimes gray) spore masses in them. The anthracnose fungus is able to multiply on the leaves without visible symptoms, which may explain its sometimes widespread and sudden appearance in fields. When conditions are very hot and humid during the harvest season and a lot

of overripe berries are present, Mucor/Rhizopus rot can develop. This rot leads to leaky berries and envelops them in a grayish white, fungal mass.

New fungicide characteristics

Many of the newer fungicides are less toxic than older products, which is good for farm personnel, consumers, and the environment. Therefore, many of the newer products may be applied up to and including the day of harvest. They also tend to have more convenient granular or liquid formulations and are effective at lower rates. However, a good number of the newer products are more expensive and more prone to resistance development in target fungi than older materials. This means that they have to be used judiciously and that there may be a limit on the number of applications per season. In general it is a good idea to apply any of the strobilurin fungicides (Abound, Cabrio or Pristine) no more than twice per season. Please follow label directions carefully before use of any crop protection chemical.

Abound (azoxystrobin - this product was called Quadris in the past) is a reduced-risk type fungicide with good to excellent broad-spectrum activity against foliar diseases, powdery mildew, anthracnose and various fruit rots. It does **not** have much activity against Botrytis gray mold. It is systemic and has limited curative activity. The fungicide gets rainfast quickly. The label rate is 6.2-15.4 fl oz/acre. We usually recommend 10-12 oz/acre. The number of applications is restricted for fungicide resistance management. PHI=0 days.

Cabrio (pyraclostrobin) is also a reduced-risk fungicide with good to excellent broad-spectrum activity against foliar diseases, powdery mildew, anthracnose and various fruit rots. However, it does **not** provide much control of Botrytis gray mold. It is locally systemic and has limited curative activity. The fungicide gets rainfast quickly. The label rate is 12-14 oz/acre. The number of applications is restricted for fungicide resistance management. PHI=0 days.

Pristine (pyraclostrobin and boscalid) is a reduced-risk fungicide that contains a strobilurin and a carboxamide active ingredient. Due to the two active ingredients, this fungicide has even a broader spectrum of activity than Cabrio and Abound. It provides excellent control of foliar diseases, powdery mildew, anthracnose and fruit rots, including Botrytis gray mold. Due to its locally systemic and systemic ingredients, it has moderate curative activity. The fungicide gets rainfast quickly. The label rate is 18-23.5 oz/acre. The number of applications is restricted for fungicide resistance management. PHI=0 days.

Elevate (fenhexamid) is a reduced-risk fungicide that has good to excellent activity against Botrytis gray mold. This fungicide is locally systemic and is able to control incipient infections; however, it is best used as a preventative fungicide. The fungicide gets rainfast quickly. Due to its unique chemistry, Elevate can be used to alternate with fungicides in other chemical classes for fungicide resistance management. PHI=0 days.

Captevate (fenhexamid and captan) is a pre-mix of Elevate and Captan. It has excellent activity against Botrytis as well as good activity against anthracnose and other leaf spot and fruit rot diseases. The captan component enlarges the spectrum of control. This formulation appears to perform a bit better than a tank mix of Elevate and Captan. The label rate is 3.5-5.25 lb/acre. At the high rate, the dose is equivalent to 1.5 lb Elevate and 5.6 lb Captan 50WP per acre. The PHI=0 days.

Switch (cyprodinil and fludioxonil) is a reduced-risk fungicide that is a mixture of a systemic and protectant active ingredient. Switch has excellent activity against Botrytis gray mold, moderate activity against anthracnose and scorch, and good activity against powdery mildew. The label rate is 11-14 oz/acre. PHI=0 days.

Scala (pyrimethanil) is a reduced-risk, systemic fungicide related to one of the active ingredients in Switch. Scala has good to excellent activity against Botrytis gray mold and moderate activity against anthracnose. Not much is known about its activity against other strawberry diseases. Captan may be added to broaden its spectrum of control. The label rate is 18 oz/acre. PHI=0 days.

Armcarb, Kaligreen, MilStop (potassium bicarbonate) are protectant fungicides that are akin to baking powder and therefore have low toxicity. All are labeled for organic production. They are used mostly for powdery mildew control in the greenhouse industry but are also labeled for field-grown crops. They are very safe to use and are moderately effective against foliar and fruit rot diseases. They appear to work by desiccating fungal spores and mycelium. The rates are 2.5-5 lb/acre for Armcarb, 2.5-3 lb/acre for Kaligreen, and 1 lb/acre for Milstop. PHI=0 days.

