



Vermont Vegetable and Berry News – July 11, 2017

compiled by Vern Grubinger, University of Vermont Extension

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www.uvm.edu/vtvegandberry

UPCOMING EVENTS

July 11 (today, rain or shine) 5-7 pm. VVBGA Strawberry Production Workshop. Four Corners Farm, Route 5, S. Newbury VT. No registration or fee just show up if you can.

July 12, 5-7 pm. Cornell/NOFA-NY High Tunnel Workshop, Slack Hollow Farm, Argyle NY.

See: <https://enych.cce.cornell.edu/event.php?id=781>

July 19, 4-6 pm. NOFA-VT Leek Moth Workshop. UVM Catamount Farm, S. Burlington. See:

<http://nofavt.org/events/organic-pest-control-leek-moth>

July 26, 3-6 pm. NOFA-VT onion and potato workshop, Hurricane Flats, S. Royalton, See:

<http://nofavt.org/events/farm-smarter-not-harder-production-efficiency-onion-potato-crops>

July 27, 10-4. UVM Crops and Soils Field Day. Borderview Research Farm in Alburgh, VT.

Register by 7/21 at www.regonline.com/2017cropsfieldday or call Susan Brouillette (800) 639-2130 ext. 432.

REPORTS FROM THE FIELD

(Charlotte) We are seeing SWD in our red raspberries, but have seen no damage in the blueberries or saw any damage with the strawberries. Strawberries ended fast due to the rain making the fruit rotten, but before the rain we had great berries! Blueberries are a week behind, but look great, and we just started picking. Saw and treated for blueberry maggot this year. All the pests are coming early. Black raspberry crop is great and ready on time. We are just able to get into some of the fields to start planning for next season, but the forecast is for more rain. I hope it won't be too much.

(Orwell) Clay soil seems impossible with all this rain, and even though summer is quickly ticking by, we are just getting a handle on overgrown grass and weeds. Sidedressing crops that look stressed for nitrogen has been very effective this year after so many inches of rain. They green up quickly with a little boost and a little sunshine.

Our strawberry crop came on strong and beautiful but crashed quickly after several heavy rains; we couldn't keep up with pulling all the moldy berries off. Thankfully, crops under cover are doing well; so far, they are remarkably disease free. Learned from past mistakes to keep them chugging along by fertigating, rather than realizing all too late that they ran out of juice around mid-July.

(Plainfield NH) Strawberry season winding down, a less than lucrative event given the uncooperative weather. All varieties were bunched up from the cool spring and the incessant rain contributed to fruit rots. PYO crowds were diminished by unattractive weather. Plants still look in great shape and crop potential was there, but the game was sacrificed in the late innings. Still picking for the farmstand, netting blueberries and picking raspberries. Farmstand sales are off to a good start.

Greenhouse tomatoes are doing well except for a house of heirlooms that was in blossom in late May. Usually we count on wind pollination from rolling up the sides but in the time of early fruit set May was so damp and miserable the houses remained shut and we are seeing misshapen and smaller fruit. A "C" hive of *Bombus* would have paid for itself pretty quickly this year, but as who knew? Leafhoppers are visiting, slowing the beans a bit, and cucumber beetle was its annual annoyance. Melons sizing up and potatoes were planted on the sandy river soils so have loved the damp conditions and are in blossom.

Wildlife remains a big issue with deer decimating cole crops and newly transplanted cukes. Spraying Hinder to deter them, and most fungicides have a discouraging effect on the deer as well. Birds are very discouraged with the netting on the small fruit, but we haven't had the cedar waxwings pressure as in years past. "Sumo-wrestler shaped woodchucks" (description courtesy Skip Paul) have been ravaging cole crops, and eradication is the only solution, which we have been trying to do with smoke bombs. Never had any luck with Havahart traps. Den holes are hard to find and often have multiple entrances. The days of hunting and shooting them are long gone as many of our best farmstand patrons' wildlife sensibilities are offended by the harming of wildlife for any reason. I was lectured by one customer that "Wild animals often live on the edge of starvation..." I guess we have to stoically suck this drivel up, and hope Skip Paul's woodchucks storm her flower beds.

