



# New York Berry News

CORNELL UNIVERSITY

Volume 07, Number 12

December 15, 2008



## What's Inside

### 1. Currant Events

- a. Agro-One Soil and Plant Analytical Laboratory
  - b. Northeast Region IR-4 Analytical Lab in Geneva to Reorganize
  - c. Extension IPM Programs Threatened
  - d. Certis to Distribute Bionematicide
  - e. Essex County High Tunnel Raspberry Grower Receives National Award
  - f. Ontario Fruit and Vegetable Convention
  - g. Ontario Berry Growers Meeting
  - h. Farm and Ranch Irrigation Survey to be Conducted
  - i. New Farm and Ranch Online Planning Tool
  - j. Project Launched to Give Mid-Atlantic Growers a Boost
- ### 2. Berry Compound Reduces Aging Effect - Rosalie Marion Bliss
- ### 3. Best Management Practices for Ribes - Cathy Heidenreich
- ### 4. Berry Disease of the Month: Strawberry Leaf Spot - Kerik Cox
- ### 5. Review of Strawberry Fertilization - Molly Shaw

**N**ow that everyone has finally been able to shake the dust of the 2008 season off their feet its time to rest and regroup!

Plenty of time during those long winter naps to put on your thinking caps and dream of the 2009 season improvements and innovations. Take time to jot the 2008 season down on paper – what worked, what didn't, what to do differently next season, what to keep status quo.

The December issue offers the first of a monthly series of articles by Kerik Cox focusing on berry diseases.

Another first is a series of articles on berry best management practices from the 2007 Berry Grower survey many of you participated in. This month we are looking at currants and gooseberries.

Watch for blueberries (January), raspberries and blackberries (February) and strawberries (March) in the months to come.

And finally, hold on to your hats! An action packed educational line up is in the works for Winter/Spring 2009. Dates and details to come in the January issue.



**Happy Holidays  
and  
Wishes for a  
Berry Prosperous 2009!**

## CURRENT EVENTS

**January 17, 2009.** *Introduction to Berry Growing-* Cayuga County Cooperative Extension, Auburn, NY. Morning Session 9:00 AM- 12:00 noon. Registration is \$10. For more contact Peggy Lillie, CCE Cayuga County, 248 Grant Avenue, Auburn, NY 13021, 315-255-1183.

**Feb. 3-5, 2009.** *Mid-Atlantic Fruit and Vegetable Convention*, Hershey Lodge and Convention Center, Hershey, PA. For more information contact William Troxell at 717-694-3596 or visit [www.mafvc.org](http://www.mafvc.org).

**Feb. 10-12, 2009.** *Empire State Fruit and Vegetable EXPO and Becker Forum*, Liverpool Holiday Inn and OnCenter, Syracuse, NY. Berry session Thursday, November 12, 2009. For more information, visit <http://www.nysaes.cornell.edu/hort/expo/> or contact Jeff and Lindy Kubecka, New York State Vegetable Growers Association, PO Box 70, Kirkville, NY 13082 or email [nysvga@twcny.rr.com](mailto:nysvga@twcny.rr.com).

**February 17-18, 2009.** *Ontario Berry Growers Annual Meeting*, St. Catharines, Ontario, Canada. See news brief and agenda below for details.

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

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

## **AGRO-ONE SOIL AND PLANT ANALYTICAL LABORATORY**

**C**ornell University and Dairy One are planning to combine their strengths to provide soil and plant testing services to farmers and farm advisors. Cornell University's College of Agriculture and Life Sciences and Dairy One Cooperative, Inc. are collaborating through Agro One to insure that farmers and farm advisors in New York and the Northeast continue to have high-quality soil, plant tissue, and nutrient laboratory testing services available to them now and into the future. Additionally, the collaboration will provide a mechanism for delivery of new analytical services and systems in the future.

Through this collaboration, Cornell will move its routine soil and plant tissue analysis to the Agro One laboratory housed at Dairy One's Ithaca facility. This allows Cornell to focus on soil and plant research and the development of innovative analytical methods, while Agro One will focus on providing routine soil and plant tissue analysis to farmers and their advisors. Agro One will provide soil and plant tissue testing services as have been available through the Cornell Nutrient Analysis Laboratory along with additional analytical services. Key input regarding analytical methods and quality control will be provided by Cornell, and Cornell nutrient management recommendations will continue to be provided through Agro One. Stakeholders will therefore continue to receive the same services as in the past.

Agro One will bring together the strengths of Cornell's knowledge and research in agronomy and horticulture with Dairy One's industry-leading analytical capabilities and customer service. The Dairy One sample transportation system that blankets the Northeast will become available for soil and tissue samples being submitted to the Agro One lab. Agro One will also provide an expanded set of analytical data for use by Cornell researchers.