ProPhyt, Phostrol, Agri-Fos (phosphorous acid/phosphites) are low-toxicity, highly systemic fungicides that break down to the same active ingredient as Aliette. They are not the same as phosphorus fertilizer. Their main scope of activity is against *Phytophthora* diseases (red stele, leather rot, crown rot), although they may have a broader spectrum than the label indicates. At high concentrations/rates, some leaf burning may occur. PHI=0 days.

Serenade (*Bacillus subtilis*) is a biological control agent that is moderately effective against foliar diseases, gray mold and anthracnose. It is strictly a protectant and has to be reapplied every 7-10 days to maintain efficacy. It is OMRI listed and can be used in organic strawberry production. A new formulation, Serenade Max, that contains a higher concentration of the bacteria, is now also on the market. PHI=0 days.

Older fungicides such as **Topsin M, Captan, Thiram, Copper, Sulfur**, etc. remain effective and relatively inexpensive disease control tools. **Cuprofix** is a new, easy-to-use copper sulfate formulation that does not plug up sprayers. **Ridomil Gold** and **Aliette** remain excellent choices for control of Phytophthora diseases such as red stele and leather rot. Other older fungicides that have labels for use in strawberries but are used less often are: **Syllit, Rovral, Nova, Procure**, and **JMS Stylet Oil**.

SPRAYING STRAWBERRIES

Dr Andrew Landers, Department of Entomology, Cornell University, NYSAES, Barton Lab., Geneva, NY 14456
(<http://www.nysaes.cornell.edu/ent/faculty/landers/pestapp>)

There are many new developments in spray technology that will help reduce the costs involved in applying pesticides. The main costs associated with pesticide application are the cost of pesticides, which continue to rise in many cases. Any technology that reduces the amount of product necessary to control a weed, insect, or disease, or improve its effectiveness, is welcome. The other major costs to consider are those of labour and timeliness.

Timeliness is crucial if pesticides are to control disease or insects. Applying the spray mix too early may act in a prophylactic way if the product is designed to do that. Many sprays must be applied to the target at a specific growth stage of the weed, insect, or disease. Failure to apply products on time will lead to increased disease levels or insect activity.

Coverage is essential. Poor spray coverage is a major factor contributing to poor disease control. Better coverage leads to better control, and a thorough application of an effective material is required. Uneven coverage increases the amount of fungicide that must be applied in order to provide adequate control on poorly covered areas and the number of sprays required if it allows a disease to become established.

Whilst canopy size and shape will affect application volume, there are equally dangers in not applying enough spray and in applying too much spray. There is an optimum quantity required for a thorough coverage of the target. The old adage that you should spray until the leaves drip is misplaced; likewise lowering spray rates to below the minimum which offers control is also misguided advice.

A number of growers have reduced application volumes to extremely low levels and are observing poor control due to inadequate coverage. Interestingly, research around the world confirms similar results and indicates that there is an optimum volume to provide thorough coverage and control.

A number of pesticide manufacturers are adopting the ASAE/BCPC nozzle selection system and stating on the pesticide label the spray classification needed for their product. Reference nozzles, tested in a laboratory using a laser analyzer, are then classified according to the characteristics of the spray produced. Fine, medium, and coarse are the categories of agricultural sprays. The label recommendation makes nozzle selection far easier for the sprayer operator. A general guideline is:

Fine classification for contact fungicides and insecticides

Medium classification for herbicides

Coarse classification for pre-emergent sprays

Growers may find these spray classifications in the latest nozzle catalogues and should cross-reference the selected nozzle type, based upon flow rate, with the spray classification. Growers have to consider good coverage and penetration into the canopy, so traditional fine sprays may not penetrate, so the traditional compromise takes place, a medium spray quality should be chosen. On no account should large droplets or coarse spray quality be used, as the droplets run-off the target. Large droplets can also be created from worn or damaged nozzles, remember to change nozzle tips when their output is greater than 10% of the manufacturers recommended flow rate.

However, weather conditions, particularly wind and its effect upon drift, must be taken into consideration. If the label or supplier makes no recommendation concerning nozzles or spray quality, then a reasoned choice of spray quality must be made, based upon the target, the product, and the risk of drift

Spray drift of pesticides is an important and costly problem facing pesticide applicators. Drift can result in damage to susceptible off target crops, environmental contamination to watercourses and a lower than intended rate to the target crop, thus reducing the effectiveness of the pesticide. Pesticide drift also affects neighboring properties, often leading to concern and debate. There are two types of drift, airborne drift, often very noticeable and vapor drift. The amount of vapor drift will depend upon atmospheric conditions such as humidity, temperature and the product being applied and can occur days after an application is made. Drift is influenced by many inter-related factors including droplet size, nozzle type and size, sprayer design, weather conditions and last but not least the operator.

