



## **Vermont Vegetable and Berry News – April 10, 2017**

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### **REPORTS FROM THE FIELD**

(Shaftsbury) Foxglove aphids on our greenhouse tomatoes. Using *Aphidius ervi* for those. Weeds in over-wintering greens houses had green peach aphids. Pulled ALL the weeds and tilled in. Releasing *Aphidius colemani* in bedding plant houses for preventative aphid control, and also using *Amblyseius cucumbers* for thrips.

(Burlington) Strange thing in our tunnel lettuce: exuding salts through guttation, crystallizing on the outer leaf margin and looking like a bright white fuzzy disease. Gabrielle up at the UVM Plant Diagnostic clinic ran it down, thankfully not powdery or downy mildew. Salt levels were not terribly high in that house when we tested last fall. We had an entire house go down to spinach downy mildew in a few short weeks in March. We were growing Corvair, a cultivar not resistant to race 14, so the odds on bet is that we have race 14 on the farm. Our other spinach Regiment in other houses is so far unaffected. We mowed, flamed, and tilled the infected spinach, and it looks like we have excellent mortality to kill off the spinach downy mildew, our latest obligate parasite.

(Westminster West) We have had very few insects so far (knock wood.) A few aphid hot spots, hit them with M-pede soap spray. Released a batch of lady bugs early in a few houses followed by weekly releases of *Encarsia* and a few other beneficials, which really seem to help. Had a few plants infected with powdery mildew, sprayed Milstop as well as Actinovate on all plants. Used Rootshield, although a bit late for a batch of lavender I think; lost a lot!

The use of trap crops and banker plants has been so successful we are going to try using yellow marigolds throughout our onion fields this year to control the onion thrips that usually play havoc with us. The thrips haven't been a problem for last 2 years in the greenhouses using the marigolds so we thought it will be worth the time to try, will report on progress later this summer!

Took a peek under the 3 layers of row cover yesterday to see how the garlic came thru the winter, they are just poking up, maybe ½ inch and I didn't see any empty holes so far, hope to remove the covers by Wednesday this week and set up to fertilize several times; will also be injecting Cease into the drip lines to prevent pathogens on the roots.

Incredible wind damage this year on several structures, maintenance is now almost a full time position here! Rebuilding the old milk room on the barn, thought it would be a quick patch to the roof, nothing concerning an old barn is ever quick! But the results will be worth it.

Hiring all done and always amazed at the high quality of the folks that want to work in agriculture is these days, although I'm having to pay much more than I ever have to keep the best long term people, I think it's worth it. Still way to wet to plow, but the plants are shipping out and orders look good this year!

(East Montpelier) Here comes another season. "hope springs eternal" ouch. All kinds of fun things happening on the farm: moles have discovered the high tunnels and are creating a bit of a mess. Vole population was noticeably scarce this winter.

Spinach was planted too late and just did not take in time. I am giving up on direct seeding and going back to 200 cell transplants this fall. More up front labor but also a more guaranteed consistent stand of spinach that takes with better yields.

High winds made the decision for me on when to redo the baseboards on one of my house by splitting the baseboards in half and tearing the plastic loose. Was going to wait until July or so but that will have to be moved up on the schedule.

Symphylans persist in my third house with some small "hot spots" in my other two houses. Going to renovate the house and then cover crop with yellow mustard and till it in as a biofumigant and see if that knocks them back finally. Really at a loss for how to deal with these things. Discovered last season that good sized robust tomato transplants can outgrow them. Plants looked good and had very decent yields.

Flea beetles showing up in one house on the spinach already. No aphids yet. Deer pressure was really high last year and expecting to see the same this year. No tomato horn worm last year to speak of after two years of really high populations. Not sure why. Sugar snap peas are up and running in one house. They will come out by mid-May and determinate tomatoes will go in. Nice quick crop with high value.

(Orwell) Navigating the mud has been the biggest challenge of the past couple of weeks--we haven't been able to get the tractor into, or even near, the high tunnels for soil prep. The tomatoes are very ready to go into the ground, so this week we will be busy prepping and planting. With the addition of another high tunnel this winter, our goal is to have better crop rotations in the tunnels to manage diseases and pests.

We've had great advice from UVM's Entomology team in managing aphids and other hoophouse pests, but we feel like planning breaks in the cropping cycles is one of our best prevention tools. We've learned by working with them to proactively plant flowers that attract beneficials like alyssum, marigolds, borage, and calendula. Lots to get a move on, let's hope spring sticks around.

