

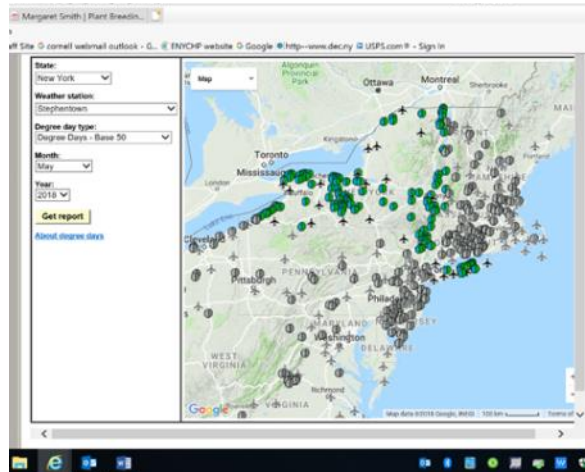
# Berry News

VOLUME 6, ISSUE 4 - MAY 24, 2018



## Spring Berry “To Do” List

Growing degree day accumulation (base 50) has been fairly rapid over the past few weeks, although there is a dramatic variation across the region. Lower Hudson Valley locations are recording 300 – 350, Kinderhook is at 300, Voorheesville at 250, Saratoga at 275 and Clifton Park may have the highest accumulation in the entire region at 353! But accumulation is really specific – Amsterdam is at 237, Cobleskill at 234 and Stephentown is at 192. In the north, Crown Point is at 297, Peru at 201 and Chazy at 153. All of these readings are relatively in line with past years accumulation at this time – it’s just that the manner in which the warmth accumulated was a bit different. We had very modest accumulation during April, but caught up quickly so far in May.



All of this is important because it helps to track pest emergence. We are working with a few growers across the region as they assist NYS IPM specialist Dr. Juliet Carroll with verifying NEWA models for blueberry maggot, cranberry fruit worm, and several strawberry diseases.

The importance of having a weather station right near you cannot be overstated. We’ve had a number of stations come on line recently (thanks to many dairy farmers) which has provided additional resources especially in the Mohawk valley and upper Hudson. If you’re interested, please visit the NEWA page at <http://newa.cornell.edu/>.

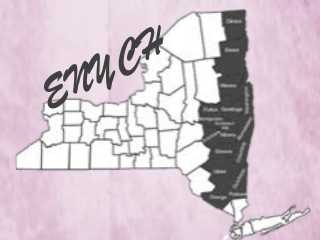
### —Strawberries—

- Strawberry bloom is upon us. The lower Hudson Valley had little time to spray for Botrytis as the plants went so quickly from tight bud to

*continued on next page*

## Table of Contents

Berry “To Do” .....	1
Managing Anthracnose Fruit Rot of Blueberries.....	3
Understanding Cherry Fruitworm and Cranberry Fruitworm.....	4
FYI.....	6
Upcoming Events.....	7



bloom and there were so many rain events, so Grey Mold may be an issue in plantings there. It's been dryer in the Capital district so hopefully sprays will aid in control. 10% bloom is the trigger for Botrytis sprays. Continue every 7-10 days if wet weather or heavy dew occurs.

- Not many tarnished plant bugs seen – this has been a trend the last few years.
- Keep eye out for overwintering pests – like cyclamen mite! Cyclamen mites are much harder to detect, but cause leaves to be stunted and malformed as they emerge from the crown. It's difficult to control these mites – so removing obviously infested plants is a good management practice.
- Plan for frost protection – inspect irrigation equipment and row cover. Make sure you have some type of adequate temperature detection system at the field level. Fingers crossed that we get out of May with no serious frost incidents.
- Spider mites seen in strawberries throughout the region. Remember that mite thresholds are quite low – use a presence/absence method. Look at 60 fully expanded tri-foliate leaves and if you find 15 mites you have reached threshold. You may want to spray and then add beneficial predator mites as soon as possible to fields to control these pests.

