

Cornell University
Cooperative Extension

Eastern NY Commercial Horticulture Program

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Tree Fruit News

ENYCH Program Educators:

Fruit

Dan Donahue

Phone: 845-691-7117

Email: djd13@cornell.edu

Tree Fruit

Anna Wallis

Phone: 443-421-7970

Email: aew232@cornell.edu

Tree Fruit & Grapes

Laura McDermott

Cell: 518-791-5038

Email: lmg4@cornell.edu

Berries

James O'Connell

Phone: 845-691-7117

Email: jmo98@cornell.edu

Berries & Grapes

Vegetables

Chuck Bornt

Cell: 518-859-6213

Email: cdb13@cornell.edu

Amy Ivy

Phone: 518-561-7450

Email: adi2@cornell.edu

Teresa Rusinek

Phone: 845-340-3990 x315

Email: tr28@cornell.edu

Crystal Stewart

Cell: 518-775-0018

Email: cls263@cornell.edu

Maire Ullrich

Phone: 845-344-1234

Email: mru2@cornell.edu

Business and Marketing

Bob Weybright

Phone: 845-797-8878

Email: rw74@cornell.edu

Layout:

Carrie Anne Doyle

Content Editor:

Dan Donahue

Pest and Weather Data

Degree Day Accumulations

(03/01 through 09/01/2014, via NEWA)

Location	Base 43 F	Base 50 F
Peru	2885.1	1955.6
Watermill	2896.9	1908.4
Clifton Park	3019.7	2071.5
Marlboro	3203.3	2209.6
Hudson	3296.1	2303.7
Highland	3310.9	2298.1

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Upcoming Pest Events

DD Range (43F)

Lesser Appleworm 2 nd flight peak	2131-3105
Oriental Fruit Moth 3 rd flight peak	2643-3221
San Jose Scale 2 nd gen crawlers emerging	2746-2852
Obliquebanded Leaf Roller 2 nd flight peak	2593-3011
Peachtree Borer flight subsides	2478-3126
Redbanded Leafroller 3 rd flight peak	2717-3207
Spotted Tentiform Leafminer 3 rd flight peak	2568-3022

Data courtesy of Scaffolds and Art Agnello

Latest Pest Events

Brown Marmorated Stink Bug adults and nymphs observed feeding on apples, peaches, and peppers in Milton (Ulster County) and Highland (Ulster County).

Trap Capture and Scouting Threshold: If BMSB captures exceed 40/trap per week, or if the insect is observed on the tree, using 1 BMSB per 100 feet of perimeter orchard linear row, applications for management of BMSB should be made. Employ the first available window using one of the most effective insecticides that will best fit your harvest schedule.

Spotted Wing Drosophila sustained trap catches in the following ENYCHP counties: Orange, Ulster, Dutchess, Columbia, Rensselaer, Albany, Saratoga, Washington, Clinton.

Serving the educational and research needs of the commercial small fruit, vegetable and tree fruit industries in Albany, Clinton, Columbia, Dutchess, Essex, Fulton, Greene, Montgomery, Orange, Rensselaer, Saratoga, Schoharie, Schenectady, Ulster, Warren and Washington Counties

BMSB Trap & Scouting Update

By Peter Jentsch, Cornell University Dept. of Entomology, posted to online blog August 28, 2014
<http://blogs.cornell.edu/jentsch/>

