



UMass  
Extension

# Vegetable Notes

For Vegetable Farmers in Massachusetts since 1975



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## CROP CONDITIONS

It's been really fun to see many of you over the last couple of days at Twilight Meetings and the research farm tour. And we learned a few things too! Carbon emission-reducing sorghum, new strains of basil downy mildew with new resistant varieties to match, Bluetooth- and wifi-controlled irrigation, how to get NRCS financial assistance to upgrade irrigation systems, crabgrass as a new forage crop, sweet corn caterpillar control, using shade cloth and mulches to reduce heat impacts on veggie crops, and a new favorite pumpkin variety that gets fewer virus symptoms (Kratos)! We appreciate folks turning out at such a busy time of year.

Bulk harvests are starting just as crews are shrinking with students returning to school. Melons are rolling in, onions are curing, potato harvest is starting in many fields, and corn is coming in strong. Field tomatoes and peppers are finally ripe but plants are struggling with the moisture and humidity, and diseases are angling to make it a short season for these precious crops. Continued rains have given crews time to crack garlic, clean up greenhouses, and do some hail Mary plantings for fall harvests. It's been a challenging year to grow vegetables, and while it's always easiest to focus on what doesn't look great (a weedy field, or a diseased bed), there is a lot of beautiful food coming in right now and we are lucky in MA to have such direct access to this bounty—thanks for keeping at it through the wet and the mud to keep us all so well-fed!



*We had a wonderful turn out for our Research Farm tour yesterday. Thanks to everyone who came by! Photo: M. Ng*

## PEST ALERTS

### Alliums

As storage onion crops come in and cured onion sorting begins, be sure to sort out and not store diseased onions. Each leaf of the onion plant becomes a single layer of the bulb, and diseased leaves often develop into rotten layers in the bulb when the bulb is stored. See our fact sheet on [Allium Postharvest and Storage Diseases](#) for more information.

### Brassicas

All four [caterpillar pests of brassicas](#) are out there chomping away – imported cabbage worm, diamondback moth, cross-striped cabbageworm, and cabbage looper. Labeled materials include spinosyns (e.g. Radiant), pyrethroids (e.g. Fastac, Baythroid XL, Brigade, Asana, Danitol, Declare, Warrior, Pounce, Mustang), diamides (e.g. Vetica, Coragen, Exirel, Verimark), Proclaim (FRAC group 6), Avaunt (22), and Torac (21A). Diamide products are more expensive but are systemic, have long residuals, and will also protect against flea beetles. Bt products (e.g. Dipel, Xentari) are

very effective and are OMRI-listed. Use a spreader-sticker to help materials adhere to waxy brassica leaves.

## Cucurbits

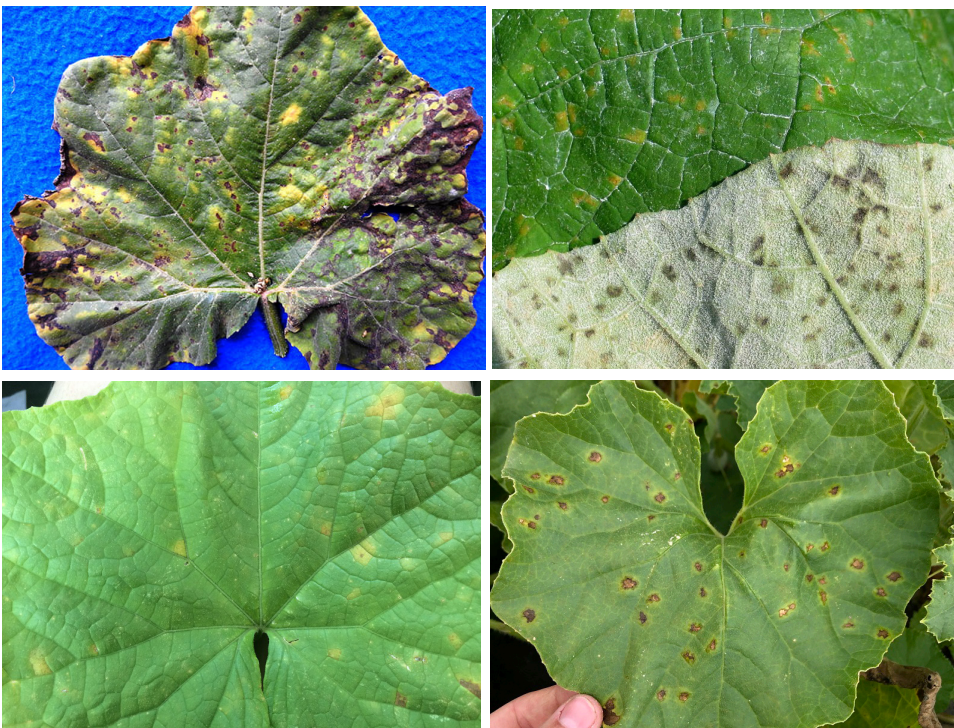
We're seeing symptoms of **viruses** in pumpkins now. We are in the process of having samples diagnosed, but usual suspects include [CMV](#), [WMV](#), and [ZYMV](#). Get in touch with us at (413) 577-3976 or [umassveg@umass.edu](mailto:umassveg@umass.edu) if you're seeing crinkled leaves, mosaic patterns, or other viral symptoms in your squash or pumpkins (see photo)—we've been seeing more and more of these cucurbit viruses in recent years, and if we are able to diagnose what viruses are out there then we'll be able to better understand their sources, alternative hosts, and management recommendations.