### —Blueberries—

- Blueberries are at 5% to full bloom across all areas depending on varieties and location. For the most part bloom looks strong – but very light bloom in a few plantings suggest that winter damage may result in poor fruit set.
- Bees should be introduced around 10% bloom. That means that all plantings south of Glens Falls should have brought bees in by now.
- To prevent fruit molds, apply fungicides at bloom. The best timing for **Anthraco nose fruit rot** (see picture this page) begins at petal fall. I've seen increasing amounts of anthracnose in plantings. You may see small shoot tip blighting followed by a few flowers turning brown or black. I rarely see leaf spots, but when they occur, they are roughly circular and can be large or small. The most noticeable symptom are the infected berries. As they ripen, the flower end of the berry softens and then puckers and salmon-colored spore masses form.

- Bloom sprays for **mummyberry** are indicated if primary mummyberry (shoot blight) infections were not controlled previously. Substituting captan in the mixture may be preferred if Phomopsis canker is a problem. Mixtures with captan may be repeated at 7 to 10-day intervals throughout bloom if rain occurs. Discontinue use of Ziram DF or Ziram Granuflo as they are labeled only for the shoot blight phase, not flower infection. Highest levels of control are often achieved by using either Pristine WG or Indar 2F. Indar is a translaminar material that could help – but you need to wait until berries are blooming to apply.
- Look for scale insects. Brigade, Triple Crown, Esteem and oil should be used before bloom—due to concern about pollinators but oil can also cause a problem on the fruit finish if applies after fruit set.
- This year we are monitoring for **cranberry fruitworm**. Adult emergence may happen this week. The adult moths of the cranberry fruitworm lay their eggs at the base of the newly set fruit. The greenish larvae are up to half an inch long and brownish red on the back. Moths of the **cherry fruitworm** appear late in the blooming season, when the bloom is nearly off. The larvae are three eighths inch long and uniformly reddish orange. Larvae of both species attack the green fruit. Cranberry fruitworm larvae web the berry clusters together and feed inside. Damage is obvious. Just a few worms can do extensive damage. Two sprays are often required for control; the first should be applied at petal fall and the second 10 days later, about 2 weeks before harvest.



***Callisto damage is notable because of bleached out, stunted leaves.***  
Photo courtesy of Ohio State Univ.

### —Brambles—

- Primocane emergence finally coming – but floricanes have jumped forward in a big

*continued on next page*



way. Some bloom in southern areas and flower buds showing into upper Hudson region.

- Scout for Two-spotted and Red mites.
- Seeing some herbicide damage in raspberries. Certain cultivars are much more prone to damage – but all raspberries are sensitive.
- Consider stripping lower 12-18" of canes to help dry out planting, and improve insecticide penetration.
- We are deploying **SWD** traps this week and next. Monitoring is one of the most important things you can do to control SWD – you need to know when they are there in order to control them! Trap placement will also help you trap the first insects: Place the trap in the shade of the canopy (ie put them on the east side of the row instead of the west)– and place them in the lower third of the plant.



*Interveinal necrosis is a sign of terbacil (Sinbar) injury.*

*Photo by L. McDermott*

## Managing Anthracnose Fruit Rot of Blueberries

Laura McDermott, CCE ENYCHP

Anthracnose (*Colletotrichum acutatum*) is a serious pre- and post-harvest fruit rot in most blueberry growing regions. The flowers are infected early in the spring. Cane, twig, and leaf lesions are more sporadic.

**Symptom:** The fruit rot manifests itself as sunken areas on ripe fruit with gelatinous, orange spore masses. On young canes, lesions are dark brown with fruiting bodies in concentric circles. On twigs, dark brown lesions may originate from infected buds and kill part of the twig. On the leaves, lesions look reddish brown with distinct borders. Salmon-pink spore masses may appear on infected tissues under humid conditions.

**Disease cycle:** The fungus overwinters in infected twigs, old fruiting spurs and live buds. In spring and summer, spores produced on infected tissues are dispersed by rain and cause new infections. Spores are released between bloom and early fruit development. Prolonged wetness (12 hours or more) and temperatures of 68-77°F (20-

25°C) promote disease development. Fruit infections remain latent until the fruit starts to ripen or until after harvest.

