



UMass
Extension

Vegetable Notes

For Vegetable Farmers in Massachusetts since 1975



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CROP CONDITIONS

We heard sighs of relief from across the state after soaking rains finally came and brought 3-6 inches of water to most areas over the last 2 weeks. The rain helped to replenish irrigation ponds and saturate fields--though it wasn't enough to get us out of drought status. A few farmers I spoke to said that it thankfully came down pretty gently and was a welcome respite, though there was significant flooding in parts of New England, and on some farms, the rain was too much for vulnerable crops. Almost-ripe tomatoes swelled and split and we can expect to see some spread of fungal and bacterial diseases that get splashed around by rain.

A big thanks to Gary Gemme of Harvest Farm for hosting us last Thursday, and to everyone who came out for the twilight meeting. We had a great discussion about precooling and storing vegetables. Precooling as quickly as possible after harvest and before crops go into storage helps reduce respiration and preserve product quality. We talked about the range of techniques, from the rudimentary top-icing to hydrocooling and vacuum cooling with specialized (and sometimes expensive) equipment. Forced-air cooling is another option, and Chris Callahan from UVM Extension shared his team's designs for [counter-top](#) or [pallet-sized](#) forced air cooling boxes; read more here: [Forced Air Cooling on the Farm](#). You can choose your method based on which equipment you have available as well as which crops you're cooling. See [Table 16 of the New England Vegetable Management Guide](#) for recommended cooling methods for different crops.

Speaking of expensive equipment, here's a reminder that MDAR's [Agricultural Food Safety Improvement Program](#) (AFSIP) is now accepting grant applications. There's still time to apply for funds for harvest equipment, wildlife fencing, packshed building materials, cooling equipment, or other eligible projects. The deadline is **September 30**.

Keep an eye out for the 2022 Census of Agriculture this fall. The USDA announced that the 2022 Census of Agriculture will be mailed in phases,

starting with an invitation to respond online in November followed by paper questionnaires in December. Farm operations of all sizes, urban and rural, which produced and sold, or normally would have sold, \$1,000 or more of agricultural product in 2022 are included in the ag census.

Finally, the [New England Vegetable and Fruit Conference](#) is back in person! The conference will be held this December 13, 14, and 15 in Manchester, NH. See the Events section for more information.



At last--idle irrigation equipment under a cloudy sky.

Photo: L. McKeag

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 *We are currently working remotely but checking these messages daily, so please leave us a message!* **Email:** umassveg@umass.edu

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

PEST ALERTS

Alliums

Be on the lookout for [Allium leafminer](#) in leek fields, the fall flight is starting now. Recommended insecticide options include Exirel or Radiant for conventional growers and Entrust + insecticidal soap (e.g. M-Pede) is recommended for organic growers. Row covers applied before the flight starts can prevent damage as long as covers are solidly in place before the flies are active.



*Allium Leafminer oviposition marks.
Photo by G. Higgins*



*Alternaria Leaf Spot on Broccoli. Photo by
G. Higgins*

Brassicas

Conditions are ideal for [Alternaria](#) leaf spot and head rot. If you aren't already spraying it may be too late. There is widespread resistance to Quadris but there are several other fungicides with excellent efficacy, Cornell Veg Program put together this cheat sheet to keep track of them: https://cvp.cce.cornell.edu/submission.php?id=739&crumb=crops|crops|broccoli|crop*6

Cucurbits

We are seeing a lot of [virus on all kinds](#) of squashes out there this year, we aren't sure yet why this year it seems so widespread. There are several viruses of cucurbits that can cause leaf mottling and deformity, as well as deformed and discolored fruit. Some that have been identified this season across the region are **watermelon mosaic virus** and **cucumber mosaic virus**. Watermelon mosaic virus has some weed hosts including clover, so that may be contributing to its increasing prevalence. Viruses can really only be controlled, or their spread minimized, by controlling the aphids that vector them.



Summer squash with watermelon mosaic virus.

Wet field conditions promote disease and rot of squash and pumpkins left in the field. Bring these in to cure if possible, remove mud and dirt, and avoid wounding squash as you bin them up. These rots can spread in storage so handle with care!

Lettuce crops are in rough shape with diseases like bottom rot worsening and continued damage from tarnished plant bugs, which cause brown raised spots on the midribs.

Solanaceous

The recent rains and incredibly thick and long dew periods are really ramp-



Bacterial canker on tomato. Photo S. Scheufele

ing up disease spread through the crop. Fungal diseases such as [early blight](#), [Septoria leaf spot](#), and [gray leaf spot](#), and bacterial diseases like [spot](#), [speck](#) and [canker](#) grow more slowly at cooler temperatures but they spread easily by splashing rain or moving water from plant to plant during dewy, wet harvests.

