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Berry News

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Regional Updates:

North Country—Clinton, Essex, northern Warren and Washington counties

Berry phenology: Brambles - Floricanes are still in flower, primocane emergence is good and vigorous. Blueberries - Most varieties are at fruit set, no color yet, but the berries are sizing up nicely. Strawberries - June bearing strawberries: Harvest is underway, crop is looking good, depending on whether U-picks start to open up this weekend.

Pest focus— Tarnished plant bug on strawberries and soon on raspberries. Botrytis sprays remain important. Scout for root insects.

Capital District—Albany, Fulton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, southern Warren and Washington counties

Berry phenology: Strawberries at green fruit to late bloom. Held over DN strawberries seem to be fruiting later. Tremendous amount of rain has prevented many growers from spraying. Raspberries between fruit set and bloom. The fruiting canes are definitely shorter, but the fruit set so far looks decent. Blueberries in green fruit and fruit sizing – the crop looks excellent.

Pest focus— continue to scout for TPB. Check new plantings for strawberry rootworm adult feeding. Make note of weak growth in bearing patches and check for grubs feeding on roots a little later in the season. Blueberries keep an eye out for small canker lesions.

Mid-Hudson Valley—Columbia, Dutchess, Greene, Orange, Sullivan and Ulster counties

Berry phenology: Harvest is underway for June bearing strawberries, getting closer to peak production. Early floricanes raspberries have begun to ripen, primocanes have good fruit set. Blackberries and blueberry crops look good, both with heavy fruit set. Blueberries are beginning to develop color (purple shoulders), and early varieties may start harvest in the next couple of weeks.

Pest focus—Continue monitoring for spittle bug and spotted wing Drosophila. Keep an eye on raspberries for cane borers, and elderberries for borers as well. Botrytis may still be a concern with all this wet weather.

Tour of Nourse Farms

SAVE THE DATE!!! Tuesday, July 23rd

Eastern NY growers have an opportunity to tour the premier Berry Plant Nursery in the Northeast—Nourse Farms in Whately, Massachusetts. Nate Nourse will be conducting a tour of the raspberry plantings where we'll be focusing on methods for pruning and trellising these plants.

To see more of the nursery, visit <http://noursefarms.com/>.

More information about timing, car pooling and cost will be announced later.

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, Sullivan, Ulster, Warren and Washington Counties

Spotted Wing Drosophila First Captures

Growers and educators alike have been anxiously awaiting the arrival of spotted wing Drosophila (SWD) in New York State. Early last week (June 11, 2013), a message was posted by Dr. Rufus Isaacs on the Michigan State Blueberry Website announcing the first capture of SWD in blueberries. Since then, the first reported SWD has been found in the NY trap network – one female in Ontario County. SWD has also been found in Fairfield Co CT, as reported recently by Dr. Richard Cowles of the Connecticut Agricultural Experiment Station.

Message posted on the Michigan State Blueberry Website at <http://msue.anr.msu.edu/news/> [first capture of spotted wing drosophila in michigan for 2013](http://msue.anr.msu.edu/news/first_capture_of_spotted_wing_drosophila_in_michigan_for_2013):

Early Capture of Spotted wing Drosophila Emphasizes the Need for Monitoring and Preparing for Fruit Ripening Period

A single female spotted wing Drosophila (SWD) was collected in a trap checked on June 6, 2013, in Michigan's Allegan County. This fly was found in a yeast-sugar baited trap at a tree line adjacent to a commercially-managed blueberry field. The timing of this capture is about two weeks later than our first catch in 2012, reflecting the cooler spring season. Also, as part of our research on SWD, there are a large number of traps in the region where this fly was found, so we have a very low proportion of traps catching this pest (about 1 percent of traps). **In the previous few years of our experience with SWD, there were low captures for many weeks before the population increased when fruit became ripe. It is too early to tell how this will look for 2013.**

Most fruit fields and orchards are still with green fruit, meaning that SWD cannot yet infest berries, so for most fruit growers there is no need to spray insecticides for control of this fly yet. For strawberry growers who do have ripe fruit, monitoring those fields and checking ripe berries for larvae should be a first step before taking any action as the numbers of SWD are currently extremely low. However, this can be considered an early warning that SWD is starting to become active and that monitoring programs should be in place to determine when

SWD becomes active in different regions and in your farm. Michigan State University Extension has a monitoring network in place across the major fruit production regions and we will be reporting those catches weekly as part of the MSU Extension Fruit News.

If you are checking traps, be aware that the female SWD that have no spots on the wings look quite similar to a native vinegar fly that could be confused with SWD. See the MSUE News article "Spotted wing Drosophila monitoring should be started soon – know what to look for" for a good photo of the look-alike next to SWD.

