



**Vermont Vegetable and Berry News – May 5, 2020**  
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## **REPORTS FROM THE FIELD**

(Starksboro) We have started taking online orders and making home deliveries. Our H2a workers were 4 weeks late. People seem very inclined to buy local. Both wholesale and retail sales are way ahead of last year. I thought we might have a lot of US workers applying for work, but it's not the case. Put in a new hand washing sink after research revealed that soap and water is better than hand sanitizer. Covid 19 protocols by the dozen. All-in-all a very eventful spring so far.

(Guildhall) Field work has started, discing in corn stubble, and some plowing. Putting 30 acres into clover/rye, plowing ahead of the crops and picking up last year's plastic is on the docket for late this week. The CT river has only flooded twice so far, so the old timers say it's got one more to go. Potatoes in storage continue to be good, sales have been good too, hoping to get the last 100k# sold this month.

(Westminster) We got an early jump with the great weather in March, and planted lettuce, kale, beets and carrots, as well as getting lots of field work done. But then April's cold weather arrived, slowing growth down considerably. We are about a week behind at this point. But we figure it all tends to even out over time. The beets and carrots are up and we should be harvesting asparagus soon. Our H2-A workers from Jamaica will arrive soon, despite some early worries over whether they could come to the U.S. to work.

(Burlington) We are finishing up our winter tunnel greens and flipping tunnels to tomatoes, cucumbers, and peppers for the summer. We had an amazing crop of winter greens this year with the milder winter, and I am hoping our summer production is similarly excellent. We are testing a new (to me) product instead of stakes for basket weaving: a metal rod of about 9-gauge stiff rod/wire that hangs from the tunnel frame that serves as the attachment point for tomato basket-weaving twine. If it works to contain our determinate tunnel tomatoes, it will save a ton of setup and removal twine compared to wooden stakes.

Our spring farm work is manageable so far, but our summer CSA looms a month off, with all of the modifications that entails from our typical distribution. We've made the decision to pre-bag our summer shares through late June, then hopefully taper off on bagging through July. Our business model rests on a lot of vegetable choice, distribution flexibility, and human interaction and contact. So far our winter CSA members have been great, but we are about to find out just how tolerant our people are to not having all the great things we usually offer on the farm.

(Grand Isle) Cold and dry are the words to best explain the current season. Plus, throw in a dose of uncertainty about how best to sell vegetables in a world of virus anxiety. We have the peas and potatoes planted and hope to get the sweet corn seed in once the soil temperatures increase a bit more. Transplants are getting large in their greenhouse. Our latest new love is a Dramm nozzle for the hose; notably the model that has 1000 holes which results in fine gentle watering. (Shrewsbury) Our spring CSA is over 3 times its normal size, and summer CSA signups now almost twice the size they normally are. We've been fortunate to be able to source some storage vegetables from larger organic farms to round out the greens that we're harvesting now, and our farm is selling a lot of greens to other farmstands. We hadn't done this volume of sourcing and selling vegetables to/from other farms before, it's been rewarding to work with other farms in that way. We used to do one year-round market and one additional summer market...having taken 6 weeks off from market, we're looking at the possibility of dropping farmer's markets entirely.

Last weekend was the first time where our work settled down enough for our family to enjoy a real Saturday and Sunday off with no farmer's market to run, what a treat! The past 6 weeks have been very challenging to make such big changes so quickly, but we're trying to make the most of this wide-open opportunity to make big changes to our farm's marketing structure. This year our big goal is to develop our marketing channels in a way to get to spend a little more time with our family.

In the field, one of the themes of this year is trying to realize production efficiencies by paying more attention to detail in bed preparation. We were lucky to get some greens seeded outdoors in early April's warm spell. Our normal crop plan is mostly thrown out the window as we adapt to different markets and increase production to meet the increased demand...it will be an interesting year and we're looking forward to doing our best!

(Pownal) Spring tilling completed on all our blueberries with hand cultivating around the bushes. Fertilized all bushes and hand cultivated into soil. Then tractor and bucket work placing new mulch for each bush and spreading/leveling the mulch. Lots of labor during the very cold spring, wearing long johns and hand heaters in our gloves. Between the rainy days and snow cover days we finally finished on Saturday. Hoping all the labor late last summer and this spring has prevented those mummy berries. We lost 25% of our best berries last summer to that disease last year.

