



Cornell University  
College of Agriculture and Life Sciences

# New York Berry News

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January 25, 2013

## Events Calendar

**January 30-31, 2013.** *Farm Food Safety Training with GAPs*, Mt. Morris, NY. More information or to register:  
<http://www.gaps.cornell.edu/eventscalendar.html>

**February 7-8, 2013.** *Farm Food Safety Training with GAPs*, Batavia, NY. More information or to register:  
<http://www.gaps.cornell.edu/eventscalendar.html>

**February 12-14, 2013.** *Hudson Valley Commercial Fruit Growers School*, Kingston, NY. More details follow below.

**February 27, 2013.** *All Day Blueberry School*, in Gettysburg, PA. More information follows below.

**February 27 – March 1, 2013 –** *US Highbush Blueberry Council Spring Meeting*, in Savannah, GA. More information: 916-983-0111 or  
[www.blueberry.org](http://www.blueberry.org).

**March 6-7, 2013.** *Farm Food Safety Training with GAPs*, Penn Yan, NY. More information or to register:  
<http://www.gaps.cornell.edu/eventscalendar.html>

**March 13, 2013 –** *Cape Cod Cranberry Growers' Association Winter Meeting*, in Hyannis, MA. More information: 508-866-7878,  
[info@cranberries.org](mailto:info@cranberries.org), or [www.cranberries.org](http://www.cranberries.org).

**March 13-14, 2013.** *Farm Food Safety Training with GAPs*, Riverhead, NY. More information or to register:  
<http://www.gaps.cornell.edu/eventscalendar.html>

**April 11, 2013 –** *Highbush Blueberry Production Workshop*, in Hamden, NY. More information follows below.

**June 17-19, 2013 –** *Berry Health Benefits Symposium*, in Concord, NC. Join leading researchers and industry leaders to learn about the newest research in this field. Held biennially; this fourth Symposium will be the first time the event has been held on the East Coast. For more information, contact [catmc@peak.org](mailto:catmc@peak.org). Info about the 2011 Symposium may be found at [www.berryhealth.org](http://www.berryhealth.org).

**December 4-7, 2013 –** *Joint North Carolina Strawberry Growers Association and North American Strawberry Growers Association Conference*, Sheraton Imperial Hotel, Durham, North Carolina. More information: [info@ncstrawberry.com](mailto:info@ncstrawberry.com) or [www.ncstrawberry.com](http://www.ncstrawberry.com).

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## **Hudson Valley Commercial Fruit Growers School – February 12-14, 2013**

The annual Hudson Valley Fruit Growers' School will again be held at the Holiday Inn of Kingston. This year the event will be 3 days as follows:

**February 12, 2013 –** Tree Fruit Session and evening Trade Show

**February 13, 2013 –** Tree Fruit Session

**February 14, 2013 –** Special Session on Spotted Winged Drosophila for Berry and Grape Growers.

The agenda and registration information is available at our website at:

[http://hudsonvf.cce.cornell.edu/meeting\\_announcements/2013%20Fruit%20School%20program%20version%202012-26-12.pdf](http://hudsonvf.cce.cornell.edu/meeting_announcements/2013%20Fruit%20School%20program%20version%202012-26-12.pdf)



### **Agenda - Special Session on Spotted Winged Drosophila for Berry and Grape Growers, February 14, 2013**

<b>8:00 – 9:00 AM</b>	<b>Registration. Sign DEC Recertification Credit rosters.</b>
<b>9:00 – 9:05 AM</b>	<b>Welcome and Announcements.</b> Laura McDermott, <i>Cornell Coop. Ext. ENY Hort. Team, Hudson Falls, NY</i>
<b>9:05 – 9:45 AM</b>	<b>Overview of SWD Biology, 2012 Monitoring Efforts, and Local Impacts.</b> Emily Cook, <i>Cornell Coop. Extension Ulster County, HVL, Highland, NY</i> and James O'Connell, <i>Cornell Coop. Ext. ENY Hort. Team, HVL, Highland, NY</i>
<b>9:45 – 10:20 AM</b>	<b>Non-chemical Production Practices for Reducing SWD Damage.</b> Laura McDermott, <i>Cornell Coop. Ext. ENY Hort., Hudson Falls, NY</i>
<b>10:20 – 10:35 AM</b>	<b>Break</b>
<b>10:35 – 11:15 AM</b>	<b>Post-harvest Practices to Minimize Fruit Loss from SWD.</b> Craig Kahlke, <i>Cornell Coop. Ext. LOF Team, Lockport, NY</i>
<b>11:15 – 11:55 AM</b>	<b>Overview of Insecticides for SWD (video-conference presentation).</b> Richard Cowles, <i>Connecticut Agric. Exp. Station, Windsor, CT</i>
<b>11:55 – 12 Noon</b>	<b>Announcements - stamp morning DEC pesticide credit forms</b>
<b>12:00 – 1:15 PM</b>	<b>Lunch and networking</b>
<b>1:00 – 1:15 PM</b>	<b>Sign afternoon DEC credit rosters.</b>
<b>1:15 – 1:20 PM</b>	<b>Call to Order and Announcements.</b> James O'Connell, <i>Cornell Coop. Ext. ENY Hort. Team, HVL, Highland, NY</i>
<b>1:20 – 1:40 PM</b>	<b>Results from 2012-2013 Hudson Valley Insecticide Trials.</b> Peter Jentsch, <i>Dept. Entomology, Cornell Univ., HVL, Highland, NY</i>
<b>1:40 – 2:10 PM</b>	<b>Recommendations for SWD Control in 2013 in ENY.</b> Peter Jentsch, <i>Dept. Entomology, Cornell Univ., HVL, Highland, NY</i>
<b>2:10 – 3:10 PM</b>	<b>Spray Equipment and Techniques for SWD Control.</b> (tentative) Jason Deveau, <i>OMAFRA, Simcoe, Ontario</i>
<b>3:10 – 3:25 PM</b>	<b>Break</b>
<b>3:25 – 3:35 PM</b>	<b>Audience Survey on Weed Management Issues in Grapes and Berries.</b> James O'Connell, <i>Cornell Coop. Extension Ulster County, HVL, Highland, NY</i>
<b>3:35 – 4:30 PM</b>	<b>The New CCE Eastern NY Commercial Horticulture Program – Impacts on Berry and Grape Programs and Discussion of Grower Needs.</b> Steve Hoying, <i>Dept. of Horticulture, Cornell Univ., HVL, Highland, NY</i>
<b>4:35 PM</b>	<b>End of CCE Meeting; stamp morning DEC pesticide credit forms.</b>

### **Annual Cooperative Leaders Forum, March 11-12**

The Cornell Cooperative Enterprise Program and the Northeast Cooperative Council will host the 63<sup>rd</sup> Cooperative Leaders Forum March 11-12 at the Doubletree Hotel, East Syracuse, NY. A dynamic program is planned with a focus on how cooperative businesses can adapt and thrive in a constantly changing world. There will be presentations on changing demographics and what that means for agricultural cooperative businesses and their farmer members; updates on federal government regulatory and policy issues surrounding commodities, international trade, and transportation; production agreements between U. S. and Netherlands-based Friesland Campina; and board of directors governance and fiduciary responsibilities.

To register for the conference, visit the following website: <http://cooperatives.dyson.cornell.edu/events.htm> For information about the conference, contact Bobbie Severson at [rmh27@cornell.edu](mailto:rmh27@cornell.edu) or phone 607/255-1987.

### **All-Day Blueberry School in Gettysburg, PA February 27, 2013**

Registration is now open for an upcoming All-Day Blueberry School. This school will cover blueberry production from A to Z in one intensive day. Topics to be covered include basics on blueberry plant requirements and establishment; irrigation; fertility; varieties; disease, insect, and weed management; bird control; economics; and marketing pointers.

Speakers include entomologist Cesar Rodriguez-Saona and plant pathologist Peter Oudemans from Rutgers University, blueberry breeder Mark Ehlenfeldt from USDA-ARS, and Penn State extension personnel Steve Bogash, Kathy Demchak, Tom Ford, and Lynn Kime.

Pesticide credits will be awarded. The school will take place from 8:00 am to 4:30 pm at the Penn State Extension Office at 670 Old Harrisburg Road in Gettysburg, PA. Directions can be obtained at this site. <http://extension.psu.edu/adams/directions>. The registration fee is \$75 through February 22, 2013 and increases to \$95 starting February 23. Register on-line at <http://agsci.psu.edu/blueberry-growers> or call 1-717-263-9226. The registration fee covers lunch, materials, and a CD/DVD of all Powerpoints and written materials that will be sent to each paid registrant after the meeting.

## USDA NEWS

### Statement from Agriculture Secretary Vilsack on Continuing His Service in the Obama Administration

WASHINGTON, Jan. 14, 2013 – Agriculture Secretary Tom Vilsack made the following statement today regarding the announcement that he will continue his service in the Obama Administration.

“President Obama and I share a deep appreciation for rural America and its unlimited potential in the years ahead to feed a growing world population, revolutionize America’s energy, further protect our natural resources and create more jobs here at home. We will continue to urge Congress to pass a Food, Farm and Jobs Bill that will help us continue USDA’s wide range of efforts to support this work. As we look ahead to a promising future in our small towns and rural communities, I am pleased to continue working alongside President Obama to grow more opportunity in rural America.”

### USDA to Measure the Economic Well-Being of American Farms

ALBANY, NEW YORK – The U.S. Department of Agriculture’s National Agricultural Statistics Service (NASS) will spend the next several months contacting farmers and ranchers across the nation to conduct the Agricultural Resource Management Survey (ARMS). The results of this survey will serve as a baseline for numerous federal policies and programs that affect U.S. farms and farm families.

“ARMS is our primary tool for gauging the financial condition and production practices on American farms and ranches,” said King Whetstone, director of the NASS New York Field Office. “By participating in this survey, New York farmers directly impact the decisions that affect them, their families and their operations.”

NASS conducts ARMS jointly with USDA’s Economic Research Service. In an effort to obtain the most accurate data, the federal agencies will reach out to nearly 35,000 producers nationwide, including 285 in New York, between January 1 and April 15. The survey asks the producers to provide data on their operating expenditures, production costs and household characteristics.

“Decision makers from all facets of U.S. agriculture will use the collective information from ARMS to answer questions and make important decisions concerning the economic viability of American agriculture, the rural economy and other emerging issues,” explained Whetstone. “That’s why it is imperative for all farmers contacted by NASS to provide responses and help shape the future of U.S. agriculture.”

As with all NASS surveys, information provided by respondents is confidential by law. NASS safeguards the confidentiality of all responses, ensuring no individual respondent or operation can be identified.

The economic data gathered in ARMS will be published in the annual *Farm Production Expenditures* report on August 2, 2013. All NASS reports are available online at [www.nass.usda.gov](http://www.nass.usda.gov).

### USDA Announces Speakers for the 2013 Agricultural Outlook Forum

*Agriculture Secretary Tom Vilsack, former Senator Thomas Daschle to speak*

WASHINGTON, Jan. 14, 2013–The U.S. Department of Agriculture (USDA) today announced speakers for the 2013 Agricultural Outlook Forum, "Managing Risk in the 21st Century," Feb. 21-22 at the Crystal Gateway Marriott Hotel, Arlington, Va. Agriculture Secretary Tom Vilsack will present the keynote address, followed by guest speaker former Senator Thomas A. Daschle, currently a senior policy advisor with DLA Piper. USDA Chief Economist Joseph Glauber will present the 2013 U.S. Economic Outlook for Agriculture. In addition, a distinguished panel of speakers for the Feb. 21 plenary session includes: Bryan T. Durkin, Chief Operating Officer, CME Group; David Baudler, President of Cargill AgHorizons; and Scott H. Irwin, Laurence J. Norton Chair of Agricultural Marketing, University of Illinois. Mike Adams, AgriTalk Radio host, will moderate the panel.

The Forum's dinner speaker on Feb. 21 will be Adam Sieminski, Administrator of the U.S. Energy Information Administration (EIA), addressing the, "U.S. Energy Market Outlook."

A program schedule and registration are available at [www.usda.gov/oce/forum](http://www.usda.gov/oce/forum).

On Feb. 22, Chief Economist Glauber will moderate a panel titled, "Crop Insurance: A Global Perspective." Panelists include Yves Salmon, Advisor to the CEO, Groupama SA – Paris, France; Olivier Mahul, with the World Bank Group; and John Drakeford, with Aon Benfield, an English insurance company. The discussion will focus on the role of crop insurance in risk management, reinsurance, and the changing face of the U.S. and foreign crop insurance.