The move away from providing commercial laboratory services is consistent with Cornell's focus on research and spinning off commercially-viable technologies to the private sector. Freeing up resources previously dedicated to commercial soil and plant tissue lab services will allow Cornell to enhance its research capabilities while improving the amount of data available through Agro One.

There are many logistical issues to be worked out in the coming weeks. Cornell and Dairy One are committed to making a smooth transition for farmers, farm advisors, extension educators, and Cornell personnel.

Dairy One Cooperative, Inc. is a 501 (c) 5 educational not-for-profit cooperative that provides dairy herd improvement services (DHIA) and software to dairy farmers in 13 northeast U.S. states and analytical services for forage, milk, water, soil, and manure to customers in the U.S. and around the world.

## **NORTHEAST REGION IR-4 ANALYTICAL LAB IN GENEVA TO REORGANIZE**

*Ted Boscia, Staff Writer, CALS Communications, Ithaca, NY*

**D**ue to federal funding constraints, the USDA's Interregional Research Project No. 4 (IR-4) Northeast Regional Analytical Laboratory at the Experiment Station in Geneva is being reorganized. IR-4 field research trials in Geneva will continue, but laboratory analysis is being shifted to other IR-4 labs.

The IR-4 Project enables specialty crop producers in the Northeast to secure EPA registration of safe, alternative pest management tools for minor crops like fruits, vegetables and herbs through field trials and laboratory analysis.

"We want to assure our stakeholders that the reorganization of the IR-4 analytical program does not jeopardize the productivity of the IR-4 Project as a whole," said David M. Soderlund, professor and chair in Cornell's department of entomology at Geneva, who directs the NE Region IR-4 Program. "The NE IR-4 program in Geneva will continue to conduct specialty crop field studies, but the analysis of field samples is being shifted to other IR-4 units. The reorganization will allow us to continue serving U.S. specialty crop growers and make better use of scarce resources." Reorganization of the Geneva IR-4 lab will occur over the next three years. For the 2008 fiscal year, lab operations will be unaffected and researchers will continue to analyze samples from previous field trials. In 2009, the lab will be funded to complete ongoing research but new samples will be sent elsewhere for analysis. In 2010, all analytical work will cease, but field operations in the NE Region will continue to be managed from Geneva.

As a result of the reorganization of the Geneva lab, seven staff positions will be eliminated over time. Laboratory staff learned of the decision in July. Cornell is working to create opportunities for the affected employees, while IR-4 administrators are seeking to identify comparable positions at the program's three remaining labs that are located at the

University of California-Davis, Florida State University, and Michigan State University. Headquarters for the IR-4 Program is at Rutgers.

The USDA partnered with four land-grant institutions in the 1960s to form IR-4 in response to increasingly stringent federal pesticide controls that created financial and practical barriers to minor crop producers. Companies that develop, register, and market crop protection chemicals do not view the relatively small markets associated with specialty crops as priority business objectives because of the limited potential economic return on investment. The IR-4 Project's four regional labs and field research centers in 25 states produce the analytical data required for EPA approval of new uses of pesticides and biopesticides on specialty crops.

"The lab in Geneva has been operational since 1972 and has provided expert analysis from many skilled scientists and technicians," said Jerry Baron, executive director of the IR-4 Project. "Losing this expertise and dedication made our decision very difficult."

## **EXTENSION IPM PROGRAMS THREATENED**

### *WSSA Asks Congress to Rescind Farm Bill Change That Threatens Extension Integrated Pest Management (IPM) Programs*

**T**he Weed Science Society of America (WSSA) has petitioned Congress to rescind a last-minute change to the recently approved 2008 Farm Bill that threatens Extension Integrated Pest Management (IPM) Programs throughout the United States.

Extension IPM programs run by the nation's land grant universities make an essential contribution to the common good. They provide training and advice to help us protect our food supply, minimize human health risks, promote judicious pesticide use, conserve environmental resources and improve the profitability of the nation's farmers.

Historically, this national network has been funded by the Farm Bill at an average of approximately \$135,000 per state each year. This modest investment produces far-reaching results by enabling a nationwide IPM infrastructure that supports seamless information sharing and knowledge transfer.

But a last-minute amendment to the 2008 Farm Bill threatens the very existence of many of the extension programs that support farmers and homeowners across the country. For the first time in the 30-year history of Extension IPM, funds will not be allocated to universities in each state on a proportional basis. Instead, a limited number of grants will be awarded competitively by the Secretary of Agriculture.

This change erodes the national nature of the IPM network and is expected to leave entire regions of the country without the grower training and outreach needed to manage pests and weeds effectively or to address problems that are unique to a particular region or locale.

"The new funding model reduces our capacity to respond quickly and effectively to emerging pest threats," said Lee Van Wychen, WSSA science policy advisor. "That means critical expertise will wither away in states that lose funding, leaving entire regions of the country vulnerable to insects, diseases and weeds that know no geographical boundaries."

