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College of Agriculture and Life Sciences

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The Berry Patch Pioneers Innovative Use of Exclusion Netting to Combat SWD

This article was originally posted on the New York State Berry Grower's Association website: https://www.nysbga.org/berry-growers/2017/6/7/the-berry-patch-pioneers-innovative-use-of-exclusion-netting-to-combat-swd

The Berry Patch, in tiny, rural Stephentown, has pioneered an innovative solution to spotted wing drosophila (SWD) infestation. Since it arrived in the United States in 2008, SWD has made it virtually impossible to grow commercially acceptable, pesticide-free raspberries and blueberries, but the Berry Patch's experiments with exclusion netting seek to end crop losses.

Spotted wing drosophila is native to Southeast Asia. It first appeared in California in 2008, and spread to Florida the following year. By 2010, SWD had migrated to the Carolinas, Louisiana, Utah, Michigan, and Wisconsin. Northeastern fruit growers first went to battle with the insect in 2012, when an average of 80% of raspberry and 30% of blueberry crops—and approximately $4.3 million in revenue in NY state alone—were lost due to infestation of the fruit during its early ripening stages. Dale-Ila Riggs, co-owner of the Berry Patch and NYSBGA board chair, says, "This pest is a game-changer for berry growers nationwide. There are no natural enemies for it in the U.S."

Exclusion Netting Continued

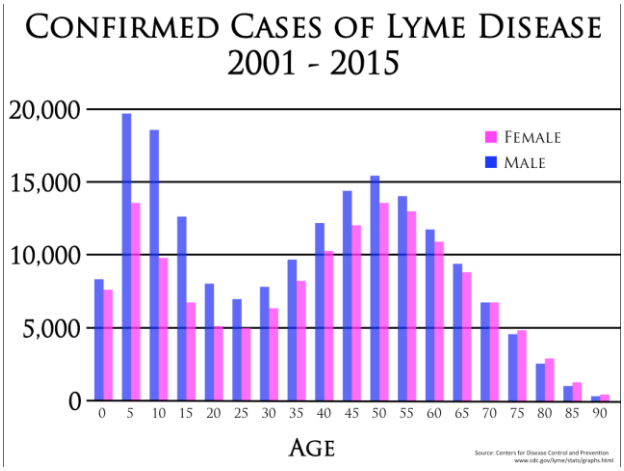
In 2012, Riggs lost about 40% of her lucrative blueberry crop to SWD. After observing some early research on the use of exclusion netting at Cornell University's New York State Agricultural Experiment Station in Geneva, she obtained a Northeast Sustainable Agriculture Research and Education Farmer grant to test the use of the netting on her half-acre blueberry planting. Riggs adapted her existing bird-netting support system into a support system for the exclusion netting, with extra protections and anchoring to withstand thunderstorms, hail, and up to 60 mph winds. She then compared the fruits from the covered plot to the fruits grown in a control plot protected only with bird netting.

The results were startling. Riggs documented an infestation rate of 0.7% and 0.3% in 2014 and 2015, and last year had a 0% infestation rate—a rate virtually unheard-of in agricultural systems. Other farms around the country are taking notice, and have started to duplicate the Berry Patch's successful growing system.

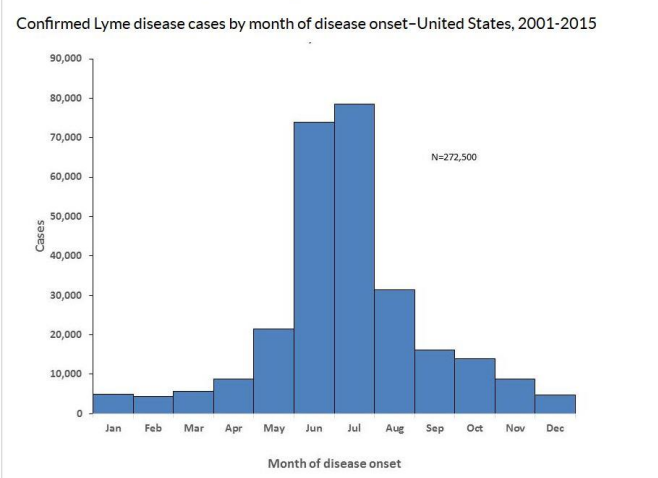
Riggs will set up her blueberry exclusion netting again in early July, prior to SWD's summer activity. She also plans to experiment with the same exclusion netting for her high-tunnel raspberry planting for the first time this year. "With SWD, no one has been able to grow pesticide-free berries that are free from infestation," Riggs notes. "The netting makes it possible. This is a highly effective method that brings new hope for growers."

Lyme Disease: Ticks and the Diseases They Carry

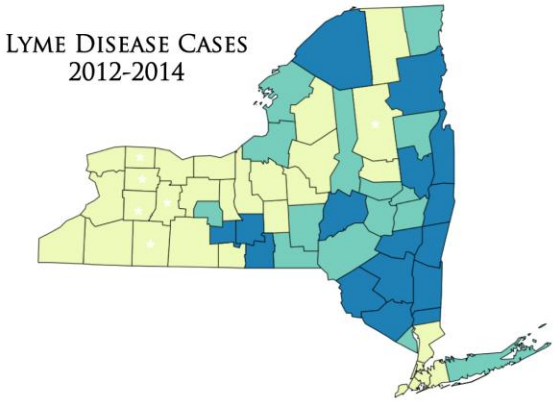
By Matt Frye; Community IPM Extension Educator in the Hudson Valley. Matt provides education and conducts research related to pest management in areas where people live, work, learn and play.