**Management:**

Prune out old or infected wood; create an open canopy to reduce humidity and increase spray penetration; plant resistant cultivars; limit overhead irrigation; harvest in a timely manner; cool fruit rapidly after harvest; apply effective fungicides from pink bud to harvest. Abound, Serenade Max, Bravo, Captevate are just a few of them. Double Nickel has some efficacy for organic growers. If you are spraying for mummyberry you will likely take care of anthracnose. To prevent recurrence the following year, make sure to apply petal fall spray. For additional materials that are labelled in NYS, refer to your 2018 Cornell Berry Pest Management Guidelines.

Photos were taken by C. Heidenreich, Cornell University. Additional information can be obtained through [Michigan State University fact sheet](#).



## Understanding Cherry Fruitworm and Cranberry Fruitworm

Sonia Schloemann, UMass Extension Fruit Program

**ID/Life Cycle:** Both Cranberry Fruitworm (*Acrobasis vaccinia*, CBFW) and Cherry Fruitworm (*Grapholita packardii*, CFW) are native to North America, as are the blueberries they infest. The adult forms of these fruitworms are small brownish-gray or grayish-black moths. Eggs are laid near the calyx of green fruit and are pale creamy color. Larvae found within blueberry fruit in June are small and pale yellowish or pinkish in color. CFW larvae have dark brown heads.

initial flight into a blueberry planting. Lures are available for both species. Traps should be placed during bloom with a minimum 50' buffer between them. Monitor trap catches twice weekly and remove moths caught each time you check in order to identify when sustained captures occur. Secondary scouting can be done for egg laying by inspecting the calyx end of green fruit with a hand lens. Scout the periphery of the planting especially near woods and hedgerows. Finally, scout for infested



**Photos: left, CFW adult male - MSU Blueberry Facts; next, CBFW adult male - MSU Blueberry Facts; middle, CBFW (top) and CFW (bottom) larvae - MSU Blueberry Facts; right, CBFW feeding and frass in fruit cluster – Rutgers Crop Pest Advisory.**

Fruitworms overwinter as larvae in the duff around bushes or field edges and pupate in the spring, emerging as adult moths after the start of bloom and usually before early fruit set. Cherry Fruitworm (CFW) emerges earlier than Cranberry Fruitworm (CBFW). Once mated, moths move into blueberry plantings when fruit is small and green to lay eggs directly on the fruit. Larvae then tunnel into the fruit and begin feeding. Infested fruit turn prematurely blue making them easy to identify when scouting. Larvae will consume from 3-6 berries, filling them with brown frass, and web together fruit with silk. The frass from CFW remains inside the fruit whereas that from CBFW is pushed out and visible. Upon reaching maturity, larvae leave the berries and move to overwintering sites. There is one generation per year.

**Damage:** Larvae feed on ripening fruit. Feeding reduces the crop and spoils marketability of the berries.

### Management

**Monitoring:** Pheromone traps can be used to monitor male populations of these pests and helps to identify the

fruit by looking for prematurely pigmented berries.

**Developmental Model:** Fruitworm development is closely related to weather conditions for both species and can be predicted with reasonable accuracy using Degree Day accumulations. Cherry Fruitworm is thought to emerge at approximately 230 GDD Base 50°F from March 1. Cranberry Fruitworm emerges later, around 350 GDD Base 50°F. Emergence can be confirmed by using pheromone traps that capture male moths of each species during their first flight. Noting the start of sustained trap captures can be used as the biofix for the developmental model.

The important stage to forecast for either species is egg-laying which, for CBFW, occurs during the period of 85-400 GDD Base 50°F after the onset of sustained adult activity or flight (biofix). Therefore CBFW egg laying is generally predicted to take place during the period of 435-750 GDD Base 50°F. Modeling for CFW egg-laying is not currently available but is likely somewhat earlier than CBFW.

### Control strategies

#### Cultural/Biological:

- Eliminate weeds and trash around plants to minimize protective overwintering habitat for larvae.

- Clean cultivate between rows to disrupt pupation sites and reduce the population of this pest.
  - Hand pick and destroy infested fruit in small plantings.
  - Preserve natural enemies whenever possible by selecting spray materials that are less toxic to beneficials.
- Chemical:*
- Apply recommended insecticides beginning 85 – 100 GDD base 50F after sustained trap catches (biofix), which usually coincide with berry-touch or when degree day models reach the action threshold.
  - If action threshold is reached while some bushes are still in bloom, use materials that are listed as relatively safe for pollinators/parasitoids in chart below that are listed as relatively safe for pollinators/parasitoids.
  - Avoid use of insecticides with seasonal use restrictions that may be needed for Spotted Wing Drosophila (SWD) control later in the season.
  - Rotate insecticides from different IRAC groups to reduce the chance of resistance development in the pest.
  - Use pesticides that are less toxic to predators (e.g., insect growth regulators or B.t. products) to promote populations of natural enemies.