Message posted on the NY State IPM Blog at <http://blogs.cornell.edu/swd1/2013/06/13/my-first-report-one-swd-found/>:

NY First Report – One SWD Found

The first reported SWD has been found in the NY trap network – one female in Ontario County. The trap was collected June 11, 2013 and is part of Greg Loeb's trap network. The [NY trap network](#) consists of ~230 traps. As of 6/13/13, no other trap locations have caught SWD, so this find represents ~0.4% of traps catching SWD.

The trap consisted of a bait cup containing whole wheat fermenting dough floating in a drowning solution of (9 parts) apple cider vinegar, (1 part) ethanol, (drop) soap in a clear deli cup. The trap was set a few feet into the wooded edge of a blueberry field. Blueberries in Western NY are starting to color – green with a hint of pink/purple. (554 accumulated GDD, day length 15:14)



Photo: Faruque Zaman

A female SWD, serrated ovipositor in the inset. This particular female was collected in 2011 and sent to USDA SEL for confirmation by Faruque Zaman and Dan Gilrein, Suffolk County Cornell Cooperative Extension, Long Island Horticultural Research and Extension Lab. She was the first officially confirmed SWD from NY in 2011. *Image source: NY State IPM Blog*

Spotted wing Drosophila has also been confirmed in Fairfield Co CT. Dr. Richard Cowles, Entomologist at The Connecticut Agricultural Experiment Station reported that a farmer found male SWD flies in pail of mushy strawberries.

As of 6/18/13, SWD has not been found in any Eastern NY Counties. Educators are continuing to monitor for SWD and will alert growers to its presence when found. The latest information on SWD can be found on the NY State IPM blog at <http://blogs.cornell.edu/swd1/>.

If you have any questions about SWD in New York State, please contact Laura McDermott or Jim O'Connell.

Rainfast Characteristics of Fruit Crop Insecticides

By John Wise, Michigan State University, published in UMass Extension Berry Notes, June 2012 Vol. 24, No. 6

The rainfall events experienced in Michigan have prompted questions about the relative “rainfastness” of the insecticides used in fruit production. In 2006, [AgBioResearch](#) provided funds to purchase and install a state-of-the-art rainfall simulation chamber at the [MSU Trevor Nichols Research Center](#) (TNRC), after which [Michigan State University Extension](#) has conducted trials – with generous funding support from Michigan fruit commodity groups – on fruit crops for a range of insecticides.

The second factor is the inherent toxicity of an insecticide to the target pest and the persistence of the compound in the environment. In some cases, a compound may be highly susceptible to wash-off, but its persistence and inherent toxicity to the target pest compensates for the loss of residue, thus delaying the need for immediate re-application.

The third factor is the amount of precipitation. In general, organophosphate insecticides have the highest susceptibility to wash-off from precipitation, but their high level of toxicity to most insect pests overcomes the necessity for an immediate re-application. Neonicotinoid

insecticides are moderately susceptible to wash-off with residues that have moved systemically into plant tissue being highly rainfast, and surface residues less so. Carbamate, IGR and oxadiazine insecticides are moderately susceptible to wash-off, and vary in their toxicity to the range of relevant fruit pests.

Continued on next page

Table 1. Rainfastness rating chart: General characteristics for insecticide chemical classes

Insecticide class	Rainfastness ≤ 0.5 inch		Rainfastness ≤ 1.0 inch		Rainfastness ≤ 2.0 inch	
	Fruit	Leaves	Fruit	Leaves	Fruit	Leaves
Organophosphates	L	M	L	M	L	L
Pyrethroids	M/H	M/H	M	M	L	L
Carbamates	M	M/H	M	M	L	L
IGRs	M	M/H	M	M		
Oxadiazines	M	M/H	M	M	L	L
Neonicotinoids	M,S	H,S	L,S	L,S	L,S	L,S
Spinosyns	H	H	H	M	M	L
Diamides	H	H	H	M	M	L
Avermectins	M,S	H,S	L,S	M,S	L	L

* H – highly rainfast (≤ 30 percent residue wash-off); M – moderately rainfast (≤ 50 percent residue wash-off); L - low rainfast (≤ 70 percent residue wash-off); S-systemic residues remain within plant tissue

There are several critical factors that influence impact of precipitation on a pesticide’s performance. First is the plant penetrative characteristic of the various compounds. Some pesticide chemistries, like organophosphates, have limited penetrative potential in plant tissue, and thus are considered primarily as surface materials. Some compounds, such as carbamates, oxadiazines and pyrethroids, penetrate plant cuticles, providing some resistance to wash-off. Many newer compounds, such as spinosyns, diamides, avermectins, and Insect Growth Regulators (IGR) readily penetrate plant cuticles and have translaminar movement in leaf tissue. Others, like the neonicotinoid insecticides, are systemic and can have translaminar as well as acropetal movement in the plant’s vascular system. Penetration of plant tissue is generally expected to enhance rainfastness of pesticides.

