



# New York Berry News

CORNELL UNIVERSITY



Volume 08, Number 2

February 6, 2009

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For more information or to register for the above events contact: Kevin Schooley, 30 Harmony Way, Kemptville, ON K0G 1J0 Canada. Phone: 613 258-4587; fax 613 258-9129, e-mail: [kconsult@allstream.net](mailto:kconsult@allstream.net).

**February 16, 2009:** Small Fruit IPM Scout Training – Session I. Wyoming County CCE. More information: Lutie Batt, 585-786-2251.

**February 24-27, 2009:** Hudson Valley Commercial Fruit Growers' School and Trade Show Kingston Holiday Inn, Kingston, NY. **Berry session Feb 26.** For more information go to: <http://hudsonvf.cce.cornell.edu/calendar.html> or contact Jenny at (845) 340-3990.

**March 4, 2009:** Berry Pest Management Update. Erie County CCE, with polycom site at Chautauqua County CCE. DEC pesticide recertification credits available. Details follow in news brief below.

**March 5-7, 2009:** Professional Farmers' Market Managers Training Workshop. Stockade Inn, Schenectady, NY. For more information: <http://www.nyfarmersmarket.com/workshops.htm> or E-mail Diane at [info@nyfarmersmarket.com](mailto:info@nyfarmersmarket.com), (315) 637-4690.

**March 12, 2009:** Regional Berry Pruning Work shop. Grisamore Farms, Locke, NY. More information: Dan Welch, Cayuga County CCE, 315-255-1183 or [dww56@cornell.edu](mailto:dww56@cornell.edu).

**March 14, 2009:** Small Fruit IPM Scout Training – Session II. Wyoming County CCE.

**March 16, 2009:** Introduction to Berry Pest Management. Ontario County CCE. Details follow below.

**March 19, 2009:** Regional Berry Pruning Work shop. Columbia County CCE. More information: More information: Steven McKay, Columbia County CCE, 518-828-3346 or [sam44@cornell.edu](mailto:sam44@cornell.edu).

**March 25, 2009:** Regional Berry Pruning Work shop Jefferson County CCE. More information: Sue Gwise, Jefferson County CCE, 315-788-8450 or [sjg42@cornell.edu](mailto:sjg42@cornell.edu).

**March 26, 2009:** Regional Berry Pruning Work shop Livingston County CCE. More information: David Thorp, Livingston County CCE, 585-658-3250 ext 109 or [dlt8@cornell.edu](mailto:dlt8@cornell.edu).

**April 6, 2009:** Regional Berry Pruning Work shop Delaware County CCE. More information: Janet Aldrich, Delaware County CCE, 607-865-6531, or [jla14@cornell.edu](mailto:jla14@cornell.edu).

**April 20, 2009:** Small Fruit IPM Scout Training – Session III. Green Acres Farm, Rochester, NY.

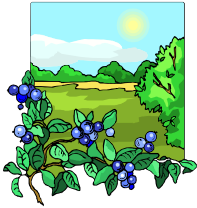
**May 12, 2009:** Small Fruit IPM Scout Training – Session IV. Green Acres Farm, Rochester, NY.

## CURRENT EVENTS

**Feb. 10-12, 2009.** Empire State Fruit and Vegetable EXPO and Becker Forum, Liverpool Holiday Inn and OnCenter, Syracuse, NY. **Berry session Thursday, February 12, 2009.** More information:

**February 17-18, 2009.** Ontario Berry Growers Annual Meeting, St. Catharines, Ontario, Canada.

**February 18-19, 2009.** Ontario Fruit and Vegetable Convention, St. Catharines, Ontario, Canada.



# Berry Pest Management Workshop

Saturday, March 14, 2009

8:30 am to 11:45 am

Cornell Cooperative Extension Center

480 North Main Street

Canandaigua, NY 14424



**Presenter:** Cathy Heidenreich, Cornell Berry Extension Support Specialist  
Department of Horticulture, College of Agriculture and Life Sciences, Cornell University

**This workshop is aimed at commercial berry growers but home gardeners will find it helpful, as well.**

The program will review berry pest management methods and introduce new management tactics, strategies and products for pests (insects, diseases and weeds) found in berry crop production. An overview of the most common pests for strawberries, raspberries and blueberries will be followed by a discussion of season long pest management strategies for each berry crop. DEC credits pending.

**Fee: \$10.00 per family.** To register or for additional information, contact Cornell Cooperative Extension at 585-394-3977 x 427 or 436.



## Registration Form for Introduction to Berry Growing

**Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**City, State, Zip:** \_\_\_\_\_

**Phone:** \_\_\_\_\_

**Amount enclosed:** \_\_\_\_\_

Make check payable to: Cornell Cooperative Extension

Mail to: Cornell Cooperative Extension

Berry Workshop

480 North Main Street

Canandaigua, NY 14424

## **SMALL FRUIT IPM SCOUT TRAINING STARTS FEBRUARY 16**

*REGISTER BY FEBRUARY 6<sup>th</sup>*

**T**his four-day training consists of 2 classroom sessions and 2 field sessions. Some topics to be covered are: site selection; nutrient management; pest management; IPM tactics; mulch application/removal; irrigation systems; cultivation equipment; and sprayer calibration.

Classroom sessions will be held at the CCE-Wyoming County office in Warsaw, NY on February 16 and March 16. The field sessions will be held at the Green Acre Farm in Rochester NY on April 20 and May 11. Fee for the training is \$75.

For more information contact CCE-Wyoming County at 585-786-2251 or <http://counties.cce.cornell.edu/wyoming> (for a brochure/registration form).

## **FEBRUARY. 26<sup>th</sup> - 27<sup>th</sup> HIGH TUNNEL CONFERENCE RESPONDS TO NY GROWERS DEMAND FOR INFO**

**S**aranac Lake, NY -- A growing sector of New York agriculture is the use of high tunnel greenhouse-type structures to start crops earlier, harvest later in the year, and improve yield and quality of fruits, vegetables and flowers. A February 26-27 High Tunnel Production in Northern New York conference event at North Country Community College in Saranac Lake will feature growers from NNY and across the state, Cornell University researchers and Cornell Cooperative Extension fruit and vegetable specialists.

This conference builds on the excitement and success of last year's high tunnel event. To meet grower demand for more information on how to use high tunnels, we have added grower-to-grower networking, panel discussions and breakout sessions for both beginning and experience high tunnel growers, says conference organizer Amy Ivy, director of Cornell Cooperative Extension of Clinton County.

Program speakers include H. Christian Wien of Cornell University, Cornell Cooperative Extension Regional Vegetable Specialist Judson Reid, and high tunnel growers Fred Forsburg, Honeyhill Farm, Livonia, NY; Rob Hastings, Rivermede Farm, Lake Placid, NY; and Mike Kilpatrick of Kilpatrick Family Farm, Granville, NY.

Grower and high tunnel manufacturer Nelson Hoover, NYS Berry Specialist Laura McDermott, and Regional Vegetable Specialist and Excellence-in-IPM grower Chuck Borndt are also on the agenda.

The 9 am to 5 pm program on Thursday, February 26<sup>th</sup> features presentations on:

- Crop possibilities for high tunnel production.
- Beginner and experienced sessions on getting started and production plans.
- Soil fertility and irrigation.
- Tomatoes: training, trellising, grafting, heirloom varieties, troubleshooting.

The 7 am to 2 pm agenda for Friday, February 27<sup>th</sup> includes:

- The pros and cons of various high tunnel structures and coverings
- Ventilation and automatic openers.
- Heating the soil to hasten growth.
- Simplified recordkeeping.
- Crops discussion: berries, cut flowers, greens, melons and peppers.

Registration is \$75 for both days, \$50 for a single day, and includes lunch, snacks, and Friday breakfast. Register by February 20<sup>th</sup> with Cornell Cooperative Extension of Clinton County at 518-561-7450.

The New York Farm Viability Institute and Northern New York Agricultural Development Program have provided support for this conference. High tunnel production resources are found on the Northern New York Agricultural Development Program website at [www.nnyagdev.org](http://www.nnyagdev.org).