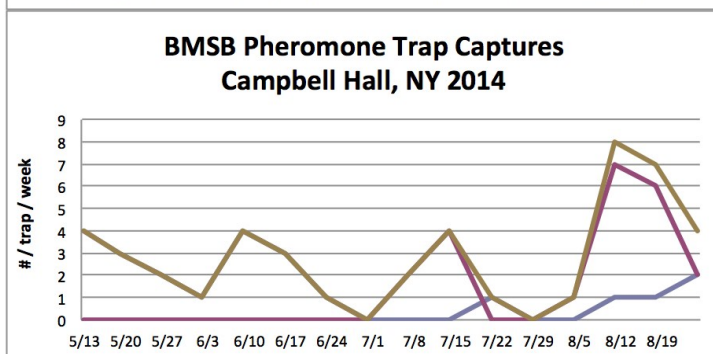
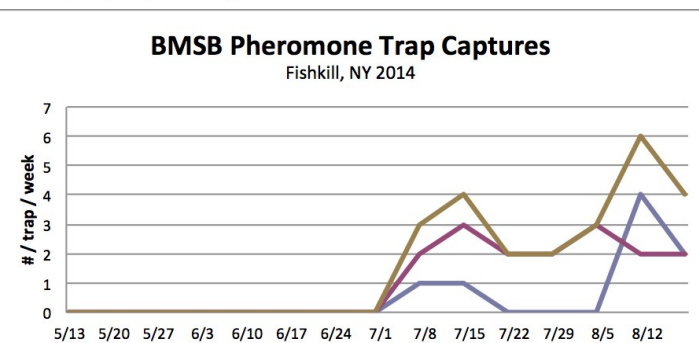
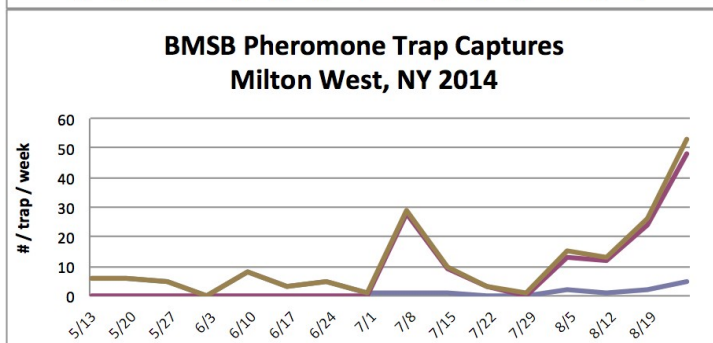
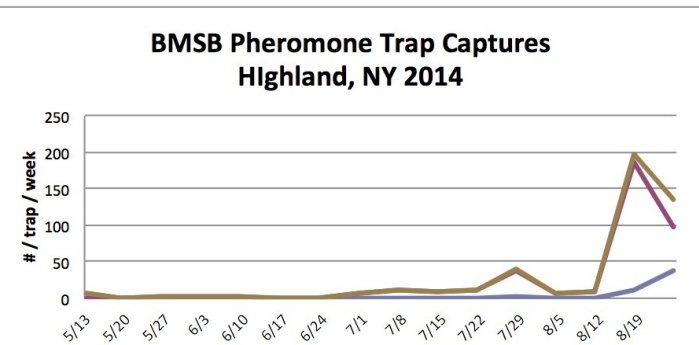
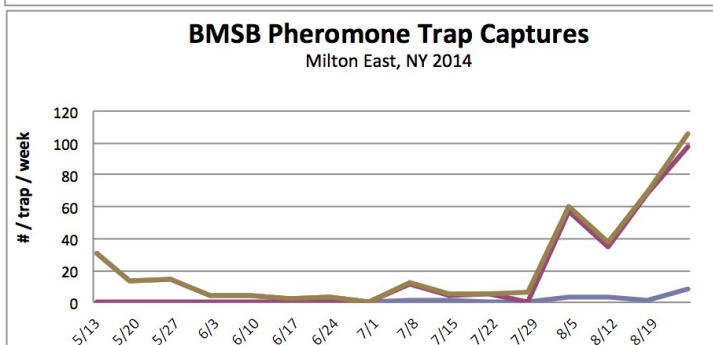
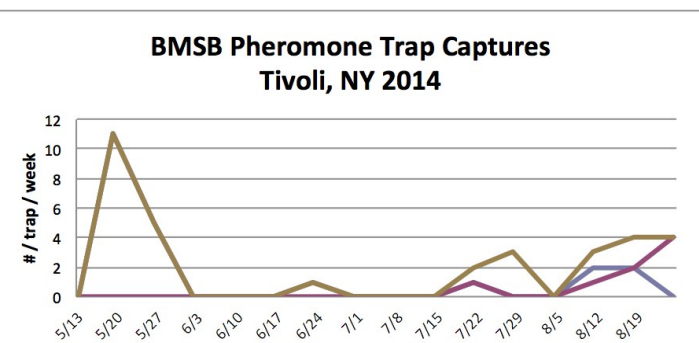
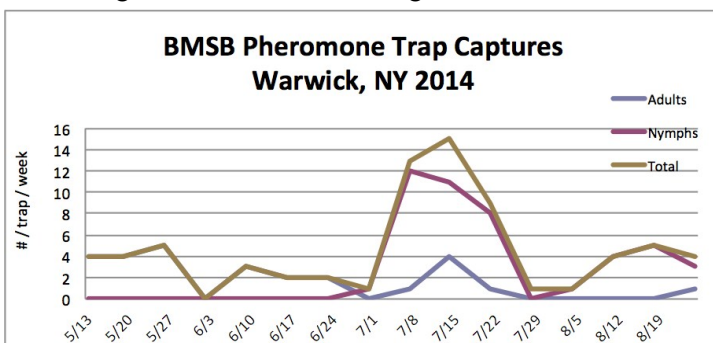
We continue to see increases in BMSB movement to pheromone baited Tedders traps, 50-93% of which are nymph. Traps at three of our monitored sites, Milton-West, Milton-East and Highland have trap captures above 40 per week.

