



New York Berry News

Volume 13, Number 6

July 22, 2014

Features:

- Ag News 7
- Berry Organization News 11
- Focus on Food Safety 14
- On the Organic Side... 16
- \$ Money Talk \$ 18
- Focus on Pest Management 19
- Articles 25
- Upcoming Events 26

Highlights:

- CALS Launches New School 4
- Wild Parsnip 5
- Blueberry Collapse 6
- SWD Update 19
- Know the Imposters in SWD Monitoring Traps 20
- Controlling Raspberry Cane Borers 23
- Leaf Analysis – Now is the Time! 25

Strawberry Renovation - A Reprise

Cathy Heidenreich and Marvin Pritts, Cornell University

Renovation, a routine practice in matted row strawberry production occurring immediately after harvest, is one key to retaining plant vigor and fruit size.

Growers continue to express concerns that standard renovation procedures successfully used in the past seem to be reducing plant stands. Renovated plantings come back slowly and often lack in vigor and/or do not survive the winter well, resulting in poor yields the following year. It may be worth re-evaluating renovation practices to assess what impacts they may be having on strawberry plant health.

Strawberry Plant Anatomy 101

The strawberry plant consists of a crown from which leaves, flower clusters, runners, branch crowns and adventitious roots grow (Figure 1-1).

Strawberry leaves are arranged in spirals about the crown with every 6th leaf directly above the first in the spiral; each leaf consists of 3 leaflets with a thick cuticle layer and numerous stomata on the underside of the leaflets. These leaves are the powerhouses of the plant sustaining the crown and providing nutrients for development and growth of new leaves, flowers, fruit and roots. Many leaves die after exposure to hard frosts in late fall/early winter, or after about 4 months of life. They are replaced by new leaves which grow each spring and are produced



throughout the year. Leaves that develop late in the summer may overwinter and can actively photosynthesize with the first light of spring when temperatures are sufficiently warm.

Strawberry roots are produced during spring and fall and remain active until soil freezes in early winter. Two types of roots are produced: primary roots and feeder roots. Primary roots are produced from the crown; in successive years new primary roots are produced above older ones. These roots supply water and nutrients to the crown. Feeder roots are produced on primary roots; their purpose is water and nutrient absorption from the soil. Unlike primary roots these roots are relatively short-lived.

A good balance is required between leaves and roots for the strawberry plant to thrive. If this balance is temporarily altered in a modest way - say from a root-feeding grub or a leaf-feeding caterpillar, the plant will eventually return to a proper balance on its own. If the alteration is significant, such as occurs with root-rotting fungi, then the plant may never achieve a proper balance between roots and leaves.

Strawberry Renovation - A Reprise *(continued)*

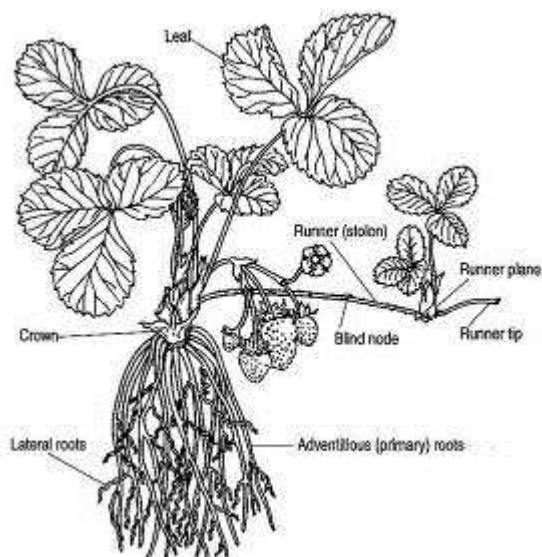


Figure 1-1 from: Pritts, M. and Handley, D. (eds.) 1998. *Strawberry Production Guide for the Northeast, Midwest and Eastern Canada*. Northeastern Regional Agricultural Engineering Service (NRAES) Publication No. 88, Ithaca, NY

Why Renovate?

Through the renovation process plants are thinned to a desired density and excessive runner growth is controlled, helping to maintain a plant density that will allow for good fruit size the following year. Without some control of plant density, the row will become too thick, berry size will be small, and conditions will be more favorable for disease. Mowing the leaves off and narrowing the rows will not permanently upset the balance between roots and leaves, and will help keep plant density at the appropriate level.

Leaves that develop in July usually senesce about 3 - 4 months later, which means that without renovation and leaf removal, the planting enters winter with lots of dead leaves. These leaves can be a source of disease (gray mold) that carries over into spring. Removing the cohort of leaves in mid-July can reduce the potential for inoculum carry-over into the following spring. Also, these summer leaves are often infected with foliar disease and may be infested with mites. Cutting them off and incorporating them into the row middles is a good IPM practice. The new leaves that emerge are "clean" and can be protected in ways that a fruiting field cannot.

Renovation Basics

Irrigate planting to provide adequate soil moisture prior to mowing. Fruit production is a period of extreme stress for strawberry crowns when their moisture and

nutrient reserves are depleted in order to mature fruit. Providing excellent soil moisture during harvest helps minimize this stress on crowns. Efforts to maintain soil moisture should not stop there, however. It is equally important to maintain soil moisture after harvest and just prior to renovation in order for crowns to go through the renovation process successfully. This is especially true for later season varieties which tend to be mowed off immediately after harvest; early and mid-season varieties at that point have had time to recoup some of their losses before mowing.

Mow off the old leaves. Removal of older less thrifty leaves after harvest in mid-summer causes crowns to push new healthy leaves prior to flower bud initiation. Leaves should be mowed one week after final harvest of the latest variety in the planting, mowing leaves close to the ground. Be careful during the mowing process not to damage the crowns. Removal of leaf debris at this point may help reduce incidence of foliar disease in the new plant stand.

Note: *Fields with significant damage to root systems (rootworms, white grubs, root weevils, various root rots) or fields under water stress should not be mowed off as plants may not be able to produce another set of healthy leaves. (See the earlier paragraph on root/shoot balance.) Growers with fields in this condition should seriously consider plowing under and replanting and/or rotation out of strawberries for these fields as the likelihood of them producing economically substantial strawberry crops in the immediate future is slim.*

Fertilize. Plantings in the first fruiting year or older are typically top-dressed at renovation with 70 lb. actual N/A at renovation in the form of ammonium nitrate, urea, or calcium nitrate. Consider adding an additional 20 – 30 lb. actual N/A in late summer depending on stand density and vigor.

Note: *Both preferred sources of nitrate nitrogen for strawberries (ammonium nitrate and calcium nitrate) are in short supply and/or unavailable due to increased governmental regulation. Growers using urea as an alternative to these products are reminded it is subject to volatilization during warm humid weather and may cause plant injury (leaf blackening). It should be applied on cooler, overcast days whenever possible. Another alternative nitrogen source some growers have turned to is CAN (calcium ammonium nitrate) which apparently is of much less*

Strawberry Renovation - A Reprise *(continued)*

regulatory concern and more widely available.

Sweep runners into rows. This task is assiduously attended to during the establishment year but is often overlooked in subsequent years. Sweep runners into rows until sufficient plant stand is achieved. Any additional runners produced are essentially weeds and can be tilled in.

Note: *Those runners not rooted by September are not likely to produce fruit the following season, so it will not hurt yield to till them into the row middle if narrowing the rows again in fall.*

Narrow rows/cultivate. More berries are produced along row edges than in row middles. Wider rows are more difficult to harvest, and may also lead to increased disease pressure. Narrow rows, on the other hand, have better air circulation, sunlight penetration, and spray coverage, leading to better fruit quality.

Within one day of mowing rows should be narrowed with a disk harrow, rototiller or cultivator to 8 to 10 inches. If possible, equipment should be set in such a way as to add an inch of soil over the tops of crowns on lighter soils or ½ inch over the tops of crowns for heavier soils. This stimulates new primary root growth (above the old ones on the crown...) and rooting of new runners.

Between-row subsoiling may be desirable where tractor/harvest traffic has been heavy on wet soils and/or where compaction layers have formed. This will improve water infiltration. A Hillside cultivator is used by some growers during renovation as it may be configured to narrow rows, throw a thin soil layer over plants and subsoil at the same time.

Irrigate. This should be done immediately after renovation to settle soil around crowns, incorporate post-renovation herbicide and fertilizer, and jumpstart new growth. The job doesn't end there however. Plants should continue to receive 1 to 2 inches of water per week through August and September either by rainfall or irrigation to optimize nitrogen uptake.

Note: *All renovations efforts may be negated at this point if soil moisture does not remain adequate. Failure to provide adequate soil moisture will result in decreased runner production and flower bud initiation, which in turn means less yield next season.*

What about Weed Control?

2,4-D is often used to reduce broad-leaved weeds in strawberry fields at the time of renovation. Since 2,4-D is taken up via leaves and not roots, it is applied right over the strawberry planting immediately after harvest. Fortunately, strawberries are tolerant of 2,4-D whereas most other broad-leaved plants are not. Wait about 5 days to give the 2,4-D a chance to be absorbed, then mow and cultivate.

After cultivation and narrowing of the rows, a pre-emergent herbicide may be applied to prevent weed seed germination for the rest of the year. Sinbar is the most effective against weeds, but it can also damage the strawberry plants - especially if used in consecutive years or if the root system is not healthy. Devrinol is safer to use at this time. Applying a pre-emergent herbicide is the last step in the renovation process.

Renovation Timeline

1. Ensure that field has adequate soil moisture
2. Apply 2,4-D
3. Mow off leaves 5 days later
4. Fertilize
5. Narrow rows and cultivate row middles
6. Apply pre-emergent herbicide
7. Irrigate as necessary

References

1. Demchak, K. (ed.) 2010. *Mid-Atlantic Berry Guide for Commercial Growers 2010-2011*. <http://pubs.cas.psu.edu/freepubs/MABerryGuide.htm>
2. Pritts, M. and Handley, D. (eds.) 1998. *Strawberry Production Guide for the Northeast, Midwest and Eastern Canada*. Northeastern Regional Agricultural Engineering Service (NRAES) Publication No. 88, Ithaca, NY.

(This article originally appeared under the title, "Strawberry Renovation - Revisited", in NY Berry News Vol. 11, No. 6, June 21, 2012.)

New School Positions Plant and Soil Science for the Future

Stacey Shackford, College of Agriculture and Life Sciences

June 6, 2014. Plant and soil scientists at the College of Agriculture and Life Sciences (CAL S) have been sowing the seeds of sustainability, food security and improved human health for more than a century.

A new initiative will help position the college for the future and create a new face for the plant and soil sciences at Cornell by integrating five departments – Plant Biology, Horticulture, Plant Breeding and Genetics, Crop and Soil Sciences, and Plant Pathology and Plant-Microbe Biology – in one administrative unit.