Boys aged 5-9 years old have the highest confirmed number



Most cases of Lyme disease occur in the summer after being bitten by spring-time nymph tick (Sources: CDC)



Darker colors represent higher incidence of disease (Source: NYS Dept. of Health)

By now, you've heard of Lyme disease. If you're reading this in the Northeast, chances are you've had Lyme disease or know someone that does. And perhaps you know that Lyme disease is a topic entrenched in scientific and political controversy in terms of accurate diagnosis, effective treatment, and access to insurance. Putting these larger issues aside for the moment, the intent of this post is to present data on Lyme disease and help people to better understand the risks.

What: Lyme disease is a series of symptoms that occur when our body is infected with a bacterium called *Borrelia burgdorferi*. In the Northeast, the *only way* that people and animals become infected with Lyme is when they are bitten by a blacklegged tick – sometimes called the deer tick. The complex lifecycle of the tick and how they obtain and transmit pathogens is described by TickEncounter.

Who: Each year, approximately 30,000 cases of Lyme disease are reported to the CDC, making it the most commonly reported vector-borne disease in the US [a vector-borne disease is one transmitted through the bite of an organism such as a tick, mosquito, flea, etc.]. However, studies suggest that this number is only a fraction (about 10%) of the actual cases of Lyme disease in the US, putting the estimated number of cases between 300,000 and 400,000 each year. Based on this value, Lyme disease is the **second most common infectious disease** in the US, falling between two sexually transmitted diseases: Chlamydia (#1) and Gonorrhea (#3). Who is at the greatest risk of Lyme disease? Children! Especially boys aged 5 to 9 years old. **Parents – check your children daily for ticks**!!

When: Ticks can be active any day of the year when temperatures are above freezing. However, based on their lifecycle, the greatest risk of acquiring Lyme disease occurs during the spring months when nymph ticks are present, resulting in summer-time symptoms and doctor visits. Nymph ticks are about the size of a poppy seed, which makes them difficult to see. Check yourself daily for ticks, using your fingers to feel raised bumps and your eyes to notice new black marks.

Where: While Lyme disease is regarded as the second most common infectious disease in the entire US, over 96% of all cases come from only 14 states.
Fortunately, there are steps that individuals can take to reduce their risk of encountering ticks and acquiring tick-borne disease.

Researchers are investigating area-wide tick management options (The Tick Project) and working to understand how habitat management (The Tick Management Handbook; Japanese Barberry Control Methods) and host management (mice, deer) affect tick populations. But it's up to you to protect yourself — knowing that prevention is the best cure.

1. Wear tick-killing clothing. Buy over-the-counter permethrin spray and spray it on your clothing and gear. Used according to the label, permethrin binds to the material and can kill ticks, mosquitoes and other pests following a lethal exposure. Do-it-yourself treatments can remain effective for up to seven washes. Also consider buying pretreated cloths or sending your outdoor socks, pants, and shirts for professional treatments. These can be protected for up to 70 washes.

2. Use repellants. DEET, picaridin, oil of lemon eucalyptus and IR3535 all repel ticks. The percentage of active ingredient on the label indicates how long that product will be active in the field. For more on choosing the right repellant see our previous post, "Understanding over-the-counter sprays for mosquitoes and ticks" (June 2, 2015) and this guide from Consumers Reports.

3. Recognize and avoid tick habitat. Tick species differ in where they prefer to hang out. The blacklegged tick (transmits Lyme disease) is found at adult knee-height and below in wooded or brushy areas. When hiking, stay on the trail and away from these areas. If you'll be in tick habitat, take precautions by wearing long pants tucked into your socks and a light-colored shirt tucked into pants. These steps make it more difficult for ticks to get to your skin. If you've treated your clothing with permethrin, this can also increase the exposure of the ticks to the acaracide — the tick-killing substance.

4. Steer clear of hitchhikers. Ticks can be carried on clothing or gear that you used outdoors — gear that you haven't used permethrin or a repellent on. True, ticks don't survive long in most homes because of low humidity, but still — you're safest if you change your clothes and place exposed items in a large, zippered plastic bag in an entryway. Put them in a clothes dryer and run on high heat for 20 minutes. The tumbling action of the dryer and the high heat kill ticks and similar critters. [Note: don't wash clothes first. Even the hottest cycle might not kill ticks, and it increases the drying time needed.

5. Check for ticks. Taking all these steps doesn't mean you will avoid ticks 100% of the time. Perform daily tick checks *even if you haven't been outdoors in a day or so*. Get to know the marks on your skin and recognize new ones. New marks that, if you touch them, just happen to have legs.

6. Remove ticks safely. Only one method has been officially evaluated for its ability to safely remove ticks — using sharp tweezers, grab a tick as close to the skin as possible and gently pull up. Other methods could increase the risk of acquiring a tick-borne disease. To learn more, see our post "It's tick season. Put away the matches."

7. Protect you pets. Just like people, pets can encounter ticks and acquire tick-borne disease. If your pet goes outdoors, it should have some protection against ticks. TickEncounter describes some of the options available for your pets, including oral and spot-on medications as well as collars. Speak to your veterinarian about the best option for protecting your pet against tick bites. Regular grooming with a fine-tooth comb after being outdoors can help to remove ticks that have not attached to your pet's skin.

Follow label instructions for do-it-yourself clothing treatments.

Original articles posted on the New York State IPM blog page:
http://blogs.cornell.edu/nysipm/2017/10/05/lyme-disease-by-the-numbers/
and
http://blogs.cornell.edu/nysipm/2017/10/10/steer-clear-of-ticks-and-the-diseases-they-carry/

Ticks wait for a passing host on vegetation or in leaf litter. Staying on trails can reduce your exposure to ticks.