Directing the spray to the target is the key to successful penetration and deposition. Whilst many modern nozzles can control drift successfully, e.g. drift-guard and air induction nozzles, there is still much to be done on positioning those nozzles in relation to the crop target. Multi-nozzle assemblies surrounding the target often help.

Air assistance certainly helps but usually when there is a good canopy to intercept the spray plume and capture the droplets. In early season spraying, when little foliage exists, then air assistance can cause more drift. There is a need to consider adjusting the airflow to match the canopy development.

There is very little work published specifically for strawberry spraying. Nils Bjugstad, a colleague at the University of Norway has conducted a five-year trial on improving spraying equipment. Bjugstad and Sonstebj (2004) observed the main issue is to obtain approximately the same spray and pesticide coverage and amount on the leaf surface on the outer and inner leaves as well as the upper and underside of the leaves (mainly spraying against grey mould in Norway).

Because the plant canopy increases considerably during the growing season, they concluded that they had to adapt the volume rate according to this change of mass. As shown in their papers, they recommend to use three nozzles in the start of the season; two from each side and one from the top, and for larger plants five nozzles per single row; one from the top and two from each of the sides, and in this way adjust the volume rate from 12.5, 19.0, 25 pints per 109 yards row length, (converted from the metric system)

015 nozzles seem to be too small and increase the risk of drift (drift will be measured next year) and lower the capacity (rows per hour). 02 and 03 nozzles seemed therefore to be more suited. They did not use cone nozzles in this study, only flat fan nozzles. Top angle 65 and 80 degrees should be used to maintain good penetration into the plant (but a good overlap has to be ensured). Best results were at 75 psi with the nozzles 4-8 inches above the target.

They also tested Air induction (AI) and Drift guard (DG) nozzles, but they did not prove to be better, mostly they gave poorer results. They tried them out in combination with conventional nozzles, using AI and DG on the top. This will be interesting to study in the forthcoming drift experiments. They use mostly front mounted equipment in Norway to ensure a good overview and control, but operator exposure has to be taken into account, and therefore the nozzles making larger drops may be interesting in some occasions, but always combined with conventional nozzles to ensure a good coverage.

Conventional crop sprayers as well as air assisted boom sprayers are not in use in strawberries in Norway, because the inter-row is sprayed and penetration is poor, especially down to the inner leaves and to the lower sides. Normally they use front mounted equipment that cover three single or double rows. For good conditions this equipment may be built out for five rows.

Finally, labor, their skill, and attitude toward spraying will assist greatly in getting good spray coverage. Training of operators is a must if the product is to be work successfully.

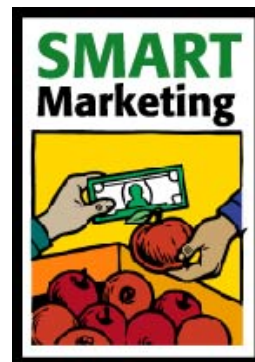
References:

Bjugstad N. and Sonstebj A. (2004) Improved spraying equipment for strawberries. In: *Aspects of Applied Biology 71*, International advances in pesticide application. Pp.335-342.

(Reprinted from: *New York Berry News* [Vol. 4, No. 5](#), May 13, 2005)

SMART DISTRIBUTION STRATEGIES— A REVIEW OF SOME NORTHEAST DISTRIBUTION BUSINESSES AND THEIR STRATEGIES

Jude Barry, Extension Associate, Department of Applied Economics and Management, Cornell University, Ithaca, NY



Many individual agricultural producers and groups of producers are challenged by the real costs of distributing fresh product and consider it a bottleneck to effective marketing strategies. It's an issue that has challenged producers through the ages. While the fundamental solutions seem to be similar as years go by (producers working in partnership and in cooperation to effectively move product), the strategies required to meet the new trends of our ever demanding consumer, need to be innovative, dynamic and of course cost effective.

At the Cornell Strategic Marketing Workshop held in December, 2005 (Sponsored by the Department of Applied Economics and Management, Cornell University and the Agricultural Marketing and Management Program Work Team) innovative distribution strategies for producers were discussed at great length. Some businesses and organizations that are devoted to improving distribution of agricultural products in the Northeast presented a variety of messages of how to make distribution an opportunity for successful marketing. A handful of the messages they shared are discussed here.