**WEEK OF APRIL 6, 2009**

Target Area: Columbia, Greene, Delaware, Otsego, Schoharie, Albany, Rensselaer, Montgomery and Schenectady Counties

FOR FARMERS, PROFESSIONAL APPLICATORS, & SCHOOLS



**WHAT IS CLEANSWEEP?**

An **Environmental Benefit Project** Providing:

- ✓ Safe and Economic Disposal of Unwanted Pesticides and Old School Chemicals
- ✓ Recycling of Pesticide Containers
- ✓ Enhanced Stewardship of Unwanted Pesticides and the Environment



**WHERE AND WHEN IS IT?**

- ✓ Focus Area: Columbia, Greene, Delaware, Otsego, Schoharie, Albany Rensselaer, Montgomery and Schenectady Counties
- ✓ Week of April 6, 2009
- ✓ Collection Site Locations to be Determined (See Website)



**WHO CAN PARTICIPATE?**

- ✓ Farmers & Owners of Former Farms
- ✓ All Categories of Certified Applicators
- ✓ Schools, Golf Courses, Cemeteries
- ✓ Retailers of Agricultural, Commercial, or Home/Garden Pesticide Products



**WHAT WILL BE ACCEPTED?**

- ✓ Unwanted Pesticides
- ✓ School Chemicals, Mercury-containing Devices, and Elemental Mercury
- ✓ Triple-rinsed HDPE or Metal Pesticide Containers for Recycling



**IS PARTICIPATION FREE?**

- ✓ No Charge to Farmers or Owners of Former Farms
- ✓ For Other Participants, No Charge for 100 Pounds or Less of Pesticides, with Nominal Fee for Each Pound over 100 Pounds
- ✓ Nominal Fee for Non-pesticides (Check Website for Cost Structure)

**PRE-REGISTRATION REQUIRED**

**2009 REGISTRATION DEADLINES**

- MARCH 16 FOR HOLDERS OF UNLABELED & UNKNOWN PRODUCTS OR GAS CYLINDERS,
- MARCH 27 FOR ALL OTHER PARTICIPANTS

**REQUEST A REGISTRATION PACKET, FIND OUT MORE AND PARTICIPATE!**

1-877-793-3769

[info@cleansweepny.org](mailto:info@cleansweepny.org)

[www.cleansweepny.org](http://www.cleansweepny.org)

CLEAN SWEEP NY is sponsored and administered by the New York State Department of Environmental Conservation. Funding for the project is administered by the Natural Heritage Trust.



CLEAN SWEEP NY is also supported by: NYS Department of Agriculture & Markets, Cornell University Cooperative Extension, New York State Farm Bureau, Professional Trade Associations Regional Pesticide Distributors, New York State Agribusiness, and Ag Container Recycling Council.



## **BERRY PEST MANAGEMENT UPDATE**

*Wednesday, March 4, 12:45 – 4:00 pm*

*Cornell University Cooperative Extension Center of Erie Co., East Aurora, NY 14052*

**T**he Cornell College of Agriculture and Life Sciences – Department of Horticulture and Cornell University Cooperative Extension of Erie County will present a Berry Pest Management Update. The meeting will be held at the Cooperative Extension Center in Erie County (21 South Grove Street, East Aurora, NY 14052) on Wednesday, March 4, 2009 for small fruit producers in Erie county and surrounding areas.

The program will also be offered via poly-com at CUCE of Chautauqua County (3542 Turner Road; Jamestown, NY 14701); the program will run from 1:00 pm until 4:00 pm with walk in registrations starting at 12:45 pm. DEC and CCA credits will be available.

The pre-registration fee, if received by February 28<sup>th</sup>, is \$20.00 for CCE enrollees and \$30.00 for non-enrollees. The cost will be \$10.00 more at the door. For more information or to receive registration materials for the East Aurora session, contact Sharon Bachman at 716-652-5400 x 150 or [sin2@cornell.edu](mailto:sin2@cornell.edu). For more information or to receive registration material for the Chautauqua session contact Ginny Carlburg, (716) 664-9502 x 202 or [vec22@cornell.edu](mailto:vec22@cornell.edu).

The course will include a review of berry pest management methods and resources, and an introduction to new management tactics, strategies and products for pests found in berry crop production. An overview of the most common pests for each crop will be followed by a discussion of season long pest management strategies for each berry crop. Post harvest practices that reduce fruit rots and help maintain berry quality will also be discussed.

## **COMMISSIONER GIVES ANNUAL STATE OF AGRICULTURE ADDRESS**

*"I believe farming and agriculture in New York has a promising future."*

*Jessica A. Chittenden, NY Department of Agriculture and Markets, 518-457-3136, [jessica.chittenden@agmkt.state.ny.us](mailto:jessica.chittenden@agmkt.state.ny.us).*

**J**anuary 8, 2009. New York State Agriculture Commissioner Patrick Hooker today gave the 10th annual State of New York Agriculture address at the 177th Annual Forum of the New York State Agricultural Society in Liverpool. The Commissioner recognized the more than 300 agricultural leaders in attendance, acknowledging their personal resolve to seek solutions to issues that not only confront agriculture, but the entire State of New York.

The topic of this year's Annual Forum was planning for the future, and provided attendees with insight on how to plan for both expected and unexpected changes. During the Commissioner's remarks, he mentioned that "With all the changes impacting the State and its farms – the economy, technology, weather, energy costs and more – New York is still a very powerful state with capable and motivated workers, a diverse economy, and extraordinary entrepreneurs, educators and research facilities...Together we can face the toughest challenge and solve any problem."

The Commissioner described 2008 as "the year of the good, bad and ugly" with record commodity prices, record oil prices, a new Farm Bill, ongoing anxieties over labor issues and a harvest that capped a growing season of extremes. Food safety issues also made the headlines in 2008 with the largest recall in U.S. history and worldwide concern for melamine tainted milk products from China that killed at least six children.

While Congress finally passed a new Farm Bill in 2008 that provided good news for New York farmers with support for New York's specialty crops, increased funding for farmland protection, new incentives for cellulosic ethanol, and a stronger safety net for dairy farmers, the Commissioner predicted "2009 will be a lot tougher than last year."

"Despite a number of factors that are conspiring to make 2009 more challenging than 2008, I am optimistic," the Commissioner said. "I do believe farming and agriculture in New York has a promising future."

New York State currently faces the largest budget deficit in history, forcing state agencies like the Department of Agriculture and Markets to focus on its core mission. "As Governor Paterson has told us, the need for a course correction for New York State is long overdue. The current path is not sustainable. We cannot spend more. We must spend smarter."

Over the past couple of months, the Governor and Commissioner identified programs that are essential to the continued viability of all types of agricultural production and made sure that funding for those programs remained at strong levels. Some of those programs include the Veterinary Diagnostic Laboratory at Cornell, Integrated Pest Management, migrant child care, agricultural education, as well as environmental protection programs like nonpoint funding and farmland

protection. The Governor has also proposed new programs that will further strengthen the industry such as allowing wine to be sold in grocery stores and the Bigger Better Bottle Bill, which would allow more money for environmental programs.

The Commissioner said, "While some of the proposed spending cuts will be challenging to manage, these actions are no less necessary than those a farm operation takes during a time of low prices and high input costs. As Commissioner, I do not want the future of agriculture in New York to be one of mere survival; rather I want the future of New York agriculture to be a source of pride and prosperity for our entire state."

The Commissioner challenged the group to share a common vision that could be not only accepted, but embraced by local communities and governments at all levels. That vision is to make a better New York by valuing agriculture, allowing farmers to remain stewards of the land and to make a living from the land by working more efficiently with fellow producers, suppliers, processors, communities and governments.

The Commissioner closed by asking the group to look around the room at their peers who are dedicated to New York's agricultural industry and assured the crowd, "I know we can do it."

## **PEST MANAGEMENT GUIDELINES FOR BERRY CROPS AVAILABLE ONLINE**

**T**he 2009 edition of the Pest Management Guidelines for Berry Crops is now available on line. This annual publication provides up-to-date pest management information for blueberry, bramble (raspberry and blackberry), strawberry, ribes (currant and gooseberry), cranberry, and elderberry production in New York State. Supplemental information on wildlife management and harvesting, handling, and transporting berries is also included. It has been designed as a practical guide for berry crop producers, crop consultants, Ag chemical dealers, and others who advise berry crop producers. Visit the web site at: <http://ipmguidelines.org/BerryCrops/>.



## **NEW YORK STRAWBERRY PRODUCTION DECREASES - BLUEBERRY PRODUCTION REMAINS UNCHANGED**

**S**trawberry production in New York was down 2 percent from 2007 to 4.50 million pounds, according to Stephen Ropel, Director of USDA's National Agricultural Statistics Service, New York office. The value of utilized production is estimated at \$7.43 million, down 2 percent from the \$7.59 million in 2007. New York ranks ninth in strawberry production. Nationally, the strawberry crop for 2008 was placed at 2.53 billion pounds, up 4 percent from 2007.