Visit the Weed Science Society of America's website (<http://www.wssa.net>) for further background on the change and what you can do to help. Or contact: Lee Van Wychen, Director of Science Policy for the Weed Science Society of America, [Lee.VanWychen@wssa.net](mailto:Lee.VanWychen@wssa.net), 202-746-4686

## **CERTIS TO DISTRIBUTE BIONEMATICIDE**

*Rosemary Gordon, Senior Managing Editor, American Vegetable Grower Crops & Markets*

**C**ertis USA has been granted the marketing and distribution rights to sell MeloCon bionematicide in the U.S. by its manufacturer Prophyta GmbH, Germany.

MeloCon contains spores of the naturally occurring fungus *Peacilomyces lilacinus* and controls several species of nematodes in vegetable, fruit, and tuber crops where currently available nematicide options are being restricted or phased out. MeloCon will be available in early January 2009. California registration is pending.

Prophyta is a pioneer in the development of biological control organisms that are used worldwide in both conventional and organic farming. The company discovered that the PL 251 strain of the *Peacilomyces* species (MeloCon) is strongly

parasitic to all stages of development of common plant-infecting nematodes, in particular the eggs. It is especially effective in controlling cyst, lance, citrus, reniform, and root-knot nematodes. It is estimated that the root-knot species, alone, is responsible for 5% of all crop losses worldwide.

*(Reprinted with permission from: American Vegetable Grower Enews, December 11, 2008.)*

## ESSEX COUNTY HIGH TUNNEL RASPBERRY GROWER RECEIVES NATIONAL AWARD

**C**OLD SPRING. Glynwood, a not-for-profit organization that helps communities save farming and conserve farmland by empowering them through educational and community-based agricultural initiatives, honored the winners of its sixth national Harvest Awards on Monday, Oct. 27 at Beacon restaurant in New York City.

The Harvest Awards were created by Glynwood in 2003 to highlight the creative work by individuals and organizations from across the country that do an exceptional job of supporting local and regional agriculture and increasing access to fresh, healthy food. The awards help to identify and promote best practice ideas with the goal of inspiring others to take action within their own communities and build urban-rural coalitions in support of regional farms.

This year's winner of the Glynwood Farmer Award is Robert Hastings, the farm manager at Rivermede Farm in Keene Valley. Recognized for his exceptional agricultural innovations and his community leadership, he has pioneered advances in season extension, creating techniques that have extended his short growing season to a year-round operation using 10 greenhouses and high tunnels to grow vegetables and fruits. This year he installed a photovoltaic system for the farms electrical needs and is finishing plans to heat the greenhouses with a geothermal system.

In 1885, the NYS Forest Commission asserted that the Adirondack region, as a whole, was utterly unfit for agricultural purposes. Rob Hastings is proving them wrong. He has pioneered advances in season extension, using hoop houses, high tunnels, row covers, wind breaks, zip covers and walls of water, to create a year-round operation, in spite of the Adirondacks short growing season.

Rivermede is managed without pesticides or chemical fertilizers. Some of the innovations that make this possible are based on what Rob learned during the six years he spent at Penn State specializing in tissue culture. He is also drastically reducing energy use on the farm.

Rob's impact reaches beyond his own community. He has been a leader in the effort to create Adirondack Harvest as a regional brand and to create a network of regional growers that now involves 227 farmers along with 54 restaurants and stores in 8 counties, helping improve the economic viability of the entire farm community.

His most recent project is creation of a farm store that provides an outlet for other farmers' products as well as his own and that educates customers about the importance of supporting local farms.

Rob Hastings is an example of how a great grower, with passion and commitment, can have an impact that extends far beyond his or her own fences.

*"My photovoltaic panels are online and the geothermal heating project should be finished by next summer. My hope is to be independent of oil within two years." Rob Hastings, Rivermede Farm*



Rob Hastings in his raspberry tunnel that helps produce delicious berries in the cold Adirondack climate (top). Hastings' new farm store that features locally grown products from his and other farms (bottom).



February 18 & 19, 2009 | Brock University | St. Catharines, Ontario  
 Canada's Premier Horticultural Event

**T**he 2009 edition of the Ontario Fruit & Vegetable Convention, Canada's premier horticultural show, will take place on February 18 and 19 at Brock University in St. Catharines, Ontario.

Highlights include:

- Speakers from across Canada and the United States
- Two full days of learning sessions covering key horticultural issues
- Great networking opportunities with fellow growers and industry experts
- Trade show featuring industry leading suppliers
- Fine Food & Wine evening reception

The Fine Food and Wine event, an evening of food, wine and great networking, is being held Wednesday, February 18 from 5:30 to 8:00 p.m.

**BONUS!** Pre-register by February 10 and receive FREE Lunch and Fine Food & Wine ticket. On-site registrations will include sessions and tradeshow access only.

(More information on the berry session here? Also include information on the OBGAs meeting here as well?)