1. **Innovation = Opportunity.**

Innovation in distribution is a key strategy for those involved. Innovation can be referred to at different levels, in terms of:

- the logistics of distribution,
- the physical movement of product in distribution,
- the packaging of the product and
- the choice of target markets for developing distribution strategies

Effective agricultural distribution businesses are looking for innovative strategies at all of these levels. An example of such innovation being adopted is demonstrated by Red Jacket Orchards in Geneva, New York. This business is a vertically integrated family farm that grows fruit in Central New York and then processes, packs and markets the fruit and other products through their own distribution network. The business transports their products and that of others to New York City.

In addition to directly delivering weekly to 25 New York City Greenmarkets, the Hunts Point Terminal Market and a number of restaurants and specialty food stores in the city, they have recently leased 5000 ft² of warehouse space in Brooklyn to offer more efficient delivery to the smaller purchasers in New York City. They have adopted "innovative" packaging strategies as they work with their different niche markets. This area is very customer driven and Red Jacket Orchards have worked with their consumer to provide fruit and vegetables in packaging of appropriate size, labeling and shape to attract the niche buyers. The business is continuing to look for innovative partnerships and products with which to develop the business.

2. **Observe the Market Trends**

Understanding trends in the market is vital in keeping ahead of the game with all aspects of marketing including distribution. An organization that presented at the Strategic Marketing Workshop in December and provides services to producers is USDA's Agricultural Marketing Service (www.ams.usda.gov/tmd/MSB) who strives to improve agricultural product distribution through identifying marketing opportunities and developing solutions and marketing channels.

An innovative distribution business that is demonstrating success in the monitoring of trends in the marketplace is Earthbound Farm - the nation's largest grower shipper of organic produce. At the Strategic Marketing workshop, they reported that external factors to the business, which they called "Megatrends" were critical in the decision making of their distribution strategy. Industry trends that they track include;

- changing models of distribution and transportation,
- the need to get business closer to the customer to ensure high quality product can be economically distributed. This includes regional positioning of where the product is grown, the distribution facilities and their employees. Earthbound Farm are building more regional warehouses including a New Jersey location,
- the declining supply and rising cost of natural resources
- the availability of labor

Over the years, Earthbound Farm has grown their distribution operations so that now they have their brand in 74% of the supermarkets in the USA (AC Nielsen, ACV data).

3. *Diversifying Market Risk through Export.*

Distributing product to different locations and customers is a strategy that can spread the risk that a product is exposed to. Examples of such risk include loss of customers, competition from other products and insufficient sales volume to cover the fixed costs of a product.

Food Export USA – Northeast is a non-profit organization comprised of state agricultural promotion agencies that use federal, state and industry resources to promote the export of northeastern food and agricultural products. In New York State (NYS) they work with NYS Department of Agriculture and Markets. The organization is committed to assisting US suppliers (including small and medium-sized suppliers) through their Export Education, Market Entry and Market Promotion strategies. Through these programs, Food Export USA – Northeast can assist companies to understand and discover new opportunities in the export market.

Export may help diversify market risk through expanding market opportunities (although may present other risks). If the market is correct, global export can increase sales. In addition, when an innovative food product lifecycle has finished here in the USA (for example alternative products have come onto the market and sales of a particular product have diminished), there may be opportunity to move the product across the border to rejuvenate sales and restart the lifecycle of the product. If the market is diversified and sales are increased, unit costs are reduced making the product more cost effective to the business.

4. *Supply of the Product*

Good quality, reliable supply is a strategy that smart distributors need to ensure to minimize loss percentage of their deliveries, reduce unnecessary distribution costs and sustain their customer base.

David Rose, a representative from Sid Wainer and Son Specialty Produce based in Massachusetts spoke at the Strategic Marketing workshop in December 2005. His business grows and buys specialty produce and distributes it to specialty food buyers through the Northeast, particularly in the metro areas. Like all of our speakers, Sid Wainer and Son is very focused on the needs and demands of the consumer with respect to quality, supply and packaging. They receive and pay a premium price for the product that they handle, but in return require the quality and reliability that the consumer is paying for. In order to do this, they make regular contracts with their suppliers.

5. *Partnerships*

As I mentioned at the start of this article, partnerships and collaborations have always been a fundamental solution to effectively moving product from A to B. Successful partnerships are a key factor in successful distribution activities across the Northeast.