The first adult was found moving to urban structures, seeking overwintering sites. As nymphs mature to adults, increasing numbers will be seeking host food sources to

stock up on reserves to take them through 6 months of winter. This 'feeding frenzy' often results in very high numbers of BMSB moving to irrigated orchards, especially during dry periods in September and October, if native deciduous tree hosts are unsuitable as a food source.

By far, feeding injury to mid to late season peach appears to be the greatest threat this year. In vegetable sites we are scouting, beans and Jalapeno pepper appear to be favored over tomatoes at this point in time. The pepper damage remains at <1% injury. There are relatively few BMSB in

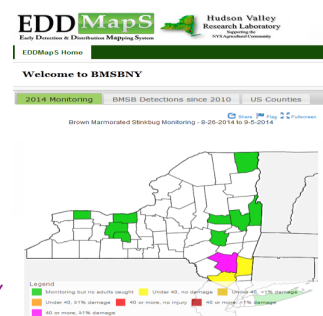
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Graphs here show
BMSB Pheromone Trap
Capture 8.28.14.

Also see BMSB Mapping in
NY 2014 using EDDMapS.

Click on image at right or see
<http://www.eddmaps.org/bmsbny/>



BMSB Trap & Scouting Update, continued from previous page

vegetable fields, however, in peach orchards (in Highland), populations feeding on fruit continue to be very high in unsprayed trees. We have seen 5% of our trees with 100% fruit injury with remaining trees with over 20% injury from BMSB feeding. Growers along the Hudson River from Highland to Marlboro should continue intensively scouting along the perimeter of orchards near woodlands or isolated host trees and vegetable sites containing legumes and pepper.

Trap Capture and Scouting Threshold: If BMSB captures exceed 40/ trap per week, or if the insect is observed on the tree, using 1 BMSB per 100 feet of perimeter orchard linear row, applications for management of BMSB should be made. Employ the first available window using one of the most effective insecticides that will best fit your harvest schedule.