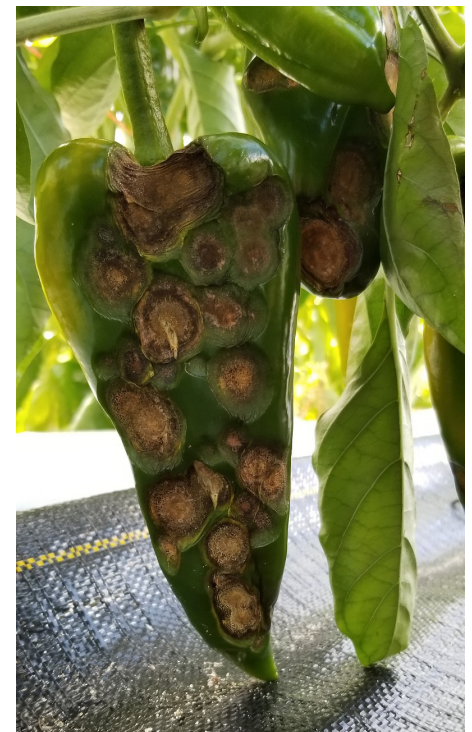
*Symptoms of viral infection in a pumpkin leaf.  
Photo M. T. McGrath*

**Cucurbit downy mildew** is continuing to spread throughout the region, though no new reports from MA. If you suspect CDM in your crops, please let us know so that we can track this important pathogen. We report cases on a county-wide basis and it's important to know where and on what crops this disease is showing up so that other growers can stay on top of fungicide sprays. Currently CDM has only been reported on cucumber in the Northeast, but there is a report on acorn squash/summer squash/zucchini and on jack-o-lantern type pumpkins in western Ohio. Scout cucurbits weekly for signs of CDM and continue with regular broad-spectrum and targeted fungicide applications, remembering to rotate between FRAC groups in the targeted materials. If you're struggling with CDM in your late cucumbers, remember that there are resistant varieties available that provide good control for later season harvests when CDM is present.

Table 1. Squash vine borer trap captures for week ending August 16	
Whately	0
Leominster	0
North Easton	-
Sharon	1
Westhampton	0



*Clockwise from top left: cucurbit downy mildew on butternut, pumpkin, cantaloupe, and cucumber. Photos: M. T. McGrath and UMass Extension*



*Pepper anthracnose.  
Photo: R. Norton*

## Nightshades

**Pepper anthracnose** is severe in affected, untreated fields now. This disease overwinters on crop residue in the soil, and often starts in "hot spots" in the field the following year before spreading with wind and rain. It causes sunken

## CONTACT US:

Contact the UMass Extension Vegetable Program with your farm-related questions, any time of the year. We always do our best to respond to all inquiries. **Office phone:** (413) 577-3976 **Email:** [umassveg@umass.edu](mailto:umassveg@umass.edu)

**Home Gardeners:** Please contact the UMass GreenInfo Help Line with home gardening and homesteading questions, at [greeninfo@umext.umass.edu](mailto:greeninfo@umext.umass.edu).

lesions on fruit that develop salmon-colored sporulation. On farms with a history of pepper anthracnose, crop rotation out of peppers and tomatoes is key for avoiding this disease. Infected fruit found early by scouting can be removed from the field to slow the spread. Fungicides are also effective if applied early and often, targeting developing fruit. See the [pepper disease control section of the New England Vegetable Management Guide](#) for labeled materials.

**Late blight:** No new reports of late blight have come in from the Northeast this week. The only reports in the Northeast remain from Yates Co., NY and Simcoe, Ontario. The more pressing diseases in tomato this season remain the ones that come every year—[bacterial leaf spot and speck](#), [Septoria leaf spot](#), and [early blight](#).