"How to": Berry Diseases

Identifying diseases in your small fruit plantings can help reduce potential crop loss. The following information was taken from a PowerPoint presentation given by Kerik Cox, Associate Professor in the Plant Pathology and Plant-Microbe Biology Section, School of Integrative Plant Science at Cornell University. Kerik's program specializes in applied plant pathology, mycology, and community/stakeholder education. For more detailed information the PowerPoint can be viewed here: https://rvpadmin.cce.cornell.edu/uploads/doc_420.pdf.

Step 1 Identify

What is a disease? : A disease can be described as a "change in physiology caused by microbial attack". This can show up in a variety of forms including rots, spots, lesions, & discoloration. Disease symptoms can be confused with plant damage caused by hail, animals, herbicides, & heat. The key is to look for signs of a pathogen and to pay attention to when there are weather and spray events.

Step 2 Symptoms

What are symptoms?: Disease symptoms can be described as observable physiological reactions resulting from pathogen infection. When trying to identify what symptoms your plants are experiencing, keep an eye out for disease symptoms such as discoloration, lesions, wilt, chlorosis (yellowing), and necrosis (death of tissue). Some common examples are blight and rot.

Blight- you will see general rapid death of several plant organs

Rot- necrosis and maceration of fleshy tissue

The way that the symptoms are presented can also help identify a disease. Look for whether or not the distribution of symptoms is patchy or uniform. A patchy distribution is most likely a biotic disease while abiotic diseases usually have more of a uniform distribution. When you see disease across plantings you may have a soilborne disease.

Step 3 Scouting

Scouting for diseases can be tricky. You can't see pathogens until the infection has already occurred. Because many management practices do not protect against infection, it is important to catch disease symptoms as soon as possible. By scouting frequently you can prevent the spread of new infections and be more prepared for the next year.

Is It Caused by a Virus?

Viruses have abioic infectious particles. Plant physiology may appear similar to nutrient deficiency or toxicity and may take years to actually show symptoms. Three common small fruit viruses in New York are Tobacco and Tomato ringspot virus (ToRSV and TRSV), Blueberry Scorch Virus (BIScV), and Blueberry Shock Ilavrirus (BIShV).

Tobacco and Tomato ringspot virus (ToRSV and TRSV)- Symptoms are asymptomatic and cause malformed leaves with chlorotic and necrotic spots. Virus symptoms may not appear for more than 10 years. As the virus progresses it causes poor plant growth, poor or absent fruit production, and potentially plant death. This virus is spread by Dagger nematodes, which thrive in sandier soils. A number of weeds can host this nematode. Some management strategies include removing plants and replanting them elsewhere with healthy stock or leave fallow.

Blueberry Scorch Virus (BIScV)- This virus causes blight and necrosis of developing leaves and flowers during bloom. Although it may look like frost injury, the damage has cultivar-specific chlorosis and marginal necrosis patterns. As the virus progresses it causes poor growth, poor or absent fruit production, and potentially plant death. The vector for this virus is aphids. The aphids are able to move quickly thoughout a planting and into neighboring fields.
https://ecommons.cornell.edu/bitstream/handle/1813/43077/blueberry-scorch-FS-NYSIPM.pdf?sequence=1&isAllowed=y

Blueberry Shock Ilarvirus (BIShV)- Symptoms include blight of flowers and developing leaves during bloom. The second flush of growth in the summer and bushes look normal, but the plants will not have fruit. This virus causes symptoms that last between 1-4 years and then infections become inactive. Bushes lose productivity but can recover with good yields in a perfect operation. Blueberry Shock Ilarvirus is transmitted in pollen spread by bees and is easily distributed within a field and to neighboring fields.

Other Problems:

When scouting you may find symptoms that do not fit those described above. Keep in mind that there are various other factors that can affect your small fruit planting. Root diseases, winter and drought injury, *Phytophthora* root rot, and black root rot all negatively effect the health of plants.

If you notice an issue with your small fruit planting and are unsure what steps to take, feel free to contact your region's Cornell Cooperative Fruit Programs: https://nysipm.cornell.edu/agriculture/fruits/cce-programs

A visual tool to help you diagnose diseases as well as other maladies in berry crops can be found at: https://blogs.cornell.edu/berrytool/

New Farmers Grant Fund Program

Empire State Development

New York State has allocated $1 million in the 2017–2018 state budget for the fourth round of the New York State New Farmers Grant Fund. *Its purpose is to provide grants to help beginning farmers improve farm profitability.* A Request for Applications for this round is **happening now**.

This grant fund helps beginning farmers improve farm profitability through *one or both* of the following goals:

- Expanding agricultural production, diversifying agricultural production and/or extending the agricultural season
- Advancing innovative agricultural techniques that increase sustainable practices such as organic farming, food safety, reduction of farm waste and/or water use

The program has provided more than $2.4 million to farmers since 2014. View the list of previous awardees.

Eligible Applicants:

- Eligible applicants are farm businesses, in which all owners are in the *first ten years* of having an ownership interest in any farm operation.
- The farm must have a *minimum of $10,000 in sales* of products grown or raised on the farm.

Eligible Expenditures:

- Eligible costs include the purchase of new or used machinery and equipment, supplies, and/or construction or improvement of physical structures used exclusively for agricultural purposes

Below are links to the 2017 Guidelines and Application for the program.

2017 New Farmers Grant Fund Program Guidelines
2017 New Farmers Grant Fund Program Application

This program is **currently open**, and applications **are being accepted**.

Applications must be **postmarked by January 26, 2018.**
It is anticipated grant awards will be announced in late Spring/early Summer 2018.