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

## ONTARIO BERRY GROWERS ASSOCIATION – ONTARIO FRUIT AND VEGETABLE CONVENTION BERRY PROGRAM



**Tuesday, February 17, 2009 - Four Points Sheraton Suites**

9:30 a.m.	32R14 and F1 hybrids	Adam Dale, University of Guelph
10: 00a.m.	Grower Profile	Steve Polter, Polter Berry Farms, Ohio
10:45 a.m.	New Products For Berry Growers Part 1:	Company representatives
	• Allegro, Tanos, Serenade, Switch, Topas, Pristine	
11:45 a.m.	OBGA Annual Meeting	
1:15 a.m.	Modified Atmosphere Storage Systems For Berry Crops	Charles Forney, Agriculture and Agri-Food Canada
1:45 p.m.	Advances In Sprayers For Row Crops	Jason Deveau, OMAFRA
	Air Assist, Air Curtain And Low Drift Spray Nozzles.	
2:15 p.m.	Sprayers For Raspberries And Blueberries	Panel (John Cooper, Bill Parks, Paul Ralph)
3:00 p.m.	Round Table Discussions	Join 3 of the 5 discussions, 30 minutes per round
	• Varieties	
	• Row Covers	
	• Tricks With Sinbar And Other Weed	

- Management Strategies
- Food Safety Resources And Funding For Ontario Growers:
- Improving Shelf Life

4:30 p.m. Labour Issues LICC representative

7:30 p.m. OBGA Social Time

### ***Wednesday, February 18, 2009 - Brock University***

9:30 a.m.	New Products for Berry Growers Admire, Delegate, Surround, Aim Others TBA	Panel Moderator, Hannah Fraser, OMAFRA
10:00 a.m.	Managing Two-Spotted Spider Mites In Strawberries With Predatory Mites	Bernie Solymar, Earth Trampler Consulting
10:30	Raspberry Pest Management: New Products + New Pests = New Strategies	Pam Fisher, OMAFRA
11:00 a.m.	Using Cover Crops To Control Nematodes	Mike Celetti, OMAFRA
11:30 a.m.	All About Flavour: What Makes It, Can You Improve It	Charles Forney , Agriculture and Agri-Food Canada
12:00 -2:00	Lunch	
2:00 p.m.	Flower Bud Initiation In Strawberries	Adam Dale, University of Guelph
2:30 p.m.	Using High Tunnels And Other Techniques For Season Extension Of Berry Crops	Brad Bergefurd, Ohio State University Extension
3:00 p.m.	Can Your Product Be Traced Back	Andrew Watt, OMAFRA
3:30 p.m. – 4:30 p.m.	Containers: Finding A Lid That Works Panel Discussion	Panel Moderator: Andreas Boecker, University of Guelph

## **FARM AND RANCH IRRIGATION SURVEY TO BE CONDUCTED**

**T**he U.S. Department of Agriculture will soon conduct the Farm and Ranch Irrigation Survey as a follow-up to the 2007 Census of Agriculture. By providing a single source of comprehensive, up-to-date information on irrigation and water use across the agricultural industry, this survey will aid in efforts to promote efficient irrigation practices and ensure long-term sustainability of water resources.

USDA's National Agricultural Statistics Service (NASS) will survey farm and ranch operators to gather data on land and water use, crop acreage and yield, application methods, equipment, facilities and expenditures. For the first time, NASS will also collect supplemental information on irrigation use among nursery and greenhouse operations. These operators will be asked about irrigated area by horticultural crops grown, water use, application methods and value of sales. The survey will be mailed on January 12, 2009. Survey results will be available November 30, 2009.

We safeguard the confidentiality of all survey responses," says Stephen Ropel, Director of the New York Field Office. "Data about individual operations are used only in conjunction with information from other producers." The National Agricultural Statistics Service is even exempt from the Freedom of Information Act, so producers can be guaranteed that their individual data will not be released to any person or any other agency. All agricultural statistics published by NASS are available free of charge at [www.nass.usda.gov](http://www.nass.usda.gov). For more information, call 1-800-821-1276.



## **NEW FARM AND RANCH ONLINE PLANNING TOOL: FARM-RISK-PLANS.USDA.GOV**

**W**ASHINGTON, Nov 4, 2008 - USDA's Risk Management Agency (RMA) has launched an online resource to aid farmers and ranchers in focusing on how to protect against down-side risks, as well as how best to take advantage of up-side opportunities in the market.

The new resource, a sub-site of the RMA Web site called [Farm-Risk-Plans.USDA.gov](http://Farm-Risk-Plans.USDA.gov), allows producers to complete a risk management checklist, identify their enterprise's strengths, weaknesses, opportunities, and threats, and explore a wealth of risk management information.