### Sweet Corn

**European corn borer** trap counts are low at most sites, with only one location in eastern MA catching a relatively high number of 17 this week.

**Corn earworm** trap counts are up again this week, with especially high numbers along the coast and a high of 132 in Seekonk. Most locations are on a 4-day spray schedule this week.

**Fall armyworm** moths are finally being caught with some regularity in more traps this week, with 7/15 traps reporting captures.

**Table 3. Corn earworm spray intervals based on Heliothis trap moth captures**

Moths per night	Moths per week	Spray interval
0 - 0.2	0 - 1.4	no spray
0.2 - 0.5	1.4 - 3.5	6 days
0.5 - 1	3.5 - 7	5 days
1 - 13	7 - 91	4 days
Over 13	Over 91	3 days

**Table 2. Sweetcorn pest trap captures for week ending August 16**

Location	GDD* (base 50°F)	ECB NY	ECB IA	FAW	CEW	CEW Spray Interval
<b>Western MA</b>						
Feeding Hills	1965	2	0	2	20	4 days
Southwick		2	0	2	20	4 days
Granby	1875	8	1	0	1	no spray
Whately	1960	7	0	11	18	4 days
<b>Central MA</b>						
Leominster	2014	11	0	3	55	4 days
Lancaster		2	0	2	7	4 days
North Grafton	1729	3	1	1	5	5 days
Spencer	1822	-	-	-	-	-
<b>Eastern MA</b>						
Bolton	1861	0	0	-	2.5	6 days
Concord	1836	17	0	0	20	4 days
Haverhill*	1907	7	0	0	27	4 days
Ipswich*	1807	8	0	2	35	4 days
Millis	-	4	1	n/a	68	4 days
North Easton	1940	0	0	0	20	4 days
Sharon		1	0	0	40	4 days
Sherborn	1945	7	1	0	16	4 days
Seekonk	1867	1	0	0	132	3 days
Swansea		0	0	0	27	4 days
- no numbers reported for this trap N/A this site does not trap for this pest						
*GDDs are reported from the nearest weather station to the trapping site						

# WINTER HIGH TUNNEL SPINACH VARIETY TRIAL, 2022-23

## Background

Spinach downy mildew (DM), caused by the oomycete pathogen *Peronospora farinosa*, has emerged in New England as an important disease of fall and spring field spinach and winter high tunnel spinach over the last several years. This disease is sporadic and does not appear every year on every farm. Part of the reason for the sporadic pattern of incidence is that there are many races of the pathogen – 19 numbered races, as well as countless novel, unnumbered races. Spinach varieties have resistance to different sets of spinach DM races, so the occurrence of disease outbreaks depends on the spinach varieties present, the DM race(s) present, and environmental conditions on a farm at a certain time. There are conventional fungicides that can effectively control spinach DM (including Revus, Reason, Ranman, Ridomil Gold, Quadris, Orondis, and Aliette; for a complete list, see the [spinach disease section of the New England Vegetable Management Guide](#)), but there are currently no effective OMRI-listed fungicides, so resistant varieties are a crucial management tool for certified-organic growers and still an important tool for conventional growers since they can help to delay development of fungicide resistance.



*Spinach downy mildew symptoms on the top of spinach leaves (left) and sporulation on the underside of a leaf (right). Photos: G. Higgins*

Downy mildews are host-specific pathogens—spinach DM only causes disease on spinach and is different from the downy mildews that cause disease on cucurbits, basil, and other crops.

Spinach breeders are constantly developing spinach varieties with new resistance packages to manage DM, but most new varieties are targeted to large-scale growers in CA and AZ, where most of the country’s spinach is grown and where DM can lead to huge crop losses. The downy mildew pathogen quickly evolves to overcome resistance bred into spinach varieties, so spinach varieties available from seed producers change often, and while New England seed distributors aim to provide varieties with the best possible disease resistance, there is also incentive to carry varieties that will be available for a long time despite not having full DM resistance. Over the last 3 years, the UMass Extension Vegetable Program has conducted spinach variety trials aimed at identifying varieties with resistance to as many DM races as possible and that perform well in a New England winter high tunnel environment.