Contact Information

Questions should be sent to Bonnie Devine at nyfarmfund@esd.ny.gov.

Further information can be viewed at https://esd.ny.gov/new-farmers-grant-fund-p

NEW YORK STATE

Growing frustration about the weather: What can we do?

2017 has been a very wet year. But you already know that. From May to July, most of upstate New York received at least five inches of rain above normal. But go back to 2016 and the same areas had deficits ranging from one to five inches. That's a real drag.

How are you supposed to plan ahead when it seems impossible to predict what will happen? It seems like every growing season is different. What our parents and grandparents knew about weather patterns on the family farm may no longer apply.

'It's June and we're not even in our fields.'

'I missed the cutoff date for crop insurance.'

The list goes on and on.

The Network for Environment and Weather Applications is a useful resource for fruit and vegetable growers when it comes to understanding how changing weather conditions affect your operation on a daily or weekly basis. For example, online tools such as our apple scab and fire blight models help you understand disease risk and subsequent action steps on a daily basis to protect your apples.

But what about the bigger picture? As growers, how do we even begin to predict management needs in the upcoming season when historical patterns and family knowledge may no longer be as useful? Precipitation, drought, extreme weather, extended growing season and so on are all hitting us at once. Our climate is changing.

Dr. Allison Chatrchyan, director of the Cornell Institute for Climate Smart Solutions has taken steps to explore this 'big picture' dilemma by collaborating with Cornell professors Dr. Art DeGaetano and Dr. Toby Ault, as well as regional Cornell Cooperative Extension specialists throughout New York State who form the Climate Smart Farming (CSF) Extension Team.

Online climate smart decision tools have also been developed to complement the work of CSF Extension Team members. Visit the Cornell Climate Smart Farming website to explore these resources related to agriculture and climate. Where NEWA looks at short-term risks posed by insects and diseases to a crop, the CSF program takes a broader view, providing historical context to current conditions and seasonal trends. By doing so, growers can move in a direction of understanding ways in which fluctuating climate conditions could influence farming operations.

Dr. Chatrchryan provides a great overview of the CSF program in this video. Her talk, Cornell's Climate Smart Farming Program: Research, Tools, and Extension Support for Farmers in New York and the Northeast, was presented at the 2016 New York State IPM Conference Climate, Weather, Data: Protecting Our Crops and Landscapes. You can also download a PDF of Dr. Chatrchyan's presentation.

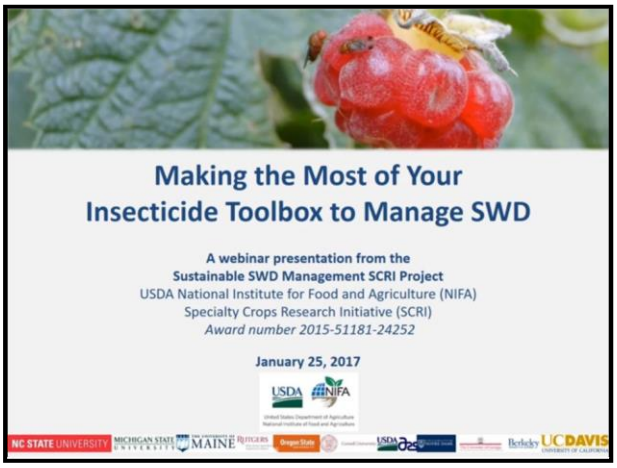
Dan Olmstead is Coordinator of the New York State IPM program's Network for Environment and Weather Applications. You can follow him on Twitter (@dolmstead) and Instagram (@dan_olmstead).

SWD Webinars

Two webinars are available for anyone interested in learning more about spotted wing drosophila (SWD) management.

1) **Making the Most of Your Insecticide Toolbox to Manage Spotted Wing Drosophila**
https://www.youtube.com/watch?v=nV4Yb6_DiHw

2) **Management of Spotted Wing Drosophila using Organic Strategies**
http://articles.extension.org/pages/74034/management-of-spotted-wing-drosophila-using-organic-strategies



"This 1 hour webinar focuses on insecticide usage to control the invasive spotted wing drosophila, *Drosophila suzukii*. Topics addressed include insecticide efficacy, post-harvest residues, resistance management, and strategies to improve control."

"This webinar will provide a comprehensive update on organic management of spotted wing drosophila. It will cover findings of the research conducted during the first year of this project on organically approved strategies including:

1) behavioral strategies to improve monitoring (using more attractive baits and lures) and management (attract and kill approach);
2) cultural strategies to lower SWD populations in the field (canopy and floor management, and using exclusion netting); and
3) chemical strategies (using organically approved insecticides in combination with adjuvants and phagostimulants."

Rainfall Survey

March through July of 2017 was a period of above average rainfall in much of New York. Rainfall often came as heavy downpour events, leading to agricultural damage and disease. The purpose of this survey is to gather information on regional impacts and how farmers coped with this situation, so that farmers and those institutions and industries that support farmers will be better prepared in the future.