The new resource features four modules: [Risk Management Planning](#), [Better Marketing Planning](#), [New Enterprise Planning](#), and the [Farm Planning Library](#). Each contains the best available information, consolidating resources from leading Land Grant Universities and government agencies.

Producers are able to complete two exercises online which give them a novel look at their risk management situation. First is the Risk Management Checklist, a three-page list of questions to stimulate conversation among the family or leadership team of any farm or ranch operation.

The second is a Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis, a commonly used planning exercise in the business world, recognizing that small- to medium-sized farms are serious businesses which must use the same tools as any other modern business.

The team that developed this project together over the past year includes farmers, Extension educators, and risk management education consultants, as well as the head of the National Agricultural Law Center at the University of Arkansas and RMA professionals.

## **PROJECT LAUNCHED TO GIVE MID-ATLANTIC GROWERS A BOOST**

*David Eddy, Senior Western Editor, American Vegetable Grower Crops & Markets*

**W**ith consumers increasingly demanding food that is safe, nutritious, and locally grown, the Mid-Atlantic specialty crop industry is sure to grow, say Penn State researchers, who believe that maximum growth will depend on collaboration among different parts of the industry from the grower through the processor and marketer to the consumer, and also involve institutions of higher learning to provide science-based innovations and an educated workforce. The university's College of Agricultural Sciences is responding to this need by developing a Mid-Atlantic network of producers, processors, wholesalers, retailers, researchers and educators to form a coalition to address strengths and weaknesses in the specialty crop food industry.

According to Kathleen Kelley, project coordinator and associate professor of horticultural marketing and business management at Penn State, consumer demands are increasing as well as rising transportation costs for producers in California, Florida and the southern hemisphere countries who supply fresh fruits and vegetables to the Mid-Atlantic region. "This is creating a tremendous opportunity for specialty crop producers in the Mid-Atlantic, but we need to have research, education and extension programs in place to support them."

That's why Kelley and other Penn State experts in horticulture, plant pathology, entomology, agricultural economics, and food sciences are teaming up with industry to assess changes in consumer's purchasing and eating habits and the impact of those changes on industry opportunities. "Many growers and others in the food industry don't have access to consumer buying trends and how they will impact their businesses," Kelley explains. "The goal of this project is to get the data to network members so they can make more informed business decisions."

The project is being funded by a USDA Specialty Crop Research Initiative grant, whose goal is to solve critical specialty crop agriculture issues, address priorities and solve problems through multifunctional research and extension. For more information about the program, visit [www.csrees.usda.gov](http://www.csrees.usda.gov).

*(Reprinted with permission from: American Vegetable Grower ENews, November 20, 2008)*

# BERRY COMPOUND REDUCES AGING EFFECT

*Rosalie Marion Bliss, Public Affairs Specialist, Room 1-2226-B, 5601 Sunnyside Ave., Beltsville, MD 20705-5129, 301-504-4318, [Rosalie.Bliss@ars.usda.gov](mailto:Rosalie.Bliss@ars.usda.gov)*

**D**ecember 11, 2008. In a new study, aged laboratory animals that ate a diet rich in the berry and grape compound pterostilbene performed better than those in a group that did not eat the enriched diet, scientists with the Agricultural Research Service (ARS) have reported. Pterostilbene reversed measurable negative effects of aging on brain function and behavioral performance.

Neuroscientist James Joseph, psychologist Barbara Shukitt-Hale and colleagues at the Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University in Boston, Mass., collaborated on the study with chemist Agnes Rimando of the ARS Natural Products Utilization Research Laboratory in Oxford, Miss.

The study was published recently in the *Journal of Agricultural and Food Chemistry*. For the two-part study, the researchers wanted to determine if pterostilbene would be effective in reversing the effects of aging on mature rats.

For the first part of the study, they tested seven stilbene compounds in cell cultures and found that pterostilbene was the most effective at preventing oxidative stress. For the second part of the study, they fed aged rats one of three diets: control, or control adjusted to include either low or high concentrations of pterostilbene.

The results indicated that in aging rats, pterostilbene was effective in reversing cognitive decline and that improved working memory was linked to pterostilbene levels in the hippocampus region of the brain.

The study results are the latest in a series of ARS cell culture and animal model studies published in the last decade that shed light on relationships between various dietary components and brain function while aging. The authors noted that there are additional berry compounds showing similar potential, which they continue to investigate in animal and cell models.

A bowl of berries is a treat for the eye as well as a delight for the palate. But these tasty little morsels happen to be quite tricky to grow, harvest, and handle. These crops tend to have brief growing seasons and are vulnerable to insects, disease, and even birds, so ARS scientists have given them lots of attention. *(Photo by Scott Bauer)*

Take strawberries. In the 1950's, ARS actually saved the strawberry industry in the Great Lakes region when we released the first varieties that could survive red stele, a root-rotting fungus. We're also old hands at strawberry breeding. ARS came up with such June-bearing favorites as Earliglow, a sweet and juicy berry with a wonderful flavor. We've also bred berries that bear fruit from spring until well into the fall like Tribute and Tristar, which have brought new market opportunities to Northwest strawberry growers.