Production of blueberries for the Empire State was at 2.50 million pounds. The 2008 crop is valued at \$4.11 million, a 22 percent increase from \$3.37 million in 2007. The U.S. estimate for blueberries is 349 million pounds, up 22 percent from 2007.

The combined value of New York's berry crop totaled \$11.5 million. This compares with \$11.0 million in 2007.

## **NY NASS 2008 ANNUAL FRUIT REPORT**

**T**he 2008 value of New York tree fruit and grape production totaled \$347 million, down 6 percent from the 2007 value. The value of utilized production was below the previous year for apples, sweet cherries, pears, and strawberries.

Apple production was down 6 percent to 1.23 billion pounds. Total grape production decreased 4 percent from 2007 to 172,000 tons.

Tart cherry production totaled 9.6 million pounds, down 15 percent from the 2007 crop. Pear production was down 6 percent to 10,300 tons, and peach production was down 13 percent to 5,500 tons.

Nationally, in 2008, New York ranked second in apple production, third in grape production, and fourth in pear production.

**Table 1. New York Fruit Yields**

Kind	Pounds per Acre		
	2006	2007	2008
<b>Apples</b>	28,000	31,200	29,300
<b>Peaches</b>	8,240	7,420	6,880
<b>Tart Cherries</b>	4,780	7,060	6,000
<b>Sweet Cherries</b>	2,740	3,400	3,000
<b>Pears</b>	22,800	18,340	17,160
<b>Grapes</b>	8,620	9,720	9,300
<b>Blueberries<sup>1</sup></b>	2,220	2,560	2,560
<b>Strawberries</b>	2,900	3,300	3,200

<sup>1</sup>Yield based on utilized production.

**Table 2: Fruit Production and Value 2006-2008**

Season	Acres of Bearing Age	Production Unit		Price Dollars	Value of Utilized Production 1,000 do.	
		Total	Utilized			
<b>Million pounds</b>						
<b>Apples</b>	<b>2006</b>	45,000	1,260	1,250	0.201	250,905
	<b>2007</b>	42,000	1,310	1,300	0.222	288,260
	<b>2008</b>	42,000	1,230	1,180	0.221	260,525
<b>Tart Cherries</b>	<b>2006</b>	1,800	8.6	8.6	0.317	2,725
	<b>2007</b>	1,600	11.3	11.3	0.343	3,871
	<b>2008</b>	1,600	9.6	9.4	0.413	3,879
<b>Sweet Cherries</b>	<b>2006</b>	700	960	860	2,290	1,973
	<b>2007</b>	700	1,190	1,180	2,980	3,518
	<b>2008</b>	700	1,050	920	3,520	3,241
<b>Pears</b>	<b>2006</b>	1,400	16,000	15,600	429	6,685
	<b>2007</b>	1,200	11,000	10,300	497	5,120
	<b>2008</b>	1,200	10,300	9,400	504	4,742
<b>Grapes</b>	<b>2006</b>	36,000	155,000	153,000	261	39,946
	<b>2007</b>	37,000	180,000	180,000	299	53,843
	<b>2008</b>	37,000	172,000	172,000	339	58,354
<b>Peaches</b>	<b>2006</b>	1,700	7,000	6,730	667	4,489
	<b>2007</b>	1,700	6,300	6,300	634	3,995
	<b>2008</b>	1,600	5,500	5,200	922	4,796
<b>1000 lb</b>						
<b>Blueberries</b>	<b>2006</b>	900	2,200	2,000	1.4	2,796
	<b>2007</b>	900	2,500	2,300	1.47	3,373
	<b>2008</b>	900	2,500	2,300	1.79	4,107
<b>1000 cwt</b>						
<b>Strawberries</b>	<b>2006</b>	1,500	44	44	170	7,480
	<b>2007</b>	1,400	46	46	165	7,590
	<b>2008</b>	1,400	45	45	165	7,425
<b>Total Fruit and Berries</b>	<b>2006</b>	89,000				316,999
	<b>2007</b>	86,500				369,570
	<b>2008</b>	86,400				347,069

## **TOM VILSACK SWORN IN AS SECRETARY OF AGRICULTURE**

**T**om Vilsack was sworn in as the 30th Secretary of the U.S. Department of Agriculture (USDA) on January 21, 2009. Appointed by President Barack Obama, Vilsack received unanimous support for his confirmation by the U.S. Senate.



Secretary Vilsack has served in the public sector at nearly every level of government, beginning as mayor of Mt. Pleasant, Iowa in 1987, and then as state senator in 1992. In 1998, he was the first Democrat elected Governor of Iowa in more than 30 years, an office he held for two terms.

Throughout his campaign for Governor, Vilsack articulated a vision for making Iowa the Food Capital of the World and focusing on creating economic opportunity in rural communities and small towns through value-added agriculture. As Governor, he created the Iowa Food Policy Council to advance local food systems, enhance family farm profitability, and combat hunger and malnutrition. He led trade missions to foreign countries to market agricultural products and attended the Seattle meeting of the World Trade Organization (WTO) to push for expanded agricultural trade negotiations. In addition, he worked to support independent farmers and ranchers by enacting livestock market reform and mandatory price reporting legislation in 1999.

Vilsack was a leader among his colleagues. In addition to serving on the National Governors Association Executive Committee, he also served as chair of the Governors Ethanol Coalition, chair of the Democratic Governors Association, and founding member and chair of the Governors Biotechnology Partnership. As chair of the National Governors Association Committee on Natural Resources, Vilsack promoted private lands conservation and advanced the concept of tying farm payments to conservation commodities. Vilsack's national Private Lands, Public Benefits conference focused attention on the need to address conservation challenges by providing incentives to private landowners to implement conservation practices resulting in clean air, clean water, and enhanced wildlife habitat. He also created a comprehensive conservation program in Iowa to encourage and assist landowners in installing buffer strips, restoring wetlands, and rewarding good conservation practices.

During his tenure as Governor, Tom Vilsack initiated a comprehensive effort to increase economic opportunity and create good-paying jobs. He started Vision Iowa, a program to invest in cultural and recreational infrastructure throughout the state. A combination of venture capital initiatives created an entrepreneurial environment for innovation and new ideas to get started; and the Iowa Values Fund provided an economic growth strategy focused on creating and retaining jobs in targeted sectors including life sciences, financial services, and advanced manufacturing. Each of these initiatives created under Vilsack's administration contributed to the rebuilding of local economies in small towns and rural communities across the state.

In addition to state economic investment, Vilsack's leadership and vision were instrumental in transforming Iowa to an energy state. His policies led to the construction of Iowa's first power facility in two decades and made Iowa a leader in alternative energy and renewable fuels. Vilsack created a regulatory and financial environment in Iowa for wind energy to develop to the point that it now makes up 5.5 percent of the state's generation, the largest percentage of any state. Iowa also emerged as a leader in the production of ethanol and biodiesel during his tenure.

Throughout his public service, Tom Vilsack has pursued an agenda dedicated to the principles of opportunity, responsibility, and security. He is recognized as an innovator on children's issues and education, economic and healthcare policy, and efforts to make government more efficient and accessible. Iowa is known for its strong K-12 education system in part due to Vilsack's initiatives. He developed aggressive early childhood programs, reduced class sizes, created a first-in-the-nation salary initiative to improve teacher quality and student achievement, and enacted a more rigorous high school curriculum. His leadership also led to Iowa becoming a national leader in health insurance coverage, with more than 90 percent of children covered.

A native of Pittsburgh, Pennsylvania, Vilsack was born into an orphanage and adopted in 1951. He received a bachelor's degree from Hamilton College in Clinton, New York, in 1972 and earned his law degree from Albany Law School in 1975. He moved to Mt. Pleasant - his wife, Christie's, hometown - where he practiced law. The Vilsacks have two adult sons, Jess and Doug, who both grew up in Mt. Pleasant, and a daughter-in-law, Kate, who's married to Jess.



## NEW ORGANIC AGRICULTURE WEB SITE

A new website about organic agriculture production provides research, news and learning modules from land-grant universities nationwide. eOrganic will launch at regional organic farming and production conferences in January and February and can be found at: <http://www.extension.org>. Choose Organic Agriculture to see the variety of content the community of practice has developed such as, video clips, frequently asked questions, and news and upcoming events.