Among the 25 breakout sessions are other risk-management sessions and 85 distinguished experts in the fields of international trade, forestry, conservation, transportation, energy, nutrition, local foods, and food safety. The Forum continues to feature the traditional USDA commodity supply and demand and food price outlooks.

USDA has hosted the Agricultural Outlook Forum since 1923 to provide farmers and ranchers, government, and agribusinesses with sound information for decision-making. Attendees are expected to include members of farm organizations, food and fiber firms, academia, foreign governments, and the news media.

Individual speakers' topics and biographies are available at [www.usda.gov/oce/forum](http://www.usda.gov/oce/forum). Registration is \$375 until Jan. 22, 2013, and \$425 thereafter. Plenary speeches will be Webcast after 6 p.m. EST on Feb. 21, and breakout session speeches and presentations will be posted online after 6 p.m. Feb. 22.

## **Agriculture Secretary Vilsack Reminds Producers to Complete 2012 Census of Agriculture**

*Census Information a Vital Tool for Evaluating USDA Programs and Services*

**WASHINGTON, Jan. 17, 2013**-Agriculture Secretary Tom Vilsack this week continued to remind producers to complete forms for the Census of Agriculture—the only source of uniform, comprehensive and impartial agricultural data for every county in the nation. The 2012 Census of Agriculture will provide the U.S. Department of Agriculture (USDA) with current information to help ensure an abundant, safe, and accessible food supply for all of America. On Monday, Vilsack spoke to thousands of American farmers and ranchers in Nashville, Tenn. The Census of Agriculture, said Vilsack, is one of the most important tools for providing certainty to producers and sustaining the unlimited economic potential of rural America.

"It's important for farmers and ranchers in America today to stand up and be counted by participating in the Census of Agriculture," said Vilsack. "By participating in this survey, producers help provide a snapshot of the current state of agriculture in our country, which helps policymakers make better decisions about farm safety net programs and policies."

Currently underway by USDA's National Agricultural Statistics Service (NASS), the Census collects detailed data covering nearly every facet of U.S. agriculture. It looks at land use and ownership, production practices, expenditures and other factors that affect the way farmers do business and succeed in the 21st Century.

Census information helps USDA monitor trends and understand the needs in agriculture to better align its products and services. Ways the department used Census data in the past include:

- Helping to ensure the future of the agriculture industry in America, by developing programs and priorities to help new and beginning farmers get started and stay in business. This was supported after the Census reported the average age of a farmer continued to increase from 50.3 in 1978 to 57.1 in 2007. And, while the majority of farm operators are between the age of 45 and 64, the fastest growing group of farm operators is those 65 years and older.
- Looking at where and how to provide expanded and improved Internet access and services to rural America. The Census provided comprehensive county-level data on Internet access and revealed that 57 percent of all farmers had Internet access in 2007, up from 50 percent in 2002. Of those producers accessing the Internet, 58 percent reported having a high-speed connection.
- Illustrating the changing nature and needs of agriculture, the number of farms that produced 75% of production declined from 144,000 in 2002 to 125,000. At the same time, the number of small farms counted in the 2007 Census of Agriculture represented 91 percent of all farms. Overall small farms increased 1 percent from 2002 to 2007. These statistics show just how important to our food supply these very large farms are and how vital it is that programs such as crop insurance and others in the Food, Farm and Jobs bill are available. Different sized farms have different needs that USDA supports just as fervently.

All farmers and ranchers should have received a Census form in the mail by early January. Completed forms are due by February 4, 2013. Farmers can return their forms by mail or online by visiting a secure website, [www.agcensus.usda.gov](http://www.agcensus.usda.gov). Federal law requires all agricultural producers to participate in the Census and requires NASS to keep all individual information confidential.

For more information about the Census, visit <http://www.agcensus.usda.gov> or call 1-888-4AG-STAT (1-888-424-7828). The Census of Agriculture is your voice, your future, your responsibility.

## **NEW YORK STATE BERRY GROWERS ASSOCIATION NEWS**

### **Berry Growers Association Recruiting Variety Testers - Dale-Ila M. Riggs,**

*President, NYS Berry Growers Association*

The New York State Berry Growers Association is recruiting commercial growers interested in joining the Association and participating in the evaluation of a new strawberry selection from Cornell. Through a new agreement between the New York State Berry Growers Association (NYSBGA) and the Cornell berry breeding program, raspberry and strawberry growers will evaluate elite selections from the university in their own fields.

Each year Cornell berry breeder Courtney Weber evaluates thousands of potential new varieties looking for improved disease resistance, flavor and growth. Less than one-tenth of one percent become elite selections, which then require rigorous testing to determine if they outperform existing varieties. Participating members of NYSBGA will plant test selections in their fields and provide evaluation data collected from their trials to Cornell.

"Growers will give us feedback on how the flavor, yield, color and disease resistance compare to other varieties they are growing," said Weber, associate professor of horticulture based at Cornell's New York State Agricultural Experiment Station in Geneva. "The most important question for me is whether they'd want to plant more."



### Want to participate?

Commercial growers interested in joining the New York State Berry Growers Association to participate in the evaluation of new berry selections from Cornell should [email NYSBGA executive director Paul Baker](mailto:pbaker.hort@roadrunner.com) (pbaker.hort@roadrunner.com)

The collaboration will also lead to more thorough testing because the larger-scale, commercial plots result in a statewide planting that is 200-fold larger than Weber's evaluation plots.

Growers will benefit from the opportunity to test-drive new varieties before their release and having direct input on new releases in the breeding program. According to Paul Baker, Executive Director for the NYSBGA, growers want to maintain the steady stream of new varieties that is key to satisfying consumers' appetites for farm fresh fruit.

"The berry growers are a unique group of individual farms who pool their resources for the collective good of the industry," said Baker. "Our agreement is a clear signal to Cornell that if they will do the breeding and research, we are willing not only to invest, we want to work directly with them."

"The industry was looking for a way to provide stable support for Cornell berry research and variety development," said Dale-Ila Riggs, NYSBGA president and co-owner of The Berry Patch in Stephentown, N.Y. "When we learned that hands in the field are one of the biggest limiting factors in evaluating new berry varieties, we offered to be some of those hands." The arrangement, she said, "could also be a blueprint for other industry groups who want to directly support the research that benefits agriculture in New York State."

### NYSBGA Board Member Profile: John Cashin, Cashin's Farm, Fultonville, New York

John's grandfather operated a fruit farm in the Hudson valley, producing apples, peaches and an assortment of small fruits. Unfortunately, this farm was sold before John was able to take over the operation, but John learned most of the basics of small fruit production from his grandfather.

John attended the University of Maine and graduated with forest management and forest engineering degrees. The forest management degree provides basic soil, ecology and entomology knowledge useful on the farm, and the engineering degree provided employment at Verizon while raising a family and starting a farm.

The 110 acre abandoned dairy farm located in the Town of Root in Montgomery Count was purchased in 1988. For 20 years the family operated a U-pick strawberry and raspberry operation on a part time basis. About 5 years ago with John decided to operate the farm on a fulltime basis started selling at farmer markets in addition to the U-pick.



The farm continues the U-pick tradition but he now attends 3 farmers markets during the week and sells to some wholesale customers. The variety of products offered has also expanded and now includes 3 acres of strawberries, 1 ½ acre of brambles, 1 to 2 acres of vegetables and hay and straw. Bramble production includes 1 acre of fall raspberries, and tunnel grown black berries, and black, red and yellow raspberries. A second tunnel was constructed this fall for vegetable production with the goal of avoiding the problems associated with this year's temperature extremes, drought, and hail.

John agreed to participate on the NYSBG board for a variety of reasons. First and foremost is the fact that a greatly reduced segment of the population is involved in agricultural and yet the population at large is dependent on agricultural production for survival. So agriculture needs a voice, and right now with berry growers facing new invasive pests, labor and regulatory issues everyone needs to

communicate what makes sense for the industry.

# New York State Berry Growers Association

Chairperson-Dale Riggs-(518) 733-6772    Treasurer-Anthony Emmi-(315) 638-7679

Executive Secretary-Paul Baker- (716)807-6827 fax (716)219-4089

[goodberries@roadrunner.com](mailto:goodberries@roadrunner.com)

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

## MEMBERSHIP RENEWAL/APPLICATION 2013

Name \_\_\_\_\_ (Renewal \_\_\_\_\_ New \_\_\_\_\_)

Farm or Business Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_

E-Mail Address \_\_\_\_\_ County \_\_\_\_\_

Web Address \_\_\_\_\_

### **Crops: (check all that apply)**

Blueberries \_\_\_\_\_ Raspberries \_\_\_\_\_ Blackberries \_\_\_\_\_ Strawberries \_\_\_\_\_ Currants \_\_\_\_\_

Gooseberries \_\_\_\_\_ Other \_\_\_\_\_ Vegetables \_\_\_\_\_ Fruit \_\_\_\_\_

### **Marketing Venue (Please indicate percent)**

U-Pick \_\_\_\_\_ Retail \_\_\_\_\_ Wholesale \_\_\_\_\_

**Membership Fee – 1 Year 2013** \_\_\_\_\_ **\$125.00**  
(\$50 of this will go directly to research)

**Research Fund Donation** \_\_\_\_\_

**TOTAL ENCLOSED** \_\_\_\_\_



Please make check payable to New York State Berry Growers Association  
Or NYSBGA and send to:

**Paul Baker, Executive Secretary NYS Berry Growers**  
**3568 Saunders Settlement Road, Sanborn, NY 14132**  
*Cancelled check will serve as your receipt, unless otherwise requested*

## FOCUS ON FOOD SAFETY

### FDA Proposes New Food Safety Standards for Foodborne Illness Prevention and Produce Safety

*Public encouraged to comment on new proposals*

**January 4, 2013.** The U.S. Food and Drug Administration today proposed two new food safety rules that will help prevent foodborne illness. The proposed rules implement the landmark, bipartisan FDA Food Safety Modernization Act (FSMA) and are available for public comment for the next 120 days. The FDA encourages Americans to review and comment on these important proposed rules.

The proposed rules build on significant strides made during the Obama Administration, including the first egg safety rule protecting consumers from *Salmonella* and stepped up testing for *E. coli* in beef as well as existing voluntary industry guidelines for food safety, which many producers, growers and others currently follow.

The rules follow extensive outreach by the FDA to the produce industry, the consumer community, other government agencies and the international community. Since January 2011, FDA staff have toured farms and facilities nationwide and participated in hundreds of meetings and presentations with global regulatory partners, industry stakeholders, consumer groups, farmers, state and local officials, and the research community.

“The FDA Food Safety Modernization Act is a common sense law that shifts the food safety focus from reactive to preventive,” said Health and Human Services Secretary Kathleen Sebelius. “With the support of industry, consumer groups, and the bipartisan leadership in Congress, we are establishing a science-based, flexible system to better prevent foodborne illness and protect American families.”

The burden of foodborne illness in the United States is substantial. One in six Americans suffer from a foodborne illness every year. Of those, nearly 130,000 are hospitalized and 3,000 die from their illness. Preventing foodborne illnesses will improve public health, reduce medical costs, and avoid the costly disruptions of the food system caused by illness outbreaks and large-scale recalls.

These two FSMA rules are part of an integrated reform effort that focuses on prevention and addresses the safety of foods produced domestically and imported, with additional rules to be published shortly.

The first rule proposed today would require makers of food to be sold in the United States, whether produced at a foreign- or domestic-based facility, to develop a formal plan for preventing their food products from causing foodborne illness. The rule would also require them to have plans for correcting any problems that arise. The FDA seeks public comment on this proposal. The FDA is proposing that many food manufacturers be in compliance with the new preventive controls rules one year after the final rules are published in the Federal Register but small and very small businesses would be given additional time.

The FDA also seeks public comment on the second proposed rule released today, which proposes enforceable safety standards for the production and harvesting of produce on farms. This rule proposes science- and risk-based standards for the safe production and harvesting of fruits and vegetables.

The FDA is proposing that larger farms be in compliance with most of the produce safety requirements 26 months after the final rule is published in the Federal Register. Small and very small farms would have additional time to comply, and all farms would have additional time to comply with certain requirements related to water quality.