Fifteen years ago, blueberries were practically nonexistent in the Gulf States. But our early-ripening varieties have extended highbush blueberry culture to the Deep South. Today, over 10,000 acres are grown in Dixie, with more than 4,000 acres thriving throughout Texas, Louisiana, and Alabama.

In the Pacific Northwest, where most of our red raspberries are grown, Willamette, a 1943 release, still accounts for 40 percent of the red raspberry acreage.

And, when USDA blackberry breeders introduced the first truly genetic thornless blackberries, Thornfree and Smoothstem, they caused a small roadside revolution. The new varieties were just what some growers needed to establish pick-your-own operations.

*The researchers followed protocols approved by the Frederick, Md.-based [Association for Assessment and Accreditation of Laboratory Animal Care International](#) and a Boston, Mass.-based Internal Animal Care Review Committee.*

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





# BEST MANAGEMENT PRACTICES FOR SMALL FRUIT: - RIBES

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

This is the first article in a series detailing results of a NYS Berry Grower Survey conducted November 2007, as part of the 2007-2009 NYFVI Berry Production Efficiency Project. Survey participants were asked to identify management practices giving them the best production efficiency for various small fruit crops. Best management practices information collected from 89 growers across 37 NYS counties has been tabulated and will be shared through this series. Ribes is the crop for discussion in this month's installment. Watch for blueberries in January, raspberries and blackberries in February, and strawberries in March, 2009.



## *Ribes in NYS – A Brief History*

Currants, gooseberries and Jostaberries (known collectively by their genus name Ribes) are somewhat of an anomaly as they are a relatively old crop and a relatively new crop for New York State. Their commercial production in the US (and NY) dates to the early 20<sup>th</sup> century when they were widely cultivated. More than 7,000 acres of commercial Ribes were in production during that period. Their value was recorded to be more than \$1.4 million in 1919. New York, with almost half of the US acreage, was cited as the leading producer of currants during that time. Unfortunately, the introduction of white pine blister rust from Europe brought Ribes production to a sharp halt in 1935. As alternate host to this serious fungal disease of pines, Ribes were federally banned from all commercial production due to the potential threat to valuable timber resources. Commercial plantings were ripped out and destroyed. Eradication programs were put into place to restrict/eliminate wild populations.

The development of resistant pine and ribes varieties led to a repeal of the federal ban on their production in 1966. New York, however, with its rich Adirondack timber resources, continued to maintain the planting ban at the state level. The regulation on growing *Ribes* species in New York was revised in 2003 permitting small fruit growers the opportunity to again engage in commercial Ribes production. Some restrictions still apply. For more information see NYSDEC regulations located at: <http://www.dec.ny.gov/regs/4079.html>.

## *Plant Establishment, Weed Management, and Fertilization*

There was a clear consensus among those NYS growers producing Ribes that they were an “easy-breezy” berry crop, requiring very little if no care, easy to establish and to propagate. One grower commented, “They are hard to kill. Just take cuttings from your best plants, put them in the nursery, and after they root, plant ‘em.” Growers indicated they had success with both spring and fall planting of Ribes. Currants are probably the most easy to establish/propagate of the 3 species of ribes.

Perhaps one of the best, but most overlooked ways to improve Ribes production efficiency is to spend some serious time in site selection prior to planting. They perform best on deep loam soil with good water holding capacity, large amounts of organic matter, and a pH range between 5.5 to 7.0. While Ribes tolerate a wide range of soils, best production is achieved on this type of soil. It is not advisable to plant Ribes on heavy clay soils, especially those with poor soil drainage. Ribes also require sites with adequate air drainage. Sites with good air drainage reduce the potential for losses from frost damage, freeze injury, and disease.

All grower respondents highlighted the importance of pre-plant site preparation. This should begin *at least* one year before planting. Goals for pre-plant site prep include improving drainage, correction soil nutrient deficiencies, adjusting pH, eliminating perennial weeds, and reducing potential pest and disease problems. Research has shown that addition of large amounts of organic matter to soil preplant is beneficial. This type of soil amendment may take many forms. Perhaps the easiest/least expensive to implement is the use of a green manure crop, grown and tilled under the summer prior to planting. Recommendations for green manure crops for Ribes include: buckwheat, barley, clover, vetch, oats, beans, peas or rape. Other options for increasing soil organic matter include incorporation of well-rotted/composted farmyard manures, straws, bark, and/or sawdust. If these materials are used, supplemental nitrogen applications may be needed to improve microbial breakdown of these types of amendments.