This survey can be viewed at the following link:
https://cornell.qualtrics.com/SE/?SID=SV_0uo09Hc67IsVFfn&Q_JFE=0

If you have further questions pertaining to this survey contact:

Shannan Sweet

Email - sks289@cornell.edu;

Phone - 607 255 8641;

Address - 126 Plant Science Building, Dept. of Horticulture, Cornell University, Ithaca, NY 14853

Upcoming Events

Berry Production distance learning course

Starts November 7th, but register now!

http://smallfarms.cornell.edu/online-courses/course-descriptions/berry-production-bf-122/

Great Lakes Expo

December 5-7, 2017

Devos Place Conference Center and The Amway Grand Plaza Hotel Grand Rapids, Michigan

Registration opens September 25, 2017

http://glexpo.com/

2018 Becker Forum: Farm Employment Practices - Planning for the Future

January 15, 2018

Holiday Inn Syracuse-Liverpool, Exit 37

Syracuse, NY

Register at the NYS Vegetable Growers Association website

2018 Empire State Producers EXPO

January 16 - January 18, 2018

NEW location:

Onondaga Community College's SRC Arena & Events Center in Syracuse, NY

http://nysvga.org/expo/information/

NASGA Annual Meeting & Conference

January 21st - January 24th, 2018

New Orleans, LA

Register here: http://www.nasga.org/n-american-strawberry-growers-conference.htm

Save the Dates - LOF Winter Fruit Schools

February 5th & 6th, 2018

Save the Dates: More info forthcoming

https://lof.cce.cornell.edu/event.php?id=839

NEWA Survey and Berry Models

PLEASE PARTICIPATE IN OUR ONLINE NEWA SURVEY – help us shape our future website!

The Network for Environment and Weather Applications (NEWA) wants you to take our survey — it'll only take **10 minutes** or less.

All responses from the survey are **anonymous and confidential** and will not be shared with any outside group.

What is NEWA?

NEWA, newa.cornell.edu, uses real-time weather data, streamed from 588 weather stations throughout the Northeast, Midwest and mid-Atlantic to provide you with agricultural decision support. NEWA has insect and plant disease management tools, degree days, and weather information for growers, consultants, Extension educators, faculty, and others. NEWA models and resources are available *free of charge*, and help growers make informed management decisions, based on weather-predicted insect phenology and plant disease risk.

Why take the survey?

Over the next two years, we'll rebuild the NEWA website, newa.cornell.edu, and we want to know what users', new and old, want and need from an online weather-based decision support system. Our new website will be as easy to use on your smart phone as on your desktop, and we want to build it *the way **you** want it to be*. Whether you've used NEWA's online pest forecast models for years **or** have never used NEWA, we will benefit from your responses.

Take the survey now: http://bit.ly/2x0n7CK ***Thank you for participating!***

Click on the tiny url link above or type in the full url shown below to access the survey.
https://cornell.qualtrics.com/SE/?SID=SV_0GRlhOIDI5HwbR3&Q_JFE=0

How can NEWA benefit your berry farm?

Berry pest forecast models are in the works! NEWA is teaming up with the NYS Berry Growers Association targeting six berry pest developmental models. We're creating tools for blueberry maggot, cranberry fruitworm, Botrytis fruit rot of strawberry, strawberry anthracnose, mummy berry, and Botrytis blight of blueberry.

Apple, grape, onion and potato farmers reported *in 2007* that they save, on average, $19,500 per year in spray costs and prevent, on average, $264,000 per year in crop loss as a direct result of using NEWA pest forecast models. 99% of NEWA users would recommend NEWA to other farmers.

CONTACT US FOR MORE INFORMATION

About the survey and NEWA:
Dan Olmstead
NEWA Coordinator
New York State IPM Program
P: 315.787.2207 **E:** dlo6@cornell.edu

About the berry models being developed:
Juliet Carroll
Fruit IPM Coordinator
New York State IPM Program
P: 315.787.2430 **E:** jec3@cornell.edu

Organic Fruit Sales Surge 12%

By David Eddy; editor of Meister Media Worldwide's *American Fruit Grower*® and *Western Fruit Grower*® magazines.

Organic fresh produce accounted for $1.25 billion dollars in sales at the end of the second quarter 2017, an 8% increase in dollars and a 10% rise in volume from the previous year, according to the Organic Produce Network (OPN).

Partnering with Nielsen, OPN's review of second-quarter organic fresh produce sales at retail stores across the country shows dollar sales of organic fresh vegetables totaled $608 million while organic fresh fruit sales came to $425 million. Collectively, organic fresh fruits and vegetables represented nearly 10% of all produce dollars at the end of the second quarter.

Overall, from the previous 12-month period, sales of organic fruit were up 12.3%, while sales of organic vegetables rose 5.7%.

Strong sales were buoyed by consumers' desire to know as much about where the produce they buy comes from and how it was grown, says Matt Lally, Client Manager for Nielsen Fresh.

"Looking at these trends, it is clear that there is a continued interest in organic produce and a movement toward transparency in general," Lally says. "Today's consumer is interested in eating simpler, cleaner products and this is reflected in the continued growth we are seeing with organic fresh produce."

The $234 million-dollar organic packaged salad category led the way in terms of sales during the second quarter this year, accounting for 19.5% of organic produce sales. The volume rise of 5.6% compared to a year ago could be an indication that lower retail prices are helping to boost sales in this convenience-based category.

During the second quarter, the $175 million-dollar berry category accounted for the second highest share of organic sales and had an average retail price of $4.19. Berries, which represented 14.6% of organic produce sales in the second quarter, saw a 22.1% jump in dollars and 16.6% increase in volume compared to a year ago. While berries as a whole have been on a strong upward trend for some time, organic growth continues to be at a faster pace than its conventional counterparts.

The $59 million-dollar banana category, the third-largest fruit segment behind berries and apples, experienced a 25% increase in volume over 2016, which is impressive considering conventional banana sales have struggled recently. Likewise, pineapples saw a 35% jump in volume during the same period. "It's clear growers and shippers are clearly responding to continued interest in organic fresh produce by increasing production and availability of key commodities," says Matt Seeley, CEO of OPN. "For their part, it appears retailers are working harder as well to ensure that in-demand organic produce items are represented on their shelves."