“The FDA knows that food safety, from farm to fork, requires partnership with industry, consumers, local, state and tribal governments, and our international trading partners,” said FDA Commissioner Margaret A. Hamburg, M.D. “Our proposed rules reflect the input we have received from these stakeholders and we look forward to working with the public as they review the proposed rules.”

Before issuing the two rules, the FDA conducted extensive outreach that included five federal public meetings and regional, state, and local meetings in 14 states across the country as well as making hundreds of presentations to ensure that the rules would be flexible enough to cover the diverse industries to be affected. The FDA also visited farms and facilities of varying sizes.

“We know one-size-fits-all rules won’t work,” said Michael R. Taylor, the FDA’s deputy commissioner for foods and veterinary medicine. “We’ve worked to develop proposed regulations that can be both effective and practical across today’s diverse food system.”

Additional rules to follow soon include new responsibilities for importers to verify that food products grown or processed overseas are as safe as domestically produced food and accreditation standards to strengthen the quality of third party food safety audits overseas. Improving oversight of imported food is an important goal of FSMA. Approximately 15 percent of the food consumed in the United States is imported, with much higher proportions in certain higher risk categories, such as produce. The FDA will also propose a preventive controls rule for animal food facilities, similar to the preventive controls rule proposed today for human food.

The FDA plans to coordinate the comment periods on the major FSMA proposals as fully as possible to better enable public comment on how the rules can best work together to create an integrated, effective and efficient food safety system.

**For more information:**

- [Federal Register Notice for the Proposed Rule “Current Good Manufacturing Practice and Hazard Analysis and Risk-Based Preventive Controls for Human Food”](#)
- [Federal Register Notice for the Proposed Rule “Standards for the Growing, Harvesting, Packing, and Holding of Produce for Human Consumption”](#)
- [FDA Food Safety Modernization Act \(FSMA\)](#)

The FDA, an agency within the U.S. Department of Health and Human Services, protects the public health by assuring the safety, effectiveness, and security of human and veterinary drugs, vaccines and other biological products for human use, and medical devices. The agency also is responsible for the safety and security of our nation’s food supply, cosmetics, dietary supplements, products that give off electronic radiation, and for regulating tobacco products.



### January 2013 Produce Safety Alliance Update

If you have not already had your inbox filled with alerts, we would like to inform you that the FDA has released the Proposed Produce Safety Rule. The link is below:

Standards for the Growing, Harvesting, Packing, and Holding of Produce for Human Consumption  
<http://www.fda.gov/Food/FoodSafety/FSMA/ucm334114.htm?source=govdelivery>

We encourage everyone involved in the fresh produce industry, especially growers, to read and review this document. There is an open-comment period through May 16, 2013 where thoughts and opinions can be shared, so we encourage everyone to participate. We have created a fact sheet to help understand how to engage in this process; please see the link below for more information.

[Proposed Produce Safety Rule: How to Stay Involved](#)

We will send more information as it becomes available. We hope everyone is having a great start to 2013. As always, please do not hesitate to contact myself Gretchen Wall ([glw53@cornell.edu](mailto:glw53@cornell.edu)) or Betsy Bihn ([eab38@cornell.edu](mailto:eab38@cornell.edu)) if you have any questions.

### New Food Safety Regulations Proposed for Fresh Produce Growers - Dr. Luke LaBorde, Department of Food Science, Penn State University

**January 16, 2013.** On January 4, 2013, the U.S. Food and Drug Administration (FDA) released a draft Produce Safety Rule as required under the Food Safety Modernization Act (FSMA) of 2011. This proposed regulation would establish mandatory practices that farmers must take to prevent microbial contamination of fresh produce. Below are highlights of requirements FDA would issue in the final regulation:

**Worker Health and Hygiene** - Farm and packing house workers who harvest or handle fresh produce, and their supervisors, must receive training on personnel hygiene and health conditions that can increase the risk for food contamination. Growers are required to show proof of training by keeping written records. Toilet facilities have to be readily accessible, kept reasonably clean, and supplied with toilet paper.

Hand-washing stations must be close to toilet facilities and supplied with potable running water, hand soap, and clean single use towels.

**Agricultural Water** - Growers must be able to demonstrate that the water they use for irrigation, pesticide preparation, cooling and washing, etc. is safe for its intended use. Maximum average E. coli levels of 126 cells per 100 milliliters have been proposed for irrigation water that can contact the edible part of the crop. Water used for post-harvest operations face more stringent standards; no detectable levels of E. coli are allowed.

**Biological Soil Amendments** - At least a 9 month interval (270 days) would be required between application of raw animal manure to produce fields and harvesting if there is a possibility that the manure may contact the produce. Composted animal manures can be applied from 0 to 45 days before harvest depending on whether or not it can contact the crop. Growers, or commercial compost suppliers, must provide proof through laboratory testing that the composting process was adequate to make it safe to use. No human waste is allowed on fields except in the case of sewage sludge biosolids that are treated according to already existing regulations.



**Domesticated Animals** - Working animals, such as mules and horses, are allowed in produce fields as long as the grower can demonstrate that they have taken adequate measures to prevent contamination. If animals are allowed to graze in areas intended for produce growing, the waiting period specified for application of raw manure (270 days) would apply.

**Wild Animals** - FDA recognizes that it is impossible to keep all wild animals away from produce fields. If the situation is out of control and there is a reasonable probability that wild animals can contaminate produce, growers would be required to monitor their fields for signs of animals and take some kind of preventative measure to keep them out or discourage them from entering.

**Equipment, Tools, and Buildings** - Equipment and tools need to be kept reasonably clean. Sanitation standards for packing buildings requires good water drainage, control of dripping condensation, a pest control program, and regular clean-up of trash. Partially-enclosed packing buildings are acceptable if the grower or packer takes precautions to prevent birds and other pests from becoming established in the buildings.

Here are some important points that need to be made about the proposed rule.

- The proposed rule covers only fresh produce that is sold commercially. It does not apply to produce used for personal consumption, such as home gardens.
- The focus of the new regulation is on fruits, vegetable, nuts, herbs, mushrooms, and sprouts that are typically eaten raw, not commodities that are generally cooked or further processed. For example, potatoes, eggplant, winter squash, beets, and beans for drying are exempt.
- Not all farms that grow fresh produce are required to comply with the rule.
- Farms with gross food sales under \$25,000 are exempt
- Farms with gross food sales over \$500,000 are generally required to comply.
- Those with total sales of between \$25,000 and \$500,000 may or may not receive exemptions, depending on what kind of marketing channels are used.
- For instance, if a farmer sells than more than half of his/her strawberry crop directly to consumers, such as at a farmers market, farm stand, as a CSA, or if he/she delivers it directly to a grocery store or restaurant, they are exempt from the regulation. However, to receive this exemption, these kinds of direct sales must be to buyers in the same state as the farm, or if out of state, no farther than 275 miles from the farm.
- If a crop is mostly sold through wholesale outlets, such as through distributors, warehouses, or fresh-cut processors, the farm is not exempt and is covered under the rule.
- Exemptions can be cancelled if FDA determines that a farm may be a source of contaminated produce.
- And finally, keep in mind that growers of any size who sell at least some of their crop through wholesale marketing channels, even if technically not covered by the federal regulation, have been facing and will to continue to face standards at least as stringent as anything in the final FDA regulations.

Remember, this is a proposed rule. It is not a final regulation. This means that growers have an opportunity to comment on any part of the rule they do not understand or object to.

The draft ruling is available for viewing at <http://www.fda.gov/Food/FoodSafety/FSMA/ucm304045.htm>. The public will have the opportunity to submit comment on the draft rule until May 16, 2013. Before this date, FDA will be holding public meetings to explain the proposal and to provide additional opportunity for input.

There are two ways to send comments. You may submit comments through the internet at <http://www.regulations.gov>. Once you are on the site, follow the instructions for submitting comments.

For written comments, you may fax them to FDA at 301-827-6870 or mail them to:

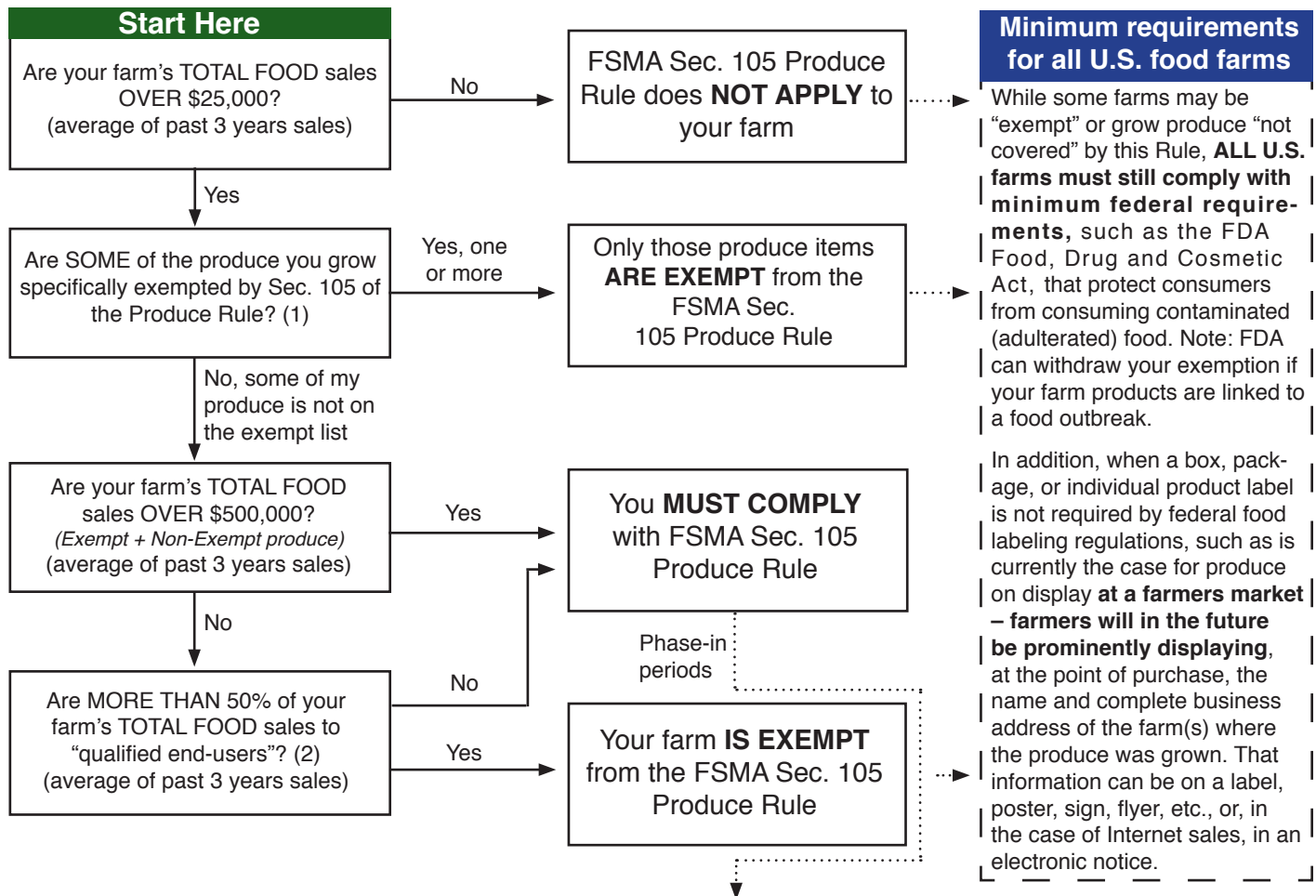
Division of Dockets Management (HFA-305)  
Food and Drug Administration,  
5630 Fishers Lane, rm. 1061  
Rockville, MD 20852.

All written submissions received must include the Docket No. (FDA-2011-N-0921)

# FDA Food Safety Modernization Act

## PROPOSED - Sec. 105 Produce Rule - Compliance Decision Tree for U.S. Growers of Fruits, Vegetables, Nuts, Mushrooms, Herbs, or Sprouts

**Attention.** Being “exempt” or growing produce that is “not covered” in the regulation does not automatically result in exemption from the marketplace or buyer requirements. Farmers’ market managers or others, for example, could require GAPs, third party audits, and/or adherence to the regulation for vendors or suppliers. Visit the Produce Safety Alliance website to find GAPs educators in your state who can help you implement food safety practices to meet GAP requirements ([www.producesafetyalliance.cornell.edu](http://www.producesafetyalliance.cornell.edu)).