(Plainfield NH) The last snowstorm battered us and left us without power for 16 hours and phones and internet for 3 days. I highly recommend spending some time in the fall and setting up your generators and making sure all the cords have the correct ends for the disconnects. We invested in a generator that could run all the barns and greenhouses, and although it cost a great deal of money, and the temps were not critically cold it made a huge difference in our comfort level because if it had been in the 20s, we wouldn't have had the capacity to keep all the greenhouses from freezing.

Last week centered around greenhouse growing. As suspected, my small pockets of foxglove aphids and 2 spotted spider mites have become the problems I thought they might be when the days got longer. Have been using a lot of *Phytosimilis persimilis* for the mites and using the ladybugs in conjunction with an application of *Requiem* to keep the foxglove aphids in check because the usual supply of *Aphidloletes* has tightened up because of the demands of the cannabis producers. So we are filling in this week with orders of *Aphidius colemani*. The spider mites predator have been coming from a couple different vendors. It is interesting to note the viability difference in the *P. persimilis* from different sources, and I will be paying more attention to that as I order in the future. There are many factors to can affect beneficial viability, shipping, time of year, etc. but I am convinced that the less time live predators spend in the bottle, the more effective they are when released.

(Newburyport MA) Arrowhead Farm. Heated greenhouse vegetables looking good despite dark weather. Tomatoes with two clusters in bloom. Albion and Seascape strawberries in 12" hanging baskets overhead with bloom and half grown green fruit. Spring planted greens in cold houses look really nice, both seeded and transplanted, about a week away from harvest.

Released 18,000 ladybugs in two 3,000 sq. ft. houses of overwintered spinach have given 100% aphid control as always. I wish all pest issues were this easy. Switched to Promix with biofungicide for propagation and germination with no problems at all. All field transplants this year growing in Promix with mycorrhizae and thus hoping to inoculate the field soil around the transplant; -just an experiment.

Winter farmers' market sales very strong. CSA signups slow. 4" herbs and 'Living Lettuce Bowls' ready for sale this week. Spent \$8,500 repairing equipment this winter and hoping things run more smoothly for it. Farm help hard to find. Warm evening so I've left all the rollup sides open tonight to tone things up a bit. Off to a very good start except for labor shortage.

(Argyle NY) Pleasant Valley Farm. Our three high tunnels are producing very high yields with the transplanted (Jan. seeded) broccoli raab now producing. Salanova lettuces have all been cut once or twice that were seeded last Sept. and many things are being ripped out and new transplants going in.

The spinach was doing well, but now is yellowing and there is some Cladosporium on a few varieties due to the high humidity, but no sign of downy mildew since we sprayed it about 2 months ago. That spinach tunnel has not been heated at all, so the freezing temps, according to Meg McGrath of Cornell, kill downy mildew, and ours definitely was in the 20's in Feb. and March.

Aphids are starting to show up on Asian Greens, kale and salad mix so ladybugs were just spread in there this past week and we will do them weekly for about 3 weeks. Onions look great in overwintered tunnels, plastic is coming off the small tunnels of greens and onions, and strawberry typar covers are taken off during the day (and back on due to deer at night). The overwintered field spinach is growing nicely, which will be good to have for markets. We are waiting for the fields to dry a bit more but expect to be seeding many crops in the fields by the end of the week.

The new farm project we started 1/2 hour from us ([www.pitneymeadows.org](http://www.pitneymeadows.org)) is on a sandy loam soil and we will be tilling under sod tomorrow and doing some trial plantings this year, hopefully supplying a local college for some revenue. We will also be doing trials with Cooperative Extension and will be keeping records and sharing info. Not recommending anyone be in charge of two farms! We are looking for an intern or part-time manager that wants to live on the new farm, learn all about a new farm start-up enterprise and help in its creation: [arnold.pvf@gmail.com](mailto:arnold.pvf@gmail.com) if any interest or ideas.

(Little Compton RI) We had an opportunity in mid-February to get a quick last direct seeding of greens in before our scheduled April 15th planting of Tomatoes. Seeding went well, germination was great. But a series of cold snaps forced us to cover the plants quickly one evening and we left the covers on over the cold weekend. Without hoops the two layers of row cover transmitted the cold temps to the leaves they were touching, giving us some freeze damage.