Interestingly, 10 organic commodities account for nearly three-quarters of all organic produce dollars. In addition to packaged salads and berries, rounding out the list are herbs, spices and seasonings, apples, beverages, carrots, bananas, lettuce, tomatoes, and citrus.

Within the $47.5 million value-added organic produce category, (which includes baby peeled carrots, green beans, and vegetable trays and medleys), the segment saw a 2.7% increase in dollar sales and a 4.5% jump in volume during the second quarter of 2017 compared to last year, with overall retail prices about two percent lower than the same period last year. Consumer preference seems to lean more toward value-added vegetables than it does value-added fruit, which was down close to 6% in volume at the end of the second quarter.

More than likely, higher retail prices in this category segment, on average about 4% more for organic fruit vs. a year ago, curtailed consumer interest. The impact was most dramatic with watermelons which saw a 13% rise in average retail price but a 67% decline in volume compared to a year ago. Similarly, honeydew melons had a 47% jump in price and saw a 60% decline in volume during the same period.
“Retailers we spoke with concurred that cost has been one of the biggest hurdles in growing sales of value-added organic fresh produce and fruit in particular,” Seeley says. “They point out that future growth will be dependent on finding the sweet spot between offering convenience-based organic fresh produce and fair pricing.”

This article was originally posted on Growing Produce on September 5, 2017. It can also be viewed through the following link: http://www.growingproduce.com/vegetables/organic-fruit-sales-surge-12/

Utilizing Plasticulture: Minnesota

The North American Strawberry Growers Association organizes a tour somewhere in North America or Mexico every year. These are excellent opportunities to see the very best growers in various regions of our continent. This past summer the tour went to Minnesota where one of the stops was Jerry Untiedt's farm in Waverly. Jerry is an early adopter of new technologies and marketing strategies and has had both successes and failures as he pushes the boundaries of fruit and vegetable production in a cold climate. New York growers can learn from Jerry since our climates are similar. The following is a summary of an article written by Gary Pullano that appeared in the October issue of Vegetable Grower News.

Untiedt's Vegetable Farm, founded in 1971, grows more than 50 different fruits and vegetables. The majority of these crops are grown within their 45 acre high tunnels. The owner, Jerry Untiedt, uses "four season tunnels" because they are able to withstand winter weather. Although they are generally sustainable, supplemental heat is needed to reduce frost risk. Through trial and error this farm has discovered that high tunnel practices allow them to have crops when other, more traditional farms, do not.

Using tunnels can be described as rewarding but challenging. While they are working within the tunnels for 7 months out of the year, the work consists of 20 hours a day, 7 days a week. When they were first starting out, Untiedt's used small tunnels, which made it easier to individually heat and maintain. Over the years they have grown their system tremendously. Currently the tunnels are 24 feet wide and 500 feet long, which equates to about ¼ of an acre per bay. These larger tunnels work well for them and can withstand around 70 mph winds.

Untiedt's has 10 years of experience with growing day-neutral strawberries in high tunnels. Growing them is not always easy as they are extremely susceptible to insects, particularly larvae and Japanese beetles. When growing strawberries in tunnels, proper pollination is a factor. Bumblebee hives are added to the middle of the tunnels and because strawberry flowers have low levels of pollen, they supplement the bees with cane sugar. Each bumblebee hive thrives for around 6-7 weeks and then is replaced with a new colony. All strawberry runners are cut by hand, which ensures the plants are properly maintained. Untiedt's grows several varieties including Evie, Seascape, and Albion, among others. Using these techniques, Untiedt's Farm is able to benefit from adopting plasticulture and has become well known for having strawberries before most of the competition.

Berry Production Course

Thinking of adding more berry and bramble fruits to your farm?

An online webinar course will soon be available to anyone that wishes to sign up. If you're exploring the idea of adding berries and bramble fruits to your farm, this course will help you consider all the aspects of this decision, from varieties and site selection all the way through profit potential and marketing.

Various learning objectives will be covered including:

- Primary considerations when choosing a site for successful berry farming
- Basic cultural demands of the 3 major berry crops (strawberry, blueberry and brambles)
- Cultural requirements of an array of lesser known berry crops
- Pest complexes of the major berry crops
- Post-harvest requirements of berries
- Considerations for successful marketing of berry crops
- How to analyze costs vs. expenses and be able to incorporate them into a business plan

The bulk of the course happens *on your own time*, with discussions, readings, and assignments in MOODLE, our virtual classroom. To add to the experience, webinars will be woven into the online interface of the course to allow you to meet on a weekly basis to learn from outside presenters and ask questions to address your farm issues in real time. If you miss a webinar, they are always recorded and posted for later viewing.

Laura McDermott, team leader and regional fruit and vegetable specialist for Cornell Cooperative Extension of Eastern NY, and Jim O'Connell, the small fruits educator for Cornell Cooperative Extension in Ulster County NY, will be the instructors for this course.