### Compliance Phase-in Scope and Timing

The amount of time farmers have to begin complying with the Produce Rule depends on the dollar amount of **TOTAL FOOD sales** from that farm each year:

**Very Small Businesses**—a very small business is defined as having, on a rolling basis, an average annual monetary value of food sold during the previous three years of no more than \$250,000. These farms would have **four years after the effective date** to comply; for some of the water requirements, they would have six years.

**Small Businesses**—a small business is defined as having, on a rolling basis, an average annual monetary value of food sold during the previous three years of no more than \$500,000. These farms would have **three years after the effective date** to comply; for some of the water requirements, they would have five years.

**Other Businesses**—other businesses would have to comply **two years after the effective date**. For some of the water requirements, they would have four years to comply.

#### Notes:

(1) **Exempt produce** includes produce that receives commercial processing that adequately reduces the presence of microorganisms of public health significance (e.g., green beans that will be canned) or that is rarely consumed raw, specifically arrowhead, arrowroot, artichokes, asparagus, beets, black-eyed peas, bok choy, brussels sprouts, chick-peas, collard greens, crab apples, cranberries, eggplant, figs, ginger root, kale, kidney beans, lentils, lima beans, okra, parsnips, peanuts, pinto beans, plantains, potatoes, pumpkin, rhubarb, rutabaga, sugar beet, sweet corn, sweet potatoes, taro, turnips, water chestnuts, winter squash (acorn and butternut squash), and yams.

(2) A **qualified end-user** is either (a) the consumer of the food or (b) a restaurant or retail food establishment that is located in the same state or, if located out of state, no more than 275 miles away from the farm.

## Mark Your Calendars for 2013 GAPs Trainings

There are still 4 out of 5 planned 2-day Good Agricultural Practices (GAPs) workshops scheduled for this winter and spring remaining for growers to attend. This is for those farmers who are being required by buyers to provide third party verification of their food safety practices and for farmers thinking about moving in this direction. With the Food Safety Modernization Act draft FDA regulations to be released in the very near future, the timing of these workshops is paramount. Although the 2-day workshops will cover the vast majority of what most 3<sup>rd</sup>-party audit companies require, it will be geared towards the new Harmonized GAPs standards that Wegman's and many other retailers are requiring. These are sponsored by Genesee Valley Regional Market Authority (except the Long Island training), Cornell Cooperative Extension, Cornell University, the Produce Safety Alliance, and the New York State Department of Ag & Mkts.

- January 30-31, Focus on Potatoes, location: Mt. Morris. The focus is on potatoes, but all fresh produce growers are invited
- February 7-8, General GAPs training for all fresh produce growers, location: Batavia.
- March 6-7, General GAPs training for all fresh produce growers, location: CCE-Yates, Penn Yan.
- March 13-14, General GAPs training for all fresh produce growers, host CCE-Suffolk, Riverhead.

For more information and updates, see: <http://www.gaps.cornell.edu/eventscalendar.html> Registration info will be up approximately 4–6 weeks before the workshops. For more info, contact Craig Kahlke at [cjk37@cornell.edu](mailto:cjk37@cornell.edu) or 585-735-5448.

## FOCUS ON PEST MANAGEMENT

**Disease Snapshot: Crown gall on Blueberry** - Zachary Frederick, Graduate Student and Dr. Kerik D. Cox, Assistant Professor Plant-Pathology & Plant-Microbe Biology, Cornell University

**Causes:** *Agrobacterium tumefaciens*

**When to watch for it:** Season long in newly established plantings.

**First line of defense:** Establish plantings in uninfected soils and use clean planting stock.

**Summary:** Galls initiated by *A. tumefaciens* are most common on the base of canes and on roots, although less frequent on lateral roots. Younger galls are cream to light brown in color and darken with age. Infected plants may be stunted compared to uninfected plants nearby.

*Right: Crown gall can form on any wounded blueberry tissue exposed to infected soil or water.*  
*Photo Credit: William Bertram*



All blueberry cultivars are susceptible to crown gall. This means that the first and most effective disease management option is to exclude *A. tumefaciens* from newly established plantings by inspecting planting stock prior to use. Galls created by *A. tumefaciens* are rarely observed on mature plants.

Management practices that minimize the wounding of plant tissues reduce the opportunities for *A. tumefaciens* infection. However, the act of transplanting and separating pot bound roots often create wounds, and *A. tumefaciens* can naturally infect roots at the sites where new lateral roots are being formed. No chemical treatment options are available to control *A. tumefaciens* gall formations, but *Agrobacterium radiobacter* strain K84 may be prophylactically applied as a root dip to prevent infection prior when planting new stock.

**Spotted Wing Drosophila in New York: Where We Are and Where We Are Heading** - Dr. Greg Loeb, Department of Entomology, Cornell University

Spotted wing drosophila (SWD) *Drosophila suzukii*, originally from Asia, is a new invasive fruit pest that became established in NY and surrounding states in 2011. Unlike other fruit flies that typically only infest overripe and rotten fruit, female SWD oviposit in ripe fruit thereby making them unmarketable. Soft-skinned fruit are at greatest risk. In 2012 we monitored adult SWD and larval infestations for small fruit and stone fruit crops, and potential wild hosts through the season to determine crops at most risk, timing of infestation, spatial variability, relationship between adult captures and larval infestations, and role of wild hosts. Traps baited with apple cider vinegar were used to monitor adult SWD at multiple small fruit farms in NY, including traps placed at the edge or interior of various berry crops and in wood edges adjacent to fruit crops. Figure 1 summarizes adult capture results. SWD adults were not detected in these traps until early July and became wide-spread and abundant by mid-August. Overall, we captured more adults in traps on wood edges relative to crops and this was particularly true in the fall indicating a shift to wood sites, perhaps to seek overwintering habitat. However, traps in wood sites did not generally provide any earlier detection of SWD than traps in the crop.

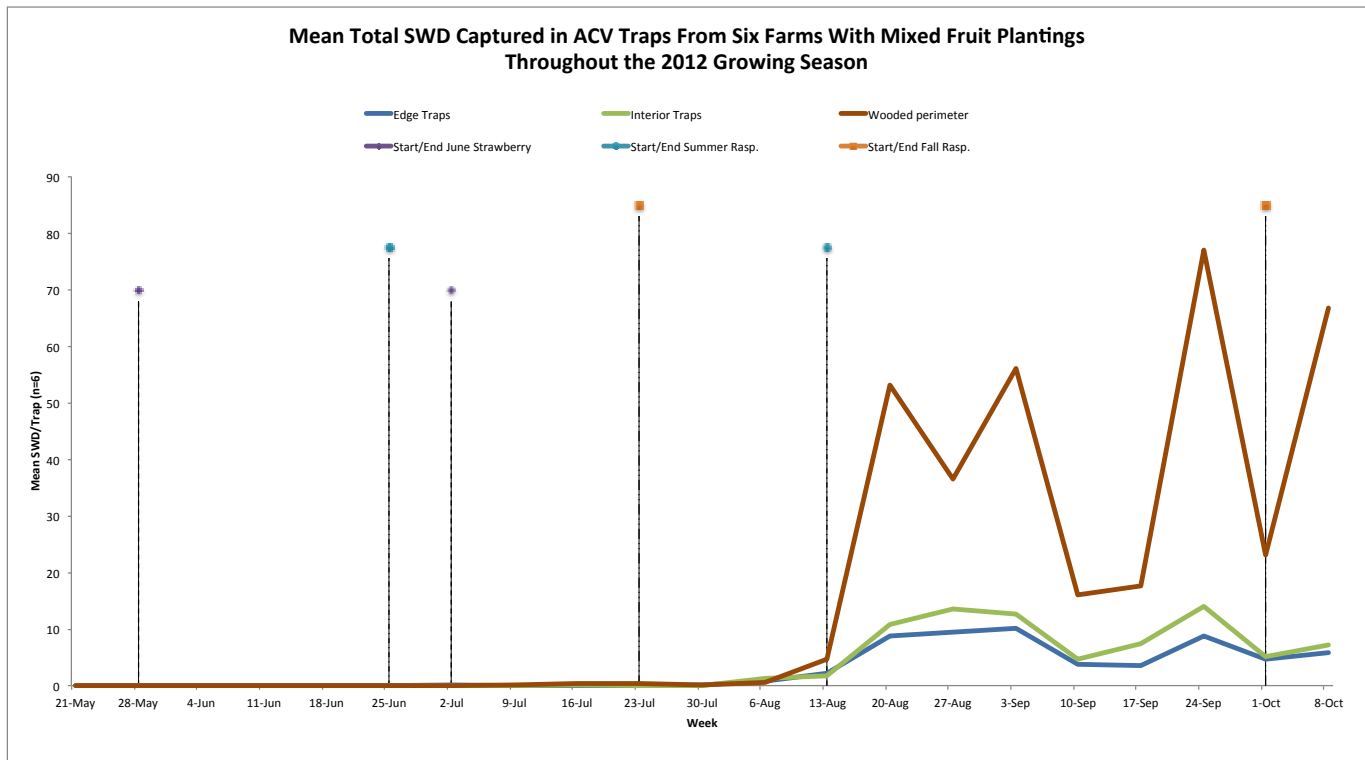


Figure 1. Mean total SWD captured in various fruit crop (combined for this figure) edges and interiors, and from wooded farm perimeters, from six Finger Lakes and Lake Ontario region farms, throughout the 2012 growing season. Standard ACV deli-cup traps were used and checked weekly.

Ripe fruit samples that were collected and held under insectary conditions provided some indication of host utilization and the ability of various fruit crops to support development of SWD (Table 1). Rearing results should be interpreted keeping in mind factors related to the population dynamics of the SWD in relation to the fruiting season of the various crops and wild hosts. Fall raspberry and blueberry appeared to be the most utilized by SWD, but we reared SWD from a number of other fruit crops at lower levels. June-bearing strawberry escaped SWD infestation in 2012 while day-neutral strawberries in late summer were exploited. The most important wild hosts at the farms studied included dogwood, buckthorn, pokeweed and bush honeysuckle. Peaches and day-neutral strawberries appear to support SWD infestation, though damage was not as great as was found for raspberries and blueberries. By mid-August severe infestations were found and were reported across NY with timing of infestation development being rapid.

Table 1. Mean  $\pm$  SE SWD per sample, other *Drosophila* per sample, and proportion of SWD reared from various possible SWD fruit hosts. Sampled from 7 different farms in the Finger Lakes Region, NY.

Host	N Rows	SWD Rank	Total SWD Mean/g $\pm$ SE	Total Other Fruit Flies Mean/g $\pm$ SE	Proportion SWD mean $\pm$ SE
Fall Raspberry	63	1	1.05 $\pm$ 0.22	0.17 $\pm$ 0.05	0.76 $\pm$ 0.04
Wild-Buckthorn	29	2	0.54 $\pm$ 0.16	0.06 $\pm$ 0.04	0.82 $\pm$ 0.09
Fall Raspberry (overripe)	2	3	0.49 $\pm$ 0.34	0.03 $\pm$ 0.03	0.96 $\pm$ 0.035
Blueberry	68	4	0.38 $\pm$ 0.12	0.08 $\pm$ 0.03	0.73 $\pm$ 0.06
Wild-Pokeweed	10	5	0.30 $\pm$ 0.12	0.07 $\pm$ 0.05	0.86 $\pm$ 0.09
Summer Raspberry	82	6	0.25 $\pm$ 0.07	0.11 $\pm$ 0.04	0.59 $\pm$ 0.07
Wild-Dogwood	5	7	0.17 $\pm$ 0.09	0.04 $\pm$ 0.02	0.86 $\pm$ 0.07
Grape-Syrah(damaged)	2	8	0.13 $\pm$ 0.13	0.0 $\pm$ 0.0	1
D-N Strawberry	58	9	0.09 $\pm$ 0.03	0.37 $\pm$ 0.16	0.34 $\pm$ 0.08