A second cold snap and covers stayed on a bit too long as well. And we experienced edema on our greens. Never seen this before but our local Extension confirmed it. Too much excess moisture and too cool temperatures. Probably should have made an exception and given them some heat. They are a bit ugly but still selling at the Saturday markets.

A word of caution for those planting your greenhouse tomatoes this time of year. Take a second and inspect your cables which your tomatoes are hung off of. We buy 3/16 galvanized cable from Home Depot but in the extra humid GH they don't last too many years. Nothing more depressing than seeing a 100-foot wire break and a 1/10 of your tomatoes on the ground. Inspect your cables every year.

March rains giving us our best water levels in five years. This crazy fluctuating winter temperature took toll on our crimson clover fields. Even lost some populations of Austrian Winter peas. Monday is the first spray for Winter Moth down this way. Gypsy Moth also will be bad again I have heard.

#### **BT NOW AVAILABLE FOR USE ON COLORADO POTATO BEETLE**

Please read the article below to learn more about Trident, a recently approved B.t. for control of Colorado potato beetle. This is an important alternative to Spinosad in order to avoid resistance. However, B.t. only works well on small larvae. Scout your crops so you can time applications when larvae are still small, and actively feeding. Getting good coverage of all the foliage is also important. Save the Entrust for control of adults if necessary.

Here's a great UMass Veg Notes from 2008 on management of CPB, including scouting and a good picture of the eggs: <https://ag.umass.edu/sites/ag.umass.edu/files/newsletters/vegnotes-06-12-08.pdf>

## **UPDATE ON OMRI-APPROVED PESTICIDES**

Eric Boire, Consultant, Crop Production Services, Addison VT (Eric.Boire@cpsagu.com)

With spring around the corner, it's good to take a moment and recognize newly registered products as well as revisit some that have been flying under the radar.

With the disclaimer that I work with multiple organic suppliers here at CPS in Addison Vermont, I am going to highlight some products from Certis USA which calls themselves "The Biopesticide Company." By my unofficial count they have 27 OMRI-certified products, most of which are registered here in Vermont. Here are 6 of these products and their uses that you should know about. All can be applied up to the day of harvest and have a 4-hour reentry period. But always check the label for instructions prior to using a pesticide.

Trident contains B.t. (*Bacillus thuringiensis* var. *tenebrionis*) and is labeled for control of Colorado potato beetle on potato, tomato and eggplant. Treatment should start shortly after hatch; apply every 7-14 days. The recommended rate is 3 quarts/acre in a minimum of 20 gallons/acre of water. Cost is about \$20 per application.

PFR-97 contains *Isaria fumosorosea* and is labeled for control of insects and mites on a wide variety of crops. Apply at 1 lb/acre but do not tank mix with fungicides.

Trilogy contains 70% neem oil, for control of light populations of soft bodied insects, mites and various fungal diseases. Toxic to bees if they come in direct contact.

Deliver is a B.t. (*Bacillus thuringiensis* subspecies *kurstaki*) product that is labeled caterpillar pests on a wide variety of crops. Because of its concentration, a 0.5 lb./acre rate is effective.

Cueva contains copper octanoate, a unique copper formulation with a fatty acid "soap." It contains less copper per application than many other formulations. Approved for use on many fruits and vegetables. The rate is 1-2 quarts/acre.

Double Nickel is a bactericide/fungicide containing *Bacillus amyloliquefaciens* and it has multiple modes of action. It can be used foliar or in furrow and it works well with most insecticides/fungicides. Rate is 1 quart in furrow or 2 quarts foliar per acre.

(Editor's note: see [https://www.certisusa.com/organic\\_crop\\_production.htm](https://www.certisusa.com/organic_crop_production.htm) for a list of all the Certis OMRI-labeled products and links to their labels.)

## **SPINACH DOWNY MILDEW UPDATE**

Meg McGrath, Cornell University

I am aware of 16 occurrences of downy mildew in spinach in the northeast since 2014 (NJ, CT, MA, NY, VT, and ME). That doesn't sound like a disease to be concerned about, but I am because the pathogen is related to pathogens causing basil downy mildew and late blight, it also produces wind-dispersed spores, and it has equal destructive potential. This is being documented in the west, especially in organic crops with half overall going unharvested I hear, which equates to \$3 million/week. Losses are due to pathogen's ability to overcome genetic resistance in spinach (there are now 16 known races) and inability to effectively control the disease with organic fungicides.