The School of Integrative Plant Science was launched at a June 6 ceremony on the Ag Quad, attended by representatives of several departments and many alumni who were on campus for Reunion Weekend. University President David Skorton commended the college for creating a school that will help advance Cornell's mission of service to the state, nation and world.

"This is a step toward increasing the impact – that is already enormous – of the very high level of expertise that CAL S has in this area," Skorton said. "Through the new school, CAL S aims to strengthen its teaching and research and extension work in plant science and to attract more students to the field – students who will be future leaders in these vital areas."

"And for our CAL S alumni, still another reason to be proud of one of the finest schools of agriculture and life sciences anywhere in the world," he added.

Skorton was joined by Kathryn J. Boor, the Ronald P. Lynch Dean of CAL S; David Stern, president of the Boyce Thompson Institute for Plant Research (BTI); and Alan Collmer, the Andrew J. and Grace B. Nichols Professor of plant pathology, who has been appointed as the school's first director.

CAL S will be teaming up with BTI and the U.S. Department of Agriculture to invest \$35 million in the new school over the next decade, for faculty hiring, research and student support.

"It's an investment in addressing the big challenges," Boor said. "Whether it's creating a more secure, nutritious and sustainable food system to feed a rapidly growing global population; devising new plant-based medicines, materials and sources of bioenergy; or ensuring the biodiversity and health of the ecosystem



Dean Kathryn Boor and Alan Collmer, the Andrew J. and Grace B. Nichols Professor of Plant Pathology and director of the School of Integrative Plant Science, speak on the Ag Quad June 6. Jason Koski/University Photography

that supports all life on Earth; basic and applied plant and soil sciences provide the very foundation upon which our society will build enduring solutions to a wide range of challenges facing the world today."

The School of Integrative Plant Science was conceived by a group of faculty members who spent a year examining the current configuration of the plant sciences. They envisioned a school that would provide coordinated administrative functions while maintaining the unique identities of its units and allowing the college to be more nimble in responding to wider scientific trends and societal needs in plant science.

It will offer a plant science major with concentrations that include plant genetics and breeding; sustainable plant production and landscape management; evolution, systematics and ecology; plant physiology and molecular biology; and plants and human health. School faculty members also contribute to several other undergraduate majors, such as agricultural sciences; viticulture and enology; biology (with a plant biology concentration); and international agriculture and rural development, as well as many minors, such as horticulture, crop management and soil science.

Collmer said he hopes the school will foster greater integration and collaboration. It will also enable the units to work in a strategic and cohesive way on matters such as faculty renewal, curricular development and resource allocation, he said.

"Each of the disciplines will be able to maximize their creativity in the context of a coordinating structure that will promote a whole new class of innovative interactions," Collmer said. (Source: [Cornell Chronicle](#))

Wild Parsnip: A Plant Not to Ignore on Your Farm

*Sharon Bachman, Cornell Cooperative Extension,
New York Invasive Species Outreach Program*

From the nasty burn you get if you come into contact with the plant sap to the seed production potential of the flower heads, you want to take note when you see wild parsnip on your farm.

Wild Parsnip has been in flower for the past month in most areas across New York. Look out for 3-7 foot tall plants with flat topped umbels (flower clusters) composed of numerous stalks holding five-petaled yellow flowers. Leaves are alternate and sharply toothed. Between 5-15 leaflets form a rosette at the base of the plant.

Avoid the burn – Contact with the sap from the wild parsnip plant and exposure to sunlight causes a skin reaction called phytophotodermatitis -- similar to a severe sunburn, the skin first reddens and then forms painful blisters. The resulting brownish pigmentation can last for years and the impacted area will remain more sensitive to sun exposure.

Protect Yourself and Your Customers – Remove new infestations while small, particularly in areas where customers may come in contact with plants. Consider putting up signs warning customers of the dangers of coming into contact with wild parsnip. Avoid mowing plants when viable seeds are present as you could spread the plant to new areas with your equipment. If mowing an infested area, clean equipment before moving to an uninfested area.

Control is Possible – There is good news in the control department in that with persistence and care this noxious weed can be brought under control using mechanical and/or chemical means, **but remember to protect yourself by wearing clothing to cover all exposed skin including gloves when working around this plant!**

For manual control, cut plant roots 1" below the soil surface and then hand pull. Aim to control plants before viable seeds set. If seeds are present, take steps to destroy seeds head while you are removing the plants.

Time mowing when plants first flower and before seeds enlarge, as at this stage the plants have depleted their root reserves and will often die. Plan a follow-up mowing for plants that re-sprout. Note that as a perennial or monocarpic plant, mowing may



benefit wild parsnip plants in the rosette stage by removing competitors for light and nutrients.

General use herbicides such as glyphosate or triclopyr can be applied as spot treatments to basal rosettes. When using pesticides be sure to follow all label and state requirements.

For some invasive plants, there are viable bio-control options such as an insect that causes significant damage to the plant. At this time there are no viable options for wild parsnip. You may occasionally observe a parsnip webworm on plants, but these insects are not known to damage large patches of wild parsnip significantly.

If you have livestock on your farm note that they may also have a reaction after eating wild parsnip when exposed to UV light. If animals show signs of wild parsnip toxicity, bring them into a shaded area, apply topical treatments to skins lesions and consider consulting with your veterinarian.

For more information on wild parsnip and other ag invaders, visit the New York Invasive Species Clearinghouse webpages at nyis.info.

Wild Parsnip: A Plant Not to Ignore on Your Farm *(continued)*

The Cornell Cooperative Extension Invasive Species Program (CCE ISP) has produced a brochure covering ag weed invaders you can share with customers and other contacts which is available at http://nyis.info/?action=bugs_and_blights#B&B Brochure .

New York held its first annual Invasive Species Awareness Week during the week of July 6-12. Events were held across the state to raise awareness about invasive species using NY's new "Stop the Invasion: Protect NY from Invasive Species" campaign and logo. Invasive species affect us all, and we all can make a difference in stopping their spread. Learning about which species are problematic and reporting infestations can prevent them from becoming widespread. NY's lands and waters are worth protecting! You can stay active on invasive species issues by getting involved in your local Partnership for Regional Invasive Species Management (PRISM), which is a coordinated group of organizations and citizens working together to prevent and manage invasive species.

Sharon is a member of the CCE ISP Team, which provides high quality science-based invasive species education; helps New Yorkers detect, prevent, and control invasive species; and helps New Yorkers protect our agricultural and natural resources, human and animal health, and economy from invasive species.



Blueberry Collapse May Be Due to Winter Injury

Laura McDermott, Cornell Cooperative Extension Eastern NY Commercial Horticulture Program

In many areas of eastern NY and New England, growers are reporting blueberry canes that are loaded with small berries that refuse to size and/or ripen. Some of these canes are starting to collapse causing the undersize berries to shrivel. Blueberry specialists are struggling to explain this phenomena, and despite the lack of exceptionally cold winter temperatures, most experts are citing the long, sustained cold as being the primary problem. In some sites, the onset of the cold, which followed a relatively mild fall, may have had more to do with the damage than the duration of the cold.

Dr. Marvin Pritts, Cornell, recently commented about this problem to the Berry Specialists on a weekly berry call. According to Dr. Pritts, "I think it is possible that sub lethal winter injury is playing a role. The most vulnerable tissues are the vascular connections to the bud. If a portion of those are damaged, then the flowers may open and the fruit forms, but there is insufficient support to sustain development - especially in hot weather where



*Winter-damaged blueberries showing lack of leaves.
Photo credits: Mark Longstroth, MSU Extension*

Blueberry Collapse May Be Due to Winter Injury *(continued)*

demand on the plant's vascular system is high. As with what one sees with Phomopsis canker, the cane holds on so long until there is almost instantaneous catastrophic collapse. Something analogous may be happening to the fruit connected to the water supply by too few functional connections."

Similar damage has been seen in Michigan as noted by Michigan State University Extension small fruit educator Carlos García-Salazar in a June 26th, **Growing Produce** article <http://www.growingproduce.com/fruits-nuts/michigan-blueberry-crop-suffers-winter-damage/>. Damage was most noticeable in low spots and in fields inland from Lake Michigan, where cold air was concentrated on sub-zero degree days.

"Some blueberry varieties were more affected than others, and it is possible to observe fields with substantial winter injury less than a mile away from fields with no or minimal damage. Managing those fields is a challenge that requires special considerations," writes García-Salazar.

Dr. Eric Hanson, Michigan State University attempts to answer the related question about how to fertilize blueberry plants so they can tolerate winter cold in an on-line fact sheet (http://msue.anr.msu.edu/news/fertilizing_winter_injured_blueberries). His response is below:

This question has not been well-researched in blueberries, although there are numerous opinions and some related information in other crops. Hardiness is optimized by maintaining nutrient levels in the sufficient ranges, and by minimizing overall plant stress (drought, over-cropping, diseases, and foliar pest feeding). The nutrient most often associated with cold hardiness is nitrogen. Excessive N use has been shown to reduce the hardiness of some fruit trees, and anecdotal observations suggest this is also true of blueberries. The key is to apply recommended rates at the right time. Nitrogen applications after June should be avoided because this may encourage additional flushes of shoot growth late in the season, which may not harden off in time for winter. The bottom line is that following good cultural practices including fertilization recommendations optimizes hardiness. Use periodic leaf analyses and soil tests to monitor plant nutrition and make sure your fertility program is best for your site.

Some people believe that fall applications of K promote acclimation and hardiness. This approach is worth studying, but has not been researched in blueberries. Another interesting idea is applying foliar sprays of urea in the late fall. Sprays have been shown to increase N reserves in the buds of tree fruit crops, and promote growth the following spring. These practices need to be studied in blueberries.

AG NEWS

Senator Gillibrand's Office Releases Food Hub Funding Guide

The office of U.S. Senator Kirsten E. Gillibrand of New York has released a 43-page publication titled A Guide to Funding Opportunities and Incentives for Food Hubs and Food Systems.

The guidebook details information on grants, loans, and tax credits from numerous federal agencies. Download the guide [here](#).

Local Food Marketing Panels at 2014 Empire Farm Days include 14-Year-Old Farmer, Chefs, Seasoned Growers, Food Buyers

July 2, 2014. Seneca Falls, NY – A 14-year-old farmer, executive chefs and seasoned produce growers will

participate in local sales and procurement panels at the August 5-7, 2014 Empire Farm Days at Rodman Lott and Son Farms in Seneca Falls, NY. The presentations in the Special Event Center at Lot 601 will offer food producers valuable information for selling their products to restaurants, at farmers' markets, and through New York State procurement channels. Empire Farm Days is the largest outdoor agricultural show in the Northeastern U.S.