Course Outline:

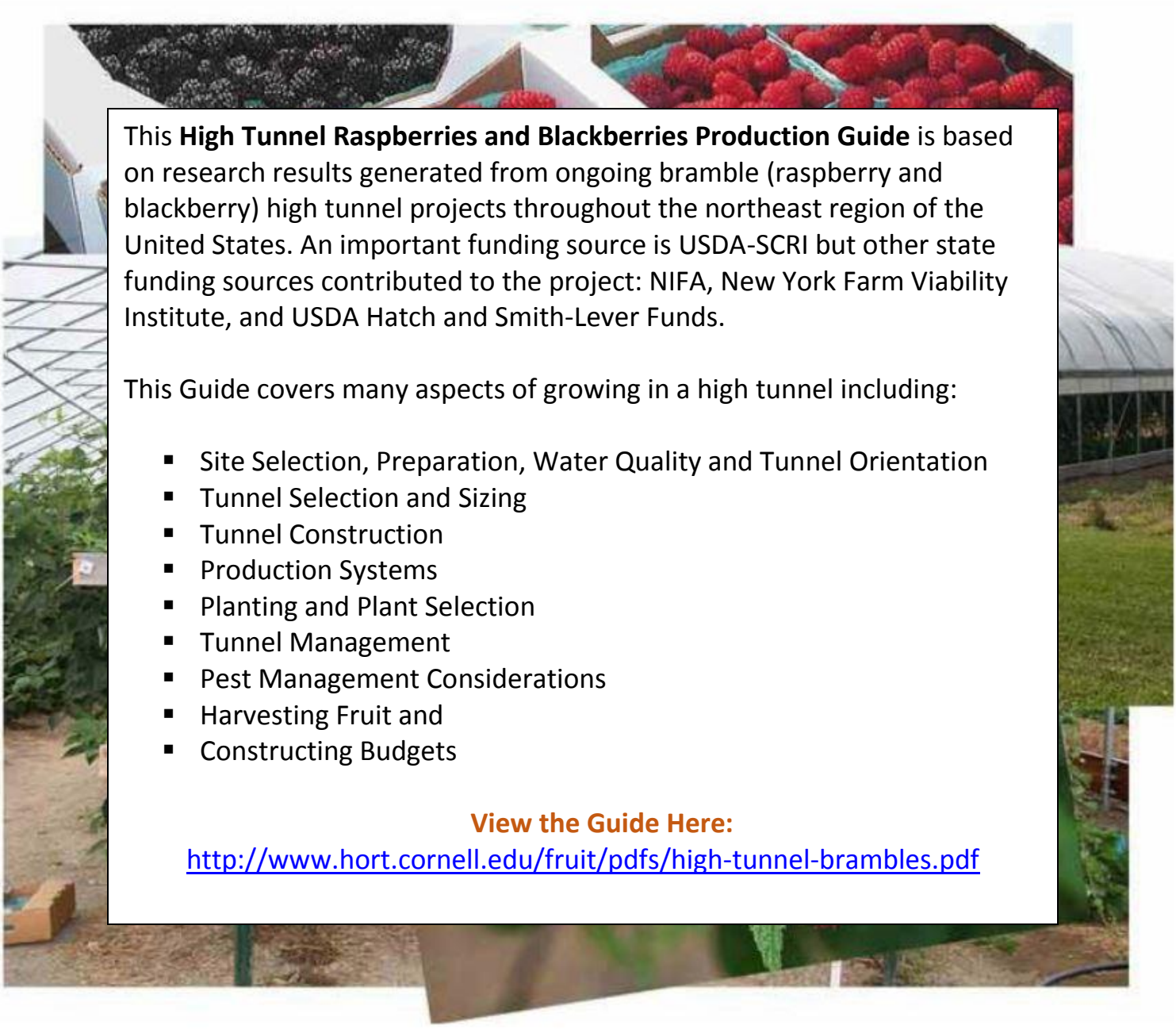
- ***Week 1:*** Site Selection – Understand how to evaluate the quality of your soil using several different physical and chemical tests. Learn to evaluate the market potential of a site. Learn how to identify suitable irrigation sources.
- ***Week 2:*** Strawberries – cultural systems of strawberries; recommended varieties; pest management.
- ***Week 3:*** Blueberries – cultural systems of blueberries; recommended varieties; pest management.
- ***Week 4:*** Raspberries and Blackberries – cultural systems of bramble crops; recommended varieties; pest management.
- ***Week 5:*** Lesser known berry crops – many minor berry crops will be covered (currants, gooseberries, and others).
- ***Week 6:*** Post-harvest and marketing

This course starts **November 7**, so sign up now!:
Registration is $250.00
http://smallfarms.cornell.edu/online-courses/register-for-courses/

For more information see http://smallfarms.cornell.edu/online-courses/course-descriptions/berry-production-bf-122/

NEW! : High Tunnel Raspberry and Blackberry Guide

By: Pritts, M., L. McDermott, K. Demchak, E. Hanson, C. Weber, A.J. Both, G. Loeb and C. Heidenreich



This **High Tunnel Raspberries and Blackberries Production Guide** is based on research results generated from ongoing bramble (raspberry and blackberry) high tunnel projects throughout the northeast region of the United States. An important funding source is USDA-SCRI but other state funding sources contributed to the project: NIFA, New York Farm Viability Institute, and USDA Hatch and Smith-Lever Funds.

This Guide covers many aspects of growing in a high tunnel including:

- Site Selection, Preparation, Water Quality and Tunnel Orientation
- Tunnel Selection and Sizing
- Tunnel Construction
- Production Systems
- Planting and Plant Selection
- Tunnel Management
- Pest Management Considerations
- Harvesting Fruit and
- Constructing Budgets

View the Guide Here:

http://www.hort.cornell.edu/fruit/pdfs/high-tunnel-brambles.pdf

Root Weevils in Berries

Root weevils, a common pest in berries, cause both physical and economic damage. The main species of concern are the black vine weevil (*Otiorhynchus sulcatus*), strawberry root weevil (*Otiorhynchus ovatus*), and the rough strawberry weevil (*Otiorhynchus rugostriaus*). Adult weevils are brown to black in color and appear to have turned-down snouts. The strawberry root weevil is the smallest of the three weevils, about 5 mm, and can be black to light brown. The rough strawberry weevil is about 6.4 mm and is chocolate brown in color. The black vine weevil is the largest of the three as they can get up to 1 cm and sometimes have small yellow flecks on their body.