## USDA TO MEASURE THE ECONOMIC STATE OF U.S. AGRICULTURE

Farmers will soon have the opportunity to set the record straight about the issues that affect them - and to help ensure that policies and programs are based on accurate, real-world data. This is the goal of the annual Agricultural Resource Management Survey (ARMS), conducted by the U.S. Department of Agriculture's National Agricultural Statistics Service (NASS).

ARMS is USDA's primary source of information on production practices, resource use and economic well-being of America's farm operations and farm households.

"Just about every federal policy and program that affects U.S. farmers and farm families is based on information from ARMS," said Stephen Ropel, director of the NASS New York Field Office. "This information is used not just by USDA and Congress, but also agribusinesses and others who make the decisions that shape the future of New York agriculture."

Between January to March, NASS field offices will contact 37,000 farmers nationwide by mail or phone to complete the survey. Producers will be asked to provide data on their operating expenditures, production costs and household characteristics.

"All farm operators rely on quality information and sound government policies in order to run a successful business. That's why participation in ARMS is so important," Ropel explained. "Producer participation in ARMS ensures that decisions affecting farmers, their families, their businesses and their communities are based on the facts, straight from the source."

As with all NASS surveys, information provided by respondents is confidential by law. NASS safeguards the confidentiality of all responses, ensuring that no individual producer or operation can be identified. All NASS reports are available online at: [www.nass.usda.gov](http://www.nass.usda.gov).

## SCIENTISTS SERVE UP MUSTARD MEAL TO TAME WEEDS

*Jan Suszkiw, USDA ARS News Service, USDA (301) 504-1630, [jan.suszkiw@ars.usda.gov](mailto:jan.suszkiw@ars.usda.gov)*

Sinalbin, the same compound that gives white mustard its pungent flavor, could also prove useful in fighting weeds. Agricultural Research Service (ARS) studies suggest sinalbin and other compounds released into soil by applications of white mustard seed meals can kill or suppress certain weedy grasses and annual broadleaf weeds.

Agronomist Rick Boydston, with the ARS Vegetable and Forage Crops Research Unit in Prosser, Wash., is conducting the studies with plant physiologist Steven Vaughn, at the ARS National Center for Agricultural Utilization Research in Peoria, Ill. They evaluated the effects of three mustard seed application rates: half a ton, one ton and two tons per acre. Of the three, the one-ton and two-ton rates worked best in peppermint, reducing barnyard grass, green foxtail, common lambsquarters, henbit and redroot pigweed populations by 90 percent several weeks after application.



*(White mustard. Photo courtesy of Joseph M. DiTomaso, University of California-Davis, Bugwood.org.)*

Although young peppermint plants sustained minor damage from the treatment early on, they recovered and resumed their normal growth. Onions weren't so lucky. Regardless of the application rate used, the treatment severely damaged the bulb crop when applied before emergence, or before the onions produced two true leaves. Applications at the two-leaf stage or later were more promising.

In trials with potted rose, phlox, coreopsis and pasque flower, the treatment killed or reduced the growth of annual bluegrass, common chickweed, creeping woodsorrel and liverwort. In treated plots, 86 to 98 percent of common chickweed seedlings died; those that survived were shorter and weighed less than treatment-free chickweed seedlings.

Besides white mustard, the researchers also evaluated the weed-control effects of field pennycress seed meal and dried distiller grains (DDGs), derived from corn ethanol production. Like white mustard, field pennycress also has potential as a biodiesel crop. It and the DDGs were less effective than white mustard at controlling weeds.

The research aim is three-fold: provide organic farmers with an alternative to hand-pulling, burning and other laborious methods of weed control in specialty crops including peppermint and potted ornamentals; develop value-added uses for seed meal, should mustards prove useful in making biodiesel; and diminish environmental risks possibly resulting from conventional herbicide use.

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

## **US DEPARTMENT OF LABOR ISSUES FINAL H-2A RULE**

**D**ecember 18, 2008. The U.S. Department of Labor's Employment and Training Administration (ETA) and Employment Standards Administration (ESA) today published a final rule that modernizes the H-2A program for employing foreign workers in temporary or seasonal agricultural jobs, and enhances important worker protections. "These reforms will improve the operation of the H-2A program for agricultural employers and help ensure that the employment of temporary foreign workers does not adversely affect U.S. workers," said Secretary of Labor Elaine L. Chao.

Many of the program's regulations have not been updated in more than 20 years. Last year, only about 75,000 positions were certified to be filled by legal H-2A workers, while there are an estimated 600,000 to 800,000 undocumented workers employed on America's farms.

The changes will update the H-2A program to improve the process for hiring legal foreign agricultural workers when no U.S. workers can be found. Unlike the proposed AgJOBS legislation, which would arbitrarily slash agricultural workers' wages, the revised H-2A regulations will set required wages according to prevailing local market rates, a methodology that has been used successfully in other temporary worker programs.

Regulatory updates include reducing unnecessarily duplicative filing, and federal and state government review of applications. Required employer recruitment for U.S. workers will begin earlier, thereby giving U.S. workers additional notice of available jobs, and employers will be required to submit an initial recruitment report to the department prior to receiving certification.

The rule establishes enhanced penalties for violations and new tools to ensure employer compliance, including audits, revocation of approved labor certifications, increased debarment authority and substantial increases in fines — up to \$100,000 for violations resulting in serious injury or death of a worker. The rule also will prohibit employers and recruiters from charging fees to workers for access to jobs, a practice that in the past has led to many reported abuses.

The Office of Management and Budget has cleared the rule, which appears in today's *Federal Register*. The rule will become effective on Jan. 17, 2009.

*(ETA News Release: Number: 08-1856-NAT [12/18/2008] Contact Name: Jennifer Kaplan or Terry Shawn, Phone Number: (202) 693-5052 or x4676 for more information.)*

## **FARMERS TO SEE RETURN ON INVESTMENT WITH 2007 CENSUS OF AGRICULTURE**

*Results Available February 4*

**A** record number of farmers invested in their future by participating in the 2007 Census of Agriculture. They will soon see a return on that investment when Census results are released February 4 by the U.S. Department of Agriculture's National Agricultural Statistics Service (NASS).

"The true value of the Census of Agriculture is in the information it provides," said Steve Ropel, director of the NASS New York Field Office. "The Census charts trends in agriculture over time and provides the only source of uniform, comprehensive data for every county in the nation."

The Census, which is conducted every five years, provides facts and figures on virtually every aspect of U.S. agriculture, including number and types of farm operations, the economic aspects of farm production and the demographics of U.S. farm operators.

For farmers and ranchers, Census data can be a valuable tool to help them make informed decisions about the future of their operations. In addition, the information is used by all those who serve farmers and rural communities, including government agencies, community planners, agribusinesses, lenders, trade associations and many others.

"The information provided from the Census is really the voice of our nation's farmers and ranchers," said Ropel. "They took the time to tell us about what's happening in agriculture on a local and national level. That voice will be heard by policymakers and other agricultural stakeholders now and in the years ahead."

Census results will be available online and in various publications to be issued by NASS. For more information, visit [www.agcensus.usda.gov](http://www.agcensus.usda.gov) or call (800) 727-9540.

## CANOPY COVER - THE SECRET TO GAUGING PLANTS' THIRST

***Marcia Wood***, Agricultural Research Service Information Staff, USDA ARS.

**A**s every home gardener will tell you, ground that's bare at the beginning of summer will soon be covered by the leafy sprawl of exuberantly growing plants.

To scientists, the amount of aboveground space that plants occupy is known as "canopy cover." And though it may evoke images of the leafy canopy of a spreading oak, for instance, the term actually applies to all sizes and species of green plants—from ground-hugging tomatoes to tall, slender cotton.

Scientists at the [Agricultural Research Service's](#) Water Management Research Unit in Parlier, California, have confirmed that canopy-cover measurements are invaluable for growers, farm advisors, or irrigation consultants who want to determine precisely how much water a plant has used and currently needs.

"A bell pepper with a canopy cover of 40 percent may use, in a week, an inch of water—the amount you might want to replace the next time you irrigate," says ARS research leader and agricultural engineer Tom Trout. Canopy-cover estimates, used in a standard equation for irrigation scheduling, provide a fast, accurate, dependable, and affordable way for growers to avoid overwatering their crops.