An example of collaborative partnerships working can be seen with the Foodlink Distribution Center based in Rochester, New York. Foodlink is a part of the national Food Bank network, and it serves to provide food, nutrition, education and resources to at-risk communities in 10 counties of Central and Western New York. In an effort for this community organization to build self-sufficiency, they have built a distribution business called the Foodlink Farmers Fulfillment Center, using their unique assets of warehouse space, refrigerated trucks, coolers, repacking facilities and freezer space. Foodlink partners with Freshlink Farms, Red Jacket Orchards and Pederson Farms to supply local New York Produce to schools, wholesalers, suppliers and restaurants in the Greater Rochester Area.

In Summary

Distribution strategies vary from business to business. Being unique and innovative in the way a product is distributed, understanding the target market and controlling risk factors through distribution can help develop a good marketing strategy for a product. Being able to sustain a reliable throughput of product in the distribution chain, and building strong partnerships can be effective strategies for smart marketing distribution operatives in the Northeast.

This year's Cornell Strategic Marketing Workshop will be held on 14th-15th November, 2006 and will provide information on improving producer marketing skills to different local and regional buyers.

Resources

Distribution businesses represented at the Strategic Marketing Workshop in December 2005 and that are mentioned in this article:

David Rose, Sid Wainer and Son Specialty Produce, New Bedford, MA. www.sidwainer.com

Brian Nicholson, Red Jacket Orchards, Geneva, NY. <http://secure.redjacketorchards.com>

Edward Ragland, Agricultural Marketing Service, USDA, Washington, DC www.ams.usda.gov/tmd/MSB

Joy Canono, Generic Program Manager, Food Export USA – Northeast; Philadelphia, PA www.foodexportusa.org

Karen Pflaum and Todd Kodet, VP Supply, Earthbound Farm, San Juan Bautista, CA www.ebfarm.com

Tom Ferraro and John Montague, FoodLink, Rochester, NY www.buyhereny.com

(Reprinted from: [Smart Marketing](#), May 2006. “**Smart Marketing**” is a monthly marketing newsletter for extension publication in local newsletters and for placement in local media. It reviews the elements critical to successful marketing in the food and agricultural industry. Articles are written by faculty members in the Department of Applied Economics and Management at Cornell University.)

Check out the NYSAES Tree Fruit and Berry Pathology web site at:

www.nysaes.cornell.edu/pp/extension/tfabp

Questions or Comments about the New York Berry News?

Send inquiries to:

Ms. Cathy Heidenreich

New York Berry News, Interim Editor

Department of Plant Pathology

New York State Agricultural Experiment Station

690 W. North Street

Geneva, NY 14456

OR Email: mcm4@cornell.edu

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

**WEATHER REPORTS OF TEMPERATURES AND PRECIPITATION THROUGHOUT
NEW YORK STATE FOR WEEK ENDING SUNDAY 8:00am, April 30th, 2006**