Planted 200 new raspberries, and planted 100 last spring. Site was prepared and cow manure added plowed under and tilled again, soil test showed pH was OK. Had a scare about getting the raspberry stock. Nursey was called numerous times to ensure pick-up could still happen. After several postponements, the pick-up was canceled and said they would ship at reduced cost. Finally received stock and they are planted, big relief. Hope to finish the new blueberry planting tomorrow and then move on to our two large gardens of pumpkins and cut flowers.

(Elmore) Ramps are up, snow is gone, but more predicted for this week. Almost eighty degrees Sunday on our hill; everyone was happy about this except for us who must dig all we can before the leaves open. Unsure of all our fruit markets. Local stores even veggie stands have not been calling us back to reorder.

We supply some breweries that have not told us yet if they will be wanting our fruit. So we are focusing on our field health and planting out groves of things we always wanted here and hoping it will all turn out for the good. Feeling proud to be an essential part of the world. Feeding people really stands out during a time like this. We are all doing such important work!

(Plainfield) Scouted blueberry mulch Sunday night and did not find any mummy berry apothecia. It was warm night (49 degrees) after a warm day (70 degrees). Then I found dozens of apothecia Monday morning. I am physically disturbing the mulch and will spray urea on the apothecia. The buds are swelling quickly now but it is supposed to be a cold week.

(Plainfield NH) Usually it's the weather, but this year everything around here seemingly evolves and revolves around Coronavirus. As I imagined, the additional costs incurred through time and resources devoted to protecting employees and retail customers is significant. That said, it is an expensive inconvenience and not a true hardship. Our H2A workers have arrived and entering their last week of sequestration. We have had them hand fertilizing the blueberries and doing some hand work in the strawberries, but the foul weather of the past week has them watching a lot of Netflix and wrestling on TV.

Small fruit crops look good and I am pleased that we got through the pruning of the blueberries during this mild winter. Ray has some cole crops in the ground, some carrot and beet seeded. Mike is laying plastic in the field and soon we will be laying down Dutch white clover in the drive rows. Hopefully I will get some corn in the ground the next couple of days. Other tasks include completing the construction and moving of 5 greenhouses which will be devoted to vegetable production. Wrapping up grafting of tomatoes and making way for the retail greenhouse season.

## **TECH TIPS FROM UVM EXTENSION AG ENGINEERING**

Drain Guide - A new guide to drains is available on the blog at <http://go.uvm.edu/drains>. It covers everything from directly plumbed drains, to floor or spot drains, to trench drains. We even have a construction drawing for a trench drain!

Spring Cleaning in the Cooler - It's not a bad time of year to take a look at your coolers and consider a deep cleaning while also ticking through some preventive maintenance. We have a guide on the blog at <http://go.uvm.edu/coolerchecklist>.

Bins Guide Updated - We have updated our every growing guide to Bins, Buckets, Baskets & Totes at <http://go.uvm.edu/bins>. One highlight is fish baskets available in different colors!

Ag Engineering Podcast - Fresh, crisp episodes are released each week as Andy talks with growers to help share tools, tips, and techniques to improve the sustainability on your farm. Recent topics have included setting up an online store, rural markets, paper pot transplanter, and a single row walk-behind vacuum seeder. Full episode list, show notes, and subscription links at <http://agengpodcast.com>.

## **MANAGING SALT BUILD UP IN HIGH TUNNELS**

(adapted from UMass Vegetable Notes)

Do you notice white crusting on the surface of your high tunnel soil? This may be salt! Salts in the soil come from fertilizers and manure, and they are not your typical table salt, sodium chloride. Salts in tunnel soils mainly consist of valuable plant nutrients. They are dissolved ions from fertilizer and organic compounds. These move up to the soil surface with evapo-transpiration, and typically there is little to no overhead irrigation to flush them back down into the soil. Adding organic amendments like compost, applying high salt index fertilizers, and leaving the plastic on tunnels year-round can lead to salt build-up in a high tunnel.