Results of the previous spinach variety trials can be found here: [2018-19 Spinach Variety Trial](#),

Table 1. Varieties evaluated			
Variety	Company	DM Resistance	No. of harvests expected
Carmel	Pop Vriend	1-11, 13, 15-16, 18	2
Cocopah	Pop Vriend	1-18	
Kiowa	Pop Vriend	1-18	
Nimbus	Nunhems	1-19	
Onyx	Pop Vriend	1-19	
PV-1610	Pop Vriend	1-9, 11-15, 17, 19	
Regor	Nunhems	1-19	
Traverse	Enza Zaden	1-16, 19	
Treasure	Sakata	unknown	
Viroflay	University of AK	none	
Bandicoot	Rijk Zwaan	1-16, 18, 19	3
Colusa	Pop Vriend	1-18	
Crosstrek	Enza Zaden	1-16, 19	
Nevada	Pop Vriend	1-18	
Patton	Bejo	1-15, 17	
Pershing	Bejo	1-19	
PV-1702/Ganister	Pop Vriend	1-19	
PV-1716	Pop Vriend	1-19	
Quartz	Pop Vriend	1-19	
Responder	Bejo	1-12,14-16, 19	

## Methods

20 spinach varieties were trialed in 2022 (See Table 1). They were selected based on their wide resistance to spinach downy mildew races.

The high tunnel was cover cropped with oats and peas the summer prior to this trial; this cover crop was incorporated in mid-August. Soil tests were taken in late August and indicated that, as a result of a previous trial in the tunnel, soil nitrate varied by 39 ppm across the two sides of the tunnel, so on September 30, nitrogen was applied in the form of bloodmeal (12-1-0.5) to correct this. All spinach varieties were seeded by hand on October 3, 2022, at a rate of 3 million seeds/A (60 seeds/ft<sup>2</sup>). Plots were organized in randomized complete blocks, in 3-ft wide beds. Plots were 3 ft long with 5 rows of spinach, and 1 ft between plots. Seduce Insect Bait was applied on December 6 to control winter cutworm.

For the duration of the trial, end-wall doors were closed, automated roll-up sides were programmed to open at 50°F and close at 40°F, and exhaust and circulating fans were off. The tunnel was irrigated with overhead sprinklers as needed over the course of the winter. Soil nitrate was measured once on December 6 and it was determined that no additional N was needed.

Percent germination and percent post-emergence damping off were rated twice, 11 and 23 days after seeding. Plot vigor (%) was rated on November 14, January 20, and March 24. All varieties were harvested on November 14 and yield data was collected; additional harvests of some varieties were made on January 24 and March 2 but due to incomplete data we are presenting the November 14 yield data and the number of harvests for each variety over the course of the trial. Plots were harvested by clear cutting by hand approximately 1 inch above the soil line.

All data were analyzed in SAS using a general linear model and means were compared using Tukey's honestly significant difference test (P = 0.05).

## Results

The varieties *PV-1702*, *Quartz*, *Bandicoot*, *Nevada*, *Cocopah*, *Nimbus*, and *Colusa* had the highest and statistically equivalent yields at the first harvest (all above 0.2 lbs/ft<sup>2</sup>), and also had high germination rates (above 80%). *Nimbus* and *PV-1702* had the highest germination rates (95% and 92.5% respectively). All of those varieties, except for *Cocopah* and *Nimbus*, were relatively fast-growing and could have been harvested 3 times over the course of the trial; *Cocopah* and *Nimbus* could have been harvested only twice. *Onyx*, *Pershing*, and *PV-1716* performed the worst of all the varieties; they had significantly lower germination than all other varieties. *Onyx* had the lowest yield of all varieties, but the yields of *PV-1716*, *Pershing*, and *Traverse* were not significantly different from *Onyx*.

Of these high-yielding varieties, most had a lighter green color and slightly oblong leaves that became deltoid (spade-like) after 1 or 2 harvests. *Nimbus* and *Quartz* were darker green with rounder leaves.

Some varieties in the trial had more attractive re-growth than others. Because plots were harvested by clear cutting, the re-growth in some varieties had the tips of the leaves cut off. Other varieties with growing points deeper within the plant, had re-growth that did not show this cutting damage. *Bandicoot*, *Colusa*, *Crosstrek*, *Patton*, *Pershing*, and *Responder* all had re-growth that did not show cutting damage; the re-growth of all other varieties did show cutting damage by the 2<sup>nd</sup> harvest. After 2 harvests, *Bandicoot* was notably leggy and deltoid and may not have been marketable for some growers.

