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## Berry News

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### Regional Update

At this writing Spotted Wing Drosophila (SWD) has not been found in eastern NY except for Long Island. There have been single individuals found in western NY and Connecticut. Larger numbers have been found in Pennsylvania and Michigan. Because of the imminent threat of this pest, it is recommended to begin spraying as soon as adults are found in the vicinity. Some growers are starting the spray schedule when fruit colors, but that may be jumping the gun – although it may also offer an additional degree of control. Monitoring for this pest is a very time consuming endeavor, and CCE educators are doing their best to be as timely as possible. Please call us if you have any questions about this pest.

The blueberry season is in full swing. Many U-Pick farms were picking by July 4<sup>th</sup> – earlier than I had expected given our slow spring. The crop this year looks good, but we are seeing some problems associated with winter injury. Reports from the pacific Northwest and NJ indicate heavy crops which will offset Michigan's predicted lower crop due to winter injury.

Summer raspberries are also fruiting, and fall raspberries in high tunnels are starting to ripen. Powdery mildew and mites are problems in high tunnel plantings. Cane borers are a problem especially for U-Pick plantings. The small blackberry crop is looking ok – growers definitely will want to protect them from SWD infestation as scarcity to keep the price high.

June bearing strawberries are being renovated and day neutral berries are just beginning to fruit in a few locations. Keep an eye out for virus problems as the strawberries regrow after renovation. Strawberry mild yellow edge virus (SMYEV) has been found in Vermont, Canada and Pennsylvania along with other viruses. These viruses will result in poor vigor and unthrifty growth. Look for aphid populations that might be carrying the virus. If you think you have something suspicious – please call!



Photo of strawberries infected with strawberry mild edge virus (SMYEV). Note the yellowing on leaf margins of green leaves.

*Source: Chuck Johnson, Extension Plant Pathologist, Virginia Tech University*

### Berry 'To Do' List

#### All crops

- Implement SWD control – Visit <http://www.fruit.cornell.edu/spottedwing/> for postings of first detections throughout the state and information on control.
- Know how to evaluate fruit for SWD infection.
- Take foliar samples for nutrient analysis of all berries in early August. See instructions in this newsletter.

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*Berry 'To Do' List, continued from previous page*

### Blueberries

- Prune out winter injured dead wood to prevent canker.
- Scout for fruit rot diseases like anthracnose.

### Raspberries

- Make sure that you have thinned plantings adequately – in summer berries 4-6 canes per square foot will allow better air circulation and crop protectant penetration.
- Scout for canes infested by raspberry cane borer. These will have wilting tips and two dark rings of punctures on the canes where eggs have been laid. Cut off and destroy the wilted tips below the rings as soon as this damage is noticed.

### Strawberries

- Renovate strawberries to maintain vigor of plantings.
- Take note of weed issues in the field.
- Fertilize day neutral strawberries increasingly until 5-7# actual N/acre/day is being delivered. This should correspond to maximum harvest.
- Make sure new June bearing plantings are thriving and weeds are under control.



Rings of puncture marks on raspberry cane where eggs have been laid by raspberry cane borer.

*Photo credit: Diane Brown, MSU Extension*

## Blueberry Collapse May Be Due to Winter Injury

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 sublethal 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 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 26<sup>th</sup>, **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/>

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Winter-damaged blueberries showing lack of leaves.

*Photo by Mark Longstroth, MSU Extension*

*Blueberry Collapse and Winter Injury, continued from previous page [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, 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. - LGM*

## Monitoring Berries for SWD Larvae in the Field

- Put a sample of fruit to be tested (Caneberries/blueberries ~50 per sample) in a gallon size sealable plastic bag.
- Pour in enough salt water solution to allow the fruit to float (solution is: 1 cup of salt per gallon of water). Mark bag with field code/date. Gently crush/break open fruit.
- For a quick check in the field after a designated period of time (at least 15 minutes) hold the baggie up to light. This helps to see the larvae in the solution.
- For a more thorough examination, after a designated period of time (at least 15 minutes), pour the fruit and salt solution out into a shallow tray and use a piece of wire mesh screen to hold the fruit down making it easier to separate the larvae from the fruit.



To view a video of this process, see: <http://www.berriesnw.com/videos/baggieTest/2010SaltBagTest.htm>

Source: *Small Fruit Update, Peerbolt Crop Management*

## Cranberry and Cherry Fruit Worm

A number of growers have been calling with a question about blueberry clusters strung together with webbing or frass or both. Most people cannot find a larvae (although they are there!), but are alarmed with picker complaints. The pest in question is fruit worm – either cranberry or cherry. Both insects have very similar life cycles and the damage is similar, but the chemical control materials differ slightly, so it will be important to be able to differentiate.