The list of the most effective insecticides for BMSB management is found using this link: <http://blogs.cornell.edu/jentsch/files/2014/05/NY-BMSB-Insecticides-Efficacy.AMA.xlsx-NY-BMSB-Insecticides-Efficacy-Update-8-9-13-11fv6o8.pdf>. NYS labeled insecticides effective for use against the BMSB are available in four major classes including pre-mix formulations. Bifenthrin received an emergency exemption use permit (Section 18) to control brown marmorated stink bug (BMSB) on apples, peaches, and nectarines in Orange, Dutchess and Ulster Counties of NY. Products include Bifenthrin and Brigade, showing the greatest degree of efficacy of the pyrethroid group. However, bifenthrin has a 30d re-application interval, a 14d PHI and 12h REI.

Harvest Update for the Eastern New York Region

By Anna Wallis and Dan Donahue, CCE ENYCHP

In the Hudson Valley, Gala harvest began at the start of this week in all counties. Paulared, Ginger Gold and Zestar! harvest is complete. Our predicted harvest window for Controlled Atmosphere McIntosh remains at 09/05-15/2014.

In the Champlain Valley, harvest of Paulared and Ginger Gold is also complete or wrapping up. Harvest maturity evaluation for McIntosh and Honeycrisp begins this week

in the Harvest Maturity Program, but is expected to follow about a week behind the Hudson Valley.

Detailed maturity data is being process as this is sent for publication, please watch for the 09/05/14 E-Harvest Alert for a more specific recommendation. So far, this harvest season has offered no surprises. Dr. Chris Watkins has made the comment that the growing season in the Valley has been relatively normal, and we needn't expect anything out of the ordinary as far as storage issues are concerned.

Erik Schellenberg to Facilitate GAPs Programming in Eastern New York Region

Erik Schellenberg is a New York native, who recently returned after completing graduate school in Canada for natural resource management. His background in environmental impact assessment, ecological agriculture, and vegetable farming provide him with the knowledge and experience necessary to work with and relate to farmers. Erik is filling a grant funded position aimed at facilitating the GAPs certification process for vegetable farmers in the ENY Team area with special focus, reflecting the interest of the funder, in the Albany-south area, plus Sullivan, Rockland and Westchester. To that end, he will be leading educational sessions to help producers better understand and work through GAPs certification and will also be available for farm visits to help producers work through their customized GAPs plans and address any issues before the plans are audited by the state.



Need GAPS Help?

If you want help with writing your GAPs plan or need to get ready for your first inspection, contact Erik Schellenberg (jk2642@cornell.edu). He is prepared to help you take the next steps needed to get that inspection and to be GAPs certified. This fall, we plan on having more 2-day classes, across the region for those who have yet to get started with their plans or investigating "what it takes".

Please call 845-344-1234, and ask for Erik, if you have questions or want to book an appointment with him.

Crystal Ball Gazing about Apple Maturity in 2014

By Chris Watkins, Cornell University Dept. of Horticulture

As is usual for this year, I am asked for a prognosis of the 2014 storage year; and as always I know that I can be 100% correct by next June, but anywhere from 0 to 100% right as of early September!

Eastern New York has experienced a somewhat normal year, and as such we shouldn't be anticipating any unusual issues as long as storage apples are harvested at the proper time. We have to remember that there are no simple answers to what that means in terms of fruit quality during storage, as apples and apple trees, like all biological systems, are complex, and compensation mechanisms can be operating. Eastern New York has experienced a slightly cooler summer compared to recent history, and there have been no extended hot spells. Western New York has experienced a significantly cooler summer this year, and as such there are some storage related concerns. Two major storage disorder comments about cooler summers:

1. A cooler summer normally means a higher risk of internal browning disorders. In the past, the response to this situation was to recommend raising storage temperatures for Empire by a degree or two. However, we now know that SmartFresh can sometimes, but not always, increase the incidence of flesh browning and that this risk is increased in late harvested fruit stored at warmer temperatures (e.g. 36F). A most recent research shows that early harvest (a week before 'so-called normal') was a major contributor to reducing browning incidence. Interestingly, neither storage temperature (as low as 33F) nor SmartFresh affected browning. Harvest date is not a magic bullet but it is the best that we have. If you are planning to store beyond May, my best advice at this time is to store only first week of normal harvest periods for western NY (watch the Harvest Fax for information). If you can come earlier in good colored blocks on intensive plantings, you may lose some yield, but you will have fruit to sell later next year!