Host	N Rows	SWD Rank	Total SWD Mean/g ± SE	Total Other Fruit Flies Mean/g ± SE	Proportion SWD mean ± SE
Grape-Concord (damaged)	37	10	0.08 ± 0.02	0.47 ± 0.07	0.14 ± 0.04
Wild-Cotoneaster	2	11	0.06 ± 0.06	0.0 ± 0.0	1
Wild-Honeysuckle	53	12	0.03 ± 0.02	0.10 ± 0.07	0.45 ± 0.21
Tunnel Raspberry	47	13	0.02 ± 0.007	0.37 ± 0.08	0.31 ± 0.06
Grape-Cabernet Franc (damaged)	18	14	0.02 ± 0.007	0.15 ± 0.06	0.25 ± 0.08
Grape-Baco	14	15	0.02 ± 0.008	0.017 ± 0.007	0.41 ± 0.16
Grape-Cayuga White (damaged)	6	16	0.01 ± 0.007	0.67 ± 0.41	0.20 ± 0.16
Peach	30	17	0.01 ± 0.008	0.14 ± 0.12	0.15 ± 0.14
Grape-Cabernet Franc	44	18	0.009 ± 0.005	0.11 ± 0.06	0.27 ± 0.11
Peach-drops	30	19	0.0029 ± 0.0023	0.11 ± 0.06	0.05 ± 0.05
Apple	9	20	0.003 ± 0.003	0.0 ± 0.0	1
Wild-Sumac	14	21	0.002 ± 0.002	0.0 ± 0.0	1
Grape-Cayuga White (damaged)	18	22	0.0019 ± 0.0015	0.02 ± 0.009	0.08 ± 0.07
Grape-Cayuga White	24	23	0.0009 ± 0.0007	0.78 ± 0.77	0.01 ± 0.0099
Grape-Concord	37	24	0.0008 ± 0.0005	0.087 ± 0.068	0.08 ± 0.07
Grape-Chardonnay	24	25	0.0007 ± 0.0007	0.094 ± 0.092	0.17 ± 0.17
Apple-drops	14	26	0.0006 ± 0.0006	0.071 ± 0.04	0.02 ± 0.02
Grape-Niagara	25	27	0.0004 ± 0.0004	0.032 ± 0.030	0.08 ± 0.08
Apricot	2	28	0.0 ± 0.0	0.0 ± 0.0	
Grape-Cabernet Sauvignon	2	28	0.0 ± 0.0	0.0 ± 0.0	
Grape-White Table Grape	2	28	0.0 ± 0.0	0.0 ± 0.0	
June Strawberry	33	28	0.0 ± 0.0	0.28 ± 0.18	0.0 ± 0.0
Peach-Mummy	2	28	0.0 ± 0.0	0.017 ± 0.017	0.0 ± 0.0
Plum	2	28	0.0 ± 0.0	0.0 ± 0.0	
Sweet Cherry	7	29	0.0 ± 0.0	0.17 ± 0.17	0.0 ± 0.0
Wild-Climbing Nightshade	2	28	0.0 ± 0.0	0.0 ± 0.0	
Wild-Mushroom	2	28	0.0 ± 0.0	0.0 ± 0.0	
Wild-riparia	19	28	0.0 ± 0.0	0.0 ± 0.0	
Wild-Rosa spp.	6	28	0.0 ± 0.0	0.0 ± 0.0	
Wild-Washington hawthorn	2	28	0.0 ± 0.0	0.0 ± 0.0	

The 2012 field season was an awakening for many fruit growers to the threat of SWD. We conducted a grower survey in the fall of 2012 to assess impact of SWD. From the survey and additional discussions with industry representatives, it's clear this new pest caused major economic damage to some berry crops, particularly blueberries and raspberries. Indeed, a significant number of respondents to the survey indicated they were considering getting out of the business or shifting to less vulnerable crops. Insecticides were a primary method of management in combination with sanitation. Although SWD populations likely will decline over the winter, we anticipate that they will be back in full force in 2013. In the short-term, vigilance and rather intensive use of insecticides (with sanitation) will be necessary to keep SWD in check for vulnerable crops. Longer-term, research is continuing into the biology of SWD, improved monitoring techniques and development of alternative management approaches, such as biological control, repellents, and attract and kill devices.

I want to thank the many researchers, extension educators, and growers who worked with us during 2012 to address this new threat to berry production in NY. I also want to thank the New York Berry Grower's Association for their leadership in bringing the problem to the attention of policy makers in NY and nationally and helping to acquire the necessary funding to carry out our work.

*(Reprinted from: Proceedings of the 2013 Empire State Producers EXPO, Syracuse, NY. January 22, 2012)*

**Modernizing Sprayers for Optimal Control of Spotted Wing Drosophila** - Andrew Landers, Cornell University, Barton Laboratory, Geneva, NY 14456 [www.nysaes.cornell.edu/ent/faculty/landers/pestapp](http://www.nysaes.cornell.edu/ent/faculty/landers/pestapp)

The application of pesticides to all crops often leaves much to be desired, some growers have maintained their levels of investment in spraying by purchasing modern sprayers, others have chosen to "get by" with using old sprayers inherited from their parents or found behind the barn of some old neighboring farm. There are many good reasons to either purchase a new machine or at least to improve an existing machine.

Old galvanized tanks for example, begin to rust away after many years of sitting out in the sun or being covered in 1-2 feet of snow. Rust flakes block filters or strainers, if fitted, and/or block nozzle tips. Modern tanks are made from poly materials which won't rust (but will break down if left outside in the sun for too long).

Old sprayers have centrifugal pumps – these are fantastic for high volume but useless for fine pressure adjustment and versatility. Some really old sprayers have piston pumps, these require expensive maintenance and produce incredible pressures using plenty of power – why use them when the modern sprayer can work perfectly well with a diaphragm pump and create droplets at sensible pressures?

Filtration is so important if nozzles are to remain open and to maintain sprayer output and the resultant timeliness. Clearing blocked nozzles is a nuisance to say the least, exposes the operator to potential danger and is totally unnecessary if correct filtration and good agitation is in place. Extra filters can be installed in-line and self-flushing filters are a boon to those who still insist on using murky pond water.

When farmers are using air-blast sprayers or cannon sprayers to send the insecticide into the crop, they need to ensure that the spray plume is well-targeted to the crop and that deposition is improved whilst reducing drift. Matching airflow to the canopy volume and distance is very important – it is part of the unique combination of target, forward speed and air volume. Growers should try shutting down tractor PTO speed as the first no-cost method of matching spray to the target.

One of the most appalling features of old boom sprayers is boom stability, usually an old piece of bent, galvanized water pipe, attached to the sprayer with chains of variable length and drooping like the wings of a tired seagull! Driving such a sprayer over typical undulating ground, over woodchuck holes and rocks results in impressive boom bounce – spray pattern and distribution pattern being totally disrupted. The sight must be reminiscent of the Dodo, an extremely ungainly bird, now extinct and I would suggest the same fate should happen to the old sprayer.

Modern nozzle technology has dramatically improved nozzle quality, ceramic nozzle tips last so much longer than the inherited brass nozzles once favored by our grandfathers and passed from generation to generation. Nozzle spray quality classification allows the operator to select the correct spray quality for the right target, ensuring that drift is minimized and deposition improved. Fine spray quality for contact insecticides is a must.

Old sprayers frequently dribble spray from the nozzles when they are switched off resulting in environmental pollution, potential scorching of plants and is, of course, crass stupidity – it is such a waste of product therefore a waste of money. Modern diaphragm check valves prevent drips, switch off rapidly and are so superior to the old ball and spring anti-drip or check valve.

Air assistance sprayers such as the Gregson air-assist and Hardi Twin sprayers uses flat fan nozzles to form droplets and a hydraulically-driven fan is used to create an air blast along the boom to assist in improving penetration of the spray liquid into canopy, making the distribution of pesticide more even and diminish the risk of drift. Air assisted sprayers undoubtedly help droplet penetration and can reduce drift, particularly when the leaf canopy is developed. It is crucial to be able to adjust air volume to reduce drift. The advantages of air assistance have to be weighed against the increased capital cost and higher tractor power requirement necessary to drive the fan.

Calibration is so important and should be conducted at regular intervals before and during the spraying season, but unfortunately many growers fail to do it because it takes too long. Electronic calibration devices such as the Innoquest Spot-on and Wilger calibrator speed up the process and allow rapid calibration – a simple measuring device, a vessel with a digital display, is placed under the nozzle and, within a few seconds, it displays the flow rate.

Much can be done to improve the existing sprayer but, of course, the excitement for the young technologist of tomorrow must be with modernizing our sprayers with modern technology that helps the operator and the management of the system.

Automatic flow rate adjustment can also be carried out in the cab by using simple electronic controller. The desired application rate can be selected for the target on a crop and an adjustable controller, usually a butterfly valve in the line adjusts the flow accordingly.

Most tractor manufacturers and components manufacturers offer some form of guidance system. Using GPS and or GIS, the basic designs provide a light bar to guide the operator in a straight line. The operator watches a line of flashing lights, and, when in the correct driving position, the lights, for example, are green, go off course slightly and the lights change to orange. A field map, using GIS is the next stage, showing the driver the location of the sprayer. Boom sections can be switched on/off depending upon the shape of the field and location of the sprayer, avoiding costly overlaps.

Fully automatic steering systems are available from a number of manufacturers, ranging from simple adaptations to fit against the steering wheel to fully plumbed-in hydraulic systems. They are the most rapidly adopted piece of technology seen in many years, and, besides reducing overlaps it also reduces operator fatigue allowing longer working days. A major plus is the ability to text a message, drink a cup of coffee, change satellite radio stations and watch the implement on the back all whilst operating the tractor in a straight line!

Recording spray use is important for both record-keeping and traceability issues. A number of companies are offering systems based upon GPS/GIS which use a flow meter and data logger to record how much spray is applied and where. The ultimate solution is to be able to place this information directly into a record-keeping system, thus avoiding the chore of manual data entry.

Engineering controls have been developed to reduce operator contamination and environmental pollution. Closed transfer systems allow concentrated pesticide to be moved from the original shipping container to the sprayer mix tank with minimal or no applicator contact. Many systems exist which provide a method to measure the concentrated pesticide. Some systems also include a container rinsing system. Currently available closed transfer systems use a probe inserted into the pesticide container, a connector on the container that mates to a similar connector on the application equipment, or a vacuum-type (Venturi) system that uses flowing water to transfer the chemical from the container.

Induction bowls are metal, plastic or fiberglass hoppers attached to the side of the sprayer or the nurse tank that allow pesticides to be added to the mix tank without the applicator climbing onto the spray rig. Pesticides are poured into the bowl and water is added to flush out the bowl and carry the pesticide to the spray tank. Often a rinse nozzle is mounted inside the bowl for rinsing out empty pesticide containers. Typically induction bowls are raised out of the way during spraying and lowered to about 3 feet above ground when loading the sprayer.

Container rinse systems consist of a rinse nozzle and a catch bowl that traps the container washings (rinsate). The empty container is placed over the rinse nozzle and a jet of water cleans the inside of the container. The rinsate caught in the bowl is pumped into the spray tank to be used along with the spray mixture. Often rinse nozzles are installed in chemical induction bowls. Most closed transfer systems also provide a way of rinsing containers and piping the rinse water into the spray tank.

Sprayer tank washing has always taken a long time if the operator is careful about tank hygiene and is meticulous about cleaning out the pipeline, filters and nozzles. The operator is at great risk during tank washing from splashes of pesticide residue. Commonly, washing out may be carried out during overtime periods at the end of the working day, resulting in extra labor costs and employee concern regarding leaving the work place as soon as possible. The use of built-in tank washers reduces the amount of water required resulting in less rinsate to dispose of. The other major advantage, particularly when used in conjunction with a second tank of clean water is that rinsing out can be done in the field without the need to return to the filling area. Operator contamination is minimized.

There are a number of proven methods to improve deposition and reduce drift whilst spraying insecticides onto small fruit crops. Some solutions are relatively inexpensive such as correct nozzle selection, changing tractor PTO speed etc., others require an injection of capital. As increasing legislation continues to provide challenges for farmers and growers we are also faced with accountability to the supermarkets who buy our produce. Engineering solutions exist to help the grower meet future production requirements.