Table 1. Details of insecticide options and timing for fruitworm control in blueberry.

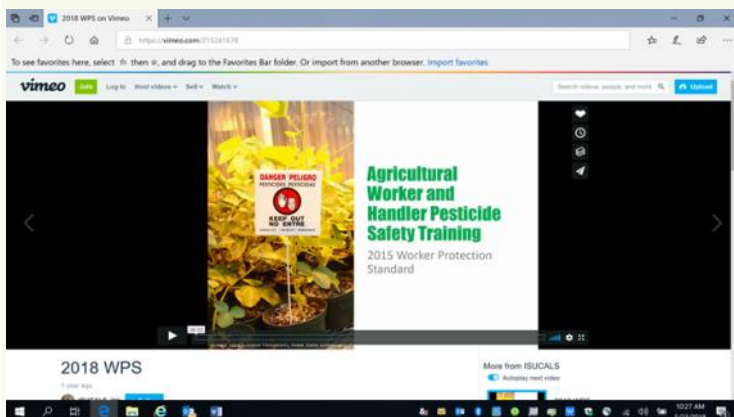
Trade Names***	Chemical Class	Life-stage activity	Optima Spray Timing	Pollinator/Parasitoid Toxicity Rating
Imidan	Organophosphate	Eggs, larvae, adults	100% Petal fall	Highly toxic
Lannate/ Sevin	Carbamate	Eggs, larvae, adults	100% Petal fall	Highly toxic
Asana/ Danitol/ Mustang Max/ Hero/ Bifenture	Pyrethroid	Eggs, larvae, adults	100% Petal fall	Highly toxic
Exirel/Altacor	Diamide	Larvae	100% Petal fall	Relatively safe
Assail	Neonicotinoid	Eggs, larvae	100% Petal fall	Moderate toxicity
Entrust/ Delegate	Spinosyn	Eggs, larvae	Early fruit set over eggs	Moderate toxicity
*Dipel	B.t.	Larvae	Early fruit set over eggs	Relatively safe
Intrepid/ Confirm	Growth Regulator	Larvae	Early fruit set over eggs	Relatively safe
*Grandevo/ *Venerate	Biologicals	Larvae	Early fruit set over eggs	Relatively safe
Rimon	Growth Regulator	Eggs, larvae	Early fruit set under eggs	Relatively safe
Esteem	Growth Regulator	Eggs, larvae	Early fruit set under eggs	Relatively safe

\*\*\* Where trade names are used, it is for the reader's information. No endorsement is implied, nor is discrimination intended against products with similar ingredients. Please consult pesticide product labels for rates, application instructions and safety precautions. Users of these products assume all associated risks.

\*OMRI certified for organic production.



## —For Your Information—



- **WPS training video** – link for streaming: Here is a video that is EPA approved for training staff. It is not super exciting, but it will do the job! <https://vimeo.com/215241678>. Please be sure to show this video in its entirety. Also remember to have workers sign document to prove that they had been trained and date it – include your signature (or the signature of the certified pesticide applicator that is conducting the training) and your applicator #.
- **Please help with Pricing Survey!!!** Researchers at the University of Arkansas, in collaboration with the North American Raspberry & Blackberry Association (NARBA), and the University of Vermont, are conducting a survey to learn more about caneberry pricing and retail strategies for 2018. The survey should only take around 10 minutes to complete. Your participation is completely voluntary. Responses will be recorded anonymously and no identifying personal information will be collected within the survey. You are free to refuse to participate in the research and to stop completing the survey at any time.

Information collected in the survey will be used to gain a better understanding of the marketing, pricing, and sales strategies currently being used by caneberry producers across the United States and Canada. Results will be aggregated and published in the June issue of the North American Raspberry and Blackberry Association's member



newsletter. A report will also be emailed to all participants requesting this option.