How to Get Your Products on the Menu

On Tuesday, August 5, at 1:30pm, chefs, restaurant owners and food producers will present information on how to get started selling to restaurants, what gets chefs' attention, and how to maintain a strong supply-and-demand relationship.

Participants in the Tuesday panel include Executive

AG NEWS *(continued)*

Chef Andrew Chambers from the New York Wine and Culinary Center, Canandaigua, NY; Matt Riddett, Executive Chef of Empire Brewing Company, Syracuse, NY; and Rune Hilt, co-owner of the Red Dove Tavern, Geneva, NY.

Farmers' Markets Tips & Tricks for Success

On Wednesday, August 6, at 1:30pm, Diane Eggert of the Farmers Market Federation of NY will moderate a panel with vegetable vendors, including Garrett Williams, a 14-year-old farmer of Garrett's Market Place, Marion, NY; James Farr, director of the Rochester Farmers Market, Rochester, NY; and Patti Battley, Seneca Falls Farmers' Market. They will talk about getting started, figuring out the unspoken rules, and how to be successful at the markets.

Selling Food to New York State

On Thursday, August 7, at 1:30pm, a panel presentation on food procurement at the State level will be moderated by Empire State Fellow for Food and Agriculture with the New York State Executive Chamber Imran Khan with participants addressing how to develop and submit bids, how to contact 'the right people,' and how to navigate the state bidding process to take advantage of the contract opportunities.

Panelists for the Thursday program include Tom Facer with Farm Fresh First, a raw product supply chain service company serving the food processing and packing industries, Oakfield, NY; Dyane Smith with the Contract Management office of the New York State Office of Mental Health, Staten Island, NY; and Margaret Dutton with Nutritional Services office of the New York State Department of Correction Services.

Empire Farm Days Manager Melanie Wickham says, "Every year we develop new learning opportunities with panels and presentations that will help farmers connect with buyers, processors, suppliers and consumers. We are pleased this year to add a trio of panel programs for fresh food producers and growers interested in selling to large buyers and institutions.

Empire Farm Days covers 300 acres with exhibits, demonstrations, seminars and activities to create the largest outdoor agricultural show in the Northeastern U.S. Find schedules and details at www.empirefarmdays.com or call 877-697-7837.

USDA Invites Suggestions for the 2017 Census of Agriculture

June 25, 2014. Albany, New York – The U.S. Department of Agriculture is now inviting suggestions for

the 2017 Census of Agriculture. Conducted only once every five years by USDA's National Agricultural Statistics Service (NASS), the Census provides detailed data covering nearly every facet of U.S. agriculture down to the county level.

"The recent release of the 2012 Census of Agriculture is the end of an ongoing 5 year-cycle that has started anew with the first stage of the 2017 Census – asking what changes to make in the next questionnaire," said NASS Administrator Joseph T. Reilly. "This is the perfect time to ask for suggestions since the 2012 data are fresh on our minds."

NASS released the complete 2012 Census of Agriculture results on May 2, 2014. The agency is now planning the content for the 2017 Agriculture Census and is accepting input. Any individual or organization may submit suggestions on questionnaire items to add or delete, as well as any other ideas concerning the Census. There will be another opportunity to provide official comment through the Federal Register process in the coming weeks.

"There are many industries looking for data that we don't already collect," said NASS Census and Survey Division Director Renee Picanso. "There are also some items that people may think are no longer relevant with changing trends in agriculture. Now is the time to express those ideas and concerns."

Content suggestions for the 2017 Census will be accepted until August 4, 2014. Comments can be submitted online at www.agcensus.usda.gov/Contact_Us/Census_Program/Input_Form/. Written suggestions may be mailed to: Census Content Team, Room 6451, 1400 Independence Ave, SW, Washington, DC 20250.

"We thank you for helping make the Census of Agriculture program a continued success," added Reilly.

To learn more and to access the complete 2012 Census of Agriculture results, including State and County

Pest Management for Sustainable Season Extension

07/09/2014. Having trouble with pests in your greenhouses and high tunnels? Interested in learning more about using biological control to manage them? Read SARE's new fact sheet, [Sustainable Pest Management in Greenhouses and High Tunnels](#), to learn

AG NEWS *(continued)*



how beneficial insects can protect crops in season-extending structures and enhance the sustainability of your operation.

SARE-funded researchers at Cornell University found that with a combination of controls, greenhouse and high tunnel pests could be managed effectively and, in some cases, eradicated.

Highlights of [23 New York case studies](#) include the development of an effective combination of parasitic wasps (*Aphidius colemani* and *Aphidius ervi*) to eradicate an aphid infestation on winter greens and peppers. And predatory mites (*Amblyseius cucumeris*) used in conjunction with minute pirate bugs (*Orius insidiosus*) helped eradicate thrips on cucumbers. Researchers also found that the two-spotted spider mite was effectively managed by applying a parasitic mite (*Phytoseiulus persimilis*) on eggplant and strawberries. The Nile Delta wasp (*Encarsia formosa*) helped manage, and in some instances, even eradicate whiteflies on tomatoes.

The fact sheet includes an introduction to biological control, along with colorful photos that can be used to identify pests and their associated crop damage. It also provides specific how-to information on scouting for pests along with detailed release information, including optimal temperature, quantity of natural enemies and timing of release relative to pest populations. Management strategies for control agents, such as predatory mites and parasitic wasps, and a supply list for obtaining biological control

agents are also found in the fact sheet.

[Download the fact sheet now.](#)

To learn more and to access the complete 2012 Census of Agriculture results, including State and County Profiles and all the other Census data and tools, visit www.agcensus.usda.gov.

Cornell's RAPP Program Demonstrates Agricultural Plastics Recycling, at Aug. 5-7 Empire Farm Days

Agricultural plastics recycling is taking off, big time!

Recyclers working with Cornell University's Recycling Agricultural Plastics Program (RAPP) are now able to process virtually all types of used farm plastics.

Much of this old plastic is turned into new products by manufacturers right here in New York State. Waste plastics previously used on NYS farms—primarily bale wrap, bunker covers, mulch and greenhouse film—are being transformed into sheets of plastic 'plywood', plastic sidewalk pavers, household and industrial-size garbage bags, and diesel fuel, as well as into new plastic containers, films and twine that will once again be used on farms.

RAPP will showcase an array of these products, as well as supplies and equipment for storing and compacting used plastic, at Empire Farm Days, August 5-7, 2014. Find RAPP at Booth #500, just outside the main entrance to the Cornell Building. Empire Farm Days—the largest outdoor agricultural trade show in the Northeast—will once again be held at the Rodman Lott & Son Farms on NY-414, just south of the village of Seneca Falls, NY.

Baler Operator Training Course: 10-11am each day of Empire Farm Days.

Register by July 22.

At 10am each day of the show RAPP will offer a free one-hour Training Course in operating the BigFoot BF300 plastic baler. This will be an hour well spent because trainees will be a giant step closer to receiving the required certification to operate a BigFoot independently on their own farms. Participants will be given a free instructional DVD to reinforce what was taught. Pre-registration by July 22 is requested, but drop-ins will be welcome if space permits. To sign up, call RAPP at 607-255-

AG NEWS *(continued)*

1187 or email agplasticsrecycling@cornell.edu.

For those who simply want to see the BigFoot work its magic, stop by at 2pm any day of the show for a demonstration. It's quite something to watch this baler transform a mountain of plastic into a dense, 1000-lb, four-foot cube in just about half an hour.

The trick to keeping plastic in shape for recycling is to keep it free of grit and gravel, and as clean and dry as is possible under farm conditions. Demonstrations of these 'best management practices' (BMPs) will be ongoing throughout Empire Farm Days, with specific tips on how to handle each type of farm plastic. BMPs and other recycling resources can also be found online at RAPP's website:

recycleagplastics.cornell.edu or Facebook page: [facebook.com/Recycling.Agricultural.Plastics](https://www.facebook.com/Recycling.Agricultural.Plastics).

USDA Unveils New Centralized Online Resource to Support Next Generation of Farmers

June 23, 2014. Davis, California - U.S. Agriculture Deputy Secretary Krysta Harden today unveiled www.usda.gov/newfarmers, a new website that will provide a centralized, one-stop resource where beginning farmers and ranchers can explore the variety of USDA initiatives designed to help them succeed.

"New and beginning farmers are the future of American agriculture," said Deputy Secretary Harden. "The average age of an American farmer is 58 and rising, so we must help new farmers get started if America is going to continue feeding the world and maintain a strong agriculture economy. The new policies announced today will help give beginning farmers the financial security they need to succeed. Our new online tool will provide one-stop shopping for beginning farmers to learn more about accessing USDA services that can help their operations thrive."

USDA's New Farmers website has in depth information for new farmers and ranchers, including: how to increase access to land and capital; build new market opportunities; participate in conservation opportunities; select and use the right risk management tools; and access USDA education, and technical support programs. These issues have been identified as top priorities by new farmers. The website will also feature instructive case studies

about beginning farmers who have successfully utilized USDA resources to start or expand their business operations.

Disaster Assistance for 2012 Frost or Freeze Fruit Crop Losses Announced

WASHINGTON, July 21, 2014 – The U.S.

Department of Agriculture (USDA) today announced Noninsured Crop Disaster Assistance Program (NAP) assistance for losses to bush or tree fruit crops due to frost or freeze during the 2012 crop year. The program, authorized by the 2014 Farm Bill, provides supplemental NAP payment to eligible producers. Farmers who did not have access to crop insurance and are in primary and adjacent counties that received a Secretarial disaster designation because of frost or freeze in 2012 are eligible for NAP assistance. Losses due to weather damage or other adverse natural occurrences may also qualify for program assistance.

NAP enrollment begins July 22, 2014. Applications must be submitted to FSA county offices by Sept. 22, 2014.

"After the 2014 Farm Bill was enacted into law, USDA expedited the restart of disaster assistance programs as a top priority," said FSA Administrator Juan Garcia. "Fruit producers experienced significant financial losses from weather-related damage in 2012. NAP provides them with long-awaited disaster relief."

To expedite applications, producers who experienced losses are encouraged to collect records documenting these losses in preparation for the sign-up in this program. Producers also are encouraged to contact their FSA county office to schedule an appointment. Limited resource, socially disadvantaged, and beginning producers are eligible for premium reductions and also may be eligible for fee reductions.

Interested producers can view the 2012 NAP Coverage for Frost, Freeze or Weather Related Fruit Losses Fact Sheet at <http://go.usa.gov/5kSQ>, or visit a local FSA office. To find out if land is located in an eligible frost/freezing county, visit <http://go.usa.gov/53rz>.

BERRY ORGANIZATION NEWS



NASGA Summer Tour Is Filling Fast

Time is getting short. **The advanced registration for this year's NASGA Summer Tour is August 4th**, so if you have not yet registered, we urge you to do so immediately.