*(Reprinted from: Proceedings of the 2013 Empire State Producers EXPO, Syracuse, NY. January 22, 2012)*

**\*Labeled Insecticides for Control of Spotted Wing Drosophila in New York Berry Crops**

*Compiled by Greg Loeb & Cathy Heidenreich for Empire State Producers Expo, January 22, 2013*

**BLUEBERRIES**

<b>PRODUCT</b>	<b>AI<sup>1</sup></b>	<b>EPA#</b>	<b>RATE</b>	<b>REI<sup>3</sup></b>	<b>DTH<sup>4</sup></b>	<b>COMMENTS</b>
Entrust Naturalyte	spinosad	62719-282	1.25-2 oz/A	4 hr.	3 d	2(ee) required, after 2 consecutive applications rotate to different MOA <sup>2</sup> ; Organic product.
Entrust SC	spinosad	62719-621	4-6 fl oz/A	4 hr.	3 d	2(ee) required, after 2 consecutive applications rotate to different MOA <sup>2</sup> ; Organic product.
Delegate WG	spinetoram	62719-541	3-6 oz/A	4 hr.	3 d	2(ee) required, after 2 consecutive applications rotate to different MOA <sup>2</sup>
Brigade WSG	bifenthrin	279-3108	5.3-16 oz/A	12 hr.	1 d	Restricted use; 2(ee) required; minimum interval of 7 days.
Danitol 2.4EC	fenpropathrin	59639-35	16 fl oz/A	24 hr.	3 d	Restricted use; Not to exceed 32 fl oz per season.
Triple Crown	bifenthrin, imidacloprid, zeta-cypermethrin	279-3440	6.4-10.3 fl oz	12 hr.	3 d	Restricted use; minimum interval 7 days; maximum per season 31 fl oz.
Imidan 70W	phosmet	10163-169	1.33 lb/A	24 hr.	3 d	Restricted use; maximum per season 7 1/8 lb
AzaSol	azadirachtin	81899-4	6 oz/A in 50 gal	4 hr.	0	Organic product; limited effectiveness.

**STRAWBERRIES**

<b>PRODUCT</b>	<b>AI<sup>1</sup></b>	<b>EPA#</b>	<b>RATE</b>	<b>REI<sup>3</sup></b>	<b>DTH<sup>4</sup></b>	<b>COMMENTS</b>
Entrust Naturalyte	spinosad	62719-282	1.25-2 oz/A	4 hr.	1 d	2(ee) required, after 2 consecutive applications rotate to different MOA <sup>2</sup> ; Organic product.
Entrust SC	spinosad	62719-621	4-6 fl oz/A	4 hr.	1 d	2(ee) required, after 2 consecutive applications rotate to different MOA <sup>2</sup> ; Organic product.
Radiant SC	spinetoram	62719-545	6-10 fl oz/A	4 hr.	1 d	2(ee); rotate to different MOA <sup>2</sup> after 2 consecutive applications.
Brigade WSG	bifenthrin	279-3108	8.0-16 oz/A	12 hr.	0 d	Restricted use; 2(ee) required; 7 day interval.
Danitol 2.4EC	fenpropathrin	59639-35	16-21.3 fl oz/A	24 hr.	2 d	Restricted use; Not to exceed 32 fl oz per season.
Malathion 8 Aquamul	phosmet	10163-169	2 pts/A	12 hr.	3 d	2(ee) required.
AzaSol	azadirachtin	81899-4	6 oz/A in 50 gal	4 hr.	0	Organic product; limited effectiveness.

\*Refer to label for details and additional restrictions.

<sup>1</sup> AI – Active Ingredient; <sup>2</sup> MOA – mode of action; <sup>3</sup> REI – Re-entry Interval; <sup>4</sup> DTH – Days to Harvest.

*(continued)*



## Labeled Insecticides for Control of Spotted Wing Drosophila in New York Berry Crops

*Compiled by Greg Loeb & Cathy Heidenreich for Empire State Producers Expo, January 22, 2013*

### CANE BERRIES

PRODUCT	AI <sup>1</sup>	EPA#	RATE	REI <sup>3</sup>	DTH <sup>4</sup>	COMMENTS
Entrust Naturalyte	spinosad	62719-282	1.25-2 oz/A	4 hr.	1 d	2(ee) required, after 2 consecutive applications rotate to different MOA <sup>2</sup> ; Organic product.
Entrust SC	spinosad	62719-621	4-6 fl oz/A	4 hr.	1 d	2(ee) required, after 2 consecutive applications rotate to different MOA <sup>2</sup> ; Organic product.
Delegate WG	spinetoram	62719-541	3-6 oz/A	4 hr.	1 d	2(ee) required, after 2 consecutive applications, rotate to different MOA <sup>2</sup> ; Min. treatment interval 4 days.
Brigade WSG	bifenthrin	279-3108	8-16 oz/A	12 hr.	3 d	Restricted use; 2(ee) required; minimum interval of 7 days.
Danitol 2.4EC	fenpropathrin	59639-35	16 fl oz/A	24 hr.	3 d	Restricted use; Not to exceed 32 fl oz per season
Triple Crown	bifenthrin, imidacloprid, zeta- cypermethrin	279-3440	6.4-10.3 fl oz	12 hr.	3 d	Restricted use; minimum interval 7 d; maximum per season 10.3 fl oz.
Malathion 8 Aquamul	phosmet	10163-169	2 pts/A	12 hr.	1 d	2(ee) required; only raspberries, blackberries, loganberries, dewberries, boysenberries.
AzaSol	azadirachtin	81899-4	6 oz/A in 50 gal	4 hr.	0	Organic product; limited effectiveness.

\*Refer to label for details and additional restrictions.

<sup>1</sup> AI – Active Ingredient; <sup>2</sup> MOA – mode of action; <sup>3</sup> REI – Re-entry Interval; <sup>4</sup> DTH – Days to Harvest.

*Reprinted from: Proceedings of the 2013 Empire State Producers EXPO, Syracuse, NY, January 22, 2012)*

**Possibilities for Financial Risk Management in Berries** - Sarah Johnston, Organic & Risk Management Specialist, NYS Department of Agriculture and Markets, [www.agriculture.ny.gov/ap/CropInsurance.html](http://www.agriculture.ny.gov/ap/CropInsurance.html), 518-457-4531

Crop insurance is created by the USDA Risk Management Agency. They provide for private insurance companies to sell what amounts to a nationally standardized insurance product for specific crops and also pay part of farmers' premiums. Crop insurance is available for those crops for which there is significant acreage in production. Consequently, in New York State, there is no crop insurance for any type of berry, but there is crop insurance for apples. Despite this, there are ways to provide some crop insurance-like protection if you chose to pursue obtaining it.

There are three possible ways to reduce the risks associated with berry production.

- You can pursue a written agreement, which is a crop-insurance equivalent that is based on federal crop insurance policies that already exist somewhere near New York State.
- You can purchase Non-Insured Assistance Program (NAP) coverage very inexpensively for \$250 per crop.
- You can insure your entire production using AGR-Lite, a whole farm insurance program that is based off the Schedule F of your tax return.

Over 6,000 acres of blueberries were insured by 63 producers in New Jersey last year. The New Jersey blueberry crop insurance policy can be used, with USDA approval, as the basis of a written agreement for acreage in New York. You must contact a crop insurance agent well in advance of the perennial crop deadline, usually November 20, to come up with a level of protection. The agent knows the procedure for seeking a written agreement.

NAP is a program that only begins to pay a portion of losses after a producer loses more than 50% of a specific crop. In the event of a total loss, a producer would receive 27.5% of the value of the NAP-protected crop. While this may not seem like much, in the event of a frost or flood event where a total loss occurs, it can be helpful to have a bit of cash-flow. NAP can be purchased from your county Farm Service Agency.

AGR-Lite was initially created as a program for diversified growers, where a special set of records was not going to be required by USDA. Instead, Schedule F would provide the basis for the protection. Since its inception, the program has never had more than 30 participants in any given year in New York. Now USDA RMA requires individual crop sales receipts on a day by day ledger basis. Some producers feel that this makes AGR-lite an unworkable option for their businesses.

For more information, visit the USDA RMA website and contact a crop insurance agent. USDA maintains a crop insurance agent locator on their website. Or contact your county FSA office for a list of agents. Or visit the NYS Department of Agriculture and Markets crop insurance website.

Risk management takes many forms. Pricing what kind of coverage is out there and how it might help in situations you have already encountered is an excellent way to think through the impacts of uncontrollable weather-related events on your business.

*(Reprinted from: Proceedings of the 2013 Empire State Producers EXPO, Syracuse, NY. January 22, 2012)*

**Editor's Note:** What follows is a series of 3 articles written by Mark Longstroth, Michigan State University Extension on the effect of winter cold on fruit crop production. While the articles' point of reference is Michigan fruit production, the information provided is applicable to NY fruit production also.

**Winter Cold Hardiness in Michigan Fruit Crops** - Mark Longstroth, Michigan State University Extension  
*Michigan fruit plants are well adapted to withstand a Michigan winter.*

**January 16, 2013.** The perennial fruits grown in Michigan can withstand most of the conditions of a Michigan winter. They withstand several months of temperatures below freezing and generally show little injury to the winter cold. They do this by becoming dormant and cold hardy.

In the fall, plants enter a dormant period called endo-dormancy (see the Michigan State University Extension article, "[Fall color show and winter dormancy in woody plants](#)"). During endo-dormancy, plants slowly accumulate chilling units to track the passage of time in the winter (see the MSU Extension article "Winter dormancy and chilling in woody plants" that follows below). When the plants are in endo-dormancy they acclimate to the cold conditions around them. The plant's basic cellular components and metabolism change to withstand cold and freezing. As colder temperatures become more common, the plants acclimate to the increased cold. Extreme winter cold will cause little or no damage if the plants, including trees, vines or bushes, are acclimated. Most acclimated fruit plants can easily withstand cold temperatures 10 to 20 degrees Fahrenheit colder than the temperatures they are experiencing. The maximum cold hardiness of Michigan fruit crops ranges from about 0 or -5 F for cold tender wine grapes to -35 F for cold hardy apples.

One of the reasons Michigan is such an outstanding fruit production region is Lake Michigan. One of the effects of Lake Michigan in the winter is to moderate the temperature of the cold air passing over it. Temperatures close to the lake are seldom below zero while

temperatures down to -10 or -20 F are common inland away from the lake. This is why cold tender fruits like wine grapes, peaches, blueberries and cherries are grown in the so called Michigan Fruit Belt along Lake Michigan's eastern shore. Under the moderating influence of Lake Michigan, winter cold seldom damages the crop, assuring regular harvests.

Sudden drops in temperature of 20 degrees or more may cause damage or winter injury (i.e., when the low temperature one night is 20 degrees colder than the night before). This is especially true if the cold snap is preceded by warm weather. When warm weather with temperatures above freezing occurs in the winter, the plants lose the extra cold hardiness they have accumulated. If warm temperatures occur before a cold snap, injury is more likely. Plants lose their enhanced cold hardiness and revert to what I call the base cold hardiness. This is the minimum hardiness that a plant has during endo-dormancy. The minimum cold hardiness of most Michigan plants is around 10 to 0 F, depending on the plant. My rule of thumb is that if we have one day when the temperature stays above freezing, we have lost a lot of our cold hardiness, and if we have 48 hours or more of warm weather above freezing, then most plants are at their minimum cold hardiness.

Renewed cold will cause the plant to reacquire its lost cold hardiness. Plants acclimate to the cold much more slowly than they lose their cold hardiness. While they can lose all their cold hardiness in a day or two, they only acquire 1 to 4 degrees of enhanced cold hardiness for every day below freezing. There is a maximum cold hardiness that a plant can attain and temperatures below this are damaging or fatal to the plant. There are also different levels of cold hardiness for different plant parts. Often flower buds are more susceptible to winter cold injury. For example, peach flower buds begin to freeze and die at -13 to -15 F and most are gone by the time the temperatures are below -16 F, but the tree itself is not damaged until the temperature drops below -20 or -25 F. This relatively wide range of injury varies for each plant species.



*The peaches in the foreground of this picture were damaged by winter cold that collected in the cold pocket in the low areas of the orchard. The temperatures were cold enough to kill the flower buds, but left the tree relatively undamaged. Photo credit: Mark Longstroth, MSUE*

During the winter, a plant in Michigan will gain and lose cold hardiness several times. The temperatures before a freeze are very important in determining if a given plant will be damaged. The worst conditions are when we have several days above freezing followed by a cold snap with temperatures dropping into the single digits or below zero. It is even worse if a second cold snap drops low temperatures well below zero. Temperatures into the negative teens make many growers nervous. Temperatures to -20 F or lower worry all fruit growers.