WHEN TO STOP SPRAYING

--Written by Dan Egel, Clinical Engagement Associate Professor, (812) 886-0198, egel@purdue.edu. Originally published in Purdue University Extension's Vegetable Crops Hotline, Issue 681, August 27, 2020.

Many vegetable growers are closing in on the final harvest, and may be wondering when to make fungicide applications late in the season. This article will address when to stop spraying, concentrating on a few examples: tomato, cantaloupe and watermelon crops. These are crops where the fruit is consumed, not the foliage.

For most vegetable crops, there is no need to apply a fungicide shortly before the final harvest. However, foliage needs to be protected to preserve fruit quality. A plant with reduced foliage will produce a smaller fruit and/or fruit that have fewer sugars and other desirable compounds. For many foliar diseases, symptoms will not be obvious for a week to 10 days. It will take even longer for the foliar disease to significantly reduce foliage. Therefore, for many diseases, it doesn't make much sense to spend good money on a fungicide for a crop that is 2 to 3 weeks before the final harvest.

Examples of diseases that affect foliage, but not fruit directly include: powdery mildew of cantaloupe or tomato, early blight of tomato, Septoria leaf blight of tomato, gummy stem blight of watermelon or cantaloupe, Alternaria leaf blight of cantaloupe and downy mildew of cucurbits. With some rare exceptions, these diseases reduce yield or fruit quality by affecting foliage, not by attacking fruit directly. Alternaria leaf blight of cantaloupe and downy mildew of cucurbits affect leaves only—not even the stems.

Diseases that affect fruit directly may need fungicide applications closer to harvest. A disease that can cause a lesion directly on a fruit can ruin the marketability of the fruit or even cause the fruit to begin to rot in transit. However, most fungicides will remain active in or on the plant for 6 to 7 days even during the most conducive weather. Therefore, an application of a fungicide to protect fruit from direct infection from disease is probably not necessary within 7 days of the final harvest.

Examples of diseases that may affect fruit directly include:

- Anthracnose of watermelon: This disease can cause loss of foliage, but also lesions on the fruit. An infection on the day before harvest could, theoretically, cause a lesion in transit. During weather that is conducive to disease, it makes sense to keep a fungicide on the plant surfaces during the last several days before harvest. Growers that are using the MELCAST system will be better able to judge when the weather is conducive for anthracnose.
- Phytophthora blight: This disease affects foliage as well as fruit. As with anthracnose above, a lesion that develops before harvest could start to rot the fruit in transit. Specialized fungicides applied 7 to 10 days before final harvest should protect the fruit.
- Bacterial spot or speck of tomato: Lesions of these diseases that occur on the fruit can ruin marketability. Applications of a copper product should help to protect the fruit during the last week or so. Warm, wet weather shortens the disease cycle and increases the likelihood of infection.
- Bacterial spot of pumpkin: This disease can cause pimple-like lesions that may ruin marketability. However, the disease affects fruit during the first 14 days or so after pollination. After this period, infection is much less likely due to changes in fruit maturity. Therefore, copper applications during the last weeks before harvest make little sense.

Another factor to consider in late fungicide applications is the amount of the disease in the field. Fungicides work to protect green healthy tissue. Fungicides will not cause lesions to disappear. Therefore, when deciding whether to make a late season fungicide application, realize that one is attempting to protect the green, healthy portions of the field.

Pre-harvest Interval (PHI) – when applying fungicides close to the final harvest or any harvest keep in mind the PHI. Often growers will need to change what fungicide is used when vegetables reach harvest stage. For example, cantaloupe growers may decide to use a fungicide with the active ingredient mancozeb with a PHI of 5 days early in the season

(examples include, Dithane®, Manzate®, Penncozeb®, Roper®). As harvest grows near, however, a fungicide with the active ingredient chlorothalonil might be used since it has a 0-day PHI (examples of products with chlorothalonil include Bravo®, Equus®, Initiate®). The PHI for each crop can be found in the fungicide label with the appropriate crop grouping.

Finally, one should be realistic about applying fungicides late in the season. Determine which fruit have a realistic chance of maturing before the season is over. For many growers, a late season application of a fungicide is not useful.

SWEET POTATO HARVEST & STORAGE

Fall is around the corner, and growers are starting to dig around to see how big their sweet potatoes have gotten under all of those vines. Sweet potatoes can be harvested whenever they reach a marketable size, but if you're looking to maximize yields, they should be dug as late as possible in the fall, according to research done by Becky Sideman at UNH Extension. While vines can tolerate a light frost, the roots should come out before a hard freeze sets in. For more information on Becky's research, including a list of varieties trialed in New Hampshire, see the full reports: *Growing Sweet Potatoes in New Hampshire* and *Sweet potato early harvest study, 2014*. Sweet potatoes require different storage conditions than other common New England root crops. Once harvest is completed—generally by early to mid-October—curing and storage considerations continue to be important.