Gala browning in the stem end of the fruit is becoming more apparent as the volumes of fruit and therefore

storage lengths increase. Again we don't have all the answers yet, but harvest date is an important factor – only early harvested fruit should be kept long term as with most varieties. Last year we found that Harvista treatment decreased injury, and that this was further reduced by conditioning (as per Honeycrisp protocol) in SmartFresh treated fruit.

Remember that with any variety, there can be differences in block to block storage capability. Some blocks can have limited storage potential for reasons that are not understood. Hopefully, your storage operator will have historical data to guide decisions and ensure these fruit are not placed into mid- to long-term storage. Of course, the reverse is true – some blocks produce fruit with excellent storage potential!

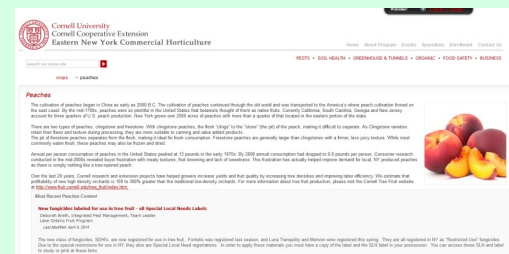
2. A cooler summer normally means lower bitter pit risk (as well as senescent disorders), but this is clearly not the case from reports for some Honeycrisp blocks from what I have seen and heard in Western New York. The reason that pit may be higher than expected is that excessive water can contribute to greater foliar growth and thus competition for the available calcium. In addition, if there is larger fruit size as a result of rain, the calcium in the flesh will be diluted. Of course, Honeycrisp is difficult anyway and your greatest weapon is orchard management to ensure good balance within the trees, and an intensive calcium spray program. Columbia County has received near-normal rainfall this season; other parts of Eastern New York have been dryer, with irrigation used to make up the difference. Serious bitter pit has been observed in some blocks, generally those with a light crop load.

Overall, the rest is yet to be revealed as the harvest and then storage season progress. Other than praying for no rain, and following the harvest fax (which represents the inputs of several people), the rest is in your hands. The key points are ensuring good harvest management to avoid late harvest of any variety, spot picking where appropriate, rapid movement of fruit to cold storages, and rapid cooling of fruit.

Eastern NY Commercial Horticulture Website

For online class registrations, announcements, older issues of our newsletters and more, please visit the ENYCHP's website at <http://enych.cce.cornell.edu/>.

Email or call any of the educators with questions or comments on the website – we want to make it work for YOU!



Summary of Apple Harvest Maturity Indices for Use in This Year's Harvest

By Dan Donahue, ENYCHP

The following are current harvest maturity guidelines for apples placed in long-term CA storage:

Notes

- Base your color criteria on the demands of your market and the requirements of your marketer.
- Review the regional maturity data published in the weekly E-Harvest Alert.
- Your individual block history, microclimate, and strain are factors that often will override the geographical location (i.e. latitude) of your orchard.
- Ethylene data (published in the E-Harvest Alert) is a good indicator for the onset of pre-harvest drop, but does not correlate well with storability.
- Pressure is an important consideration for storage apples. When testing pressure in the field to compare blocks, is important to always test apples of the same size.
- Starch testing results will show more variability when you sample picked apples out of a bin instead of picking outside canopy apples from the tree.
- All harvest indices show substantial variability, so there is no "silver bullet". Sometimes the data makes differences between blocks appear greater than they really are, and will make those necessary compromises when managing harvest crews, or reacting to the weather, worrisome. If you are in the range, all should be OK.
- Honeycrisp crop loads are extremely variable this year. Bitter pit is easy to find in the "lighter" blocks, and will be a challenge to pick-around.