Table 2. Blueberry insecticide precipitation wash-off re-application decision chart: Expected cranberry fruitworm control in blueberries, based on each compound’s inherent toxicity to cranberry fruitworm larvae, maximum residual, and wash-off potential from rainfall

Insecticides	Rainfall = 0.5 inches		Rainfall = 1 inch		Rainfall = 2 inches	
	*1 day	*7 days	*1 day	*7 days	*1 day	*7 days
Guthion ¹		X	X	X	X	X
Asana ¹		X	X	X	X	X
Intrepid ¹		X	X	X	X	X
Assail		X		X	X	X
Delegate		X		X	X	X

* Number of days after insecticide application that the precipitation event occurred.
 X - insufficient insecticide residue remains to provide significant activity on the target pest, and thus re-application is recommended.

An unmarked cell suggests that there is sufficient insecticide residue remaining to provide significant activity on the target pest, although residual activity may be reduced.

¹ Editor’s Note: Guthion, Asana and Intrepid are not labeled in NYS for blueberry production.

Continued from page 3

Diamide, spinosyn, avermectin and pyrethroid insecticides have proven to be moderate to highly rainfast on most fruit crops.

For most insecticides, a drying time of two to six hours is sufficient to “set” the compound in the plant. With neonicotinoids, for which plant penetration is important, drying time can significantly influence rainfastness. For neonicotinoids, up to 24 hours is needed for optimal plant penetration, thus the time proximity of precipitation after application should be considered carefully. Spray adjuvants, materials intended to aid the retention, penetration or spread on the plant, can also improve the performance of insecticides.

Table 3. Blueberry insecticide precipitation wash-off re-application decision chart: Expected Japanese beetle control in blueberries, based on each compound’s inherent toxicity to Japanese beetle adults, maximum residual, and wash-off potential from rainfall.

Insecticides	Rainfall = 0.5 inches		Rainfall = 1 inch		Rainfall = 2 inches	
	*1 day	*7 days	*1 day	*7 days	*1 day	*7 days
Imidan	X	X	X	X	X	X
Mustang Max ¹		X		X	X	X
Sevin		X	X	X	X	X
Provado		X	X	X	X	X

* Number of days after insecticide application that the precipitation event occurred.
 X - insufficient insecticide residue remains to provide significant activity on the target pest, and thus re-application is recommended.
 An unmarked cell suggests that there is sufficient insecticide residue remaining to provide significant activity on the target pest, although residual activity may be reduced.
¹ Editor’s Note: Mustang Max has a 2ee label that must be present when spraying occurs.

Table 4. Insecticide persistence, plant penetration and rainfastness rating

Compound class	Persistence (residual on plant)	Plant penetration characteristics	Rainfast rating
Organophosphates	Medium - Long	Surface	Low
Carbamates	Short	Cuticle Penetration	Moderate
Pyrethroids	Short	Cuticle Penetration	Moderate - High
Neonicotinoids	Medium	Translaminar & Acropetal	Moderate
Oxadiazines	Medium	Cuticle Penetration	Moderate
Avermectins	Medium	Translaminar	Moderate
IGRs	Medium - Long	Translaminar	Moderate
Spinosyns	Short - Medium	Translaminar	Moderate - High
Diamides	Medium - Long	Translaminar	Moderate - High

Based on the results from the current studies, the following charts have been developed to serve as a guide for general rainfastness characteristics and re-application recommendations for certain insect pests (also printed in the MSU Extension E-154 bulletin, “[2013 Michigan Fruit Management Guide](#)”). Note that these recommendations should not supersede insecticide label restrictions or farm-level knowledge based on site-specific pest scouting, but rather are meant to compliment a comprehensive pest management decision-making process.

Dr. Wise’s work is funded in part by [MSU’s AgBioResearch](#).

What to Do With Pesticide Containers with Damaged Labels?

If the product is still registered in NY it will be listed in the Pesticide Product, Ingredient and Manufacturer System (PIMS) (<http://pims.psur.cornell.edu/>) and DEC says that 'as long as the damaged label is on the container and is clear enough to indicate the product', it is okay for the current owner to print a label from PIMS and use the product.

What happens when a **pesticide goes out of production**? A NY registration may be maintained if there is an EPA registration or an 'existing stocks provision' is allowed by the EPA so that current stocks can be used up. Again, check PIMS. Pesticide labeling gets confusing fast, so don’t hesitate to call with your questions.