Preplant weed control with a glyphosate product (Roundup) was frequently recommended by growers to reduce perennial weeds. Many use mulch (with or without underlying landscape or greenhouse fabric) for help in suppressing weeds after planting. Various types of mulches were used ranging from wood chips and saw dust to composted sheep manure and straw. Weed control in the alleyways most often consisted of planting permanent sod row middles which were mowed periodically during the season. Other post plant weed control methods included hand weeding of berms and herbicide applications. Most herbicide products were applied in spring, often as tank mixes: Casoron/Poast, Surflan/Princep, Simazine/Solicam.

In terms of fertilization after planting, opinions were mixed on when best to apply products. Calcium nitrate was the product of choice for most respondents, followed by balanced fertilizers ( i.e. 10-10-10 or 19-19-19), and manures (composted sheep manure was cited in one instance – the more the better!).



Preplant site prep for Ribes –Berms with fabric weed barrier (4 ft x 12 in). Mulch application equipment.



Wood chips are applied to a depth of 4-6 inches.

Plants are set through holes cut in fabric.



Irrigation lines are laid over top of mulched berms.

Black currants 2 years later.

### *Pest Management*

Most growers responding to this section of the survey felt diseases were not a problem in Ribes plantings. Disease problems reported included rust, powdery mildew, and anthracnose. Various control products were used (if need be) for management of these diseases. Where a virus disease was found, the infected plant was removed and destroyed. Rovada was thought to be a red currant variety with less disease issues than other red currants.



White Pine Blister rust (WPBR) on gooseberry.



WPBR on susceptible black currant.



Powdery mildew on gooseberry fruit.



Powdery mildew on red currant leaves



Gooseberry leaf spot



Red currant leaf spot

The same respondents felt insects were not a serious problem in Ribes plantings. Insect problems reported included currant aphid and imported currant worm.

Currant aphid is most common on red and white currant, and may sometimes be found on gooseberry. The leaves of infested plants are cupped, galled, distorted, and discolored; the upper leaf surfaces are most seriously affected. Honeydew excreted by the aphids covers the foliage and fruit with a sticky coating.

Imported currant worm is not a widespread problem throughout the state, but may be very serious when it occurs, with up to 3 generations per year possible. The full-grown larva is 1.5 inches long; it is green with yellowish ends, has a black head, and is covered with black spots. Shortly after the leaves are out in the spring, the worms feed first in colonies and later singly, voraciously stripping the plants of foliage. A second brood occurs in early summer, and a partial third brood may appear depending on the weather.

Malathion may be used to control both insects; currants aphid may also be controlled by using imidacloprid, pyrethrin, or acetamiprid (Assail).



Currant aphid damage on black currant.

## **BERRY DISEASE OF THE MONTH: STRAWBERRY LEAF SPOT**

*Kerik Cox, Department of Plant Pathology, Cornell University's New York State Agricultural Experiment Station, Geneva, NY 14456*

**What is it?** Common leaf spot is a ubiquitous foliar disease of strawberries. The disease is found in almost every New York strawberry planting.

**What causes it?** The disease is caused by a fungus called *Mycosphaerella fragariae*. This fungus survives in dead infected plant litter as hard black structures called sclerotia or as microscopic spores called conidia.

**How do you get it?** In the spring, the fungus breaks dormancy just like the strawberry plant, and releases its spores into the environment. The spores spread about the planting during warm rains. Young tender leaves of strawberries become infected by the fungal spores and eventually produce more of the fungus' spores.

**What does it look like?** The disease looks like numerous tiny purple spots (1-2/8<sup>ths</sup> of an inch in diameter) with grayish white centers covering the surface of strawberry leaves. The number of spots per leaf and the severity of the disease throughout the planting depend on the amount of the fungus (inoculum) in dead planting material at the site. If the infection is too severe, the plants can defoliate.



**Left:** Common leaf spot symptoms on the surface of strawberry foliage. This level of spotting throughout a planting would represent a “severe” level of infection. **Right:** Common leaf spot symptoms on the underside of a strawberry leaf.

**What will it do to my planting?** This disease is fairly harmless and won’t impact production unless the spotting is severe. Indeed, the disease reduces photosynthesis, but unless your planting begins to defoliate from the disease, the impact on yield is likely to be negligible.

**What do I do about it?** Fungi like warm, wet, dark conditions and thrive on dead plant material. Therefore, it’s really important keep weeds out of the planting and not to crowd strawberry plants by employing tight within-row spacing. Since the fungus survives the winter on dead plant material, it’s vital to remove and destroy plant material during renovation.

**What do I spray?** You really only need to make a fungicide application if you had a high level of leaf spot the previous year. If you decide to apply a fungicide, make the application dormant or delayed dormant to reduce the “inoculum” before the emergence of young tissue.

## REVIEW OF STRAWBERRY FERTILIZATION

*(Notes from a webinar taught by Dr. Marvin Pritts, summarized by Molly Shaw, South Central Ag Program.)*

**B**asic strawberry fertilization guidelines are given in Cornell’s Berry Guidelines (<http://ipmguidelines.org/BerryCrops/>) for perennial matted row strawberries.