Special Note on Apples for Slicing: Slice Processors are looking for apples with pressure > 16.0 lbs. Keep this in mind when evaluating your harvest timing.

Gala

- Ground color changes to cream (don't be thrown off by high-colored strains)
- Flesh color changes to yellow
- Flavor develops (you know it when you taste it)
- Brix > 12.0
- Multiple picks required

McIntosh

- Starch index of 5.0 – 6.0
- Pressure > 15.0 lbs

Honeycrisp

- Starch index > 7.0
- Pressure > 14.0 lbs.
- Brix > 13.0 (14.0+ is excellent)
- Ground color turning to cream with 80% bright red
- Multiple picks are required
- Stem clipping is tedious, but will reduce the incidence of stem punctures in this high-value apple

Cortland

- Starch index of 2.5 – 3.5
- Pressure > 15.0 lbs
- Cull out bitter pit stippled fruit

Aceymac/Spartan

- Starch index of 2.5 – 3.5
- Pressure > 15.5 lbs

Snapdragon (NY-1)

- Starch index of 3.0 – 5.0
- Pressure range 15 – 18 lbs
- Soluble solids: 13 – 15 Brix
- 2/3rds red color with cream background color
- Two picks suggested, 5 – 7 days apart
- Check with your marketing cooperative for further details

Empire

- Starch index of 4.2 – 4.6
- Pressure > 17 lbs

Red Delicious

- Starch index of 2.8 – 3.5
- Pressure > 17.0 lbs

Jonagold

- Starch Index of 7.0 – 7.5
- Pressure > 16.0 lbs

Ida Red

- Starch index of 3.5 – 4.5
- Pressure > 15.0 lbs

Law Rome

- Starch index of 4.0 – 5.0
- Pressure > 17.0

Mutsu/Crispin

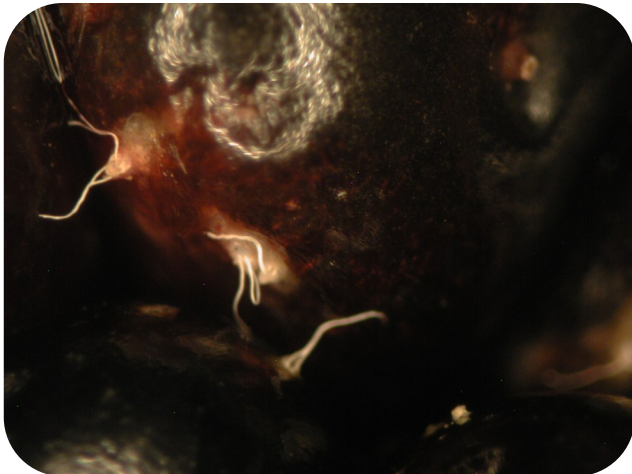
- Starch index of 4.0 – 5.0
- Pressure > 17.0

Spotted Wing Drosophila Update

By Peter Jentsch, Cornell University Dept. of Entomology, posted to online blog August 29, 2014
<http://blogs.cornell.edu/jentsch/>

As we have seen over the past 3 years, this period of warm weather during the month of August gives rise to multiple overlapping generations of the adult Spotted Wing Drosophila (SWD). The increase in numbers has now been accompanied by significant raspberry, blackberry and blueberry injury. Fruit injury over the past week has ranged from 2% to 100% damaged fruit beginning with egg laying across much of the Hudson Valley. Until recently, due to a significant delay in SWD appearance into the region, berry patches have been lightly managed to this point. However, larva are beginning to cause significant injury to fruit as extensive fruit feeding is coupled with very high egg laying and soaring adult populations.

As raspberry and blackberry are the favored host of the SWD, relative to blueberry and strawberry, these commodities will require intensive management strategies over the next few weeks through frost.



Blackberry with very high levels of SWD egg injury.



SWD oviposition in immature blackberry

More information on conventional and organic management options for NYS grown small fruit can be found here: <http://www.fruit.cornell.edu/spottedwing/pdfs/swd-insecticides-berries-ny.pdf>.