Harvesting. Sweet potato roots continue to grow until the leaves are killed by frost or until soil temperatures fall consistently below 65°F, whichever comes first. Check current soil temperatures here: http://www.nrcc.cornell.edu/dyn_images/grass/soilTemp.png. Time of harvest is often determined by digging up a few representative plants and assessing the percentage of roots in different size classes—the crop can be harvested whenever the majority of the roots are the desired size. If a hard frost occurs, the tops of the plants turn black. At that point, it is imperative to harvest as quickly as possible regardless of root size. Tuber chilling injury can occur if soil temperatures drop below 55°F. It is also important to avoid holding sweet potatoes in saturated, low-oxygen soil conditions prior to harvest, as this promotes rapid decay in storage. Take care when harvesting; unlike tubers such as white potatoes, which form thickened, protective skins that bind tightly to the underlying tissue, sweet potatoes have thin skins that can be easily damaged by equipment or rough handling.

Curing. Any abrasions or wounds created at harvest can lead to rot in storage. Curing immediately after harvest is recommended when sweet potatoes will be held in storage for later sales. Curing minimizes damage and loss during storage by healing harvest wounds. During the curing process, a corky periderm layer is formed below damaged areas, which prevents invasion by pathogens and limits water loss. To cure sweet potatoes, keep roots at 82-86°F and high relative humidity (90-97% RH) for 4 to 7 days. Respiration rate is high during curing, so ventilation is important to remove CO₂ and replenish O₂. A greenhouse can provide good curing conditions.

A freshly harvested sweet potato is more starchy than it is sweet. During curing and storage, starches in the sweet potato are converted to sugars, improving flavor. The change in sugars is measurable within one week, but it is recommended to wait at least three weeks after harvest before consuming sweet potatoes to allow for more conversion of starches to sugars and maximum eating quality.

Storage. Sweet potatoes can maintain excellent quality for up to a year if proper storage conditions are achieved. The ideal storage conditions for sweet potato are the same as for winter squash; moderately warm (55-60°F) and 60-75% relative humidity. Like winter squash, sweet potato suffers chilling injury at temperatures below 55°F and injury increases with lower temperatures or longer periods of exposure. Signs of chilling injury include shriveled, sunken, dark areas on the tuber surface, and blackening of tubers when cut open. 'Hardcore' is a physiological disorder caused by chilling, in which areas of the tuber become hard—the condition is not apparent in fresh roots but appears after cooking. Because chilling injury is irreversible and makes tubers unmarketable, growers should take particular care to avoid field curing, or



The bounty of sweet potatoes! Photo R. Santizo

storage conditions that dip below 55°F.

--UMass Extension Vegetable Program

NEWS

SEEKING COMMERCIAL FARMERS TO TRIAL ADVANCED KIWIBERRY SELECTIONS

The University of New Hampshire Kiwiberry Research and Breeding Program is now 10 years old, and we have nearly 20 advanced breeding lines ready for multi-locational testing. We're looking for 25 farmers across the northeast who are interested in participating in a grant-funded project that will support participatory evaluation of these potential new varieties, starting Spring 2023. If you are a current or aspiring kiwiberry producer, have an interest in new varieties, wish to receive more technical training, and have room for at least 12 vines, please complete this short questionnaire*.

To be eligible to participate, you must be a commercial producer, either with kiwiberries currently as one of your enterprises or as an enterprise you are interested in integrating into your system. Specific experience with kiwiberries is not required, as one of the goals of the program is to train farmers in their production. Participating growers will be compensated for their time.

If you would like to learn more about kiwiberry, a production guide developed by our program is available online at: <http://www.noreastkiwiberries.com/>

* Questionnaire link: https://unh.az1.qualtrics.com/jfe/form/SV_3aSbLzVNjJ1R3Se

CORNELL COOPERATIVE EXTENSION SEEKING DOWNY MILDEW SAMPLES ON BRASSICAS

Late summer into fall is when conditions are most favorable for downy mildew to develop on brassica (cruciferous) crops. Meg McGrath from Cornell University is very interested in hearing if you are growing any of these crops and you see symptoms, especially on collards and arugula. Knowing about on farm occurrences will help in determining degree of host specialization in the pathogen causing DM on all the brassica crops. She'd also be interested to hear at season end if you don't see any symptoms of DM on your brassica crops to provide perspective for how widespread the disease occurs. **Samples are needed for research, so if you see DM and can make the time to collect and box up some leaves, she would love to receive them. Pre-paid label will be provided. Email mtm3@cornell.edu to report disease, and to get more information on shipping.** If you don't know what downy mildew in brassicas looks like, check out some photos at <https://blogs.cornell.edu/livegpath/gallery/>.