This year's **NASGA Summer Tour** takes us to **Abbotsford, BC on August 20th & 21st**.



We'll visit Abbotsford, Langley, Aldergrove and Pitt Meadows, all on the southern side of Vancouver along the Canadian/U.S. border. There is a brief overview of this year's tour in the sections below.

But first, we urge you to register now: [Register Online](#) with any major credit card through our website and ensure your spot in this superb meeting.

Or if you prefer, [download the reservation form now as pdf](#) and mail it in or FAX it to 613-258-1565.

You also need to [book a reservation](#) for the hotel-remember to book your room early to lock in the conference rate. More information about lodging can

DAY ONE, August 20th

Berry Haven Farm, Abbotsford. Growers of day neutral strawberries, blackberries, floricane and primocane raspberries, and blueberries. They are primarily a fresh packing operation.

Pacific Coast Fruit. The Pacific Coast Fruit Products' story began with 2 girls who lost their jobs, a glass of the grape and a dream! Pacific Coast Fruit Products was started in 1988 and now specialize in processing conventional and organic berries and fruit, with 60-100 employees during peak seasons. They also have a wide range of other items including tropicals, super-fruits, grains and vegetables.

Maan Farms, Abbotsford. Maan Farms has a long history of providing quality local product to the citizens of Abbotsford. In 1977 the farm began by producing cole crops, but soon shifted to growing berries. Today they grow June and Day Neutral Strawberries, Raspberries, Blackberries and Blueberries. In addition to the farm market, they have added a winery, the Country Kitchen, and a family friendly agritourism enterprise enjoyed by many nearby communities. Our lunch will be catered at Maan Farms.

Driediger Farms, Langley. Grower, wholesale, retail, fresh plus processing and packing for blueberries, day neutral and June strawberries. A family farm with a strong commitment to both quality berries and sustainability.

Krause Farm, Langley. Now over 200 acres of berries, vegetables, and vineyard, the Krause Farm has expanded to offer 100 homemade products in the market, plus bakery, fudgery, creamery, a winery, and The Porch restaurant. We'll stay for dinner here, and have an opportunity to sample their wines.

BERRY ORGANIZATION NEWS *(continued)*

DAY TWO, August 21st

AAFC Clearbrook Substation. This AAFC (Agriculture and Agri Food Canada) research center is running cultural trials as well as raspberry, strawberry and blueberry breeding programs. Hosts are Dr. Michael Dossett, Tom Baumann, and Eric Gerbrandt.

Golden Eagle, Pitt Meadows. Golden Eagle is the largest high busy blueberry farm in Canada.

Hopcott Farms, Pitt Meadows. Flexibility is one of the features of Hopcott Farms. The Hopcott Farm in 1932 began as a dairy farm that was soon sold and transitioned into a beef cattle farm, and a retail outlet Hopcott Meats. In 1996, upon hearing that Ocean Spray Cranberries was looking for acres to plant, Bob converted 70 acres of corn fields into cranberry bogs. As the years passed, more attractions for the visitors such as a petting zoo, corn cannons, mazes and pig races were added. Hopcott Premium Meats was also added. The operation has an emphasis on Farm Direct Marketing Farm but also grows strawberries, raspberries, blackberries and cranberries.

South Alder Farms, Aldergrove. The farm harvests over 1,000 acres of berries annually, with yearly production exceeding 12 million pounds. The main crops produced at South Alder Farms are blueberries, which excel due to the rich soil and mild climates in British Columbia's Fraser Valley. In addition, blackberries, day neutral strawberries, raspberries and many other berries are also grown on the farm. There is also a blueberry packing operation, and blueberry tunnel production.

Summer Tour Hotel and Reservations

Hotel: We will be staying at the:
Ramada Plaza & Conference Center
36035 N Parallel Road, Highway 1
Abbotsford, BC.

Phone Number: 1-604-870-1050
Toll Free Phone: 1-888-411-1070
FAX Number: (604) 870-1060

Cut-off Date for Reservations: August 4, 2014
Rooms Available: Two Queens. Rate: \$99.00 (Be sure to tell them you are coming for the NASGA tour to receive this rate.)

Travel Information There are 4 airports to choose

from including one in Abbotsford and Vancouver British Columbia as well as Seattle and Bellingham Washington.

For Summer Tour Registration: [Register Online](#) with any major credit card through our website and ensure your spot in this superb meeting.

Or if you prefer, download the [reservation form now as pdf](#) and mail it in, or FAX it to 613-258-1565.

Heat and Sun Safety



"If I don't drink lots of water I get a bad headache and sometimes I even feel dizzy."

Protect yourself from heat stress and skin cancer

Use sun screen (SPF 15 or higher)

Wear light colored cotton clothes

Wear a full brim hat

Drink plenty of water before, during and after Work

Sit in the shade during breaks

Wear safety sunglasses marked "Z87"



Funded by the New York State Department of Labor Hazard Abatement Program

BERRY ORGANIZATION NEWS *(continued)*

Preview: 2015 North American Raspberry & Blackberry Conference

The **2015 North American Raspberry & Blackberry Conference** will be held in Fayetteville, Arkansas, on February 24-27, 2015. We hope to see you there!

Schedule: The program is in the planning stages, but here is the overall schedule to help you plan.

- Feb. 24, Tuesday: Opening reception in the evening. Possible local tours that afternoon.
- Feb. 25, Wednesday: A full-day tour. The highlight will be a visit to Dr. John Clark's blackberry breeding program in Clarksville. Also planned are a stop at a blackberry/raspberry nursery, a Walmart Produce Distribution Center, and a winery.
- Feb. 26, Thursday: A full day of educational sessions and trade show
- Feb. 27, Friday: A half day of educational sessions and trade show; optional afternoon tours, including the Crystal Bridges Museum.

Conference Registration: Registration will open in the fall. Both online and on-paper registration will be available.

Conference Hotel: The [Chancellor Hotel](#) will be the site of our conference. Located in downtown Fayetteville, this newly renovated hotel is within walking distance of the University of Arkansas, and surrounded by a lively district of restaurants, shops, and entertainment. There is free on-site parking for attendees and free wireless access throughout the hotel.

To make hotel reservations: You may make reservations by calling toll-free to 855-285-6162 or main line 479-442-5555. Be sure to mention "NARBA" when you call (a conference code should be forthcoming). Our special conference rate of \$109.00/night is available as well for several nights on either side of the conference dates, should you wish to make a longer stay in the area. Reservations must be made by February 1, 2015, and may be cancelled up until 72 hours prior to arrival. Be especially sure to make your reservations early if you plan to stay over February 27 into the weekend.

Travel: Fayetteville is located on Interstate I-540, with close proximity to I-412. The NW Arkansas Regional Airport is the closest airport, and is near Bentonville, about a half hour away. Rental cars, taxis, and shuttle service to the hotel are available. Locals say that it may also be worthwhile checking the price of flights at other airports in the region, such as Tulsa, Oklahoma, which may offer more direct flights and less expensive fares, especially if you plan to rent a car, or there are several people in your group.

Weather: The average high for late February in Fayetteville is in the mid-50s F.; the average low is right at about freezing, with an average snowfall in February of 2 inches. Unless it's a weird year like 2014, therefore, you can expect pretty mild conditions.

More information: <http://www.raspberryblackberry.com/local.cfm?doc=webdocs/2015Conference%20Overview.htm>

Mark your calendar and plan to attend!



Focus on Food Safety Series – Part 3

Pathogens Causing Foodborne Illness in the US

Craig Kahlke, Lake Ontario Fruit Program, and Betsy Bihn, Cornell University Department of Food Science

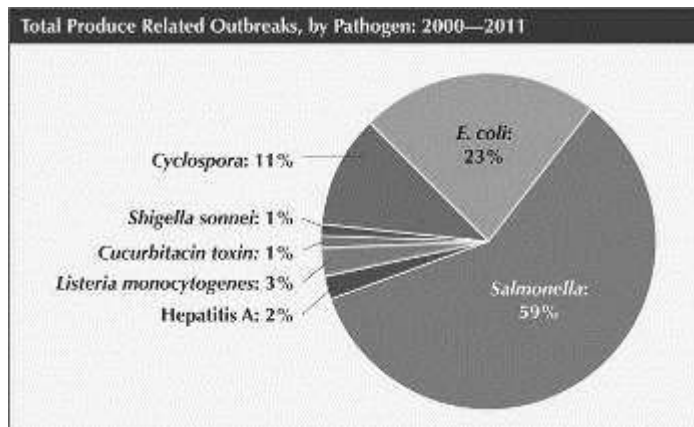
In this installment (Part 3), we will examine the pathogens that most frequently cause foodborne illnesses associated with fresh produce.

Understanding a little bit about the microorganisms and what they need to survive and multiply is important to understanding how to assess and minimize risks on the farm.

Figure 1. (right) shows the seven major pathogens that cause nearly all of the foodborne illnesses & outbreaks associated with fresh produce in the US. While bacterial causes such as *Salmonella spp.*, and pathogenic *E. coli* do cause the majority of the illnesses, the parasite *Cyclospora cayetanensis* causes over 10% of outbreaks and the virus Hepatitis A can be a threat as well. Though the data outlined in Figure 1. does not include the *Listeria monocytogenes* outbreak associated with cantaloupe, most fresh produce growers are keenly aware of that outbreak as it continues to be featured in the media as the legal ramifications continue to unfold.

Salmonella causes well over 50% of foodborne outbreaks in the US per year. Salmonellosis is the disease caused by ingestion of the *Salmonella* bacteria. On average across all foods every year, *Salmonella* is estimated to cause about 1.2 million illnesses in the US, with over 20,000 hospitalizations and 450 deaths¹. Most persons infected with *Salmonella* develop diarrhea, fever, and abdominal cramps 12 to 72 hours after ingestion of the contaminated food.

Since it is foods of animal origin that are most often contaminated with *Salmonella*, it is most prevalent in raw or undercooked poultry, meat, and eggs¹. *Salmonella* can also be found in raw or



Center for Disease Control, [CDC Estimates of Foodborne Illness in the United States, 2011](#)

unpasteurized milk and other dairy products. *Salmonella* contamination of fresh fruits and vegetables can occur through cross-contamination on the farm as well as throughout the food distribution system including transportation, retail stores and even in the home.

Pathogenic *Escherichia coli*. Nearly one-fourth of foodborne outbreaks across all food types in the US are caused by pathogenic (disease-causing) strains of *Escherichia coli*. *E. coli* are a big and diverse group of bacteria, with most strains being harmless. In fact, *E. coli* are a component of healthy intestinal tracts in humans and many other animals². Unfortunately, there are also pathogenic strains of *E. coli* that have caused many produce associated foodborne illness outbreaks. A well-known and studied strain is *E. coli* O157:H7. This strain of *E. coli* produces a shiga-toxin once ingested and so it is categorized as a Shiga Toxin-producing *E. coli* (STEC)². According to the Centers for Disease Control and Prevention (CDC), around 5–10% of those who are diagnosed with STEC infection develop a potentially life-threatening complication known as hemolytic uremic syndrome (HUS)². Most of these people will recover within a few weeks, but some, including young children and others who may be immune-compromised, can suffer permanent

FOCUS ON FOOD SAFETY *(continued)*

damage to their kidneys or other critical organs.