Adult weevils emerge in late May to June and only feed at night. As they feed, adults cause unique notching along leaf edges, chew buds right off, and also chew most of the way through leaf stems, leaving them dangling. The larvae cause the most damage, burrowing into strawberry crowns, and "tracking" along root surfaces. Larvae will feed until they overwinter in the soil and re-emerge in the spring to continue feeding. These later instars generally cause the most visual damage to the plants, causing stunted and darkened plants. The fine roots will be destroyed and even some hard fibrous roots can be eaten. This damage can weaken or kill the plant. In extreme cases the heavily damaged plants will not make it through the second fruiting year.

Stage	When to Look	Where to Look
Adults	Late June to August	Foliage; examine for leaf damage (look for notching)
Eggs	July to August	In soil
Larvae	September to April	In roots (split them and check for tunnels)

Identifying which root weevil you have in your planting will help determine the best control methods to use. Plowing under old beds can help prevent the spread of insects as they pupate in the soil. Postharvest foliar sprays can also be used to control the adult beetles, as long as you delay the spray until as many adults as possible have emerged.

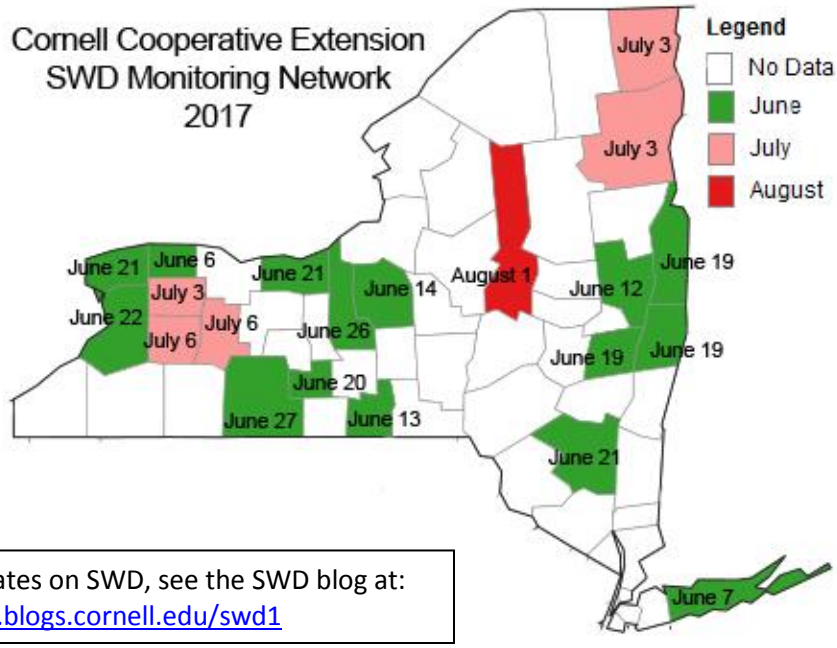
For more information: https://blogs.cornell.edu/newfruit/files/2017/01/root_weevils-259k247.pdf
http://files.tlhort.com/topicassets/attachments/ta_85_weevil_bulletin_may_2011.pdf

SWD: Year in Review

Spotted wing Drosophila (SWD) arrived early with most sites reporting continuous trap catch from the first trap catch date forward. As of August 7, 2017, all of the 32 SWD trapping sites had caught SWD in the 21 counties in New York where traps were deployed. This contrasts previous years in which first trap catch might be followed by a week or more of zero SWD trap catch. Also, in prior years there were often sites in which first trap catch was in late August or early September. To prevent fruit infestation this year, susceptible fruit crops had to be protected with an insecticide spray program or have exclusion netting in place.

By August 10, on average, 200 SWD per trap were being caught in an unsprayed fall raspberry research planting. Healthy-appearing raspberries sampled from this planting had, on average, 8 larvae per fruit as found via salt flotation. Each collected fruit yielded a range of 0-8 eggs. These data provide evidence that high pressure from SWD builds during late summer, making it impossible to harvest susceptible fruit that is free of infestation during this time, unless an insecticide program or exclusion netting is in place.

Reports came in from growers stunned by the level of damage that SWD can cause to their crops, especially blueberries and raspberries. Many U-pick blueberry plantings were closed early. In early August, reports of tart cherry loads being rejected at the processor due to worms and mold underlined that SWD had found its mark in cherries. Tons of tart cherries were dumped on the ground. Information about SWD was posted on Cornell Fruit Resources SWD pages and on the SWD blog. The situation in tart cherry and blueberry necessitated developing resources for how to treat dumped and fallen fruit on the ground to minimize infestation of susceptible fruit awaiting ripening and harvest. Carroll wrote and posted a quick guide to SWD insecticides for treating cull piles and dropped fruit.



Dates first trap catch of SWD occurred in the monitoring network. Most occurred in June and early July. Only one later, on August 1.

For further updates on SWD, see the SWD blog at: www.blogs.cornell.edu/swd1

Horticulture Section
School of Integrative Plant Science

Cornell University
Ithaca, NY

PHONE:
607-255-4568

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 seasonal 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: https://blogs.cornell.edu/berries/new-york-berry-news/

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: https://nysipm.cornell.edu/agriculture/fruits/cce-programs

UPCOMING EVENTS all posted on page 11

Questions or comments about the New York Berry News?

Ms. Nicole Mattoon
NYS IPM Program – Geneva Campus
630 W. North Street, Geneva, NY 14456
315-787-2628
nem42@cornell.edu