Overirrigating can be wasteful and can lead to unwanted leaching of fertilizers and other potential pollutants into underground water supplies, Trout says. Formerly at Parlier, Trout is now with ARS in Fort Collins, Colorado.

The concept of using canopy-cover measurements to estimate a plant's water requirements isn't new, Trout says. But ARS's California-based studies are perhaps unparalleled in scope, encompassing an extensive assortment of in-demand orchard, vineyard, and vegetable crops of various age classes, growing in various plant and row spacings, in 30 different California fields.

Growers who today would have to walk such fields to make an eyeball estimate of each crop's canopy cover might tomorrow be able to rely on satellites and computers to do the work for them. Trout and co-investigators Dong Wang, a research leader at Parlier, and Lee Johnson, a satellite imagery expert with NASA, are using satellites to capture imagery that a computer could analyze and then quickly convert to a crop-canopy measurement.

"Growers could visit a website to find the latest canopy measurement for their fields," explains Trout. "With that—and a few other pieces of information, such as locally relevant ag-weather data—they could instruct the computer to calculate the amount of water used and the amount now needed for each of their fields."

Admittedly, this scenario may be several years in the making. But it has nonetheless captured the interest of the California State Department of Water Resources. The agency has awarded Trout and colleagues a 2-year grant to pursue this high-tech way to save water and satisfy plants' thirst.—By



Soil scientist Dong Wang (left) records soil moisture data with a probe as technician Matt Gonzales (right) and agricultural engineer Jim Gartung record grape canopy cover with a spectral camera. Manually collecting data on the ground is necessary for calibrating satellite imagery.

This research is part of *Water Availability and Watershed Management*, an ARS national program (#211) described on the World Wide Web at [www.nps.ars.usda.gov](http://www.nps.ars.usda.gov).

[Thomas J. Trout](#) is in the USDA-ARS [Water Management Research Unit](#), 2150 Centre Ave., Bldg. D, Ste. 320, Fort Collins, CO 80526; phone (970) 492-7419, fax (970) 492-7408.

("Canopy Cover: The Secret to Gauging Plants' Thirst" was reprinted from the [January 2009](#) issue of *Agricultural Research* magazine.)



## ATTRA HELPS FARMERS KEEP ENERGY COSTS DOWN

In these tough times it makes a great deal of sense to reduce energy use and costs. ATTRA offers tools to help farmers and ranchers evaluate and improve their energy systems.

### Farm Energy Saving Tips

Energy saving on farms and ranches should begin with an inventory or assessment of energy use. Mentally prepare yourself to take charge and get to the bottom of things. Start by reviewing your energy bills – there's no better investment of your time. Some utility companies offer energy audits tailored for agricultural customers. If your provider does not offer audits, they may be able to refer you to someone who does. A number of Web sites offer agricultural energy calculators to begin this process. See below for more on these tools.

**Maintain tractors and stay up on injector and filter schedules.** Use the proper viscosity oils and seasonal fuels. Make fewer passes over fields by using tillage calculators, and keep ground implements sharp. Avoid excessive idling. Keep tire pressure at the lowest recommended level and avoid over-ballasting. Tillage is a main fuel use for many operations. Tillage calculators are available at this site: [ecat.sc.egov.usda.gov](http://ecat.sc.egov.usda.gov).

**Reduce synthetic fertilizer use.** Nitrogen fertilizers are particularly heavy users of natural gas in the manufacturing process. When these fertilizers are applied in excess or at the wrong time, they can pollute surface water and groundwater.

**Consider conservation tillage and no-till management strategies.** These approaches reduce diesel fuel consumption, preserve topsoil structure, and conserve soil carbon. Conservation tillage has demonstrated measurable reductions in carbon emissions over the past decade.

**Change lighting strategies.** Switch incandescent lighting to compact fluorescent lamps in barns, sheds, and outbuildings. Consider changing out yard lamps with more focused fixtures that save energy. Motion detectors on lights work well for many applications.

**Irrigate efficiently.** This usually means a combination of mechanical and management upgrades to your system. Lowering pressures on pivot irrigation systems can save considerable energy. Use pressure gauges, monitor soil moisture to avoid over watering, and examine sprinkler nozzles regularly for wear. Studies in Western states indicate that about 25 percent of electrical energy used in irrigation is wasted due to poor pump and motor efficiency.

**Increase electric motor efficiency.** Rebuild older motors and gain several percentage points in motor efficiency. Experts advise considering premium efficiency motors (2 to 4 percent more efficient than standard motors) in all new installations, or when the cost of rebuilding exceeds 65 percent of the price of a new motor. Match the new motor output to the task at hand and consider variable-speed drives as appropriate

**Manage stored fuel.** A 300-gallon unsheltered above-ground tank can lose up to 10 gallons per month through evaporation during warm months, particularly when painted a dark color. Silver-coat the tanks and put up a rudimentary shelter to keep them shaded. Pressure relief caps also reduce evaporation loss.

ATTRA is now offering farm energy technical assistance. We are ready to take your farm energy questions when you call our toll-free line, 1-800-346-9140 (English) or 1-800-411-3222 (Spanish). Our staff members have hands-on experience with a wide range of energy-saving approaches and renewable energy technologies. For more technical questions and



requests, we can also draw on the extensive engineering expertise within our parent organization, the National Center for Appropriate Technology (NCAT).

### **USDA's REAP Program: A Great Opportunity for Producers**

Among the provisions of the 2008 Farm Bill is the Rural Energy for America Program (REAP). Managed by USDA Rural Development, this program authorizes \$225 million in grants and loan guarantees for energy efficiency and renewable energy projects. Farms, ranches, and rural businesses are eligible. A simplified application process is available for projects costing less than \$200,000. To learn more about how the program works, see [www.farmenergy.org](http://www.farmenergy.org), Web site of the Environmental Law and Policy Center. To find your state contact person for the REAP program, visit [www.farmenergy.org/incentives/contacts.php](http://www.farmenergy.org/incentives/contacts.php)

### **Farm Energy Calculators**

The first step in reducing farm energy costs is to figure out where you use energy in your operation. One way to do this is to have someone perform an energy audit on your farm. The auditor will look at your energy consumption, suggest energy-efficient improvements and equipment upgrades, and estimate paybacks on these investments.

You don't need a professional energy audit to get started, though. An amazingly diverse variety of farm energy calculators are freely available on the Internet. You can examine the energy consumption and costs of various tillage systems, crops, fertilizers, irrigation, animal housing, lighting, drying, cooling, heating, and milk harvesting and chilling. Other calculators allow you to estimate whether it would make sense to install a wind turbine or photovoltaic system, or to produce your own biofuel.

### **[Farm Energy Calculators: Tools for Saving Money on the Farm](#)**

This ATTRA publication provides links to a variety of farm energy calculators on the Internet. Numerous calculators are listed with brief descriptions. Each has a specific focus, such as irrigation and pumps, electrical use, and fertilizer application.

### **Farm Energy Search Tool ([www.attra.ncat.org/farmenergysearchtool](http://www.attra.ncat.org/farmenergysearchtool))**

See ATTRA's Farm Energy Web page at [www.attra.ncat.org/energy](http://www.attra.ncat.org/energy). You will find extensive resources, including publications to download and links to other organizations working to increase energy efficiency on farms and ranches.

Are you looking for energy-related equipment, funding, and technical assistance in your state? ATTRA's online search tool makes it easy. Businesses are generally listed under the state where they are located, although many companies provide regional or national service. Contact businesses to see if they serve your area. Energy-related businesses, agencies, and nonprofit organizations serving agriculture are welcome to submit listings using a simple self-listing form. This search tool was developed with funding from the USDA Risk Management Agency.

### **Farm Energy Publications**

In addition to the publications listed here, ATTRA offers hundreds more that provide general information and specific details about all aspects of sustainable and organic agriculture. They are available to download for free from ATTRA's Web site: [www.attra.ncat.org](http://www.attra.ncat.org). Or call 1-800-346-9140 to order a free paper copy.