(Argyle NY) Pleasant Valley Farm. This month the temperatures have gotten normal but the rain persists. We are on schedule with our seedlings and transplants but wonder about the nitrogen levels. Strawberries were not the best, but peas did fine and beans now taking off. Overwintered onions look good but not as big as last year and the thrips are coming in. Summer onions on heavier soil in tile-drained field are showing signs of too much water. Most bugs and diseases are in control for now but expecting problems with cabbage aphids. Garlic is looking good; harvest next week.

We are working hard to preserve and bring back to life the 166-acre historic Pitney Meadows Community Farm, Inc. as a non-profit in the City of Saratoga Springs. Our annual fundraiser is on August 1st and we'd love to have farmers come for this unique event featuring fire cooking pits. Information: <https://firefeast.eventbrite.com> or contact Sandy at arnold.pvf@gmail.com

UPDATE FROM THE PLANT DIAGNOSTIC CLINIC

Ann Hazelrigg, UVM Extension

Tomato-leaf spots (*Alternaria* and *Septoria*) are starting to show up now on lower leaves of field tomatoes. Depending on the rain/wetting periods the disease will move upward in the plant as the season goes on. If you are going to apply fungicides (either organic or conventional) now is the time to start. If we get over an inch of rain after spraying, consider the application lost and reapply. Although we have had great late blight weather, the pathogen has not been found near New England. See map for current occurrences: <http://www.usablight.org/?q=map> Still, be on the lookout if you (or your neighbors) have saved potato seed since the pathogen could show up on previously infected tubers/foilage.

Potato-leaf hoppers are here. If you see leaf edge dieback on potato, beans and other crops, look for the little nymphs and adults. They seem to go for the early potatoes first. Some black leg showing up on potato stems. <https://ag.umass.edu/vegetable/fact-sheets/potato-blackleg>

Cucurbits-Some reports of bacterial wilt causing sudden collapse in high tunnel and field cukes. Controlling cucumber beetle is the best strategy. <https://ag.umass.edu/vegetable/fact-sheets/cucurbits-bacterial-wilt>

Collapse in squashes may be a result of squash vine borer feeding/tunneling. <https://ag.umass.edu/vegetable/fact-sheets/squash-vine-borer>

Downy mildew has been diagnosed in Ontario and western NY. See map for the current locations: <http://cdm.ipmpipe.org/>

Crucifers- Swede midge causing damage in kale and other brassicas. Watch for deformed or rotting growing points and scarring of stems. <http://www.omafra.gov.on.ca/english/crops/facts/08-007.htm>

Boron deficiency diagnosed in broccoli/ cauliflower. If your soil test says levels are low, it makes sense to apply some B (1 lb actual per acre or so) where you are growing brassicas or beets, see: <https://ag.umass.edu/vegetable/fact-sheets/boron-deficiency>

Onions/garlic-Lots of onion leek moth in garlic scapes.

<http://web.entomology.cornell.edu/shelton/leek-moth/damage.html>

Clip and destroy. Another caterpillar in this crop can be the salt marsh caterpillar but it feeds on the outside and is much hairier.

http://entnemdept.ufl.edu/creatures/veg/leaf/saltmarsh_caterpillar.htm

A fungal disease in garlic called Colletotrichum leaf spot is being reported in western New York state and Maine. It may cause curling, twisting and dieback. Orange spores eventually develop. Let me know if you see it.

As always, send a picture or samples to us in the PDC, Jeffords Hall, 63 Carrigan Drive, Burlington, VT 05405. ann.hazelrigg@uvm.edu

PESTICIDE APPLICATOR CLASS?

For those growers who wish to become certified pesticide applicators (including organic growers who are required to get licenses due to new rules) we could offer a one-day class in November in two locations in the state. We'd go over the Core Pesticide Manual materials from 9-1 and then give the test. It is a good review and you get it all over in one day! If this is something that would be helpful, please email me and let me know. I will also add you to a list and send you the when and where announcement: ann.hazelrigg@uvm.edu

For those of you who want to do it on your own, you can purchase a Core Manual from the Cornell bookstore to study, then take the test in various areas around the state.