Pathogenic *E. coli* can be shed by animals including both domestic and wild animals in their feces. Ruminants, such as cows, can naturally shed pathogenic *E. coli* which can then introduce it into the growing environment through contaminated water sources, soil, and even wind. If this manure is used on production fields, fresh fruit and vegetable crops can become contaminated.

Cyclosporiasis is an intestinal illness caused by the microscopic parasite *Cyclospora cayentanensis*. *Cyclospora* is spread by people ingesting something, such as food or water, that was contaminated with feces containing *Cyclospora oocystes*³. *Cyclospora* needs time (days to weeks) to become infectious after leaving the body in fecal material. Therefore, it is unusual for *Cyclospora* to pass directly from one person to another. People living or traveling in tropical or subtropical regions of the world may be at increased risk for infection because *Cyclospora* is endemic in these areas³. Foodborne outbreaks of cyclosporiasis in the US have been linked to various types of imported fresh produce. The time between consumption and becoming sick is usually about 1 week. *Cyclospora* infects the small intestine (bowel) with many unpleasant symptoms, including things like explosive diarrhea³. Fruit and vegetable crops can become contaminated through overhead irrigation with contaminated water sources.

Listeriosis is the illness caused by the bacteria *Listeria monocytogenes*⁴. Like *E. coli*, *Listeria* can be ubiquitous in the environment. *Listeria* contamination is usually associated with processed meats and cheeses made from unpasteurized milk. Immunocompromised individuals such as children under 5, pregnant women, and those over the age of 65, are particularly susceptible to developing Listeriosis⁴. Usually *Listeria* infection causes influenza-like symptoms including a fever, but the time from ingestion of the contaminated food to onset of the illness can be anywhere from 3-70 days!

Sadly, the deadliest foodborne outbreak in the US in nearly 100 years occurred when cantaloupe were contaminated with *Listeria* in 2011⁴. This case will be discussed in more detail in the next part of the series. Since *Listeria* is often associated with wet, cool environments, it is recommended that standing water be eliminated from packing areas and that all packing equipment be cleaned and sanitized (when possible) and allowed to dry at the end of each day. This helps to prevent *Listeria* from persisting in the farm

environment and removes opportunities for it to grow.

Hepatitis A is caused by hepatitis A virus (HAV). It is transferred from person to person through the fecal-oral route (yes, you read that correctly, someone eats someone else's poop), either by direct contact with the infected person or by ingestion of food or water contaminated by the infected person⁵. Symptoms include fatigue, nausea, vomiting, and jaundice (yellowing of the skin and eyes) with onset occurring 15-50 days after exposure to contamination. In the US, foodborne illness outbreaks caused by hepatitis A are often linked to food handlers who contaminate the food through poor personal hygiene⁵. This is why worker training and providing well stocked toilet and hand washing facilities are so important to produce safety. Workers who practice proper hand washing are less likely to spread contamination should they be infected with HAV. This is particularly important because individuals can spread HAV in their feces before they know they are sick.

This overview of a few of the pathogens that cause produce-associated foodborne illness hopefully has given you an idea of the diversity of organisms that can cause illness. More detailed information about each of these pathogens, as well as others, can be found on the Center for Disease Control's (CDC) website at <http://www.cdc.gov/>. Simply enter the pathogen in the search field in the top right corner of the home page to find extensive information about each one.

In the next installment of this series (part 4), you will be presented with a few "case studies" of major outbreaks associated with fresh fruits and vegetables. Remember, there are many things you can do to reduce risks on the farm, including the use of Good Agricultural Practices (GAPs). Please keep the suggestions for topics in this series coming and we hope to catch your eye in the next installment.

References

1. Centers for Disease Control and Prevention, <http://www.cdc.gov/salmonella/>, accessed 4-24-14.
2. Centers for Disease Control and Prevention, <http://www.cdc.gov/ecoli/>, accessed 4-24-14.
3. Centers for Disease Control and Prevention, <http://www.cdc.gov/parasites/cyclosporiasis/>, accessed 4-24-14.
4. Centers for Disease Control and Prevention, <http://www.cdc.gov/listeria/>, accessed 4-24-14.
5. Centers for Disease Control and Prevention, <http://www.cdc.gov/hepatitis/>, accessed 4-24-14.

ON THE ORGANIC SIDE..

USDA Organic Cost-Share Programs Funded

Approximately \$13 million in Farm Bill funding is now available for organic certification cost-share assistance, making certification more accessible than ever for small certified producers and handlers.

"Consumer demand for organic products is surging across the country," said Secretary Tom Vilsack. "To meet this demand, we need to make sure that small farmers who choose to grow organic products can afford to get certified. Organic food is now a multi-billion dollar industry, and helping this sector continue to grow creates jobs across the country."

The certification assistance is distributed through two programs within the Agricultural Marketing Service. Through the National Organic Certification Cost-Share Program, \$11.5 million is available to all 50 states, the District of Columbia, and five U.S. Territories. Through the Agricultural Management Assistance Organic Certification Cost-Share Program, an additional \$1.5 million is available to organic operations in Connecticut, Delaware, Hawaii, Maine, Maryland, Massachusetts, Nevada, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Utah, Vermont, West Virginia, and Wyoming.

These programs provide cost-share assistance through participating states to USDA certified organic producers and handlers for certification-related expenses they incur from October 1, 2013 through September 30, 2014. Payments cover up to 75 percent of an individual producer's or handler's certification costs, up to a

maximum of \$750 per certification. To receive cost-share assistance, organic producers and handlers should contact their state agencies. Each state will have their own guidelines and requirements for reimbursement; the National Organic Program (NOP) will assist states as much as possible to successfully implement the programs.

For additional information contact [Dana Stahl](#), Organic Certification Cost Share Program Manager, (540) 361-1126. Additional information, including state cost share contacts, is available on the [NOP Cost Share web page](#).

OSU calculator helps organic farmers use fertilizer more efficiently

06/05/2014. Corvallis, Ore. – Organic farmers use cover crops and organic fertilizers, compost and other amendments to add nutrients to their soil. But are they getting the best bang for their buck?

A new online tool from the Oregon State University Extension Service does the math so that small-scale organic farmers can figure that out more precisely. Nick Andrews, an instructor with the OSU Extension Service's small farms program, helped develop the free, spreadsheet-based tool, which is called the Organic Fertilizer and Cover Crop Calculator, at <http://smallfarms.oregonstate.edu/calculator>.

"The calculator lets you estimate how much nitrogen and other nutrients your cover crops and fertilizers will provide for your next cash crop," Andrews said. "That could help you cut back on fertilizer use and benefit from your soil building practices."

Farmers can save money on fertilizer, while also using this information to reduce the risk of nutrient runoff into waterways, Andrews said. On the flip side, farmers might discover that they're not using enough fertilizer, he said.

Farmers and gardeners who don't use cover crops can still use the calculator to determine which types and amounts of organic and synthetic fertilizers to use.

The new calculator estimates the amount of nitrogen needed in pounds per 1,000 square feet while taking into account the amount of nitrogen added by cover crops and other soil amendments such as compost.



ON THE ORGANIC SIDE...

The original 2010 calculator made calculations on a per acre basis.

This new calculator is most useful for small-scale farmers and experienced gardeners who are interested in refining their fertilizer programs. Before using the calculator, be sure to sample your soil. The calculator helps you account for legume cover crop nitrogen contributions and select the most cost-effective fertilizers, Andrews said.

Read more about cover crops, soil fertility and soil labs in the following Cooperative Extension publications.

- Estimating Plant-Available Nitrogen Release from Cover Crops — http://bit.ly/PNW_636
- Organic Fertilizer and Cover Crop Calculator — <http://smallfarms.oregonstate.edu/calculator>
- Soil Fertility in Organic Systems: A Guide for Gardeners and Small Acreage Farmers — http://bit.ly/PNW_646
- Methods for Successful Cover Crop Management in Your Home Garden — <http://bit.ly/1k4sW0K>
- Laboratories Serving Oregon — http://bit.ly/EM_8677
- Cover Crop Sampling Instructions — <http://bit.ly/RNjGr4>

Is eOrganic for You?

eOrganic is a web community where organic agriculture farmers, researchers, and educators network; exchange objective, research- and experience-based information; learn together; and communicate regionally, nationally, and internationally.

If you have expertise in organic agriculture and would like to develop U.S. certified organic agriculture information, join us at <http://eorganic.info>.

eOrganic Resources

Find all eOrganic articles, videos and webinars at http://extension.org/organic_production

Connect with eOrganic on [Facebook](#) and [Twitter](#), and subscribe to our [YouTube](#) channel!

Have a question about organic farming? Use the eXtension [Ask an Expert](#) service to connect with the eOrganic community!

National Soil Project

Healthy, productive soils are a treasured resource. The National Soil Project (NSP) at [Northeastern University](#) is collaborating with [The Organic Center](#) to examine some of the benefits organic agriculture may have on soil health. If you own an organic farm in the United States, please consider sending a soil sample to the NSP. All it takes is a two-ounce, air dried sample of top soil, and postage can be reimbursed!

Results will be published and

shared with soil donors on request.

[Learn more at the Northeastern University National Soil Project website](#)

\$ MONEY TALK \$

New Pilot Program Offers Coverage for Fruits and Vegetables, Organic and Diversified Farms

2014 Farm Bill Expands Crop Insurance Options, Provides Premium Discounts for Qualified Operations

WASHINGTON, May 21, 2014 – Agriculture Secretary Tom Vilsack today announced a new risk management option that will be available for fruit and vegetable growers and producers with diversified farms. The policy, called Whole-Farm Revenue Protection, will provide flexible coverage options for specialty crop, organic and diversified crop producers. The program will be implemented in counties across the country and will expand in availability over the next several years.

Whole-Farm insurance allows farmers to insure all crops on their farm at once, rather than insuring commodity by commodity. Traditionally, many fruit and vegetable crops have not had crop insurance programs designed for them—making it less attractive for a farmer that primarily planted a commodity crop like wheat or corn to use another part of his or her land for growing fruits and vegetables or other specialty crops. This allows farmers greater flexibility to make planting decisions on their land.