### **Energy Conservation and Efficiency**

[Conserving Fuel on the Farm](#)

[Efficient Agricultural Buildings: An Overview](#)

[Energy Saving Tips for Irrigators](#)

[Farm Energy Calculators: Tools for Saving Money on the Farm](#)

[Maintaining Irrigation Pumps, Motors, and Engines](#)

[Root-Zone Heating for Greenhouse Crops](#)

### **Renewable Energy Options**

[Anaerobic Digestion of Animal Wastes: Factors to Consider](#)

[Biodiesel: A Primer](#)

[Biodiesel: The Sustainability Dimensions](#)

[Biodiesel Production for On-Farm Use: A Curriculum for Agricultural Producers](#)

[Biodiesel Use, Handling, and Fuel Quality](#)

[Compost Heated Greenhouses](#)

[Ethanol Opportunities and Questions](#)

[Food Dehydration Options](#)

[Freeze Protection for Solar-Powered Livestock Watering Systems](#)  
[Locally Owned Renewable Energy Facilities](#)  
[Oilseed Processing for Small-Scale Producers](#)  
[Renewable Energy Opportunities on the Farm](#)  
[Small-Scale Wind Energy on the Farm](#)  
[Solar Greenhouse Resources](#) (*online only*)  
[Solar-Powered Livestock Watering Systems](#)  
[Switchgrass as a Bioenergy Crop](#)  
[Wind-Powered Electric Systems for Homes, Farms, and Ranches: Resources](#)

## **Reducing Nitrogen Fertilizer and Indirect Energy Usage**

[Alternative Soil Amendments](#)  
[Brief Overview of Nutrient Cycling in Pastures](#)  
[Conservation Tillage](#)  
[Farm-Scale Composting Resource List](#) (*online only*)  
[Foliar Fertilization](#)  
[Notes on Compost Teas](#)  
[Nutrient Cycling in Pastures](#)  
[Overview of Cover Crops and Green Manures](#)  
[Pursuing Conservation Tillage Systems for Organic Crop Production](#)  
[Sources of Organic Fertilizers and Amendments](#) (*online only*)  
[Sustainable Soil Management](#)

## **Reducing Food Miles and Transportation Energy**

[Bringing Local Food to Local Institutions: A Resource Guide for Farm-to-School and Farm-to-Institution Programs](#)  
[Community-Supported Agriculture](#)  
[Direct Marketing](#)  
[Farmers Markets](#)  
[Food Miles: Background and Marketing](#)  
[Local Food Directories](#) (*online only*)

*(Excerpted from: Newsletter of [ATTRA - National Sustainable Agricultural Information Service](#): A project of the [National Center for Appropriate Technology](#) (NCAT). Volume 16, Number 5, November 2008. ATTRAnews is [available online](#).)*

# **BRIGHT IDEAS TO REDUCE FARM LIGHTING COSTS**

Holly Michels, NCAT Editor, [National Center for Appropriate Technology](#) (NCAT)

Lighting isn't always a farm owner's first concern when it comes to energy efficiency until they have an energy audit. "It isn't so much on the customer's mind until we do an audit, said Richard Peterson, who runs Northeast Agriculture Technology in New York and conducts farm energy audits in the state, "then they realize how much lighting systems cost."

Peterson said agriculture lighting costs are significant. Lights consume 10 to 20 percent of electricity costs on the average dairy farm, but that figure can be much higher, he said. I did an audit on one farm where lighting was 40 percent of their annual electricity purchases. It's such a high figure and doesn't have to be. That's why Peterson and others are helping farmers switch to more efficient lighting systems.

Scott Sanford, a senior outreach specialist with the Department of Biological Systems Engineering at the University of Wisconsin-Madison, said lighting systems are the low-hanging fruit of a farm energy efficiency fix that's often easy and inexpensive to install and recoups great energy and cost benefits.

It's something that doesn't cost a lot to implement to save a good portion on your bill, Sanford said. He added that lighting is also the first energy issue to address for many farmers because quite a few American farms have outdated systems. In many cases (farmers) need to replace the lighting anyway because it's basically worn out, he said. They might as well put in new fixtures that are the most efficient available.

Peterson said a good place to start is by changing out incandescent bulbs to compact fluorescents (CFLs). Many farms are still using incandescent lighting, which is the least efficient of all light sources, he said. A switch to CFLs is a very simple way to improve efficiency. It's just a matter of pulling the old lamp out and screwing in the new one.

Both Peterson and Sanford said farmers can expect to recover the cost of switching to CFL bulbs within a year. The savings is upward of 60 percent, Peterson said. It's very significant.

Sanford said making farms brighter has plenty of non-monetary benefits too. When we increase the amount of light on a farm, it makes the farm a safer place to work because you can see where you're stepping. And it makes it a happier place to be, for workers and animals alike.

Several types of lights can improve the energy efficiency of your farms lighting systems, as shown in the table below. For information on how to increase your farms lighting efficiency, contact your local utility for an energy audit or use one of the calculators in the ATTRA publication [Farm Energy Calculators](#).

### Lighting Efficiency Chart

Lamp type	Avg. life (hrs)	Color	Starting Temp.	Instant On	Wattage Range	Pros	Cons
<b>Incandescent</b>	750-1000	White	>-40	Yes	25-200	Cheap, instant light in cold weather	Least efficient
<b>Halogen</b>	2-6000	White	>-40	Yes	45-500	Bright white light	High heat output
<b>Mercury Vapor</b>	24,000	Bluish	-22	No	50-1000	Fits into most existing fixtures	Least efficient high-intensity discharge bulb
<b>Compact Fluorescent</b>	6000-10,000	White	32 or 0F	Yes*	14-29	Use 75% less power, last six to 10 times longer than incandescents	May not provide instant light in very cold climates
<b>Metal Halide</b>	10,000-20,000	Bluish	-22F	No	150-1000	Good color rendering, high light output	Light fades as bulb ages
<b>Pulse Start Metal Halide</b>	15,000-30,000	Bluish	-40F	No	100-750	Faster warm-up, longer life than metal halide	Not interchangeable with old fixtures
<b>T-12 Fluorescent</b>	9000-12,000	White	50F	Yes	30-75	Long life	Not suitable for cold temps., sealed fixtures are a must
<b>T-12 High Output Fluorescent</b>	9000-10,000	White	-20F	Yes	25-110	Long life, suitable for cold weather	Sealed fixtures are a must
<b>T-8 High Output Fluorescent</b>	18,000	White	-20F	Yes	86	Long life, suitable for cold weather	Sealed fixtures are a must
<b>High Pressure Sodium</b>	24,000	Yellow-orange	-40F	No	35-1000	Highest light production, long life, high output	Poor color rendition
<b>T-8 Fluorescent</b>	15,000-20,000	Yes	50°F or 0°F	Yes	25-39	Long life	Sealed fixtures are a must

\*Requires warm-up to reach full output at cooler temperatures.

**Note:** Fluorescent and high-intensity discharge lamps all contain mercury, an environmental pollutant that requires proper disposal.

(Excerpted from: Newsletter of [ATTRA - National Sustainable Agricultural Information Service](#): A project of the [National Center for Appropriate Technology \(NCAT\)](#). Volume 16, Number 5, November 2008. ATTRAnews is available online at: <http://attra.ncat.org/newsletter/archives.html#attranews>.)

## NEW BLACK CURRANT VARIETY RELEASE NOTICE

McGinnis Berry Crops Limited  
3583 Dover Creek Road, Courtenay, BC;  
telephone 250-338-8200; email [mcginnis@berrycrops.net](mailto:mcginnis@berrycrops.net)

### **Blackcomb** (*Ojebyn x Titania*)

Blackcomb is a high yielding new variety that has high levels of resistance to foliar diseases – mildew, White Pine Blister Rust - , vigorous growth habit and tolerance to late spring frost. Blackcomb has produced yields in replicated B.C. trials that were more than 50% higher than Titania and Ben Alder. Fruit size is 20% larger than Titania. Flowering is late mid-season and this variety has demonstrated better tolerance to late spring frost than Titania. Well suited to machine harvest.



Recommended for trial in Canada and northern U.S. states.

### **Whistler** (*Ben Tirran x Bieloruskaja Slodkaja*)

Whistler has high yields of small to medium sized high quality fruit. It has fair resistance to mildew and good resistance to White Pine Blister Rust. Growth habit is slightly spreading with medium vigour. Flowering is late-mid season with good tolerance for late spring frost. Yields in replicated B.C. trials were more than 50% higher than Titania and Ben Alder. Fruit size is smaller than Ben Alder, .8 grams per berry. Juice quality is excellent. Well suited to machine harvest.



Recommended for trial in Canada and northern U.S. states.