	Temperature			Growing Degree Days (Base 50)			Precipitation (inches)				
	High	Low	Avg	DFN ¹	Week	YTD ²	DFN	Week	DFN	YTD	DFN
	Hudson Valley										
Albany	65	30	48	-3	3	106	72	1.33	0.63	4.73	1.74
Glens Falls	63	24	44	-6	0	52	31	1.16	0.43	4.09	1.11
Poughkeepsie	75	33	52	0	17	118	70	1.17	0.28	5.02	1.53
Mohawk Valley											
Utica	65	27	44	-6	0	67	35	0.06	-0.76	2.94	-0.62
Champlain Valley											
Plattsburgh	61	26	43	-6	0	60	37	0.32	-0.35	2.47	-0.32
St. Lawrence Valley											
Canton	63	23	42	-5	0	50	32	0.43	-0.27	2.78	-0.07
Massena	61	26	41	-7	0	55	34	0.64	0.02	2.58	-0.07
Great Lakes											
Buffalo	65	28	46	-4	4	85	53	0.24	-0.46	2.14	-0.73
Colden	63	23	42	-6	0	58	40	0.26	-0.58	2.48	-1.29
Niagara Falls	64	27	45	-6	2	71	34	0.59	-0.11	2.07	-1.08
Rochester	60	29	47	-4	5	86	47	0.21	-0.42	2.23	-0.38
Watertown	65	24	44	-4	0	46	26	0.38	-0.24	2.94	0.43
Central Lakes											
Dansville	64	24	45	-5	4	73	39	0.13	-0.54	1.81	-1.00
Geneva	61	28	45	-5	0	62	32	0.23	-0.47	2.08	-1.41
Honeoye	63	25	45	-5	3	66	35	0.23	-0.47	1.54	-0.69
Ithaca	63	24	44	-5	0	50	27	0.12	-0.58	1.78	-1.13
Penn Yan	62	27	47	-4	3	74	44	0.18	-0.52	1.45	-1.46
Syracuse	64	30	47	-4	2	82	45	0.09	-0.68	3.94	0.61
Warsaw	59	25	43	-4	0	49	35	0.31	-0.46	3.01	-0.36
Western Plateau											
Alfred	66	20	43	-4	2	34	21	0.21	-0.42	2.40	-0.37
Elmira	66	22	44	-6	0	52	25	0.08	-0.58	2.47	-0.22
Franklinville	66	21	43	-4	1	35	26	0.45	-0.32	2.73	-0.55
Sinclairville	70	25	45	-3	1	50	33	0.55	-0.35	3.01	-0.69
Eastern Plateau											
Binghamton	62	29	47	-3	1	69	45	0.29	-0.48	2.61	-0.52
Cobleskill	62	27	44	-5	0	45	25	0.77	0.00	4.07	0.78
Morrisville	60	26	43	-5	0	41	24	0.23	-0.54	3.48	0.39
Norwich	66	26	45	-4	0	31	10	0.27	-0.57	3.39	0.02
Oneonta	68	28	46	-1	0	62	45	0.36	-0.52	3.57	0.09
Coastal											
Bridgehampton	68	35	50	1	10	72	50	1.59	0.68	3.40	-0.57
New York	73	44	57	2	49	218	131	1.05	0.14	5.20	1.41

1. Departure from Normal

2. Year to Date: Season accumulations are for April 1st to date

The information contained in these weekly releases are obtained from the New York Agricultural Statistics Service (<http://www.nass.usda.gov/ny/>), who in turn obtains information from reports from Cornell Cooperative Extension agents, USDA Farm Service Agency, Agricultural Weather Information Service Inc., the National Weather Service and other knowledgeable persons associated with New York agriculture.

**WEATHER REPORTS OF TEMPERATURES AND PRECIPITATION THROUGHOUT
NEW YORK STATE FOR WEEK ENDING SUNDAY 8:00am, May 7th, 2006**

	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	39	57	4	49	155	89	0.11	-0.60	4.84	1.14
Glens Falls	76	29	53	2	28	80	34	0.33	-0.44	4.42	0.67
Poughkeepsie	83	36	59	5	62	180	94	0.05	-0.92	5.07	0.61
Mohawk Valley											
Utica	77	31	54	2	36	103	42	0.23	-0.58	3.17	-1.20
Champlain Valley											
Plattsburgh	74	32	56	5	43	103	56	0.61	-0.03	3.08	-0.35
St. Lawrence Valley											
Canton	77	28	52	3	29	79	40	0.27	-0.42	3.05	-0.49
Massena	79	26	52	3	33	88	43	0.43	-0.13	3.01	-0.20
Great Lakes											
Buffalo	75	34	57	6	58	143	81	0.00	-0.67	2.14	-1.40
Colden	74	27	53	4	32	90	50	0.00	-0.82	2.48	-2.11
Niagara Falls	76	29	55	3	45	116	47	0.10	-0.59	2.17	-1.67
Rochester	77	30	55	3	44	130	57	0.00	-0.61	2.23	-0.99
Watertown	76	32	52	3	26	72	30	0.09	-0.49	3.03	-0.06
Central Lakes											
Dansville	77	29	55	4	40	113	48	0.00	-0.63	1.81	-1.63
Geneva	77	33	53	2	32	94	35	0.10	-0.56	2.18	-1.39
Honeoye	77	28	55	3	35	101	41	0.00	-0.63	1.54	-2.04
Ithaca	76	26	52	1	23	73	26	0.03	-0.67	1.81	-1.80
Penn Yan	77	31	55	3	42	116	57	0.03	-0.63	1.48	-2.09
Syracuse	79	33	55	3	46	128	57	0.27	-0.49	4.21	0.12
Warsaw	72	28	52	4	24	73	41	0.10	-0.67	3.11	-1.03
Western Plateau											
Alfred	75	25	51	3	22	56	25	0.13	-0.48	2.53	-0.85
Elmira	81	25	52	0	26	78	24	0.04	-0.63	2.51	-0.85
Franklinville	76	29	51	4	17	52	29	0.08	-0.69	2.81	-1.24
Sinclairville	76	28	54	5	37	87	52	0.00	-0.86	3.01	-1.55
Eastern Plateau											
Binghamton	76	31	54	3	40	109	60	0.01	-0.72	2.62	-1.24
Cobleskill	78	31	51	1	17	62	19	0.06	-0.71	4.13	0.07
Morrisville	74	30	51	0	16	57	19	0.17	-0.60	3.65	-0.21
Norwich	80	27	52	1	23	54	9	0.07	-0.74	3.46	-0.72
Oneonta	80	30	54	6	35	97	60	0.12	-0.81	3.69	-0.72
Coastal											
Bridgehampton	76	37	57	5	50	122	75	1.33	0.42	4.73	-0.15
New York	81	49	65	8	105	323	182	0.07	-0.84	5.27	0.57