Germinating seeds and young seedlings are most susceptible to salt injury. In established crops, high salt concentrations make it difficult for crops to take up water from the soil, therefore reducing yields. Salts are measured by electrical conductivity (EC) because the dissolved ions ( $K^+$ ,  $NO_3^-$ ,  $NH_4^+$ ,  $HPO_4^-$ , etc.) have a positive or negative charge. The higher the EC, the greater the number of ions and electrical charge in the soil.

For most tunnel crops, the soil EC should be 2 to 3.5 mmhos/cm, if using UMaine or UMass soil test labs, or others that use the Saturated Media Extract (SME) method. However, we have found that readings of 4 or 5 mmhos/cm don't seem to affect yields in high tunnel tomatoes very much. Perhaps this is because the tomato root structures are larger and go deeper than where the salts have accumulated near the surface.

Salt buildup can be prevented by avoiding excessive applications of compost or manure, by carefully managing soluble fertilizers, by avoiding fertilizers with a high salt index including those high in ammonium forms of nitrogen, by maintaining soil moisture at water holding capacity, by mixing the soil to re-distribute salts, and by leaving the greenhouse cover off over the winter prior to changing to a new cover.

A common issue in tunnels is soils are not mixed deeply after salts have moved to the soil surface, so they concentrated in the couple of inches. High salts in the top layer of tunnel soils could be the reason why even highly salt tolerant crops like spinach can get salt injury in a tunnel, because they are shallow rooted. In this case, soil tests taken to a depth of 6" would not indicate unusually high soluble salt levels.

Insufficient irrigation is also a problem in some tunnels. Maintaining soil moisture at field capacity (50% of air pore space filled) is important to reduce the potential for salt injury or other nutrient related disorders such as blossom end rot or yellow shoulder in tomatoes which can occur with large fluctuations in soil moisture content. Use 8-mil plastic drip tape with emitters every 6 inches and a flow rate of at least 0.5 gpm/100 ft. to ensure more uniform moisture in beds and include 2 lines per row of summer season crops for better root zone coverage. Monitor soil moisture at different depths, and to make sure the entire width of beds are getting enough irrigation.

## **HIGH TUNNEL VENTILATION**

Chris Callahan, UVM Extension Ag Engineer

I have received many inquiries about how to improve ventilation of high tunnels from folks with tunnels that have only roll-up sides. The issues tend to be either high temp, high humidity or both, leading to plant stress or disease. These situations tend to be in less than ideal sites for ventilation and/or temperature control. For example, crowded lots with trees or other significant wind breaks close to the tunnel, high southern exposure (which can be good of course), and/or simply calm sites that provide little ventilation.

Roll-up sides alone tend to work for tunnels on sites with generally good air flow. But I think of a tunnel in this instance a bit like a wood stove. Without a chimney-effect natural draft, you're really only getting ventilation from the sides and only then if there is a decent breeze. Warmer air and, therefore, humidity will tend to collect in the canopy and peak. This probably is OK in many sites for most crops. But not always.

In many cases gable vents will improve ventilation by acting as outlets for warm humid air in warmer seasons and by allowing for low volume ventilation in colder weather. I recommend a simple 24"x24" gable vent (for a 30'x96' tunnel) on each end wall, with a thermostatic wax cylinder actuator. The actuators require no electricity, are relatively inexpensive and are passively controlled with the wax cylinder. At the very least, consider framing in a rough opening to accept a 24"x24" in the end wall so that a future install is easier.

If you want to skip the expense of a louvered, wax cylinder system, you can use a manually-controlled sheet of plywood to open and close the vent. If you go with a louvered vent, seek one that has a flanged seal it closes against. Keenan Meier has such louvered dampers: <http://www.kmdampers.com/html/products.html>. These have zero daylight when closed which results in a solid seal. Most others on the market that I have seen have no such closure seal.

Remember that HAF fans work to mix the space (circulate the air) but don't significantly improve ventilation. HAF combined with roll up sides can do the trick, but the site is the key. There needs to be a steady cross breeze for any significant air exchange to occur.

For more information on ventilation see:

<https://blog.uvm.edu/cwcallah/2019/08/14/ventilation-in-greenhouses-and-high-tunnels/>