"Crop insurance has been the linchpin of the farm safety net for years and continues to grow as the single most important factor in protecting producers of all sizes from the effects of unpredictable weather," said Vilsack. "Providing farmers the option to insure their whole farm at once gives farmers more flexibility, promotes crop diversity, and helps support the production of healthy fruits and

vegetables. More flexibility also empowers farmers and ranchers to make a broader range of decisions with their land, helping them succeed and strengthening our agriculture economy."

The 2014 Farm Bill requires a whole-farm crop insurance policy option, and paves the way for the Risk Management Agency (RMA) to make it broadly available to specialty crop, organic, and diversified growers. The Federal Crop Insurance Corporation Board of Directors (FCIC Board) approved the Whole-Farm Revenue Protection pilot policy for RMA to offer it through the federal crop insurance program in 2015.

USDA has taken many steps to provide effective insurance coverage for diversified, organic and specialty crops. The whole-farm crop insurance policy provides flexibility to meet the needs of specialty crop growers, organic producers and those with diversified farms, and who have farm production and revenue history, including five years of historic farm tax records. This policy is also part of USDA's commitment to small and mid-sized producers managing diversified operations.

USDA has been strengthening crop insurance by providing more risk management options for farmers and ranchers. The policy offers coverage levels from 50 to 85 percent; recognizes farm diversification through qualification for the highest coverage levels along with premium rate discounts for multiple crop diversification. The Market Readiness Feature, as outlined in the Farm Bill,

simplifies insurance coverage for producers under the Whole-Farm Revenue Protection pilot policy by allowing the costs such as washing, trimming, and packaging to be left in the insured revenue instead of having to adjust those amounts out of the insured amount.

The new Whole-Farm Revenue Protection policy combines Adjusted Gross Revenue (AGR) and AGR-Lite along with several improvements to target diversified farms and farms selling two to five commodities, including specialty crops to wholesale markets. The new policy is also designed to meet the risk management needs of diversified crop or livestock producers including those growing specialty crops and/or selling to local and regional markets, farm identity preserved markets, or direct markets.

As part of the pilot, Whole-Farm Revenue Protection will be available where AGR and AGR-Lite are currently offered, and will expand to other counties as data are available for underwriting and actuarial ratemaking. RMA will release information on the policy later this summer when it becomes available. This information will be announced on the RMA website at www.rma.usda.gov.

FOCUS ON PEST MANAGEMENT

Spotted Wing Drosophila Update - Juliet Carroll, Fruit IPM Coordinator

Spotted wing Drosophila (SWD) is a destructive vinegar fly (fruit fly) recently introduced to North America from Asia. Females can slice directly into ripening fruit to lay eggs; about 7 to 16 per day. When populations build in late summer and early fall, soft fruit such as fall raspberry, blackberry, blueberry, elderberry, grapes, plums, cherries and peaches can be at risk of severe infestation.



Photo: J. Carroll

Cornell University and Cornell Cooperative Extension established a SWD monitoring network in 2012. In 2014, monitoring for SWD is being done in Albany, Cayuga, Chautauqua, Chemung, Clinton, Columbia, Dutchess, Erie, Herkimer, Livingston, Monroe, Niagara, Onondaga, Ontario, Orange, Orleans, Rensselaer, Saratoga, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Tompkins, Ulster, Washington, Wayne, Wyoming, and Yates Counties. Traps are checked once per week and results are posted on the SWD blog, <http://blogs.cornell.edu/swd1/>, which you can subscribe to for email alerts.

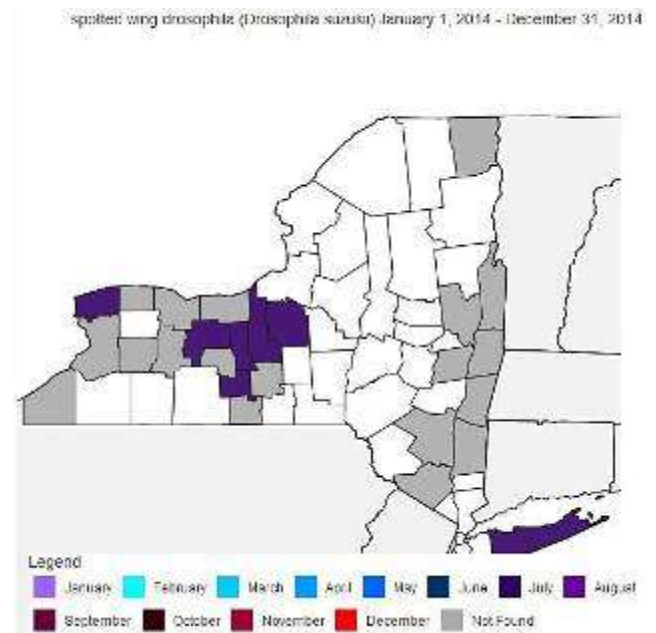
Four SWD, the first reported for of the 2014 growing season, were captured the week ending July 9. Two females in ripening summer raspberry in Suffolk County; one male in summer raspberry in Onondaga County; and one female in summer raspberry in Cayuga County.

Eleven SWD were captured the week ending July 17. One female in blueberry and one female in summer raspberry in Niagara County; one male in blueberry and one female in summer raspberry in Schuyler County; three females in summer raspberry, two SWD in woods, and three SWD in blueberry in

Ontario County.

Sustained trap catch is a milestone often used in IPM for timing management tactics against insect pests. Insect traps in the SWD monitoring network are checked once per week until adult SWD have been caught for two consecutive weeks at that location, indicating sustained trap catch.

On the blog, we post SWD first catch reports. Some of these reports may not prove to be first sustained trap catch because SWD adults are not caught the following week. This was the case for the traps in Suffolk, Onondaga, and Cayuga Counties. No SWD adults were caught at these locations the week ending July 16, and in Suffolk County, no infested fruit was detected.



This indicates that SWD populations are still very low in NY. Cultural practices such as removing overripe berries from the planting, clean picking, dragging equipment across the ground to squash and break up dropped berries, etc., may provide some benefit, particularly in crops that are nearing the end of the harvest window, such as summer raspberries. Also, remove alternate weed hosts, pokeweed and bittersweet nightshade, from the area before these weeds develop fruit. Consider creative approaches to sanitation in U-pick plantings such as providing a discount on purchased fruit when the customer brings in an extra bucket of damaged and over-ripe fruit to

FOCUS ON PEST MANAGEMENT *(continued)*

the counter for disposal.

Keep track of fruit ripening in other susceptible crops and plan to protect these with insecticides in the coming weeks. [Berry insecticide tables](#) and [tree fruit and grape insecticide tables](#) are found on Cornell Fruit Resources. SWD populations and damage can increase dramatically with favorable weather and susceptible ripe fruits. Insecticide control requires frequent applications (5-7 day interval), so plan spray programs carefully to maintain coverage and optimize the utility of the applied materials. Rotate insecticide mode-of-action to avoid insecticide resistance.

More information on SWD can be found on the Cornell Fruit Resources' [SWD website](#), www.fruit.cornell.edu/spottedwing. An up-to-date distribution map for NY and the Eastern US can be found on the Cornell Fruit Resources [SWD Distribution page](#), courtesy of the Southern Region IPM Center and the University of Georgia Center for Invasive Species and Ecosystems Health. And don't forget to subscribe to the blog, <http://blogs.cornell.edu/swd1/>.



Photo: T. Martinson

Know the Imposters in Spotted Wing Drosophila Monitoring Traps - Faruque Zaman, Cornell Cooperative Extension of Suffolk County

Spotted wing drosophila (SWD, *Drosophila suzukii*) is a type of fruit fly, sometimes called vinegar fly, relatively new to the US. Fruit flies are also commonly referred to by the genus name *Drosophila*, though there are fruit flies classified under other

genera. With the cold winter last season, we were expecting a higher than normal winter mortality, and hopefully a later than usual emergence of spotted wing drosophila. In the past several weeks (mid-May to late June) some male-female imposters have been caught in monitoring traps and they can be easily confusing for inexperience handlers. Distinguishing female spotted wing drosophila from other fruit flies caught in traps can prove challenging. Knowing the look-a-likes will help with proper identification of the species. Similar article was first published in the Vol. 12 (7), 2013 issue of the NY Berry News. This version of the article has some updates with pictures of additional imposters.

Spotted wing drosophila has emerged as a serious pest to many specialty crops in the United States. Since its detection in 2011 in New York, SWD has received much attention from researchers, extension educators, and fruit growers around the United States due to the nature and severity of damage it can cause in agricultural crops, and to its extremely rapid spread around the country. Most people associate fruit flies with rotting or fermenting fruits; SWD, however, will feed in ripening and undamaged fruits even prior to harvest. Small fruits including raspberries, blackberries, blueberries, cherries, and strawberries appear to have been the most heavily attacked cultivated crops. Fruit that is damaged may drop or deteriorate early and be unmarketable. Wild fruit such as pokeweed, bittersweet nightshade, and autumn olive berries are also good hosts and help to build or maintain their populations.

Knowing when SWD is in the area and getting an idea of their abundance can help determine whether controls might be needed for susceptible crops. So far, experience around the Northeast US suggests SWD starts appearing in low numbers around early to mid-July, with populations building into August and September. SWD detection and monitoring is done with apple cider vinegar- or yeast+sugar-baited traps. These baits are also attractive to other fruit flies so it is important to separate SWD from these other flies weekly before specimens deteriorate. Distinguishing SWD from these other species is not difficult but depends upon good magnification and recognizing features unique to SWD. The following descriptions and photos will help when trying to separate SWD from other fruit flies found in traps. Specimens that need to be stored can be placed in rubbing or other alcohol (70%).