In raspberry or blackberry patches where SWD have been captured and or fruit injury has been observed, management should begin at the first available application window to reduce adult populations and egg laying. In these cultivars a tight management schedule of 3-4 days may be needed if populations continue to increase (very likely). Blueberry have been successfully managed with a 7-day program.

If periods of rainfall begin, insecticide residue will quickly be removed and re-application should be made at the first available spray window.

2013 Lessons:

A Hudson Valley fruit grower was able to retain a clean crop (0% fruit injury) using a 3-4d program on raspberry. After 5 days of intermittent rainfall, an assessment of the crop on day 6 of raspberry showed 40% injury to the crop. With an aggressive response, this grower was able to reduce the damage down to 14% by week two through re-establishment of his management program and clean picking the crop weekly.

However, this level of damage to the crop remained until the end of the season even with a very tight program.

I'm singing (spraying) in the Rain... One option you might consider during periods of back to back rain events would be to use the entomopathogenic fungal pathogen, *Beauveria bassiana*, in the spore based formulation product Botanigard (conventional) or Mycotrol-O (organic). Spores of this natural insecticide have a greater germination rate in cool wet environments over time. I would suggest using 1-2 pounds of sugar per 100 gal of water to increase feeding of the spores by the adult to increase efficacy.

To date, SWD have been captured in all Hudson Valley counties where monitoring has been taking place, including Westchester, Dutchess and Ulster in raspberry, blueberry and blackberry plantings.

Given the increasing number of SWD finds we are seeing in the northeast, it would be wise to begin trapping efforts in brambles and blueberry fields as flies increase from localized to regional populations.

Larva in MY fruit? Another option to determine SWD presence would be the use of a rapid determination of the

Continued on next page

Spotted Wing Drosophila Update, continued from previous page

presence of larvae in fresh blackberries or raspberries. Creating a salt solution made by dissolving 1 to 2 Tsp. of salt in 1 cup of water. Collect a representative sample of fruit and begin by lightly crushing the berries and submerging them in the salt solution for about 10 to 15 minutes. If larvae are present in the fruit, they will crawl from the berry through the oviposition site and be visible emerging from the berries without the help of hand lenses.

Although very little damage has occurred in Hudson Valley fruit, It is likely that SWD damage to small fruit will begin over the upcoming week as adults establish and build in populations in berry patches.

Introduction: Spotted Wing Drosophila, *Drosophila suzukii* (SWD) is a vinegar fly native to East Asia. Established in the Eastern US since 2012, it has become an invasive insect pest of small fruit and to a lesser degree, cherry and grape. Information on insect biology can be found at <http://www.fruit.cornell.edu/spottedwing/bio.html>.

Monitoring: Traps we are presently using are made of red plastic 16 oz. solo cups and lids with a black band of electrical tape. Traps are baited with apple cider vinegar (ACV), as the attractant killing solution. Approximately 30, 1/8" holes, are drilled around the top 3/4 of the cup, leaving a 3' gap to pour out the ACV solution in a strip of 2" x 2" netting to access the number of captured flies. A yeast, flour & sugar bait mixed with water is added to a 5 oz. fixed position cup along the top edge.

Cornell's SWD web site hosts a map of the counties in which SWD is being trapped; updates on presence based on trap findings can be found here: http://nysipm.cornell.edu/invasives_exotics/swd/swd.asp.



SWD red solo cup trap.

Image: UNH Cooperative Extension



SWD egg and respiratory horn on raspberry.



SWD egg on raspberry.