What we know about this disease in our region: Races 12, 14 and a 'novel' type have been identified, but samples from most occurrences were not tested. Most cases have been in winter high tunnels; rest were spring plantings. Based on observations from growers, conditions in high tunnels are not very favorable for downy mildew (likely too cold) except during long periods of leaf wetness (such as when row cover put over wet plants). Resistance to downy mildew can be very effective. Past spring occurrences were promptly destroyed, thus the pathogen did not have much opportunity to spread.

Management recommendations for the Northeast:

1. Select varieties with resistance to at least races 12 and 14.
2. Check plants carefully for symptoms at least once a week including winter plantings that so far have not been affected. Conditions are becoming more favorable as temperature and humidity increases.
3. For crops not managed organically, apply conventional fungicides preventively or at first symptom (Actigard, Aliette, Merivon, Quadris and other QoI fungicides, ProPhyt and other phosphorous acid fungicides, Ranman, Reason, Revus, Ridomil Gold, Tanos). Downy mildew is difficult to manage with organic fungicides based on experience of researchers and growers in CA. Labeled products include copper, Actinovate, Double Nickel, Regalia, Oxidate, Trilogy, and Zonix. Copper is considered most effective but based on few evaluations of organic products.

4. Report suspect occurrences promptly to your state extension specialist so that we can keep everyone generally aware of occurrence in the region, samples can be submitted for race identification to guide variety recommendations, and we can improve our knowledge about this disease.

5. Destroy spinach crop if symptoms continue to develop despite management practices or right after final harvest even if no downy mildew seen. It is important to control the amount of inoculum in the region to minimize opportunities for spread and keep downy mildew impact low. Sources of the pathogen for the recent occurrences have not been identified.

For more information and photographs see:

<http://vegetablemndonline.ppath.cornell.edu/NewsArticles/SpinachDownyMildew.html>

#### **NRCS EQUIP SIGN-UP DEADLINE APRIL 14**

There are lot of farm practices for which you can receive funding. Learn more

<https://www.nrcs.usda.gov/wps/portal/nrcs/main/vt/programs/financial/eqip/>

Open Farm Week 2017 is scheduled for August 14-20th and registration is now open! To find our more information or to submit your event(s), please visit

<https://www.diginvt.com/blog/openfarmweekforfarmers/>. New this year, we have funds to provide resources & TA to a limited number of arms that would like support developing ideas and preparing for visitors. If interested, please apply by May 15th on the Open Farm Week registration form at the link above.

#### **DIRECT MARKETS SURVEY**

The Vermont Agency of Agriculture, Food and Markets (VAAFAM) is partnering with the Northeast Organic Farming Association of Vermont (NOFA-VT) to conduct an annual Direct-to-Consumer Market Survey for VT Producers. Participation is voluntary, but it helps us to: Update our directory of Vermont farm stands, CSAs and farmers' markets; facilitate consumer awareness about these market; gain a better understanding of Vermont's local food economies; and, better address needs of these markets. Please take 10-15 minutes to complete this direct-to-consumer market survey: <https://www.surveymonkey.com/r/DTCProducers> Sales and economic data will only be shared in aggregate form in reports, individual responses will NOT be shared publicly. Questions? [alissa.matthews@vermont.gov](mailto:alissa.matthews@vermont.gov) or 802-505-1661.



## **DIRECT MARKET TECHNICAL ASSISTANCE AVAILABLE**

NOFA-VT has a USDA Farmers Market Promotion Program grant to provide one-on-one technical assistance to 12 direct market farms, helping them implement new business and marketing strategies. Farms will have access to two years of support from a farm service provider with up to four on-farm visits in year 1 and up to two on-farm visits in year 2, along with regular check-ins. Farms receiving this TA will commit to contribute to our collection of Vermont direct market benchmark data and provide feedback on the tools and resources we are developing for the direct market farm community. Eligible direct market farmers must have been in business for at least three years, and must complete an application by April 16. Contact Jen Miller at [jen@nofavt.org](mailto:jen@nofavt.org) or 434-4122.

## **PAST VT VEG AND BERRY NEWSLETTERS ARE POSTED AT:**

<http://www.uvm.edu/vtvegandberry/newsletter/datenavbar.htm>