# VERMONT'S MOBILE BERRY QUICK FREEZE UNIT THE FIRST OF ITS KIND IN THE US

Laura McDermott, Eastern NY Berry Extension Support Specialist, Department of Horticulture, Cornell University CALS

“**W**hat can I do with my excess crop?” is a berry grower question echoed across the state. A bumper crop or the vagaries of weekend weather can impact how much of the highly perishable berry crop moves off the shelves or out of the field. Preserving berries is often done by making jams and jellies, syrups and even wines. All of these products are highly valuable but require some skill and the proper processing facility. Dehydrating berries is easy to do, but that requires a potentially expensive dehydrator that can also be expensive to operate.

Freezing berries is a relatively easy way to preserve excess berries for future sale. Frozen local berries are easy for customers to use and the preparation doesn't add much cost to the final product. Berries can be frozen in two different ways: 1) the wet pack method which involves adding sugar syrup to the berries and 2) a “dry” or individual quick freeze (IQF). For this method, the berries need to be dried in single layers so that they don't freeze together in clumps. Berries can be stored for 6 months if kept at 0 °F.



The one drawback to freezing as a means of preserving the crop is equipment. Most growers do not have access to large deep freeze units even for long term storage let alone for freezing hundreds of pounds of fruit on trays. That's why the recent news from Vermont was particularly interesting.

The Vermont Agency of Agriculture was awarded a Rural Business Enterprise USDA Rural Development grant for the design and manufacture of a mobile quick freeze unit. The Vermont Department of Tourism and Marketing provided the remainder of the funding assistance for the \$40,000 unit, saying that “A vibrant farm community is an incredibly important part of Vermont's brand”. Bruce Hyde, Tourism and Marketing Commissioner states that, “Vermont is at the forefront of the local food movement, and this program is an innovative way to promote the state”.

The premise of the mobile unit was to help farmers expand market opportunities and hopefully create additional jobs. A mobile freezer unit could reduce fuel and infrastructure costs and hopefully result in greater revenues left in Vt. Farmers pockets. “The mobile quick freeze unit is the first to be used in the United States to bring processing capabilities right to the farm. This is a significant step in helping to give farmers additional processing options as well as making more local foods available to buyers,” said Vt. Secretary of Agriculture Roger Allbee at the unveiling of the unit last August.



Brian Norder, of the Vermont Food Venture Center, designed the mobile quick freeze unit and Randy Cadieux of Georgia Vt., built it. The quick freeze technology isn't new, but putting it on wheels was. The freezer is housed in an 18' trailer that can be hitched on to a regular truck hitch. It is completely outfitted with trays for freezing between 400-600 lbs. of berries or vegetables per hour. The amount of produce varies with the individual size and water content of the produce item being frozen. The unit can temporarily store up to 800 lbs. of frozen produce.

*Flats of berries are moved along a conveyor - the fan helps to remove excess moisture before freezing.*

Farmers need to have correct wiring to accommodate the freezer which has a 50 amp plug. This is the same kind of wiring that a farm would have for a welder and may cost about \$300 to have installed. Farmers also need to supply the labor and a final storage place for the frozen product.



Lots of storage space for trays that are a must for IQF process.



Back door of quick freeze unit - note ramp for easy access.

There are many growers in Vermont that are interested in the unit. Some vocal supporters of the project are Pete Johnson of Pete's Greens in Craftsbury, Vt. and Champlain Orchards in Shoreham, Vt.

At this time, the Vt. Agency of Agriculture is in the process of choosing a private operator through a lease-to-own plan that should be in place by May 1, 2009. That operator will determine rates and schedule the movement of the freezer unit throughout the state. There is some hope that growers in border areas might also be able to schedule time with the freezer unit, but that decision will be made later. If you would like more information about the mobile berry quick freeze unit, please contact Helen Labun Jordan at 802-828-3828 or [Helen.jordan@state.vt.us](mailto:Helen.jordan@state.vt.us).

*(Many thanks to Brian Norder for the photographs. Also thanks to VAAFM for the photo of the exterior of the mobile freeze unit. Source: VAAFM Agriview, August 23, 2008.)*

## **BEST MANAGEMENT PRACTICES FOR SMALL FRUIT: - BRAMBLE SURVEY SAID...**

*Rebecca Harbut, Cathy Heidenreich, Laura McDermott, and Marvin Pritts, Department of Horticulture, Cornell University CALS, Ithaca, NY 14853*

**T**his is the third article in a series detailing results of a NYS Berry Grower Survey conducted November 2007, as part of the 2007-2009 NYFVI Berry Production Efficiency Project. Survey participants were asked to identify management practices giving them the best production efficiency for various small fruit crops. Best management practices information collected from 89 growers across 37 NYS counties has been tabulated and will be shared through this series. Currants and gooseberries were highlighted in the December 2008 issue. Blueberries were the crop for discussion in last month's installment. Brambles (raspberries and blackberries) are the topic for discussion in this issue. Watch for strawberries in the March, 2009 edition.



*Our thanks to the New York Farm Viability Institute, the New York Berry Growers Association and Cornell University CALS Department of Horticulture for their support of this project.*

### **Planting Establishment**

Success when establishing a planting of raspberries or blackberries is largely dependent upon the growers' ability to choose a proper site. A good site has physical characteristics that help reduce pest pressure and insure good plant vigor while also allowing for easy market access. These site attributes include: a location close to a market; well drained fertile soils; a 3-5% slope; easy access to irrigation water; no wild brambles in the immediate vicinity.



After choosing the site, proper preparation is important. NYS growers weighed in with their experiences in a recent Best Management Practices Survey.

Failure to manage weeds can cause more crop loss than diseases and insects combined, so attention to weed control the year prior to planting is very important. Many growers mentioned the importance of eliminating perennial weeds, but only a few noted the use of cover crops specifically. One grower plants either a rye crop or a sorghum/sudan grass mix the year prior to planting berries and finds it very helpful. The choice of cover crop will vary depending upon circumstances, but growers are encouraged to use a minimum of one cover crop prior to planting. An ideal plan would be to use buckwheat the summer before planting, till and then plant rye the fall before the spring installation.



Many farmers use a post-emergent, broad-spectrum herbicide like Round-up as a pre-plant strategy the summer before planting. Following that spray with a fall cover crop would improve soil organic matter as well as reduce weed pressure. Some growers had success with Round-up immediately prior to spring berry planting, as a kind of stale seed bed method and a few others were solarizing the soil using black plastic. This last method was not effective for a number of growers, probably due to the short summers that we have in NY. No one surveyed used fumigants as a site prep tool.

Growers roundly supported the use of nursery grown dormant stock. Only a few mentioned that they prefer tissue cultured plants. Tissue cultured plants work well in a vegetable transplanter and exhibit more uniform and vigorous growth in the first season, but not all varieties may be available. A few growers use suckers to fill in skips later in the season, with the main planting composed of nursery raised plants.

*(Raspberry tissue culture plug plant, photo M. Pritts)*

Some growers are planting on raised beds, presumably to help raise plant roots out of heavy, slow draining soils. Raised beds should be 10-12" high at the peak and 4-6' wide at the base. These beds will dry out quickly, so irrigation is important.

Drip irrigation in a raspberry planting is another practice that had nearly unanimous support. As one grower stated, "If you don't have it (drip irrigation), they won't grow". Attention to soil and plant root moisture is critical in the first season and remains important throughout the life of the planting. Some growers take extra care at planting time and use a Hydro-gel material to coat the bare roots. This material holds soil moisture around the plant and is used frequently when transplanting woody ornamentals. Other growers add kelp and/or compost to the planting hole during planting.

Most plants in NYS are planted at the recommended 2' within the row, and 10' between rows. This spacing has proven optimal for yield and plant health. Growers are mulching their newly planted brambles with organic mulch, with only a few responders using black plastic, and those growers are just using the plastic for first year weed control.



*(Raised bed planting with drip irrigation, photo M. Pritts)*

## **Weed Management**

Responses regarding weed control were quite specific, indicating that growers take weeds seriously. In addition to organic mulch, hand weeding, using mowers and string trimmers, well timed applications of herbicides were mentioned most frequently. Growers are using combinations of pre- and post-emergent herbicides along with judicious use of hand weeding and some cultivation. Cultivation in bramble crops should be reserved for between rows of an established planting – it is very easy to damage the shallow, tender roots of young plants.