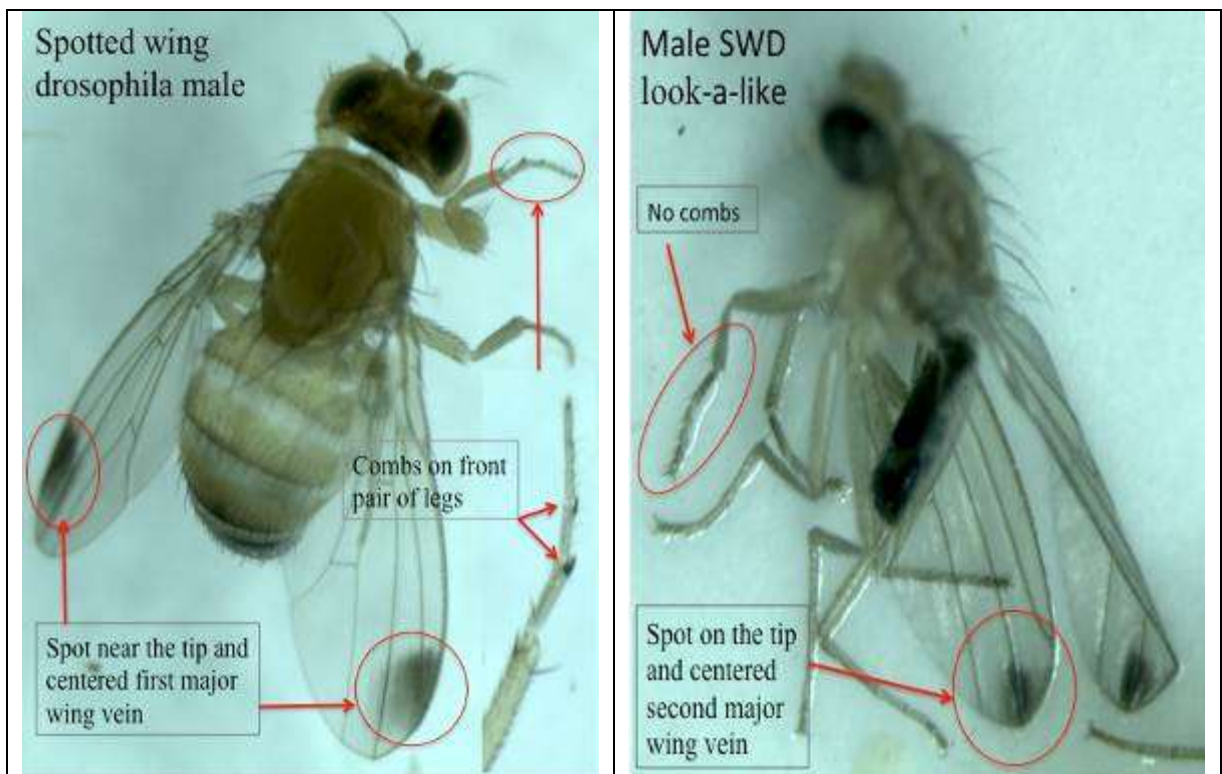
Male SWD are easiest to recognize, even with a 5X

FOCUS ON PEST MANAGEMENT *(continued)*

hand lens or possibly without magnification. The wings each have a *single spot before the wingtip*. Some other species have multiple spots and one also has a single spot but it is located right at the tip of the wing. Compare the photos and note the position of the spot (Figure 1). In newly emerged SWD the spot may not be clear, but it should be apparent after 24 – 48 hrs. and always visible on flies in traps. Another fruit fly species, *Leucophenga varia*, males also have single spot at the tip of the wings but the spot is smaller and lighter in color than the spot on SWD. This species has dots on the side of the abdomen which SWD lacks; SWD also has narrow and unbroken dark bands on the top and sides of the abdomen (more information on <http://pubs.cas.psu.edu/freepubs/pdfs/xj0045.pdf>). Some species have break in the band down the center of the back of the abdomen. SWD males also have a 'comb' (patches of 3 – 6 dark spines) nearly parallel to and on the 1st and 2nd segments of the front 'foot'. That feature requires higher magnification (at around 40X) to see clearly, but is not necessary to confirm as the wing spot and position are diagnostic.

Female SWD require higher magnification (40X or more) to separate out from other fruit flies. The wings lack any distinctive markings and the legs do not possess the combs seen on males. Two features to look for are the strong saw-like toothed ovipositor (for egg-laying) at the tip of the abdomen, and unbroken dark banding on the top of the abdomen. Other fruit flies may have a similar ovipositor but it and the teeth are much smaller and appear less 'aggressive' (Figure 2). Many species have banding on the abdomen but the bands are often broken in the center. Some similar species may also have dark pigmentation around a cross vein on the wing which is never seen in SWD. With only a little practice female SWD can be most quickly separated out based upon the appearance of the ovipositor alone. Specimens will often naturally lay on their sides, conveniently providing the best perspective for viewing the feature. If the ovipositor is not visible, pressing lightly on the abdomen will expose it.

The 2014 SWD Project on Long Island is funded by The Friends of Long Island Horticulture. Many thanks to Nolan Amon (CU student and Summer Intern) for assisting the SWD monitoring program on Long Island.



FOCUS ON PEST MANAGEMENT *(continued)*

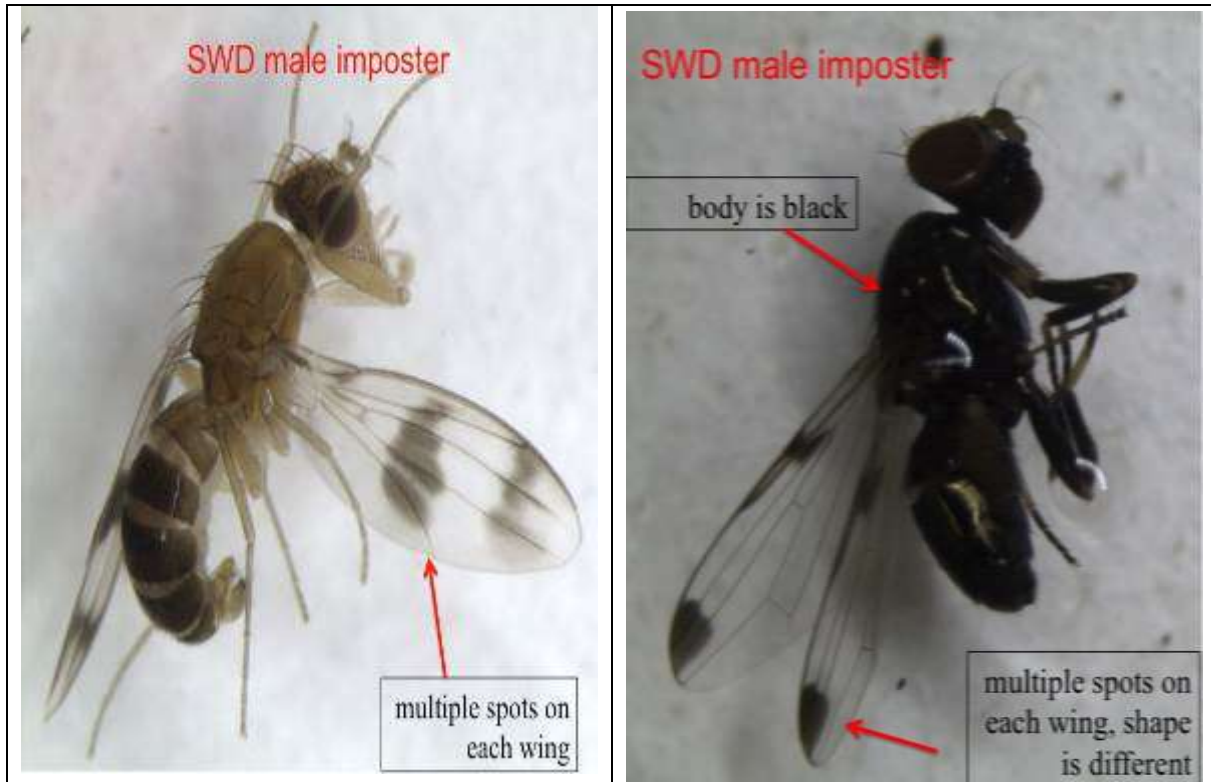
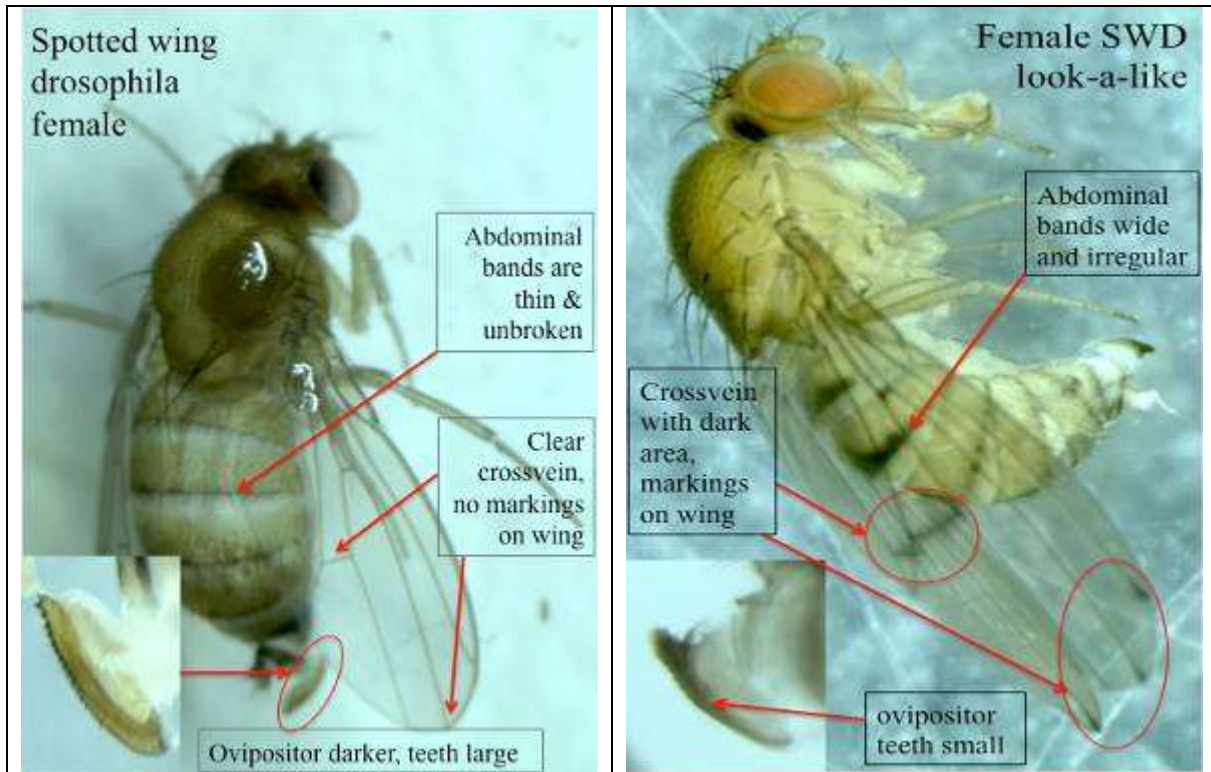


Figure 1. Male spotted wing drosophila (upper left) and imposters (upper right and bottom). Photos: Faruque Zaman, CCE-SC.



