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Berry News

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Managing for Root Weevil Complex in Strawberries

Last week, a northern NY grower applied entomopathogenic nematodes to his field to assist in controlling the root weevil complex that consists of Strawberry root weevil, *Otiorynchus ovatus* (SRW) and Black vine weevil, *O. sulcatus* (BVW). ENYCHP educators Amy Ivy and Laura McDermott participated in the application under the direction of Dr. Elson Shields and Tony Testa.



Entomopathogenic nematodes being applied with a normal boom sprayer to a field with Black Vine Weevil problems.

The biocontrol nematodes being used in this study are native and have been found to control alfalfa snout beetle across northern NY. The beneficial nematodes are applied in the evening to avoid desiccation. The grower was able to apply the nematodes using his boom sprayer with all the filters and screens removed from the nozzles. The grower left a control plot, so it will be relatively easy to see if these nematodes have an effect.

The most time consuming part of the application process was screening and rinsing the nematodes out of the substrate they have been raised in.

BVW is the larger of the two weevils and the more likely to be the problem as it has a larger host complex. The adult beetle has small yellow patches on its back. They feed on foliage, leaving characteristic notch marks on leaf margins, although this damage is usually insignificant to plant vitality, it is valuable for detecting their presence. They are 1/4- to 1/2-inch long. The larvae are white with tan heads, and have no legs. They feed on small roots and can quickly reduce the vigor of plants, causing plant death if larvae are numerous. Adult root weevils can still be present after harvest; however traditional chemical control measures of the adults should be taken early before egg laying begins in late spring. Eggs that were laid in the soil prior to or during harvest will hatch into young larvae that begin feeding on roots this fall. Root weevil larvae overwinter two to eight inches deep in the soil. You can actually scout for root weevil larvae now, but they are even smaller than in the spring and very difficult to see.



Amy Ivy rinsing beneficial nematodes through a screen so that they are in solution and ready for field application.

Both SVW and BVW are problems, but BVW can be found throughout the region.

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The weevils attack roots of high value horticulture crops, and over a few years will cause rapid decline and eventual plant death.

To scout for these pests, follow the protocol below:

- In the spring, watch for areas of weak growth. Dig in the root zones, checking for the white grub like root weevil larvae.
- When weevil adults emerge, watch for leaf notching especially on sucker growth near the ground.
- After dark on warm, calm nights, scout fields with a flashlight. Black vine and strawberry root weevils will be found feeding on top of the foliage.
- Look for adults in the dead plant material and weeds at the base of plants.
- In the fall, check areas that show weak growth and redden prematurely. The larvae be found in the fall but are much smaller than in the spring. -LGM



Weevil damage in strawberries. Photo by T. Peerbolt



Various stages of black vine weevil from larva to pupa, to newly emerged adult with still soft body, to fully black adult. Photo by T. Peerbolt

Fall Weed Control for Berry Crops

Planting year Blueberries	October	Low rate Princep
	Late November	Kerb before ground freezes. Casuron for grasses & broadleaves – apply uniformly
Established Blueberries	September into October	Sinbar after harvest, Devrinol, Solicam (if not applied in spring), Surflan, Princep
	November	Kerb for grasses. Casuron if needed
Planting year Raspberries	October	Low rate Princep but not on tissue culture plants
	Late November	Apply Casuron uniformly for grasses or broadleaves
Established Raspberries	September into October	Sinbar, Devrinol, Solicam (if not applied in spring), Surflan, Princep—high rate if not used in spring.
	November	Casuron if needed
Planting year Strawberries	October	Cultivate
	Late November	Devrinol at 8lb.A and or Sinbar, then mulch for winter protection
Established Strawberries	September	Dacthal, Sinbar, Devrinol for winter annuals. Stinger for thistles.
	Early - Nov	2,4-D if the weather is warm
	Late - November	Devrinol at 8 lb/a and/or Sinbar. Chateau for marestail, nightshade, morning glory. Mulch for winter protection.

New Super Fruit for Northern New York? Willsboro Research Farm Establishing Juneberry Nursery

Northern New York is getting on the Juneberry super fruit bandwagon. With funding from the farmer-led Northern New York Agricultural Development Program, one of the largest Juneberry research nurseries will be established at the Cornell Willsboro Research Farm in Willsboro, NY.

Juneberry, scientifically known as *Amelanchier*, pronounced ama-lan-cheer, is a blueberry-like fruit noted for its antioxidant and nutritional value. The fruit is rich in iron, calcium, manganese, protein and fiber.