Need to get rid of **old, outdated pesticides**? Check out the CleanSweepNY page for collection dates at: <http://www.cleansweepny.org/>

Gray Mold Management for Strawberries and Raspberries

By Kerik Cox, Cornell Department of Plant Pathology and Plant-Microbe Biology

The rains aren't letting up and the cool weather is persisting. It's a perfect storm for anthracnose and botrytis on near mature strawberries and raspberries in bloom. When there has not been rain, it's not been warm enough to really dry things out.

In this weather, it's important to protect your fruit or flowers. Switch, Elevate, and Pristine would all be excellent choices to use for fruit protection as they have 0 Days to Harvest Intervals. When there's a break in the rain, make sure



Photo 1. Brown sunken anthracnose fruit rot lesions (bottom left) and gray mold/botrytis fruit rot (top right) on ripe and ripening strawberries.



Photo 2. Gray mold infected red raspberry.



Photo 3. Raspberry (and strawberry) blossoms should be protected from gray mold infection beginning at 10% bloom. A second protective application should be applied at full bloom. Additional applications may be needed as fruit ripens when conditions are favorable for fruit rot development.

to protect your fruit and flowers from botrytis and anthracnose. If conditions continue consider re-protecting in 10 days or after 2 inches of rain.

USDA Grade Standards for Blueberries

Editors' Note: This grade standard is what wholesale buyers would be using to grade your fruit, and it's what we should be aiming to provide our retail customers. I believe that most growers easily meet or exceed these standards, but it's nice to have them spelled out for your pickers.

Grade U.S. No. 1.

Tolerances For defects en route or at destination.

10% for blueberries which have attached stems. Additionally, not more than 12% total, including 8% for permanent defects; or, 6% for serious damage, including 4% for serious damage by permanent defects and not more than 2% for blueberries affected by mold or decay.

Good Delivery Guidelines: 15% total, including 8% serious damage, including 3% decay

Common Defects:

Damage by:

- a) Wet berries when the individual berry is wet from juice from crushed, leaking, or decayed berries, but not due to condensation;
- b) Clusters when there are three or more joined capstems with at least one berry attached;
- c) Shriveling when the wrinkling is readily noticeable;
- d) Broken skins when not well healed or when well healed and readily noticeable, except for an allowable area within a 1/8 inch (3.2 mm) circle centered at the stem scar;
- e) Scars when affecting more than 20% of the surface of the individual berry

Serious damage by:

- a) Moldy berries;
- b) Overripe berries;
- c) Crushed, split, or leaking berries;
- d) Mummified berries when the individual berry is dried up, withered or shrunken;
- e) Insects or when there is any visible evidence of the presence of insects, including but not limited to an insect, the insect larva, feeding, webbing or frass;
- f) Broken skins when not well healed; and,
- g) Scars when affecting more than 50% of the surface of the individual berry.



Announcements

Now Available!

Are you looking to purchase new equipment, contact an agricultural organization, or visit a new farmers' market? Save some yourself some time - Check out our new directories!

The Farmers' Market Directory is a list of current markets in the Capital District, along with their hours of operation and contact information.

The Growers' Business Directory provides information on local and national businesses that cater to the needs of vegetable and fruit growers. Includes seed companies, irrigation suppliers, packaging suppliers, machinery dealers, government offices ...and more.

Visit the former Capital District website – soon to be transitioned to serve the entire Eastern NY Commercial Horticulture programs 17 counties: <http://cdvsfp.cce.cornell.edu/>

Weekly and Seasonal Weather Information

Site	Growing Degree Information Base 50 ^o F			Rainfall Accumulations		
	2013 Weekly Total 6/12—6/18	2013 Season Total 3/1 - 6/18	2012 Total 3/1—6/18	2013 Weekly Rainfall 6/12—6/18 (inches)	2013 Season Rainfall 3/1—6/18 (inches)	2012 Total Rainfall 3/1—6/18 (inches)
Albany	92.1	629.5	821.5	1.56	16.27	12.67
Castleton	93.2	615.9	833.1	1.92	12.91	12.51
Chazy	88.5	564.6	887.0	0.55	12.99	9.28
Clifton Park	80.5	577.4	776.3	0.59	17.11	14.81
Clintondale	109.2	708.3	551.0	NA	NA	10.60
Glens Falls	77.1	534.4	665.0	0.61	13.83	11.18
Granville	NA	NA	623.5	NA	NA	13.89
Guilderland	87.5	568.5	736.5	0.79	4.00	5.10
Highland	104.7	712.6	884.7	1.89	10.83	11.68
Lake Placid	41.7	312.0	NA	0.82	15.33	NA
Montgomery	109.6	651.7	759.5	2.18	12.71	NA
Monticello	81.9	483.7	587.0	0.03	0.17	0.73
Redhook	90.5	626.1	809.0	2.04	10.74	10.41

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