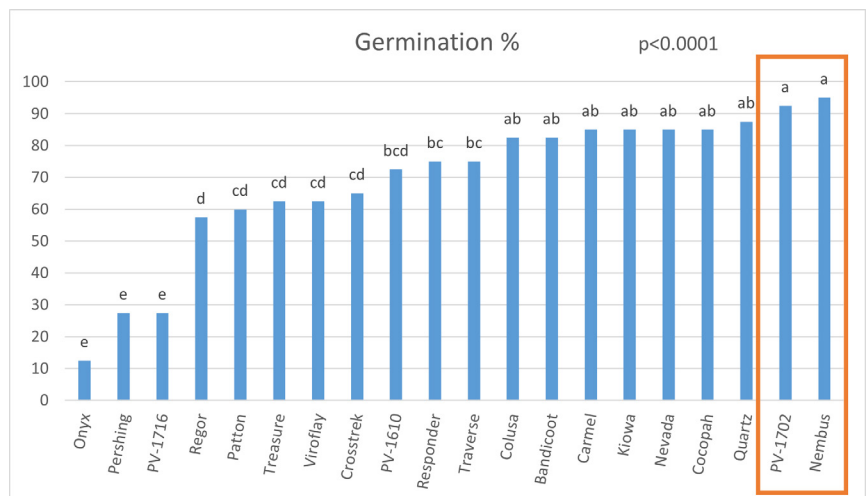


Figure 1. Percent germination, rated 23 days after seeding. *PV-1702* and *Nimbus* had the highest germination rates. Statistical significance was determined using analysis of variance. Means were separated using Tukey's HSD at  $\alpha$ -level 0.05. Varieties that share one or more letters are not significantly different from each other.

[Click here for photos of the best-performing varieties in this year's trial.](#)

Spinach downy mildew did not develop in the tunnel, but *Cladosporium* leaf spot, a common fungal disease of spinach, did develop in late-winter. All plots of *Crosstrek*, *Patton*, *Nevada*, *PV-1702*, *Colusa*, and *Bandicoot*, and some plots of *Carmel*, *Pershing*, *Responder*, *Quartz*, and *PV-1716* developed *Cladosporium* to some extent. *Cladosporium* resistance is currently not reported for commercially available varieties, but this is anecdotal evidence of varietal differences in susceptibility to *Cladosporium* warranting further research, as *Cladosporium* outbreaks are common and economically impactful in Northeast winter spinach production.

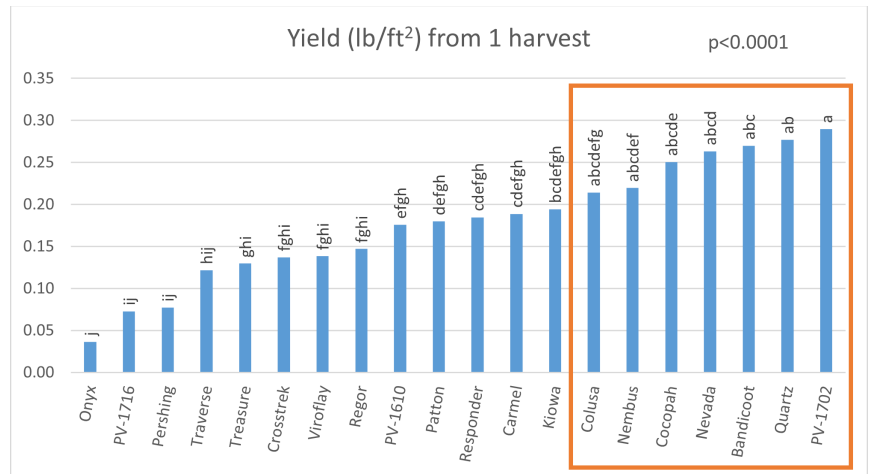


Figure 2. Yield in lbs/ft<sup>2</sup> from one harvest (November 14, 6 weeks after seeding). *Colusa*, *Nembus*, *Cocopah*, *Nevada*, *Bandicoot*, *Quartz*, and *PV-1702* were the highest yielding varieties.

Over the last 3 years, we have found that many of the varieties we've trialed are acceptable and can produce high yields in Northeast winter tunnels. We did not trial the same set of varieties each year, but some varieties that were in the top 10 performers in more than one year are: *Colusa*, *Nevada*, *Cocopah*, *Nembus*, and *Kiowa*. Varieties that had high quality regrowth included but aren't limited to: *Crosstrek*, *Patton*, *Kiowa*, *Responder*, and *Colusa*. Many of the varieties trialed are not available in seed catalogs in the Northeast but seed reps may be able to special order unlisted varieties from producers, especially if smaller-scale growers collaborate to meet minimum order requirements.