In almost 20 years of working with the Michigan fruit industries, I have seen widespread damage due to extreme winter cold only once in the winter of 1993-94 when temperatures fell -20 F and below. Injury is more likely to occur in the late winter after the chilling requirement has been met and growth begins. Once growth begins, the cold tolerance to the buds and shoots is dependent on their stage of development. (Reprinted from: [Michigan State University Extension News](#))

## Winter Dormancy and Chilling in Woody Plants *Mark Longstroth, Michigan State University Extension*

*A warm winter means woody plants will be ready to grow when the weather warms up.*

**January 16, 2013.** Since most plants do not grow during the winter, we say they are dormant. There are actually two types of dormancy during the winter. One is called endo-dormancy. In endo-dormancy, the plant will not grow even under good, warm, growing conditions. Endo is a Greek word meaning inside. In endo-dormancy, something inside the plants is inhibiting growth. The other is called eco-dormancy and occurs when the plant is ready to grow but the environmental conditions are not right, usually too cold. Endo-dormancy occurs first. Short days and freezing temperatures in the fall induce endo-dormancy in the plant. (See the Michigan State University Extension article, "[Fall color show and winter dormancy in woody plants.](#)")

As the plant enters endo-dormancy, it tracks chilling units to track the passage of the winter. Chilling units are hours of time spent above freezing. The number of hours required for chilling varies for different plants from less than 500 to 1,500 hours or more. Many people think the plant is tracking hours below freezing. It is not. Hours below freezing have no effect on chilling, but will increase cold hardiness. If warm weather occurs before the plant completes its chilling requirement, no growth occurs. Chilling and endo-dormancy normally prevent plants from beginning growth during warm spells in the middle of the winter. Not all hours above freezing are equal. Temperatures between 40 and 50 degrees Fahrenheit (5 to 10 degrees Celsius) are most effective. Temperatures just above freezing and above 50 F are less effective and temperatures above 60 F often have a negative effect on chilling.



*These peach buds (left) appear dormant, but have completed their chilling requirement and are waiting for warmer weather to begin growth. Photo credit: Mark Longstroth, MSUE*

Plants from the south or far north have relatively short chilling requirements. In the far north, it is below freezing for a long time and the spring warm-up is relatively short. Likewise winters in the south are short and mild. Plants from the middle temperate regions like Michigan have relatively long chilling requirements that keep them dormant through the long stretches when the temperatures cycle above

and below freezing in a Michigan winter. Most of the fruit crops we grow in Michigan have chilling requirements of 700 to 1,300 chilling units. We normally complete endo-dormancy here in Michigan in January, early January in the south and late January in the north. Of course, there are big differences between winters. Some are long and cold, others are warmer. The relatively warm winter we are experiencing in 2013 is allowing many plants to accumulate their chilling earlier than normal.

Another important thing happens during endo-dormancy. The plants are cold hardy. As long as the trees, bushes or vines are in endo-dormancy, they have the ability to acclimate to cold weather; we call this cold hardiness. As long as the temperatures are below freezing, the plants are ready for really cold temperatures. Maximum cold hardiness occurs when plants have been subject to cold, subfreezing temperatures for several days or more. As long as the plants are in endo-dormancy they have the ability to acclimate to colder temperatures and withstand winter cold.

After chilling is completed the plants are no longer in endo-dormancy. They are now in eco-dormancy. The plants are dormant only because of cold or cool weather. Warmer temperatures into the mid-40s will cause them to begin growth. Once the plants start to grow, they lose the ability to readjust to colder temperatures. There is usually a slow progression of development when the plant begins to grow as the temperatures slowly rise. Growth first becomes apparent when buds swell and then green tissue emerges from the bud. The plants actually begin growing before we notice the buds swelling. (Reprinted from: [Michigan State University Extension News](#))

## Forcing Cuttings to Determine the End of Dormancy in Fruits and Other Plants - *Mark Longstroth, Michigan State University Extension*

*Woody plants may be ready to grow. Forcing cuttings can tell you when dormancy is completed.*

**January 16, 2013.** Since most plants do not grow during the winter, we say they are dormant. There are actually two types of winter dormancy. One is often called endo-dormancy and is when the plants will not grow even if the conditions are warm enough for growth. The other is eco-dormancy and is when the plant does not grow because the conditions are too cold. Endo-dormancy typically prevents plants from growing during winter warm spells.

During endo-dormancy, plants accumulate chilling units when air temperatures generally are above 35 degrees Fahrenheit and below 50 F. Temperatures below freezing or warm temperatures above 55 or 60 F have little effect on chilling hour accumulation. The chilling hours required varies for different plants from 700 to 1,300 hours or more. Chilling and endo-dormancy normally prevent plants from beginning growth during warm spells in the middle of the winter.

The mild weather we have had this winter makes me think that some plants may have already completed their chilling requirement and are ready to start growing. The return of seasonably cold temperatures may keep growth from occurring. Once growth begins, the plant cannot increase its ability to withstand cold and can be injured by very cold weather. In the deep winter when plants are in endo-dormancy, they can become cold hardy to -10 or -20 F or below. Once growth begins, they lose the ability to withstand these extreme cold events.



*Left: There is no doubt these buds are swollen and the plant is growing. Photo credit: Mark Longstroth, MSUE*

According to Michigan State University Extension, there is one very easy way to know if endo-dormancy has been completed. You can take cuttings from the plants you are interested in and bring them inside to see if they will grow under warmer conditions. Collect several healthy shoots from the plants and place them in a vase or glass of water to provide consistent warm temperatures. If the buds begin to swell and grow within a week to 10 days, then you know the plants have completed their chilling requirement and warm weather will cause them to grow. You may need to do this several weeks in a row. I usually start collecting shoots in early to mid-January and generally see growth here in southwest Michigan in mid- to late January. Often the first time I see growth, the growth is ragged and

not all the buds break and start to grow. This indicates that not all the buds have completed their chilling requirement, but several have and are ready to grow.

*Right: It is hard to tell if these buds are swollen or not. Forcing them will give you an answer in a few days. Photo credit: Mark Longstroth, MSUE*



Once the plants have completed their chilling and moved into eco-dormancy, growth depends on the heat units they accumulate. If we get warm temperatures and growth begins, then the temperatures falling into the teens or below might cause damage. If you force some cuttings, you will have a good idea of how worried about winter cold you need to be. (Reprinted from: [Michigan State University Extension News](#))

### **Results from the 2012 Berry Pricing Survey - Marvin Pritts and Cathy Heidenreich, Cornell University Department of Horticulture**

In November 2012, Cornell CALS Dept. of Horticulture in conjunction with the NY Berry Growers' Association distributed a berry pricing survey to 500 commercial berry growers across the state. The purpose of the survey was to continue to make statewide berry pricing information available to commercial berry growers so they might better evaluate the economic returns of their various berry crops. Information collected would also give a picture of industry pricing trends since the initial survey conducted by the New York Berry Growers Association in 2006, along with a follow up survey conducted in 2009.

The 2012 pricing survey was the same as that used in 2009. Growers were asked to list prices they received during the 2012 season for four major berry crop commodities (strawberries, blueberries, brambles (raspberries, blackberries), and ribes (currants and gooseberries) – currently grown in NY State. There was also opportunity to include pricing information for other small fruit crops they might be marketing. Prices for berries marketed via pick-your-own (PYO), wholesale, and retail venues were requested. Growers were additionally asked to indicate whether or not they marketed their berries as value added products, and if they were organic producers.

117 growers responded from 39 counties, a 29% decrease over the number of berry growers responding in 2009 (Table 1). Onondaga, Oswego, and Wayne counties had the highest numbers of respondents with 8, 8, and 7, respectively. Of those growers responding, 12 indicated they were organic producers, more than double those organic producers responding in 2009 (5).

**Table 1. Numbers of survey respondents and counties represented for years 2006, 2009 and 2012.**

	2006	2009	2012
Total growers	48	162	117
Conventional growers	--	157	97
Organic growers	--	5	12
Counties represented	34	48	37

Fifty-seven percent of the respondents grew 2 or more berry crops. Of the 50 growers growing a sole berry crop, 32 grew blueberries alone, 12 grew only strawberries, 4 grew raspberries only, and 2 grew blackberries only.

Three producers indicated they were growing and marketing elderberries on a commercial scale; 1 producer indicated they were producing and marketing honeyberries commercially.

Forty-two percent of the responses were from farms with 3 acres or less of berries under production (Table 2). Farms with 4 to 10 acres of berries comprised 29 percent of respondents. 18 percent were from farms with 11 or more acres of berries under production; 11 percent of growers did not indicate farm size.

**Table 2. Farm size and number of representative respondents.**

Farm size (acres)	Number of growers responding	Percent
<1	25	21
1 to 3	24	21
4 to 6	23	20
7 to 10	10	9
11 to 20	11	9
>20	11	9
Acreage not designated	13	11
<b>Total</b>	<b>117</b>	

Thirty-five grower respondents indicated they marketed their crops through a single venue, with 14 marketing only through PYO, 2 marketing wholesale only, and 19 marketing only through retail sales. Seventy percent of growers responding used 2 or more marketing venues for their berry crops, primarily PYO and retail venues (Table 3). There were no significant changes in marketing venues observed between 2009 and 2012; numbers of growers using PYO, wholesale, retail and value-added sales remained relatively unchanged.

**Table 3: Comparison of commercial berry growers using various marketing venues 2006, 2009 and 2012 (percent).**

Year	PYO	Wholesale	Retail	Value-Added
2006	83	67	85	26
2009	70	39	81	23
2012	74	39	83	22

Blueberries displaced strawberries in the 2012 survey in terms of dominating the PYO, and retail marketing venues used by growers reporting. Blueberries and strawberries were very close in terms of wholesale venues with 26, 24 growers using this venue, respectively. June-bearing strawberries were second highest for all 3 venues, followed by summer raspberries, and fall raspberries, respectively.

**Table 4. Berry Crops by Marketing Venues, 2012.**

Berry Crop	Number of Growers Using Venue			Percent Growers Using Venue			Total Growers
	PYO	Wholesale	Retail	PYO	Wholesale	Retail	
Strawberry-June	44	24	55	39	39	89	62
Strawberry- Day Neutral	7	6	10	55	55	91	11
Summer raspberry (all)	29	13	38	25	25	75	51
Summer red raspberries	29	11	34	23	23	72	47
Black raspberries	18	8	18	33	33	75	24
Purple raspberries	11	4	11	31	31	85	13
Fall Red raspberries	26	9	28	24	24	76	37
Blackberry	13	9	22	32	32	79	28
Blueberry	53	26	58	35	35	78	74
Gooseberry	5	1	4	13	13	50	8
Currant (all)	6	0	5	0	0	63	8
Red currant	5	0	4	0	0	57	7
Black currant	6	0	5	0	0	63	8
Elderberry	1	0	3	0	0	100	3
Honeyberry	1	0	1	0	0	100	1

**Note:** Minimum and maximum price are determined by the report of a single farm, whereas the average price includes all farms in the survey.

#### STRAWBERRIES

63 growers from 37 counties reported June-bearing strawberry pricing with Onondaga, Erie and Suffolk counties having the highest number of respondents. Most growers marketed their strawberries through retail (90%) and/or PYO operations (72%). Strawberries held a smaller wholesale market share (39%). Average prices for the 3 marketing venues again showed modest gains for 2012 (Table 5). Prices ranged from \$1.00/lb. PYO to \$7.50/lb. retail.

12 growers from 12 counties reported pricing for day neutral strawberries with average pricing at \$2.91/lb. PYO, \$4.08/lb. wholesale and retail pricing at an average of \$4.53/lb. DN strawberry prices ranged from \$1.00/lb. PYO to \$8.00/lb. retail. Grower use of marketing venues for these closely mirrored those of June-bearing strawberries: Retail, 90%; PYO operations, 64%, and whole sale, 55%.

**Table 5: Comparison of 2006, 2009 and 2012 pricing for NYS Strawberries, \$/lb.**

	Minimum			Average			Maximum		
	2006	2009	2012	2006	2009	2012	2006	2009	2012
<b>PYO</b>	\$ 0.75	\$ 0.83	\$ 1.00	\$ 1.31	\$ 1.76	2.07	\$ 2.80	\$ 3.99	4.50
<b>Wholesale</b>	\$ 1.17	\$ 1.50	\$ 1.50	\$ 2.00	\$ 2.30	2.34	\$ 1.60	\$ 6.00	6.00
<b>Retail</b>	\$ 1.66	\$ 1.80	\$ 1.00	\$ 2.38	\$ 3.40	3.72	\$ 3.33	\$ 7.50	7.50

#### RASPBERRIES

Eighty-eight raspberry growers representing 36 counties responded. Orleans, Wayne and Yates counties had the most respondents. Raspberries were divided into summer and fall-fruited types. Of the 58 growers reporting, 21 grew exclusively summer-fruited varieties, 9 grew exclusively fall-fruited varieties, and 28 grew both types (Table 6a).