1. Departure from Normal

2. Year to Date: Season accumulations are for April 1st to date

The information contained in these weekly releases are obtained from the New York Agricultural Statistics Service (<http://www.nass.usda.gov/ny/>), who in turn obtains information from reports from Cornell Cooperative Extension agents, USDA Farm Service Agency, Agricultural Weather Information Service Inc., the National Weather Service and other knowledgeable persons associated with New York agriculture.

**WEATHER REPORTS OF TEMPERATURES AND PRECIPITATION THROUGHOUT
NEW YORK STATE FOR WEEK ENDING SUNDAY 8:00am, May 14th, 2006**

	Temperature				Growing Degree Days (Base 50)			Precipitation (inches)			
	High	Low	Avg	DFN ¹	Week	YTD ²	DFN	Week	DFN	YTD	DFN
	Hudson Valley										
Albany	73	40	59	4	66	221	110	2.29	1.52	7.13	2.66
Glens Falls	72	33	56	3	47	127	45	1.97	1.16	6.39	1.83
Poughkeepsie	72	42	59	2	63	246	108	1.88	0.90	6.95	1.51
Mohawk Valley											
Utica	73	38	58	4	59	162	61	0.48	-0.31	3.65	-1.51
Champlain Valley											
Plattsburgh	74	34	57	4	51	154	71	0.89	0.26	3.97	-0.09
St. Lawrence Valley											
Canton	76	34	58	6	58	137	67	0.46	-0.17	3.51	-0.66
Massena	77	36	58	5	62	150	70	0.74	0.18	3.75	-0.02
Great Lakes											
Buffalo	82	43	63	9	94	237	134	0.83	0.13	2.97	-1.27
Colden	76	30	56	4	44	134	63	1.10	0.33	3.58	-1.78
Niagara Falls	79	41	59	5	67	183	69	0.86	0.23	3.03	-1.44
Rochester	78	40	61	5	75	205	86	1.15	0.58	3.38	-0.41
Watertown	77	35	59	7	65	137	64	0.10	-0.48	3.13	-0.54
Central Lakes											
Dansville	80	36	58	4	58	171	64	1.02	0.39	2.83	-1.24
Geneva	77	34	57	4	56	150	52	0.91	0.28	3.09	-1.11
Honeoye	79	35	59	5	61	162	61	0.44	-0.17	1.98	-2.21
Ithaca	77	35	57	5	52	125	42	1.46	0.76	3.27	-1.04
Penn Yan	76	39	58	5	61	177	79	0.98	0.35	2.46	-1.74
Syracuse	76	39	60	6	74	202	85	0.89	0.19	5.10	0.31
Warsaw	74	31	56	5	45	118	58	0.97	0.20	4.08	-0.83
Western Plateau											
Alfred	79	28	53	2	26	82	23	1.10	0.49	3.63	-0.36
Elmira	77	32	57	3	48	126	34	1.05	0.35	3.56	-0.50
Franklinville	78	30	53	4	27	79	34	1.28	0.51	4.09	-0.73
Sinclairville	81	30	55	4	38	125	63	1.31	0.47	4.32	-1.08
Eastern Plateau											
Binghamton	74	42	58	5	60	169	82	0.91	0.15	3.53	-1.09
Cobleskill	69	35	56	3	43	105	30	1.38	0.60	5.51	0.67
Morrisville	72	31	56	4	50	107	37	2.76	1.94	6.41	1.73
Norwich	78	27	57	4	53	107	28	1.83	0.99	5.29	0.27
Oneonta	78	38	60	8	70	167	100	0.69	-0.29	4.38	-1.01
Coastal											
Bridgehampton	67	41	54	-1	29	151	68	3.82	2.96	8.55	2.81
New York	70	52	61	1	74	397	185	1.49	0.62	6.76	1.19

1. Departure from Normal

2. Year to Date: Season accumulations are for April 1st to date

The information contained in these weekly releases are obtained from the New York Agricultural Statistics Service (<http://www.nass.usda.gov/ny/>), who in turn obtains information from reports from Cornell Cooperative Extension agents, USDA Farm Service Agency, Agricultural Weather Information Service Inc., the National Weather Service and other knowledgeable persons associated with New York agriculture.