<https://store.cornell.edu/p-189394-core-certification-training-manual-for-pesticide-applicators-and-technicians.aspx>

I have powerpoints posted from previous Core workshops if that is an easier way to study.

<http://pss.uvm.edu/pesp/coremanualtraining/index.html>

The schedule of exams a locations around the state is here:

http://agriculture.vermont.gov/sites/ag/files/pdf/pesticide_regulation/2017%20Pesticide%20Exam%20Schedulev5.pdf

SIDEDRESSING NITROGEN

(Becky Maden, UVM Extension)

With a wet and cool start to the summer, many transplants had barely established their root systems before bursts of heat arrive. In a year like this, it is important to make sure your plants have adequate fertility when the heat finally hits.

Rainy conditions can leach away early season fertility even if it is from compost, cover crops, or other organic sources. Furthermore, a little extra nitrogen can help your plants outgrow early season problems like seed corn maggots, which hit initial plantings of Brassica and onion crops hard, state-wide. If you see plants showing signs of nitrogen deficiency after excess rain, like yellowing lower leaves, you are especially likely benefit from sidedressing.

A good sidedress option for organic growers is Chilean nitrate (now formulated as 15-0-2, cost is ~\$6/ lb N), which will provide crops with immediately available nitrogen. Blood meal is more expensive (~\$11/ lb N) but also pretty quick release. North Country Organics Pro-boost (10-0-0) is another option. If you sidedress with whatever N amendment you have on hand be aware that some products such as composted chicken manure may add excess phosphorus and it, like seed meals, will release N more slowly than products containing Chilean.

Some vegetable growers are using Pre-sidedress Nitrate Tests (PSNT) to determine what soil nitrate levels before amending. For more information on sidedressing and using PSNTs, visit: <https://ag.umass.edu/vegetable/fact-sheets/pre-sidedress-nitrate-test>

SWEDE MIDGE MANAGEMENT

Rachel Schattman, UVM Extension

Swede midge (SM) a pest of cole crops, is present in Ontario, Quebec, MA, NJ, NY, and northwest VT. It is moving southward. It typically has four generations, often overlapping, between May and October, with 3-6 weeks per generation. Females lay eggs in young plant tissue, where larvae feed, damaging the growing point. Symptoms include galls on transplants, irregular branching in broccoli plants, multiple heads in cabbage, and other malformations. Damage is not as severe in radishes and mustards but these crops can provide habitat for the pest, which can live in the soil for two years or more. Managing SM requires multiple strategies.

The first step is to monitor for SM on your farm. For guidance on setting up a trap with pheromone lure, see Cornell's SM information site:

<http://web.entomology.cornell.edu/shelton/swede-midge/monitoringtraps.html>

A few sources of traps and lures (in Canada, as canola growers appear to be the main market)

<http://shop.agritrend.com/41-swede-midge>

<http://solida.quebec/index.php/cultures-maraicheres/?lang=en>

If you have SM, use a combination of greenhouse and field sanitation, rotating cole crops long distances (0.5-2 km, ideally with hedgerows in between) avoiding the most susceptible crops, and adjusting planting and harvest schedules to avoid peak pressure. Row cover and/or insect netting during critical growth periods is another strategy to minimize damage.

Very little research has been done on insecticides for this pest in vegetables. One study had some success applying Assail 30SG to transplants prior to planting out. Always check product labels. Assail is not approved for greenhouse use, so transplants must be brought outside prior to application. There are currently no sprays approved to control SM on organic crops. If you think you may have swede midge on your farm, the UVM Plant Diagnostic Clinic can help confirm, see <http://pss.uvm.edu/pd/pdc/> or contact ann.hazelrigg@uvm.edu.