*This material is based upon work supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, through the Northeast Sustainable Agriculture Research and Education program under subaward number LNE20-402. We are very grateful to Jim Correll of the University of Arkansas for his support in this research.*

--Written by G. Higgins, UMass Extension Vegetable Program

## **NITROGEN MANAGEMENT WITH A PRE-SIDEDRESS SOIL NITROGEN TEST**

We are seeing lots of crop yellowing right now, as a result of nutrients, specifically nitrogen (N), being leached out of soils by the exceedingly high amounts of rain this year. This leaching happened fastest in sandy soils that are low in organic matter, but it is happening even in heavier soils. Lots of growers are sidedressing fertilizer right now. If you're wondering whether your crop needs supplemental N, or if you want to evaluate which crop needs it *most* so you can spend your money most wisely, a pre-sidedress nitrate test (PSNT) is extremely valuable information. N is released slowly from organic matter throughout the season and plant-available N is very mobile in the soil. This means that N levels fluctuate a lot throughout the season and this is why N is not included on routine soil tests that are often taken in the fall. A PSNT takes a snapshot of the level of plant-available N in your soil at the time of sampling and can tell you if a crop would benefit from additional fertilizer.

In seasons with more average rainfall, PSNTs are useful to take mid-season to determine if the release of N from your fertilizer is lining up with crop need. Table 1 has recommended times for taking PSNTs from specific crops, in more average years. Sampling instructions can be found at the UMass Soil Testing Lab website: [https://soiltest.umass.edu/sites/soiltest.umass.edu/files/forms/soil/PSNT\\_030314.pdf](https://soiltest.umass.edu/sites/soiltest.umass.edu/files/forms/soil/PSNT_030314.pdf). Test result turnaround time for PSNTs is usually much faster than for routine soil tests.

Once you have your PSNT results, you are now left with questions about how much N to apply and in what form.

**Interpreting PSNT results:** The PSNT measures the current level of nitrate in the soil, giving growers the opportunity to fine-tune their N applications. This year that means evaluating how much N remains in the soil after July's rains and determining if you need to sidedress. In other years, growers can reduce broadcast and pre-plant N applications then take PSNTs and sidedress as needed at key periods of crop growth (Table 1), thus reducing potential runoff and saving on labor

and fertilizer investments. The PSNT is useful in soils that are high in organic matter or have had a cover crop or manure turned under before planting since microbes will be mineralizing organic nitrogen for use by plants throughout the season. If the PSNT test level is low, additional N would be expected to increase yields and if the test levels are high, additional N would not increase yields.

Research conducted by the UMass and UConn indicates that an appropriate threshold for most vegetable crops is **30 ppm nitrate-N (NO<sub>3</sub>-N) and 25 ppm for sweet corn**. Above this level, sidedressing or topdressing supplemental N would be of no value and may even decrease yields. As a tool, the PSNT should be used along with a grower's experience and knowledge of their fields. For example, a field high in organic matter will continue to release nitrogen for crop growth throughout the season. Research indicates that for each 1% organic matter, we can expect 20 to 40 lb of N per acre per year to be mineralized when conditions are favorable. Reduce sidedressing amounts to reflect the nitrogen credit coming from organic matter. Interpretation of PSNT results should be made with regard to weather conditions such as recent leaching rains that reduce available N, or high soil temperatures that increase mineralization and therefore available N. Weather conditions should also be considered before making N applications to avoid runoff, leaching and volatilization.

**How much should I sidedress based on PSNT results?** For vegetable crops except sweet corn, if soils have 0-25 ppm nitrate, apply the full sidedress amount recommended in the appropriate [crop section of the New England Vegetable Management Guide](#). At 25-30 ppm nitrate you can cut the sidedress rate in half. Above 30 ppm no additional N is needed and could hurt yields. In sweet corn, no additional N is needed if soil nitrate levels are above 25 ppm. Consult Table 1 for sidedress rates of specific crops.

**What form of nitrogen should I use?** N is available in a number of forms; consult pages 37-38 of the [Nutrient Management Guide for New England Vegetable Production](#) for N options for organic and conventional growers. Common sources of fertilizer N include urea, ammonium nitrate, monoammonium phosphate, diammonium phosphate, calcium nitrate and potassium nitrate. Sulphur-coated urea is a material which releases N more slowly over a period of several weeks. In the soil, urea is converted to ammonium, which is then converted to nitrate, which is the form of N most easily taken up by plants. These conversions happen quickly if soil pH is over 6.0 and soil moisture and aeration are adequate. However, high ammonium levels, either from ammonium-based fertilizers or urea, can interfere with calcium uptake and induce cal-