To access the survey please click the following link:

[http://uark.qualtrics.com/jfe/form/SV\\_djzmC8tUnEirkyh](http://uark.qualtrics.com/jfe/form/SV_djzmC8tUnEirkyh)

If you have any questions about this survey itself, please contact Jennie Popp by email or phone at [jhpopp@uark.edu](mailto:jhpopp@uark.edu) or 479-575-7381. You may also contact NARBA by email at [raspberryblackberry@gmail.com](mailto:raspberryblackberry@gmail.com), or by phone at 919-542-4037.

- **For Beginning Blueberry growers: An Introduction to Blueberries** – webinar recording by Mark Longstroth, Michigan State University fruit educator, is part of MSU Extensions' Beginning Farmer Webinar Series "Getting started with blueberries". Recorded on March 27, 2017.



- **Invasive Species Alert! Be Aware of Jumping Worms (Amynthas spp.)**

Have you seen an abundance of worms in your fields? If so, look to see if they resemble the worm in the photo. The clitellum or collar goes all the way around the body and is smooth. The worms are very active and have a sheen to them. Look for worm castings around your greenhouse or where you move flats.

The jumping worms alter the structure and chemistry of the soil dramatically, leaving a distinctive grainy soil full of worm castings, and they can damage lawns, landscapes and even the forest understory

*continued on next page*

habitat. People unknowingly spread these worm by using them for bait or transport their egg cocoons on shoes and wheels, in mulch, or via transplanted plants.

Jumping worms reproduce easily. They are asexual (parthenogenetic) and mature in just 60 days, so each year they can have two hatches. The best time to see them is late June and early July. From September until the first hard frost, their population will double and may reach damaging levels.

Research is being done on controlling these worms but nothing has come back with favorable results. What you can try to do is contain their spread by recognizing the worms when you are working in your garden. Don't transplant mulch, soil or plants to uncontaminated areas. Plant bare root stock or seeds when possible. Do not buy *Amyntas* worms for composting, vermicomposting, gardening or bait. If you already have these worms, remove and dispose of them by solarizing them or soaking them in isopropyl (rubbing) alcohol. Do not put them in the compost pile or garden.

## Berry Specialist

**Laura McDermott**

Phone: 518-791-5038

Email: lgm4@cornell.edu

## Business Specialist

**Liz Higgins**

Cell: 518-949-3722

Email: emh56@cornell.edu

## Calendar of Events

### July 12, 2018 – FSMA Training

Cornell Cooperative Extension, Albany County – Voorheesville, NY. More information to follow. Questions? Call Laura McDermott, 518-746-2562

### July 18, 2018 - New York Soil Health Summit

Empire State Plaza, Downtown Albany, NY. For more information at this time, contact David Wolfe (dww5@cornell.edu) or Aaron Ristow (ajr229@cornell.edu).

### August 14, 15, 2018 NASGA Summer Tour

Watsonville, California

[www.nasga.org](http://www.nasga.org)

This year's summer tour will take place in northern California. We plan to visit progressive growers and marketers in the Watsonville area as well touring low elevation nurseries near Manteca and Turlock. Along the way we will take in other agriculture ventures. In California the options are endless.

### November 6-9, 2018 NASGA European Tour

Amsterdam, Netherlands

[www.nasga.org](http://www.nasga.org)

## ENYCHP Office

Abby Henderson

Phone: 518-746-2553

Email: aef225@cornell.edu

Open: Mon, Wed, Fri

8:00am-4:00pm

**Editor: Laura McDermott**

[www.enych.cce.cornell.edu](http://www.enych.cce.cornell.edu)



Find us on  
Facebook

## 20 Minute Ag Manager

All webinars run from 12:00-12:30pm

For more information:

Contact Liz Higgins at emh56@cornell.edu

To register, go to <https://tinyurl.com/y9gfqbmx>.

*Registering once gives you access to the series.*

### May: Basic Farm Finances

- May 29—Understanding Assets and Liabilities vs Income and Expenses

### June: Zoning and Land Use

- June 5—NYS Ag Assessment 101
- June 12—Local Zoning 101
- June 19—NYS Ag Districts 101
- June 26—Using On-line Data and Maps to Assess a Property Remotely