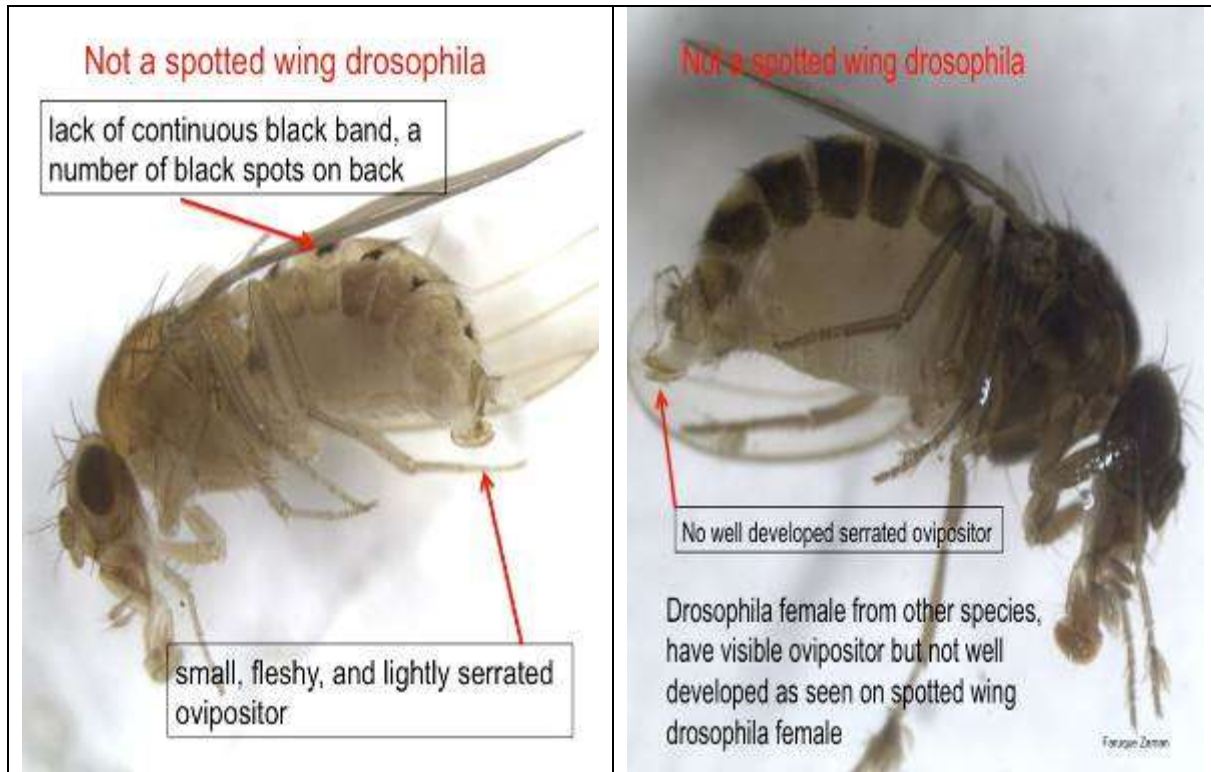
FOCUS ON PEST MANAGEMENT *(continued)*

Figure 2. Female spotted wing drosophila (upper left) and females of other fruit flies (upper right and bottom) are similar in appearance. Photos: Faruque Zaman, CCE-SC.

Controlling Raspberry Cane Borers - Mark Longstroth, Michigan State University Extension

Wilting shoot tips signal that this easy to control pest has found your raspberry patch.

Editor's note: This appears to be a banner year for raspberry cane borers in NYS. They have been reported/observed frequently in commercial field and high tunnel plantings of raspberries and blackberries.)

July 8, 2014. This time of year, Michigan State University Extension educators, including myself, get calls from homeowners complaining that the shoot tips of their raspberries are dying. I ask if there are two rings cut into the stem below the wilting. If the answer is yes, I know they have the raspberry cane borer.

Right: Wilting primocane shoot tip after girdling. Note the two girdles in the background. Photo credit: Mark Longstroth, MSU Extension

Raspberry cane borer, *Oberea bimaculata* Oliver, is a



Wilting primocane shoot tip after girdling. Note the two girdles in the background. Photo credit: Mark Longstroth, MSU Extension

FOCUS ON PEST MANAGEMENT *(continued)*

beetle pest of raspberries that is widespread in Michigan. The beetle lives its life feeding on raspberries. The adults emerge in June. They feed on the tender shoot tips of new raspberry canes. The females lay their eggs about 6 inches below the tips of the new primocanes (first year shoots emerging from the ground). First, she chews two rings around the stem about 0.5 inches apart. Then she lays an egg between the girdles. The girdling causes the stem tip to wilt.

the trash. If not removed, the larvae burrows down the cane to the base and into the crown the next summer. Affected canes are weak and often break or die the next year. The larva pupates in the soil and emerges the next year to attack the shoot tips.

This pest seldom requires insecticide sprays and can be controlled by scouting for wilting shoot tips in the summer and removing the stem sections with the eggs before the larvae can burrow into the cane. If there is a severe pest infestation, pesticide sprays are targeted on the adults in the immediate prebloom period, just before the flowers open. (Source: [Michigan State University Extension](#) in MSU Extension News 7-8-14)



Left, Close up of raspberry cane borer adult and recently chewed girdles, marking where the egg will be laid. Right, Raspberry cane borer larvae boring into raspberry cane. Photo credits: Mark Longstroth, MSU Extension

LEAF ANALYSIS – NOW IS THE TIME!

Marvin Pritts and Cathy Heidenreich, Dept. of Horticulture, Cornell University, Ithaca, NY

Why is Leaf Analysis Important?

Plant tissue analysis is used to measure directly the amount of nutrients in various plant parts, and for established perennial crops, is usually a better indicator of nutrient status than a soil test. Recommendations are based on the levels of 13 essential nutrients in your leaves at a specific time of the year (usually mid-summer).

Unlike visual diagnoses, foliar nutrient analysis can alert the grower when nutrient levels are approaching deficiency so corrective action can be taken before problems occur. They also alert the grower if fertilizer is being over-applied. Unlike soil tests, foliar analysis provides accurate results for all essential mineral nutrients, not just for the 4 or 5 reported in soil tests.

Many nutrients can be applied in fall, and the recommendations will provide details on when to apply particular nutrient fertilizers and in what quantities.

Do I Need a Soil Test to Accompany the Leaf Analysis?

It is not required, but it is helpful; if you haven't had a soil test done in the past 3 years, consider doing one this year. Regardless of when a soil test was last done, it is critical that the soil pH is in the correct range for the foliar analysis results to have meaning.

When and How Do I Collect the Leaf Samples?

Other sampling times or plant parts may prove to be more appropriate for certain nutrients, but until more detailed studies are done, foliar samples collected in mid-summer are the standard because nutrient levels fluctuate little then.

For strawberries, recommendations are based on newly expanded leaves collected after renovation in late July or early August. For raspberries and blackberries, select fully expanded primocane leaves in early August. For blueberries, select young newly matured leaves exposed to full sun in late July. **Want to learn more?** [Watch a Youtube video of berry leaf sampling.](#)

Collect at least 50 leaves from across the planting. Samples should be representative of the entire field. If a particular area of the field looks poor or has been fertilized differently from the rest, sample it

separately.

I have the Leaves, Now What?

Remove petioles, and wash leaves in distilled water. Dry them, place them in a paper bag, and send them to the laboratory for analysis. If leaves cannot be washed immediately after collection, store them in a refrigerator or cooler until they may be processed; they should not be allowed to wilt prior to washing.

Once leaves are dry, place in sample bags; label bags appropriately. Fill out the form completely and use the proper crop code from the chart provided. Be sure to indicate on the test submission form that the recommendations requested are for an established planting.

Agro-One provides soil and nutrient testing services previously available through the Cornell Nutrient Analysis Laboratory along with additional analytical services. Key input regarding analytical methods and quality control is provided by Cornell, and Cornell nutrient management guidelines are provided by Cornell through Agro-One.

A leaf analysis, including nitrogen, costs \$24. A basic soil test, with a water soluble boron test added, costs \$22. Results should return from the lab within 10 - 14 days.

To obtain basic soil test and leaf analysis sampling instructions and sample boxes/bags contact: Agro-One–Dairy One, 730 Warren Road, Ithaca, NY 14850 or calling 1-800-344-2697, or visiting <http://dairyone.com/>.

In Conclusion

Conduct a foliar tissue analysis every other year. Monitor soil pH regularly, and do a basic soil test every three years. Remember, the leaf analysis is accurate only if the soil pH is within an acceptable range (5.5 - 7.0 for raspberries and strawberries; 4.0 - 5.0 for blueberries). Always be alert for any unusual appearance of leaves, and for unexplained reductions in growth or yield.

Want to learn more? Watch a recorded webinar on berry crop soil and leaf analysis: [Berry Soil and Nutrient Management – The Basics](#)

Cornell University
Department of Horticulture

134 Plant Science Bldg.
Ithaca, NY 14853

PHONE:
607-255-4568/1789

FAX: 607-255-0599

E-MAIL:
hort@cornell.edu

We're on the Web!

See us at:

<http://hort.cals.cornell.edu/>

New York Berry News (NYBN) is a monthly commercial berry production newsletter provided by Cornell berry team members. It is designed to help promote and strengthen commercial berry crop production in New York State. NYBN is available free of charge in pdf format at:

<http://www.fruit.cornell.edu/nybn/> .

Visit the NYBN web site to view back issues or to subscribe to monthly e-mail notices with table of contents and a link to the most current issue.

More on individual team members and their areas of expertise may be found at: <http://www.fruit.cornell.edu/berry/berryteam.htm>.

Questions or comments about the New York Berry News?

Ms. Cathy Heidenreich
Cornell University Dept. of Horticulture – Geneva Campus
630 W. North Street, Geneva, NY 14456
315-787-2367
mcm4@cornell.edu

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

***Cornell University provides equal program and employment opportunity.**

Upcoming Events

August 20-21, 2014. NASGA 2014 Summer Tour, Abbotsford, British Columbia. **More information:** www.nasga.org.

October 3, 2014. Cornell Small Fruit Open House, Ithaca, NY. Save the date, more information to come!

November 17-19, 2014 – Southeast Strawberry EXPO, Pinehurst, North Carolina. **For more information:** www.ncstrawberry.com.

December 9-11, 2014. Great Lakes Fruit, Vegetable, and Farm Market EXPO and Michigan Greenhouse Growers Expo. More information: <http://www.glexpo.com/>.

January 8-11, 2014. 2015 OPGMA Congress, Sandusky, OH. **More information:** www.opgma.org .

January 20-22, 2015. Empire State Producers EXPO. **More information:** <http://nysvga.org/expo/information/>

January 27-29, 2015. Mid-Atlantic Fruit and Vegetable Convention, Hershey, PA. More information: <http://www.raspberrylblackberry.com/>.

February 3-6 2015. NASGA Conference and Symposium, Ventura, CA. **More information:** www.nasga.org.

February 24-27, 2015. North American Raspberry and Blackberry Conference, Fayetteville, NC. **More information:** www.raspberrylblackberry.com/

June 18-25, 2015 – 11th International Rubus & Ribes Symposium, in Asheville, NC, June 21-24, with preconference tour to farms and research sites June 18-21. More information: <http://www.newbeginningsmanagement.com/ishs/>