For more info see this Ontario Ministry of Agriculture fact sheet:

<http://www.omafra.gov.on.ca/english/crops/facts/08-007.htm>

Dr. Yolanda Chen at UVM studies SM. She and her grad students post updates about their research at: <http://blog.uvm.edu/yfanslow/our-work-on-swede-midge/>

A presentation on swede midge in Vermont by Andy Jones, Intervale Community Farm, and Dr. Chen is at: <https://www.uvm.edu/vtvegandberry/VVBGAMeeting2013/ChenSwedeMidge.pdf>

POWDERY MILDEW ON CUCURBITS

(Abha Gupta, UVM Extension, NW Crops and Soils program)

Most years, cucurbit plants become infected with powdery mildew (PM). This fungus first appears as white, powdery spots, that start on one leaf surface and then spreads to both sides and plant stems. Infection sites may also turn yellow. PM grows well in high humidity, moderate temperatures (60-80°F), and shady conditions.

PM can decrease photosynthesis and therefore yields, but it can also lead to further infections by fruit rotting diseases, like black rot, that may not turn up until storage. To prevent infection, use tolerant or resistant varieties, avoid planting in shady spots, and space plants widely to promote air flow.

PM cannot be controlled by fungicides after the disease is well-established, so prevention is key. Apply materials at the first sign of the disease and follow a regular spray schedule to protect new growth, whether using conventional or organic sprays. For a listing of labeled materials on pumpkins and squash see: <http://nevegetable.org/crops/disease-control-18>

Biopesticides are a potential tool being evaluated for PM control. Biofungicides contain microorganisms as the active ingredient. They affect pathogens through competition, producing a toxin, predation, and/or inducing plant resistance. We recently evaluated 4 biofungicide products: Sonata, Cease, Regalia, and Actinovate along with Champ and Oxidate for their efficacy in managing PM.

Results from the 2016 field season can be found at our website, <http://www.uvm.edu/extension/cropsoil/>. Results from the 2017 field season will be posted online during winter 2017. Questions? Abha.gupta@uvm.edu

SUMMER COVER CROPS

(Becky Maden, UVM Extension)

Even though vegetable crops may be behind schedule with the cool, wet start to the year, you still have time to get summer cover crops into your crop rotation this season. Summer cover crops can help improve soil health as a niche between early spring crops and later fall crops, or as a second-half of season 'fallow.' Here's a summary of a few key summer cover crops.

Buckwheat is a good choice if weed suppression is your main goal. It establishes, blooms and reaches maturity in just 70 to 90 days, and the residue breaks down rapidly after incorporation. Drilled at 50 lbs/A or broadcast at 70 lbs/A.

Sorghum-Sudangrass (*Sorghum bicolor* x *S. sudanense*) is a top choice for adding organic matter and building soil. Sorghum sudangrass can reach 5-12 ft. tall with 3-4 tons of biomass addition per acre. Drill 35-40 lbs/A or 40-50 lbs/A broadcast.

Sunhemp (*Crotalaria juncea*) Sunhemp has produced high amounts of biomass (3-4 tons/A) in Massachusetts). It is a high nitrogen-fixing legume and can contribute over 100 lbs N/A to a following crop. Allow sunhemp is to grow 1-3 feet tall, then mow it and let it regrow again. Drill 20-30 lbs/A.

Crimson Clover (*Trifolium incarnatum*) is a good choice for a short-term summer cover or seeded between plastic rows to reduce splash, weeds, and erosion. Shade tolerance makes this cover crop a good choice for mixes. Depending on coverage, it can fix 70-150 lbs N/A. Drill 10-20 lbs/A, and broadcast at 12-24 lbs/A.

Phacelia (*Phacelia tanacetifolia*) also known as blue or purple tansy is a good cover crop for use in rotation on vegetable farms because it is not related to many crop families. This fast growing cover crop prefers mid-summer seeding. Drill 1lb/A and broadcast 3 lb/A.

Forage-type Pearl Millet (*Pennisetum glaucum*) or Japanese Millet (*Echinochloa* spp.) have similar functions as a summer cover crop: they grow rapidly but can be more easily managed than sorghun sudangrass though with less biomass (4-6 feet tall). Drill 12-15 lbs/A or broadcast 15-20 lbs/A.

Cowpea (*Vigna unguiculata*) is fast growing with peak biomass around 60 days and tolerates drought and heat. Cowpeas can fix up to 100 lbs N/A with biomass of 3000-4000 lbs/A. Drill at 40-50 lbs/A and broadcast at 70-100lbs/A.