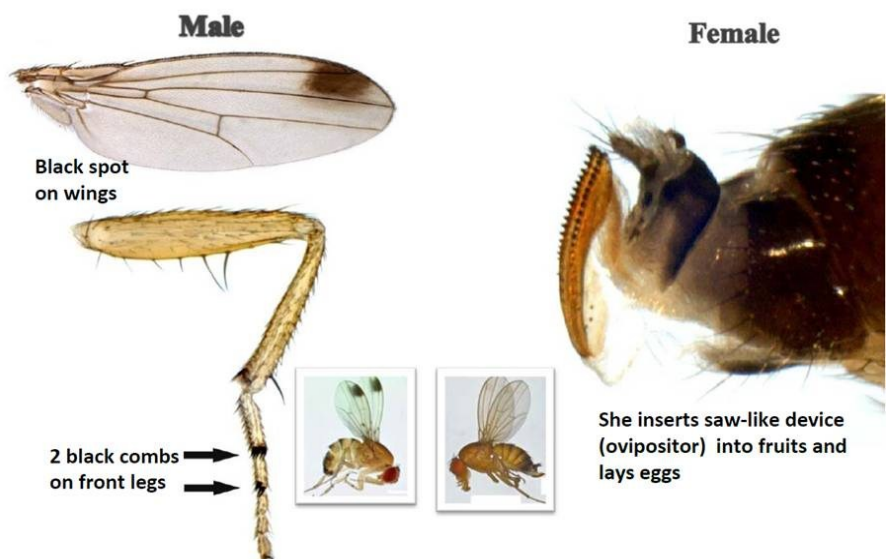


BotaniGard ES
(*Beauveria bassiana* spore formulation).



Mycotrol-O
(*Beauveria bassiana* spore formulation).

SWD Identification – key characters



SWD identification using key characteristics.

Upcoming Meetings

2nd Annual Hops Event

September 11, 2014 - 8am-4pm

Cornell Cooperative Extension of Dutchess County
Farm and Home Center, 2715 Route 44, Millbrook, NY 12545

Topics include:

- Lab Analysis of Hops
- Harvesting and Drying of Hops
- Pest and Diseases of Hops
- Value Added Foods with Hops/The Culinary and the Craft Beer Industry
- The Need for Small Grains Production and How to Get Started
- Marketing Panel Discussion hosted at Dutchess Hops, 1167 Noxon Road, Lagrangeville, NY



Topics are subject to change. \$60/person, includes lunch. Register now!

For more info. or to register contact Nancy at 845-677-8223 ext. 115 or email nh26@cornell.edu.

Small Acreage Organic Orchard Success

September 17, 2014 from 4-7 pm

Hudson Valley Lab, 3357 US Hwy 9W, Highland, NY 12528

Join Cornell entomologist Peter Jentsch and Cornell Cooperative Extension educators to learn the basics of establishing a successful high density organic orchard cropping system. We will tour the demonstration orchard to learn about how to lay out and install an intensive organic planting system and see (and maybe try!) some of the new cultivars bred for intensive organic production, hardiness, disease resistance, cider production and fresh eating flavor.

The discussion will also cover how to integrate a small orchard into your current farm to diversify your market or CSA mix; organic apple pest and disease challenges and controls; and cover some of the different challenges involved in transitioning an established orchard from conventional to organic management. There will be time at the end of the session for your organic orchard questions!

This event is FREE, but please register with Donna Clark at 845-691-7151 or djc16@cornell.edu.

For more information contact Emily Cook at 845-943-9810 or ekc68@cornell.edu.

*This program is sponsored by NOFA-NY through the
NYSDAM, Risk Management and Crop Insurance
Education Targeted States Program*

**Hudson Valley
Research Laboratory**



Every effort has been made to provide correct, complete and up-to-date pesticide recommendations. Nevertheless, changes in pesticide regulations occur constantly, and human errors are possible. These recommendations are not a substitute for pesticide labelling. Please read the label before applying any pesticide. This material is based upon work supported by Smith Lever funds from the Cooperative State Research, Education, and Extension.

Diversity and Inclusion are a part of Cornell University's heritage. We are a recognized employer and educator valuing AA/EEO, Protected Veterans, and Individuals with Disabilities.