The first step is to have a soil test done before planting, the pH adjusted to 6.5, and P and K applied as recommended by the soil test. If those things are done properly, nitrogen should be the only nutrient needed while the berries are still in the ground, unless the soil is very sandy.

Table 2.6.2. Nitrogen guidelines for berry crops.

Crop	Age of planting	Amount/timings (actual N)	N source	Comments
Strawberries	0	30 lb/A, early June	calcium nitrate	Be sure plants are growing well prior to application.
		30 lb/A, early Sept	ammonium nitrate or calcium nitrate	
	1+	70 lb/A, at renovation 30 lb/A, early Sept	ammonium nitrate, urea, calcium nitrate	Adjust fall amount based on leaf analysis.

The logic behind this fertilizer regimen is that the berries need adequate fertilizer to regrow strongly after renovation, and then nitrogen must also be available in early September when the plant is forming its flower buds for the following year.

Strawberries have rather shallow root systems, so putting on N in split applications assures that the N is present in the root zone when the berries need it.

Many growers have been accustomed to applying nitrogen in the early spring as the plants are starting to grow. But it has been shown in multiple field trials that while N applications in the spring do make the foliage grow bigger, it also makes fruit softer and more prone to rotting.

5 lbs/A of urea in 100 gallons of water (2.3 lb/A actual N) applied to the foliage in late fall gives as much yield increase as 30 lbs of actual N in the spring, and does not make the fruit soft. The foliar nitrogen should be applied after the plants have stopped growing in the fall (late October). Since the plant has stopped growing to get ready for winter dormancy, that extra nitrogen does not stimulate foliar growth. Instead, it gets sequestered in the plant roots to use in the spring. Plants can take up nitrogen through their leaves until 2-3 weeks before they drop.

Late fall foliar nitrogen is a good idea for strawberries (and apples, grapes, raspberries) if there are adequate carbohydrate reserves in the plant. Nitrogen actually makes carbohydrate reserves lower, decreasing winter survival if reserves were low to begin with. Knowing just how low the carbohydrate level in strawberries is in the fall is a tough thing to figure out, and there isn't a good scientific way to go about it. In a sunny fall with cool nights, carbohydrate reserves will probably be high. In a cloudy fall, you might want to hold off on the late foliar nitrogen application. Most years the late fall foliar fertilization will probably pay off. Even if you don't fertilize in the fall, unless the soil is very sandy it would still be best to skip the spring N application.

**Note on foliar fertilizing:** Foliar fertilizing is practical only for nutrients that are needed in tiny amounts. Leaves are not adapted to take up the bulk of the nutrients a plant needs. For example, 5 lb/A urea provides a little more than 2 lbs/A actual N - assuming that all of the spray material contacts the leaf. It has been found that less than 50% is absorbed through the leaf under the best of conditions. So each application is probably getting less than 1 pound per acre into the plants. If a strawberry's total nitrogen needs for the year are 100 lbs, which would make 100 foliar applications! Not practical. The bulk of the plant's needs should be taken care of by supplying nutrients to the roots.

After the berries are established, their nutrient needs should be assessed with leaf analyses. A soil test measures the potential bank of nutrients the strawberry could withdraw from while growing, while the leaf test measures what the plant actually manages to take up. Strawberry leaf tests should be taken after renovation in July or August.

Boron is one nutrient that is often low in fruit plantings in NY, because many of our soils are relatively low in boron. Boron is needed to good root growth (it's a component of auxin). If a leaf test comes up low in many nutrients, make sure to look at the boron levels closely. Sometimes if the boron level is low, the roots will be so small that they won't take up enough of the other nutrients that are actually available in sufficient quantity. Boron is important, but it's easy to overdo it when applying. If a leaf test shows boron is required, apply no more than 2 lb/A actual boron (10 lb/A solubor) in any one year.

### **How about those everbearing strawberries?**

The everbearing strawberries can take the same soil prep (including P and K applications) as June-bearers, but they have a wimpier root system. Because of this, they need to be spoon fed nitrogen all season long. They need 1 lb of N/A/day, and should be fertilized at least once a week (if once a week, apply 7 lbs N). If you calculate that out, you'll find that day neutral strawberries need more nitrogen per year than June-bearers.

---

Questions or Comments about the New York Berry News?

Ms. Cathy Heidenreich  
New York State Agricultural Experiment Station  
630 W. North Street  
Geneva, NY 14456  
Phone: 315-787-2367  
Email: [mcm4@cornell.edu](mailto:mcm4@cornell.edu)

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

Check out the NYSAES Tree Fruit and Berry Pathology web site at:  
[www.nysaes.cornell.edu/pp/extension/tfabp](http://www.nysaes.cornell.edu/pp/extension/tfabp)