Some growers are using black plastic mulch during the establishment year with success. Use black plastic mulch with care. If left on the planting it may encourage soil borne diseases in heavier soils and it may impede new cane emergence. The use of heavy layers of organic mulch is also discouraged, particularly if you have heavy soil. A light layer of straw during the first year and then no mulch is what is recommended to reduce problems with Phytophthora root rot.

The same tactics mentioned by growers as working well were also mentioned as not working. This reaffirms that there is no "silver bullet" with weed control. All methods may need to be considered and no method is fool-proof. Constant

attention, a full understanding of the weed growth cycle and site preparation in advance of planting are the keys to good weed control in raspberry and blackberry plantings.

## Production Systems

Attention to detail was the order of the day in terms of best management practices reported by NY berry growers to work well with brambles. These details covered the whole gamut of bramble production from preplant soil testing and amendment to post harvest berry handling and storage.

New York raspberries and blackberries continue to be planted and produced for the most part in field row systems. The row system is usually set up with 9-10 ft between row spacing. In-row spacing varies with type of raspberry or blackberry to be planted. Recommended in-row raspberry spacings are: 2-3 ft for reds, 3-4 ft for blacks, and 4-5 ft for purples. Red raspberries not producing many suckers and most yellow raspberries should be planted at 2 ft in-row spacing. Really vigorous reds such as Boyne can be spaced as much as 4 ft in-row. Thorny blackberries should be set 3-4 ft apart in row; thornless blackberries at 4-5 ft.

Row orientation varied with site. North-south rows intercept light more evenly than east-west rows, lessening sunscald and facilitating even ripening of fruit. Rows that run with the prevailing wind, however, dry more quickly than those that block the wind. Breezy sites may get more benefit from east-west rows; calmer sites more benefit from north-south rows.

In areas with heavier soils or drainage issues, raised beds were used to help minimize potential root rot problems. The same characteristics that make raised beds desirable for heavy soils and wet sites also makes drip irrigation systems a must- raised beds are more prone to drying out. Many growers reported routine use of drip irrigation systems (with or without raised beds). Drip irrigation systems were cited to be of particular importance during the establishment years.



*(Two month old raspberry planting, Ithaca, NY, photo C. Heidenreich)*



Ten growers advocated regular annual pruning. They emphasized keeping rows narrowed to 18-24 inches and canes thinned to recommended densities within rows. Many suggested early spring as the time when they did these pruning tasks. Several growers favored fall-bearing raspberries, which maybe mowed off in spring instead of requiring conventional pruning. One grower felt alternate year mowing worked best for raspberry production.

Eleven growers reported best production results when raspberries were trellised; five others listed no trellis as a production practice that worked poorly. All those using trellis, whether T or V types, suggested best results were obtained with at least a 2-wire system. One grower mentioned allowing canes to reach 6-7 feet in height worked poorly as they bent over the upper trellis wire.

*(V-trellis system, photo M. Pritts)*

Interestingly, at the time of the survey only one grower reported production of brambles in high tunnels. This grower indicated the high tunnel production system as working well. Since the 2007 survey results were collected many other small fruit growers have added or are in the process of adding high tunnel bramble production to their operations. One operation in western NY recently planted an acre of mixed high tunnel brambles after earlier successes with raspberries in a smaller tunnel.

At least 2 growers voiced concerns about post harvest berry quality. One wondered what might be a better way to keep berries after harvest. Another commented that berries do not seem to keep more than 2 days- they start to mold almost immediately. Bramble fruit quality may quickly decline in the field and even more rapidly yet after harvest. Careful attention to preharvest factors can extend shelf life. Things to consider include cultivar and site selection, plant health and nutrition, fungicide and pesticide applications.





Frequent harvesting of fields (every 1-2 days) is critical to fruit quality as raspberries ripen quickly and non-uniformly. Pickers should be trained to recognize the proper ripening stage and desired fruit appearance. Berries should pull easily from the receptacle yet be firm and not mushy. They should be picked directly into market containers. Wide shallow containers are best suited for raspberries and blackberries; clear polystyrene clam shells are becoming increasingly popular for this use. Containers should not be filled more than 4 layers high; a pad in the bottom of the clamshell may be advisable to help wick moisture and absorb any juices.

Post-harvest cooling is the most effective action a grower can take to maintain fruit quality. Forced-air cooling is the method of choice for brambles. Blackberries should be cooled to 41 °F within 4 hours of harvest. Raspberries should be cooled to 34 °F as soon as possible after harvest but always in less than 12 hours. Fruit should be held no more than 2-5 days, depending on cultivar, at 31-32 °F at < 90% relative humidity. (For more information on how build a do-it-yourself forced air cooler for small fruit go to: <http://www.ext.vt.edu/pubs/fruit/442-060/442-060.html>.)

Increased interest in bramble high tunnel production is due in large part not only to improved fruit size and yield but also berry quality. Shelf life for high tunnel berries is often 2-3 times that of field produced fruit. Fruit should still be forced-air cooled after harvest, though to help maintain quality.

### **Fertility**

“Preplant we correct all major nutrient levels based on soil test; adjust pH with lime and correct B; when bearing we use ammonium nitrate as an N source”, was one grower’s formula for success in this area. A combination of soil testing, tissue analysis and observation of crop response is the best approach to good bramble nutrition. Preplant is definitely the time to make major nutrient adjustments and changes. Amendments should be applied and work down into the top 8” of soil. Soil pH needs to be checked on a regular basis and complete soil testing done every 3 years. Leaf analysis in late summer will help fine tune fertilizer applications the following spring. These should be done at least every other year. Growers should always be on the lookout for unexplained changes in leaf appearance or reductions in growth or yield.

Most growers indicated they were using a balanced fertilizer (i.e. 15-15-15) applied as a single application in spring to established plantings. This was an interesting fact as research indicates nitrogen is more efficient applied as split applications. Recommendations are usually for a first application in May, followed by a second application in June.

Organic growers indicated they were using a range of products including composts, organic liquid fertilizers, and manures. Too much manure was non-advantageous in one instance as it provided rodents with places to hide...

Growers who did not fertilize all were in agreement that was definitely not a best management practice.

### **Pest Management**

Two fifths of the growers that were asked about successful strategies for disease management in bramble crops implied that they do not manage diseases. After looking at how growers responded in other areas of the survey, it seems likely that these growers do not understand that disease management is far more than spraying fungicides. Cultural controls like proper site selection, weed management, proper pruning and trellising, mowing and thorough picking are very important disease management strategies. Twenty-five percent of responding growers listed these types of strategies as their primary disease control method, but grower responses elsewhere in the survey indicate that almost all growers are using some combination of cultural methods to help reduce disease pressure.

Fifty percent of growers do use chemical sprays to control disease in their raspberry planting. Most of these folks were trying to control gray mold on fruit and did so with well timed sprays at bloom and immediately after bloom. Only one grower indicated that they were making weekly sprays to control disease.

An important area for improvement may be to control cane diseases. Research shows that using an eradicant fungicide just before bud break in the spring will help kill fungi that are normally resistant while the cane is dormant. Only one grower surveyed mentioned that this was part of their disease management program. Cane diseases contribute to poor plant vigor and low yield rendering the planting unprofitable.



*Anthracnose, photo W. Wilcox*



*Cane blight, photo W. Wilcox*



*Spur bight, photo C. Heidenreich*

Japanese beetle ranked #1 for the insect pest causing most problems in bramble crops. It seems that most growers are using Sevin or Malathion to control this pest, but growers might want to experiment with some of the newer materials available. Assail is labeled for use on cane berries for the control of tarnished plant bug and Japanese beetles. One grower is using pheromone traps and feels this works well but another warned against relying on hand –picking for good control. Raspberries are used as a trap crop for Japanese beetles at one farm, as the insect prefers this plant to all others crops. There were very few comments about any other insect problems.

Another important point made by a grower was that insecticide sprays should not be made during plant bloom as this would hurt the bees.

Birds, including turkeys, were problems for 30% of the growers surveyed - much more challenging pests than mammals. Only one grower mentioned having deer problems, and had poor results with control. Strategies for controlling birds were extremely varied and included propane cannons, bird guard, bird scare balloons and scare tape, yet these same techniques were also mentioned as not working for some growers. The grower with the turkey problem uses netting to successfully discourage them.



One grower mentioned that woodchucks are his nemesis. To control them he is installing fencing this year. In the meantime he encourages teenagers with rifles – and then this grower gives a very interesting description of a fly control technique using the woodchuck carcass. If you would like details, please call.

Questions or Comments about the New York Berry News?

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