**WEATHER REPORTS OF TEMPERATURES AND PRECIPITATION THROUGHOUT
NEW YORK STATE FOR WEEK ENDING SUNDAY 8:00am, May 21st, 2006**

	Temperature			Growing Degree Days (Base 50)			Precipitation (inches)				
	High	Low	Avg	DFN ¹	Week	YTD ²	DFN	Week	DFN	YTD	DFN
	Hudson Valley										
Albany	74	37	54	-5	35	256	85	1.36	0.59	8.49	3.25
Glens Falls	73	42	54	-3	32	159	29	1.44	0.60	7.83	2.43
Poughkeepsie	77	43	56	-5	39	287	83	2.61	1.63	9.43	3.01
Mohawk Valley											
Utica	71	36	53	-5	29	191	38	1.01	0.17	4.66	-1.34
Champlain Valley											
Plattsburgh	67	47	55	-2	37	191	60	2.37	1.74	6.34	1.65
St. Lawrence Valley											
Canton	72	44	55	0	38	175	64	2.01	1.35	5.52	0.69
Massena	66	44	56	-1	44	194	68	2.42	1.86	6.17	1.84
Great Lakes											
Buffalo	69	42	55	-3	37	274	116	0.58	-0.12	3.55	-1.39
Colden	66	40	51	-4	17	151	38	0.86	0.07	4.44	-1.71
Niagara Falls	66	39	54	-4	34	217	45	0.64	0.01	3.67	-1.43
Rochester	68	42	56	-3	42	247	69	0.39	-0.24	3.77	-0.65
Watertown	73	41	55	0	40	177	62	1.11	0.48	4.24	-0.06
Central Lakes											
Dansville	67	40	53	-5	22	192	30	0.53	-0.10	3.36	-1.34
Geneva	66	39	53	-5	25	175	24	0.46	-0.20	3.55	-1.31
Honeoye	69	39	54	-4	28	190	35	0.37	-0.26	2.35	-2.47
Ithaca	66	37	52	-5	18	146	17	0.48	-0.29	3.37	-1.71
Penn Yan	66	41	53	-5	23	200	49	0.43	-0.23	2.89	-1.97
Syracuse	71	38	54	-5	34	236	59	0.62	-0.10	5.72	0.21
Warsaw	63	38	50	-5	10	128	30	0.94	0.17	5.02	-0.66
Western Plateau											
Alfred	66	36	50	-5	10	92	-5	0.58	-0.07	4.21	-0.43
Elmira	69	37	51	-6	11	137	-6	0.89	0.18	4.45	-0.32
Franklinville	67	37	50	-3	13	92	16	0.94	0.17	5.03	-0.56
Sinclairville	68	39	52	-2	20	145	45	0.92	0.03	5.24	-1.05
Eastern Plateau											
Binghamton	64	41	52	-6	16	185	49	0.69	-0.08	4.22	-1.17
Cobleskill	72	42	52	-4	23	128	8	1.15	0.31	6.66	0.98
Morrisville	65	38	50	-6	10	117	5	0.58	-0.26	6.99	1.47
Norwich	71	36	53	-3	29	136	12	0.91	0.07	6.20	0.34
Oneonta	70	40	54	0	32	199	93	0.76	-0.22	5.14	-1.23
Coastal											
Bridgehampton	69	47	57	0	48	199	66	1.11	0.27	9.66	3.08
New York	74	53	61	-2	80	477	176	2.90	2.06	9.66	3.25

1. Departure from Normal

2. Year to Date: Season accumulations are for April 1st to date

The information contained in these weekly releases are obtained from the New York Agricultural Statistics Service (<http://www.nass.usda.gov/ny/>), who in turn obtains information from reports from Cornell Cooperative Extension agents, USDA Farm Service Agency, Agricultural Weather Information Service Inc., the National Weather Service and other knowledgeable persons associated with New York agriculture.