The adult moths lay their eggs in late May and early June at the base of the

newly set fruit. Larvae of both species attack green fruit. There are sex pheromones available for both pests and monitoring should begin in late April to optimize spray timing. Usually two sprays are necessary – the first at petal fall and the second 10 days later. Organically approved materials include Entrust and Dipel DF. Other materials include Azasol, or Molt-X, Sevin, Malathion, Imidan, Esteem and Delegate, among others. Check the Guidelines for more control information and visit this site for fact sheets about fruitworms: <http://www.fruit.cornell.edu/berry/ipm/ipmpdfs/bbfruitworm.pdf>. -LGM



Photo by LGM

## Backpack Sprayer Videos

Learn to use sprayers more efficiently, learn how to better use modified backpack sprayers to save time and money, and improve safety, by watching the 7 videos created by Rutgers Research Farm. This may be a helpful resource for small, organic and urban farmers, both beginning and experienced. To watch the videos, visit <http://snyderfarm.rutgers.edu/snyder-backpack-sprayers.html>.

Source: *Cornell Small Farms Program*.



## Blueberry Anthracnose

Anthracnose, or ripe rot, is caused by *Colletotrichum gloeosporioides*, and can be a serious problem in northern blueberry growing regions.

The fungus infect leaves, twigs, canes, blossoms, and fruit. On young canes, infections occur as dark brown lesions with concentric rings of pimple-like fruiting bodies. Twig infections are similar in appearance, and often originate from infected flower buds. Leaf infections may occur but are not common in New York State. Leaf spots are typically not a problem unless they cause serious defoliation.

Infected blossoms are blighted in appearance. Infections often spread from blighted blossoms into adjoining twigs. Berry infections are not usually obvious until fruit ripen (hence the alternative name “ripe rot”) but may occur any time from pink bud to harvest. Infections are most common at the blossom end of the fruit. As fruit ripens, infected regions become slightly sunken, giving the surrounding area a puckered appearance. Under very wet or very humid conditions, a layer of pinkish salmon, slimy spores (conidia) develops on the sunken fruit areas or infected twigs. Conidia from fruit infections serve as a source of secondary inoculum.

The pathogen overwinters in infected twigs and canes. In spring, conidia are produced during wet weather and are carried to new tissue by splashing rain. Infections may occur throughout the growing season whenever conditions are favorable.

Infections may occur during rainy periods anytime between bloom and harvest, but are most serious during warm rains (>70°F). Infections can occur at temperatures between 59 and 81 degrees F after a minimum 12 hour wetting period. The fungus is relatively inactive below 59 degrees F.

Anthracnose is becoming a more common problem in New York State. An integrated management program is suggested for best results, especially in plantings that have a history of the disease.

- Particularly susceptible cultivars include ‘Berkeley’, ‘Coville’, ‘Blueray’, ‘Bluecrop’ and ‘Jersey’ and should be avoided on problem sites.
- Prune and remove dead wood in the spring to reduce over wintering inoculum. Open the canopy to improve air flow and increase spray penetration. (Note: pruning out infected wood will not completely eliminate the disease.)
- Avoid excessive nitrogen fertilization as this encourages disease development.
- Limit overhead irrigation. If overhead irrigation is needed, irrigate early in the morning to allow sufficient and rapid drying time for plant surfaces. Avoid harvesting fruit when wet.
- Anthracnose is more common and pronounced on overripe fruit, so harvest promptly and frequently. Consider using multiple short-interval harvests followed by rapid cooling of harvested fruit to minimize disease.
- Disease spores may be spread on infected harvest containers such as pails, flats, or totes. Clean harvest equipment thoroughly between infected and uninfected fields.



Several fungicides are labeled for anthracnose control in NY including Abound, Captevate, Bravo Ultrex, Switch, Indar 2F and Pristine. There are no organically approved fungicides recommended for anthracnose control. Applications should begin at bloom and continue at regular intervals through harvest when favorable conditions for infection exist.

For more information see Cornell Pest Management Guidelines for Berry Crops. Apply all pesticides according to label rates and instructions.

Source: *Blueberry Disease Fast Facts, Anthracnose (Ripe Rot)*, by C. Heidenreich, D. Fiacchino, W. Koeller

## Foliar Leaf Sampling For Berry Crops

Use a leaf analysis (supplemented with a soil test) to determine fertilizer needs after the planting is established.

**Strawberries:** Collect 30 leaflets after renovation in July or August.

**Raspberries:** Collect 30 newly expanded leaflets from primocanes in early August. With fall raspberries, sampling timing maybe a little tricky; and it is good to have soil analysis to compliment it. For example – foliar analysis in an early fruiting year showed low Potassium; soil levels were adequate. Probable explanation – fruit acting as a sink for foliar potassium.

**Blueberries:** Collect 30 newly expanded leaves from well-exposed branches in late July. Blueberries often have 2 flushes of growth during season. Leaves for analysis should be fully expanded new growth from 1st flush, not second. Foliar analysis in new blueberry plantings may be beneficial but sometimes produce rather erratic results. This is attributed to the need for 4-5 years to pass after planting for plants to settle down and juvenile growth

spurts to be over. Age usually calculated from when plants go in the ground; transplant age not necessarily included in calculation in this respect (i.e. 3 year old transplants, planted 3 years probably still in juvenile growth spurt.)