Cornell Willsboro Research Farm Manager Michael Davis is excited to see how well Juneberries will grow in the Northern New York climate and is participating in a multi-state project evaluating opportunities for the Northeastern U.S. production of the berries.

“Juneberry is grown in the western US and Canada as saskatoon berry. In the Eastern U.S. and Canada, it grows in the coastal states stretching from Virginia north to Maine and in Nova Scotia,” Davis says.

“The multi-state project team is collecting wild cuttings and seeds in multiple states and Canada for a genomic database and the development of lines suitable for production in the Northeast,” Davis says.

The plants flower from March into May and produce fruit in June and July. It reproduces by self-fertilization. While the plants prefer sandy coastal habitats, it has also been known to grow in New York in woodland and forest openings; pine barrens; dry, open areas; and pond margins.



Juneberry is a New York State endangered species with populations on Long Island and Staten Island. The crop is part of North American history as native peoples often incorporated Juneberries into pemmican, a high-energy mix of available meat and fruits. The name *Amelanchier nantucketensis* derives from description by botanist Eugene Bicknell of plants growing on Nantucket Island in Massachusetts in 191.

“As a June-July harvest crop, Juneberry would produce revenues early in the growing season for producers. Juneberry could prove to be a super fruit not only nutritionally, but economically for Northern New York growers,” Davis says.

The first commercial-scale crop is expected at the Willsboro farm in 2015.

The Northern New York Agricultural Development Program provides practical, on-farm research, technical assistance, and outreach on a diverse range of crops to farmers in Clinton, Essex, Franklin, Jefferson, Lewis and St. Lawrence counties.

Learn more about agriculture in Northern New York and find NNYADP project results at www.nnyagdev.org. For more specific information about the project, contact Michael Davis, Cornell Willsboro Research Farm, 518-963-7492.

For a number of fact sheets on the production of Juneberries, refer to the Cornell Berry Website or click on: <http://www.fruit.cornell.edu/berry/production/smallberryproduction.html#juneberries>.

Now is the Best Time for Soil Testing!

Fall is the best time to sample soil for pH and nutrient testing. Testing should be done at least every 3 years, and recommendations followed, to ensure proper pH and nutrition for your crops, and to limit expensive over-fertilizing. Take at least 10 sub-samples from across a 20 acre field, as deep as you till, mix thoroughly with a trowel, air dry a pint sample if necessary, package and send for testing.

To get Cornell fertilizer recommendations and soil tests equivalent to those done previously at the Cornell Nutrient Analysis Lab, use the AgroOne – Dairy One Agronomy Testing Lab at: <http://www.dairyone.com/AgroOne/soiltesting/default.htm> Click on Soil Submittal Forms, then on F for Fruit in the left menus.

Questions? Contact mark.joyce@dairyone.com.

Sample Soils for Nematodes Now

By Pam Fisher, OMAFRA

Nematodes have caused lots of problems in strawberry fields in the past few years. Nematodes cause variable vigor and early decline of a field. Be sure to sample fields for nematode populations before planting strawberries or raspberries.

September is a good time to sample because soils are still warm, and generally moist.

For information on how to sample, see: Sampling Soil and Roots for Plant Parasitic Nematodes, <http://www.omafra.gov.on.ca/english/crops/facts/06-099.htm>. Remember that nematode samples are perishable. Nematodes may be very hard to kill in your field, but they are very easy to kill in a sample.

Sample correctly to get the best results.

- Sample approximately 8" deep, and discard the top 1-2" of the soil core.

- For row crops, sample in the row, so that samples contain feeder roots.
- Take 10-20 soil cores per acre. Ideally, each sample should represent no more than about 6 acres.
- Mix the soil cores thoroughly, but gently.
- Place soil samples in a cooler with ice. Keep cool (not frozen) until delivery. Samples should not be subjected to sudden temperature changes.
- Deliver samples to the lab as soon as possible.

In New York, soil samples for nematode analysis may be sent to the Cornell Plant Disease Diagnostic Clinic. The cost is \$40 for a nematode analysis. All of the directions and submission forms are available at: <http://plantclinic.cornell.edu/index.html>.