**Table 6a: Comparison of numbers of raspberry growers and types of raspberries grown, 2006, 2009, 2012.**

Year	Total growers	Summer-fruited	Fall-fruited	Both types
2006	34	8	8	18
2009	81	19	11	51
2012	88	21	9	58

**Note:** One item of interest from this year's survey was the number of growers reporting crop failure due to a new invasive species in NY, Spotted Wing Drosophila (SWD). Six raspberry growers took the opportunity to report via their pricing survey response cards they had experienced a complete crop loss in fall raspberries as a direct result of infestation by this pest. Late season summer raspberries, blueberries, blackberries and DN strawberries were also affected by this pest, as reported elsewhere. (Loeb and Heidenreich, 2012).

#### Summer-fruited Raspberries

Fifty-three individuals from 34 counties grew summer-fruited raspberries. A vast majority of summer raspberry growers marketed their crops retail (75%) in 2012. Fifty-seven percent marketed through PYO; 25% marketed wholesale. Average PYO prices for summer raspberries decreased slightly between 2009 and 2012, while wholesale and retail prices increased. Prices for summer raspberries ranged from \$2.00/lb. PYO to \$15.00 /lb. retail for the 2012 season (Table 6b).

**Table 6b: Comparison of 2006, 2009 and 2012 pricing for NYS summer raspberries, \$/lb.**

	Minimum			Average			Maximum		
	2006	2009	2012	2006	2009	2012	2006	2009	2012
<b>PYO</b>	\$ 2.00	\$ 1.67	\$ 2.00	\$ 2.72	\$ 4.12	\$ 3.92	\$ 3.64	\$15.33	\$ 9.50
<b>Wholesale</b>	\$ 2.44	\$ 2.00	\$ 3.30	\$ 5.04	\$ 4.33	\$ 6.14	\$ 7.11	\$12.00	\$ 12.00
<b>Retail</b>	\$ 2.00	\$ 1.50	\$ 3.00	\$ 7.09	\$ 5.31	\$ 7.32	\$13.33	\$13.51	\$ 15.00

As noted in previous survey years, there was some variation in pricing for the different types of summer raspberries (Table 6c). Purple raspberries were priced less for all three marketing venues as compared to red and black raspberries. Red raspberry prices ranged from \$2.00/lb. (PYO) to \$15.00/lb. (retail). Black raspberry prices ranges from \$2.00/lb. (PYO) to \$15.00/lb. (retail). Purple raspberry prices ranged from \$2.00/lb. (PYO) to \$11.2/lb.5 (retail).

**Table 6c: 2012 pricing for NYS red, black, and purple raspberries, \$/lb.**

(raspberry type)	Minimum			Average			Maximum		
	Red	Black	Purple	Red	Black	Purple	Red	Black	Purple
<b>PYO</b>	\$ 2.00	\$ 2.00	\$ 2.00	\$ 3.91	\$ 3.90	\$ 3.73	\$ 9.50	\$ 9.50	\$ 5.33
<b>Wholesale</b>	\$ 3.30	\$ 3.50	\$ 3.50	\$ 5.81	\$ 6.25	\$ 5.82	\$ 8.75	\$ 12.00	\$ 8.00
<b>Retail</b>	\$ 3.00	\$ 3.00	\$ 4.00	\$ 7.39	\$ 7.80	\$ 7.09	\$ 15.00	\$ 15.00	\$ 11.25

#### Fall-fruited Raspberries

Thirty-seven growers from 24 counties grew fall-fruited raspberries. One hundred percent of growers retailed their fall raspberries; 93% sold via PYO and 32% wholesaled in 2012. Average price for PYO fall raspberries fell slightly between 2009 and 2012 (Table 7). Average wholesale and retail prices increased for the same period. Maximum prices remained relatively stable for all three categories between 2009 and 2012.

**Table 7: Comparison of 2006 and 2009 pricing for NYS fall raspberries, \$/lb**

	Minimum			Average			Maximum		
	2006	2009	2012	2006	2009	2012	2006	2009	2012
<b>PYO</b>	\$ 2.00	\$ 1.67	\$ 2.00	\$ 2.99	\$ 3.88	\$ 3.81	\$ 5.82	\$ 8.99	\$ 8.99

<b>Wholesale</b>	\$ 2.44	\$ 1.77	\$ 3.00	\$ 5.21	\$ 4.79	\$ 5.53	\$ 8.00	\$12.00	\$ 12.00
<b>Retail</b>	\$ 2.00	\$ 1.50	\$ 3.75	\$ 6.93	\$ 6.54	\$ 7.66	\$12.00	\$13.51	\$ 15.00

### BLACKBERRIES

Thirty-eight reported pricing for blackberries from 20 counties across the state. Suffolk and Wayne counties had the highest number of county blackberry growers. Fifty-eight percent of growers reporting marketed their blackberries retail; 34% through PYO, and 24% wholesale. 2012 prices for blackberries in ranged from \$2.00/lb. wholesale to \$13.50/lb. retail (Table 8). Average pricing across the 3 venues increased approximately \$1.00/lb. over 2009 prices. **Note:** Data for this crop was not collected in 2006.

**Table 8: Comparison of 2006 and 2009 pricing for NYS blackberries, \$/lb.**

	Minimum		Average		Maximum	
	2009	2012	2009	2012	2009	2012
<b>PYO</b>	\$ 2.33	\$ 2.00	\$ 3.89	\$ 4.45	\$ 6.67	\$ 9.50
<b>Wholesale</b>	\$ 1.77	\$ 2.50	\$ 4.69	\$ 5.58	\$12.00	\$ 12.00
<b>Retail</b>	\$ 0.93	\$ 2.00	\$ 6.26	\$ 7.07	\$13.51	\$ 13.50

### BLUEBERRIES

74 growers from 31 counties reported pricing for blueberries. Onondaga, Oswego and Wayne counties had the highest number of respondents. Marketing for blueberries was split fairly evenly between PYO (72%) and retail (78%), with retail being slightly higher. Thirty-five percent of growers wholesale marketed. Average pricing for PYO, retail and wholesale venues rose only slightly in 2012; pricing for blueberries continues to fall short of those obtained for other berry crops in NY.

**Table 9: Comparison of 2006, 2009 AND 2012 pricing for NYS blueberries, \$/lb.**

	Minimum			Average			Maximum		
	2006	2009	2012	2006	2009	2012	2006	2009	2012
<b>PYO</b>	\$ 1.00	\$ 0.99	\$ 1.10	\$ 1.49	\$ 2.21	\$ 2.17	\$ 2.25	\$10.00	\$ 9.00
<b>Wholesale</b>	\$ 1.75	\$ 1.30	\$ 2.00	\$ 2.39	\$ 2.99	\$ 3.08	\$ 3.00	\$ 8.00	\$ 5.00
<b>Retail</b>	\$ 2.17	\$ 0.75	\$ 2.00	\$ 3.88	\$ 4.21	\$ 4.84	\$ 5.33	\$12.00	\$ 12.00

### RIBES (CURRANTS AND GOOSEBERRIES)

#### *Currants*

Ten growers from 5 counties reported pricing for currants with Wayne County having the most growers reporting. PYO and retail pricing both showed price increases of \$0.97/lb. and \$1.91/lb., respectively. Pricing was widely distributed with ranges from a minimum of \$2.00/lb. PYO to a maximum of \$9.75/lb. retail (almost a ten-fold increase). No wholesale marketing of currants was reported for 2012. (Table 10)

**Table 10: Comparison of 2006 and 2009 pricing for NYS currants, \$/lb.**

	Minimum		Average		Maximum	
	2009	2012	2009	2012	2009	2012
<b>PYO</b>	\$ 1.95	\$ 2.00	\$ 3.97	\$ 4.94	\$ 8.99	\$ 9.00
<b>Wholesale</b>	\$ 1.00	--	\$ 3.33	--	\$ 6.66	--
<b>Retail</b>	\$ 2.50	\$ 4.67	\$ 5.01	\$ 6.92	\$10.66	\$ 9.75

Red currants averaged \$4.11 and \$6.46/lb. for PYO and retail marketing, respectively. Black currants averaged \$4.96 and \$7.93/lb. for PYO and retail, respectively. **Note:** Data for this crop was not collected in 2006.

#### *Gooseberries*

Nine growers from 8 different counties reported pricing for gooseberries again with Wayne County having the most growers reporting. Gooseberries also enjoyed a wide distribution in pricing with ranges from a minimum of \$2.00/lb. wholesale and PYO to a maximum of \$9.00/lb. retail. Both PYO and Retail prices enjoyed an increase over 2009 pricing; wholesale pricing fell. (Table 11). Sixty-three percent of growers indicated they used PYO marketing for their gooseberries; 50% marketed their gooseberries retail; 13 percent wholesaled their gooseberries. **Note:** Data for this crop was not collected in 2006.

**Table 11: Comparison of 2006 and 2009 pricing for NYS gooseberries, \$/lb.**

	Minimum		Average		Maximum	
	2009	2012	2009	2012	2009	2012
<b>PYO</b>	\$ 1.99	\$ 2.00	\$ 3.40	\$ 4.17	\$ 8.95	\$ 8.99
<b>Wholesale</b>	\$ 1.67	\$ 2.00	\$ 3.89	\$ 2.00	\$ 6.66	\$ 2.00
<b>Retail</b>	\$ 2.50	\$ 4.00	\$ 4.84	\$ 6.29	\$10.66	\$ 9.00

#### *Elderberries*



Three growers from 3 counties (Jefferson, Oneida, and Onondaga) reported retail pricing for elderberries at an average of \$2.00/lb. PYO and \$3.33/lb. retail. NO wholesale marketing of this crop was reported in 2012. Interest in commercial elderberry production continues to grow in NYS.

**Table 12: Comparison of 2009 and 2012 pricing for NYS elderberries, \$/lb.**

	Minimum		Average		Maximum	
	2009	2012	2009	2012	2009	2012
<b>PYO</b>	\$ 1.99	\$ 2.00	\$ 3.40	\$ 2.00	\$ 8.95	\$ 2.00
<b>Wholesale</b>	\$ 1.67	--	\$ 3.89	--	\$ 6.66	--
<b>Retail</b>	\$ 2.50	\$ 2.00	\$ 4.84	\$ 3.33	\$10.66	\$ 5.00

*Honeyberries*

One grower reported PYO and retail pricing for honeyberries at \$3.99/lb. and \$8.00/lb., respectively.

**CONCLUSIONS**

The typical commercial berry farm has about 3 acres of berries. Berries are grown throughout the state and they bring a very high price per pound. Data from this survey indicate that the berry industry is holding its own despite the 2009 economic downturn. PYO and retail sales demonstrated modest to substantial price increases across the board in 2012 as compared to 2009; wholesale pricing remained relatively stable or decreased slightly. This data suggests there is room for further growth in both acreage and pricing. A word of caution however – growers planning to expand berry crop acreage need to be aware of, and have a management plan in place for Spotted Wing Drosophila. Existing management strategies for this new invasive species are adequate at best; more research is needed to strengthen management strategies and reduce risk from this pest.

Considerable variation in berry pricing across all marketing venues continues since the inception of the statewide berry pricing survey in 2006. The reasons for this variation remain uncertain. It has been postulated in the past that farms in more urban areas are able to receive higher prices for their berry crops, thus resulting in the widespread pricing variation observed. This hypothesis has not been supported by information collected in the 2006, 2009 or 2012 pricing surveys. Conversely, farms in rural areas were demonstrated to receive among the highest prices, suggesting that attention to quality and marketing has a high value to all consumers, irrespective of location.

Growers with pricing considerably below the state average are advised to consider raising their prices. Data collected from all 3 survey years suggest that price increases are warranted so long as fruit quality is high. Pricing below the state average price/lb. makes it difficult for other producers to receive fair prices.

Summaries from the 2006 and 2009 berry pricing surveys may be accessed from the NYS Berry Growers website at: <http://www.hort.cornell.edu/grower/nybga/>.

Many thanks to all the NYS Commercial berry growers who took the time to report their prices via our 2012 pricing survey. We hope this information is valuable to you as you set your prices for the 2013 season. Thank you!

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Questions or comments about the New York Berry News?

Ms. Cathy Heidenreich, Cornell University Dept. of Horticulture, 630 W. North Street, Geneva, NY 14456

Phone: 315-787-2367 Email: [mcm4@cornell.edu](mailto:mcm4@cornell.edu)

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