**Currants and Gooseberries:** Collect 30 newly expanded leaves from well-exposed branches in late July

**Cranberries:** Collect upright tips only (no more than top 2' of growth), mixing flowering and vegetative uprights for about 1 cup material between mid-August and mid-September.

Wash dirt and spray residue off collected tissue using distilled water if possible. Blot off excess water, place tissue in a paper bag, allow tissue to air dry and then send to: Agro-One, 730 Warren Rd., Ithaca, NY 14850. For more information about this process, plus the correct forms to include with submission, visit <http://dairyone.com/analytical-services/agronomy-services/plant-tissue-testing-services/>. -LGM

## The Recycling Agricultural Plastics Project (RAPP)

can assist with recycling many of the plastics discarded after use in agriculture. RAPP has markets and guidelines for recycling maple tubing and irrigation drip tape, as well as dairy films, boat wrap, nursery pots, agricultural chemical containers, and more. Check out RAPP's new facebook page to learn just about anything you might want to know about agricultural plastics, recycling, and the New York State Recycling Agricultural Plastics Project (RAPP). Simply search on facebook for *Recycling Agricultural Plastics Project* or <https://www.facebook.com/pages/Recycling-Agricultural-Plastics-Project-RAPP/439750762770779>.



## Calendar of Events

### July Summer Berry Workshops:

- Mon. July 21, Rulf's Orchard, 531 Bear Swamp Road, Peru, NY 12972, 4-6pm
- Wed. July 23, Bohringer's Orchard, 3992 NY 30, Middleburgh, NY 12122, 3-5pm

Monitoring for SWD, designing an effective pesticide rotation program, understanding when and how to collect leaves for a nutrient analysis and general troubleshooting will all be part of this workshop. 2 DEC Pesticide Re-certification credits have been applied for. Please pre-register with Marcie Vohnoutka at 518-272-4210 or [mmp74@cornell.edu](mailto:mmp74@cornell.edu).

**Wednesday, August 13, 3:00-5:00pm - SWD Exclusion Netting Project** will be the highlight of this meeting. Two weights of netting are being trialed. A vestibule was added to improve ease of movement. The entire patch has been covered. A 2<sup>nd</sup> year trial of a fixed sprayer system in a high tunnel will also be on view. Location: The Berry Patch of Stonewall Hill Farm, 15370 NY Route 22, Stephentown, NY 12168. To pre-register call Marcie at 518-272-4210 or [mmp74@cornell.edu](mailto:mmp74@cornell.edu).

The Eastern NY Commercial Horticulture Team is proud to announce that their updated website is up and running. For on-line class registrations, announcements, older versions of the newsletters, etc. Please visit <http://enych.cce.cornell.edu/>. We hope you bookmark it on your computer and begin using it as your ‘go to’ website for production and marketing information. Email or call any of the educators with questions or comments on the website – we want to make it work for YOU!



**2014 Weather Table**—This chart is compiled using the data collected by Northeast Weather Association (NEWA) weather stations. For more information about NEWA and a list of sites, please visit <http://newa.cornell.edu/>. This site has information not only on weather, but insect and disease forecasting tools that are free to use.

2014 Weekly and Seasonal Weather Information						
Site	Growing Degree Information Base 50 <sup>o</sup> F			Rainfall Accumulations		
	2014 Weekly Total 7/7 - 7/13	2014 Season Total 3/1 - 7/13	2013 Season Total 3/1 - 7/13	2014 Weekly Rainfall 7/7 - 7/13 (inches)	2014 Season Rainfall 3/1 - 7/13 (inches)	2013 Total Rainfall 3/1 - 7/13 (inches)
Albany	163.5	1262.1	1222.0	1.65	7.39	23.05
Castleton	154.5	1195.7	1255.6	1.45	8.61	17.80
Clifton Park	144.0	1136.0	1174.8	1.52	9.26	23.71
Glens Falls	139.1	1142.7	1053.5	1.36	10.94	17.39
Guilderland	143.5	1148.0	1163.0	N/A	N/A	N/A
Highland	165.6	1285.0	1335.5	1.99	11.61	17.24
Hudson	165.3	1284.1	1297.4	0.85	9.83	15.57
Marlboro	167.4	1225.9	1276.3	0.84	12.78	18.24
Montgomery	169.6	1251.7	1235.0	0.74	14.46	16.92
Monticello	164.3	980.4	976.5	N/A	N/A	N/A
Peru	135.3	1074.4	947.3	0.57	10.13	17.02
Shoreham, VT	146.9	1114.3	1151.4	0.33	9.22	17.79
Wilsboro	137.9	1035.1	1054.2	N/A	N/A	19.18

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