<b>Table 1. Suggested times for soil sampling vegetable crops to conduct PSNT and Sidedress Nitrogen needs of crops</b>		
<b>Crop</b>	<b>Soil sampling time for PSNT</b>	<b>Sidedress N in Lbs/A<sup>y</sup></b>
Sweet corn	When plants are 6-10" tall	<b>60-90</b>
Cabbage, broccoli, Brussels sprouts	2 weeks after transplanting	60
Cauliflower		30
Celery	2 weeks after transplanting. Sample again 3-4 weeks later.	<b>40, twice, 3-4 weeks apart</b>
Lettuce, endive, escarole	2 weeks after transplanting or after thinning (2-4 leaves)	<b>30-50</b>
Beets	After thinning (2-4 leaves)	<b>30</b>
Pumpkin, winter squash	Before vines are 6" long	<b>40-50</b>
Cucumber, melon		<b>40</b>
Spinach	2-4 leaves. Sample again after first cutting.	<b>30</b>
Potato	Before plants are 6" tall	<b>40-60<sup>z</sup></b>
Pepper	3-4 weeks after planting. Sample again 3-4 weeks later.	50, and 40 later at fruit set
Tomato		30, twice, 3-4 weeks apart
Eggplant		<b>30-50</b>
<sup>y</sup> If soils have 0-25 ppm nitrate, apply the full sidedress amount recommended by the New England Vegetable Management Guide. For crops other than sweet corn, at 25-30 ppm nitrate you can cut the sidedress rate in half. Above 30 ppm no additional N is needed and could hurt yields.		
<sup>z</sup> Potatoes also need 50-125lbs/A Potassium depending on soil test results.		
Adapted from: Rutgers Cooperative Extension Bulletin by J. Heckman, "Soil Nitrate Testing as a Guide to Nitrogen Management for Vegetable Crops" and The New England Vegetable Management Guide.		

cium related disorders such as blossom-end rot of tomatoes, tip burn of cabbage and greens and cavity spot of carrots. Application of urea and ammonium phosphates are most likely to interfere with calcium uptake whereas calcium nitrate and potassium nitrate are not likely to do this. Ammonium nitrate is intermediate in this regard. When a slow release form of urea is used, only a small amount of ammonium is present at a given time and is unlikely to cause a problem with calcium nutrition, but N may not be available quickly enough to meet the demands of a rapidly growing crop.

For organic growers options include: manure, meals and emulsions, or animal byproducts such as dried blood and feather meal. These materials vary in how quickly the N is available to the crop—the table on page 37 of the [Nutrient Management Guide for New England Vegetable Production](#) includes release rates. Choose materials with faster release rates for sidedressing.

**In summary:** N is easily leached from the soil. If this happens, money is wasted and ground water may be contaminated. N applications should be timed to meet crop demands. Large pre-plant broadcast N applications should be avoided. A PSNT should be used to determine the need, if any, for additional N during the growing season. If needed, additional N can be applied by topdressing, sidedressing or injection into a trickle irrigation system.

--UMass Extension Vegetable Program & New England Vegetable Management Guide

## **HEAT TOLERANT LETTUCE VARIETIES & PREPARING FOR FALL LETTUCE PLANTING**

--Written by Emmalea Ernest, University of Delaware Cooperative Extension Fruit & Vegetable Specialist. Originally published in [UD Extension Weekly Crop Update Volume 31, Issue 17, July 21, 2023](#).

Head lettuce for fall harvest can be direct seeded in Delaware from August 1 through August 20 and transplanted from August 10 through August 30. Getting good lettuce germination for either transplants or direct seeded plantings can be challenging when temperatures are high. The optimum soil temperature range for lettuce germination is 60-68°F and high soil temperatures can induce thermal dormancy which prevents germination. In southern Delaware, average daily soil temperatures are typically above 80°F through the third week of August. For both transplant and direct seeded production, primed seed can help reduce the risk of thermal dormancy. When starting transplants, trays can be kept in a shaded location, a cool building or germination chamber until seedlings emerge. After germination, grow out transplants in a cool location, such as a porch or other partially shaded area.

In [2012 I conducted lettuce trials](#) with two spring and two fall planting dates. Forty-three varieties were tested. The fall harvest transplanting dates were July 27, which is earlier than the recommended window, and August 15, which is within the recommended window. Even when planted within the recommended planting window (August 15), 83% of the varieties fully or partially bolted. Therefore, Delaware growers should use heat tolerant lettuce varieties for fall plantings. (As a side note, nearly all the varieties I tested produced marketable heads when transplanted on March 30).

The varieties that performed well in the 2012 fall trials, which are still available are: Skyphos and Starfighter. This year I am testing fourteen lettuce varieties (all with reported heat tolerance) in two summer trials on white mulch with shade. On July 17 we completed harvest of the first planting, which was transplanted on June 5. The varieties with no bolting and bitter flavor in that trial were: Muir, Nevada, Skyphos, Jericho and Sunland.