Adapted from Ontario Berry Grower, Vol 5, Sept. 2012

Spotted Wing Drosophila Update

Trap catches of SWD in Ulster County have declined in the past few weeks. Previous catches had total numbers of >50 adult flies per trap. Most recent catch numbers have been half as many and in some instances no adult flies were captured. Blackberries and fall raspberries are still producing in Ulster County and other parts of the Lower Hudson Valley. **Growers should not take these lower or no trap catches as indications that SWD is done for the season.** A recent discussion with colleagues at the Hudson Valley Lab indicated two possible reasons for this trend:

1. The fruit may be heavily infested with SWD eggs.
2. The current generation of SWD is dying off and a new generation will soon emerge.

There is evidence to support both of these theories.

Samples of raspberries and blackberries from previous weeks have shown 90+eggs per sample of twenty fruit, with percent infestation ranging from 60-100%, indicating that yes, berries were heavily infested by SWD. At some locations where growers had a consistent picking and spray program, trap captures were still low, but fruit was not heavily infested, lending support to the second theory. Traps had 3 or fewer adult flies and berry samples had fewer than 5 eggs per sample of twenty fruit, with a percent infestation of 15% or less.



Fixed Sprayer system to assist with control of SWD in High Tunnel Raspberries was demonstrated at a Sept. 10th Field Meeting at the Berry Patch in Stephentown, NY. This project is supported by funds from NYFVI.

In either case, it means that growers still need to remain vigilant for SWD. Although late in the season it can still infest crops and cause economic damage. If as a grower, you have decided to no longer pick your berry crops, I would encourage you to clean pick (remove all fruit) from your planting. Fruit left can serve as reservoirs for SWD and since we still have much to learn about this

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pest, at this point, the fewer egg reservoirs the better. Understandably, clean picking can be laborious and time consuming. Growers may be able to seek help from nonprofit organizations who will clean pick or “glean” the berries for the grower. These individuals will come to the farm; remove all fruit and donate it to local food pantries and soup kitchens. Contact your local CCE educator for more information.

In the mid and upper Hudson Valley the situation is somewhat different. Trap catches in the Capital District spiked dramatically during the week of September 2nd. Adults caught numbered in the 2-300 range in all traps that were in untreated crops or hedgerows. Trap catches in treated crops were also slightly higher, but nowhere near those numbers. Fruit infestation numbers in treated crops are variable with blackberries showing much higher infestation rates than raspberries and both the bramble crops more likely to be infested than day-neutral strawberries. It seems that insecticides, while not eliminating SWD, are at least repressing the pest in some

crops, although cultural controls are still very much a part of the pest control puzzle.

In northern NY trap catches remain low, but still fruit infestation is being found, especially in those crops that have not been treated regularly.

The point made in the first paragraph bears repeating – **Growers still need to remain vigilant!** If you are committed to selling soft fruit this fall, it is very important that you continue to monitor infestation rates in the fruit, continue a spray schedule at no greater interval than 7 days and make sure that your pickers are clean picking the patch. Fruit should go immediately into a cooler and not be left on the stand for display. Consumers should be advised to refrigerate fruit immediately.

Growers should also be aware that during the last several weeks the popular press has been calling in high numbers. There is little doubt that the consumer public will be aware of this pest in future seasons. - *JMO and LGM*

Weekly and Seasonal Weather Information

Site	Growing Degree Information Base 50 ^o F			Rainfall Accumulations		
	2013 Weekly Total 9/04—9/10	2013 Season Total 3/1 - 9/10	2012 Total 3/1—9/10	2013 Weekly Rainfall 9/04—9/10 (inches)	2013 Season Rainfall 3/1—9/10 (inches)	2012 Total Rainfall 3/1—9/10 (inches)
Albany	89.0	2299.4	2652.8	0.45	22.02	19.73
Castleton	85.6	2204.6	2880.8	0.16	22.72	19.82
Chazy	56.6	2081.7	2863.2	0.59	21.30	17.58
Clifton Park	78.7	2285.1	2596.3	0.77	24.72	22.71
Clintondale	101.0	2577.1	2166.5	NA	NA	NA
Glens Falls	57.4	1991.3	2310.5	0.24	19.48	15.94
Granville	56.0	NA	2449.0	0.48	NA	20.68
Guilderland	81.5	2082.8	2437.5	0.01	6.97	7.35
Highland	78.8	2552.3	2811.7	0.10	21.98	24.62
Lake Placid	22.5	1340.2	NA	1.34	22.61	NA
Montgomery	95.2	2672.9	2545.0	0.02	23.83	NA
Monticello	68.4	1833.4	2393.0	0.00	0.28	1.85

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