*Note from UMass Extension Vegetable Program: Here in Western Massachusetts, we've just wrapped up our own heat tolerance trial, looking at four varieties of head lettuce grown on different plastic mulches under shade cloth. We saw good heat tolerance and low bit-*



*Lettuce varieties that have shown heat tolerance in Delaware trials. Photo: E. Ernest*



terness in two varieties: *Skyphos* (red butterhead) and *Muir* (green batavia). We are still analyzing our data and will post the full results this winter--stay tuned for more!

## **NEWS**

### **FY2024 AGRICULTURAL FOOD SAFETY IMPROVEMENT PROGRAM (AFSIP) – ROUND II**

**A second round of MDAR's AFSIP Grant** has been posted with a due date of **Friday, October 6th, 2023**

MDAR is now accepting applications from produce and aquaculture operations who wish to participate in the Department's Agricultural Food Safety Improvement Program (AFSIP). Interested operations are encouraged to review the Request for Response (RFR) on the AFSIP website. If interested in applying, applications must be submitted with any additional documentation by the deadline of Friday, October 6, 2023.

The purpose of the AFSIP grant is to support produce and aquaculture operations in implementing enhanced on-farm food safety measures that help reduce food safety risks and help to minimize microbial contamination and food-borne illnesses. In addition, by implementing eligible upgrades that help reduce a food safety risk, the program helps operations maintain or increase market access. AFSIP is a competitive, re-imbusement grant program that funds projects up to \$50,000 or 80% of total project costs.

This round of funding has an application deadline of **Friday, October 6, 2023** and projects must be completed by **June 30, 2024**.

NOTE: For those applicants who have already submitted their applications under the first round RFR-AGR-AFSIP-FY24 you do not need to resubmit. These applications are still under review and applicants will receive notification of their status once awards are finalized.

Applications can be found here: [Agricultural Food Safety Improvement Program](#)

## **EVENTS**

### **THE 38<sup>TH</sup> MASSACHUSETTS TOMATO CONTEST TO BE HELD ON AUGUST 22**

**When:** Tuesday, August 22, 2023

**Where:** Boston Public Market, 100 Hanover St, Boston, MA 02108

**Registration:** [Click here to register.](#)

The 38<sup>th</sup> Massachusetts Tomato Contest will be held at the Boston Public Market on Tuesday, August 22nd. Tomatoes will be judged by a panel of experts on flavor, firmness/slicing quality, exterior color and shape. Always a lively and fun event, the day is designed to increase awareness of locally grown produce.

Open to commercial farmers in Massachusetts, growers can bring tomatoes to the market between 8:45 am and 10:45 am on August 22nd or drop their entries off with a registration form to one of the regional drop-off locations on Monday, August 21st. Drop off locations include sites in South Deerfield, Southboro, Dighton and West Newbury. These tomatoes will be brought to Boston on Tuesday.

For complete details, including drop off locations, contest criteria, and a registration form, click [here](#). Be sure to include the [registration form](#) with all entries.

*The 38th Tomato Contest is sponsored by the Massachusetts Department of Agricultural Resources, [New England Vegetable and Berry Growers Association](#) and [Mass Farmers Markets](#) in cooperation with the [Boston Public Market](#). Please consider participating to showcase one of the season's most anticipated crops!*

**Questions?** Please contact David Webber, [David.Webber@mass.gov](mailto:David.Webber@mass.gov).

### **TWILIGHT MEETING AT HEART BEETS FARM: SWEET POTATO PRODUCTION AND FALL PEST MANAGEMENT**

**When:** Thursday, September 21, 4-6pm

**Where:** Heart Beets Farm, 181 Bayview Ave, Berkley, MA 02779

Join UMass Extension to hear about sweet potato production at Heart Beets Farm, and to learn timely info about fall

pest management.

*1.5 pesticide credits available.*

**EASTERN MA CRAFT MEETING: [GEOTHERMAL WATER USE AND GOOD AGRICULTURAL PRACTICES AT FARMER DAVE'S](#)**

**When:** Saturday, October 21, 4-6pm

**Where:** Farmer Dave's, Dracut, MA

We will take a tour of their solar and geothermal systems and the reuse of the geothermal water for hoop house irrigation. Lisa McKeag from UMass Extension will share about a project the farm is involved in to assess pre- and post-harvest agricultural water quality for food safety. She'll talk about the results of water samples taken at the farm in 2022-23 and give an update on current food safety regulations related to agricultural water.

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*Vegetable Notes. Genevieve Higgins, Lisa McKeag, Maggie Ng, Susan Scheufele, Hannah Whitehead co-editors. All photos in this publication are credited to the UMass Extension Vegetable Program unless otherwise noted.*

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