NORTHEAST SUSTAINABLE AGRICULTURE RESEARCH AND EDUCATION (SARE) CALLING FOR 2023 FARMER GRANT PROPOSALS

The Call for 2023 Northeast SARE Farmer Grants is now available. Awards typically range from \$5,000 to \$30,000, depending upon a project's complexity and duration. Northeast SARE Farmer Grants provide the resources farmers need to explore new concepts in sustainable agriculture conducted through experiments, surveys, prototypes, on-farm demonstrations or other research and education techniques. Northeast SARE funds projects in a wide variety of topics, including marketing and business, crop production, raising livestock, aquaculture, social sustainability, climate-smart agriculture practices, urban and Indigenous agriculture and more. The Northeast region includes Connecticut, Delaware, Maine, Massachusetts, Maryland, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, West Virginia, Vermont, and Washington, D.C.

The online system for submitting proposals will open on Oct 1, 2022. Proposals are due no later than **5:00 p.m. EST on November 15, 2022**. An [informational webinar](#) featuring multiple Farmer Grant recipient Tommye Lou Rafees will take place at 12:00 p.m. on October 4, 2022.

- Learn more about Farmer Grants – northeast.sare.org/farmer
- View the full call for proposals – northeast.sare.org/farmergrantcall
- Register for the webinar – northeast.sare.org/farmergrantwebinar

- View previous SARE Projects – <https://projects.sare.org/search-projects/>

MDAR LAUNCHES LOCAL FOOD PURCHASE ASSISTANCE COOPERATIVE AGREEMENT PROGRAM (LFPA)

MDAR is soliciting proposals for projects that specifically address the goals of the USDA Local Food Purchase Assistance Cooperative Agreement Program (LFPA). The purpose of this program is to maintain and improve food and agricultural supply chain resiliency.

MDAR is seeking projects to purchase domestic food from local and regional producers, target purchases from Socially Disadvantaged farmers/producers, and distribute food to underserved communities. Preference will be given to applications that demonstrate how relationships and distribution channels will continue past the conclusion of this program. The suggested dollar value of projects is between \$50,000 and \$750,000 and this program does not have a Federal cost sharing or matching requirement. [Click here to watch an informational webinar about the program.](#) You can also [check out an updated FAQ here](#), and [submit additional comments and questions via this form](#).

To apply: Applications are due by 2pm on September 16, 2022, and must be submitted to LFPAGrant@mass.gov

To learn more: [LFPA Program website](#)

To access the Request for Responses: [COMMBUYS - Bid Solicitation](#)

Questions? Applicants may submit questions regarding the RFR and application process. Please submit questions by email to: LFPAGrant@mass.gov.

MDAR NOW ACCEPTING APPLICATIONS FOR THE AG FOOD SAFETY IMPROVEMENT PROGRAM

The goal of the Ag Food Safety Improvement Program (AFSIP) is to support **produce and aquaculture** operations that are looking to upgrade their food safety practices that work towards minimizing the risk of microbial contamination and food-borne illnesses, meet regulatory requirements, and improve market access. AFSIP is a competitive, reimbursement grant program that funds 80% of total project costs up to \$50,000.

Applications are due by 4:00PM on Friday, September 30, 2022. Please refer to the AFSIP website for more information and a copy of the application: www.mass.gov/how-to/agricultural-food-safety-improvement-program-afsip

EVENTS

POLLINATOR HEALTH AND DIVERSITY IN THE GARDEN AT GROW FOOD NORTHAMPTON

When: Thursday, September 15, 2022 from 5:30-7:00pm

Where: Grow Food Northampton Community Garden, 140 Meadow St., Northampton MA.

Registration: \$10 per participant. Space is limited, registration required. [Click here to register.](#)

Join us for an interactive workshop about pollinator health and diversity in your garden with UMass Extension and the Western Massachusetts Master Gardeners. We will start with a tour of the Pollinator Garden managed by members of the Western Mass Master Gardener Association. UMass Extension Educator Hannah Whitehead will talk about native bee diversity, and demonstrate a common bee monitoring protocol. Participants will have a chance to practice this technique in different sections of the GFN Community Garden, and we will compare our findings. Space is limited, registration required. [For more info and to register, click here.](#)

POLLINATOR HABITAT WORKSHOP AT JUST ROOTS FARM

When: Thursday, September 22, 2022, 4:30-6:30pm, including food and refreshments

Where: Just Roots Farm, 34 Glenbrook Dr, Greenfield, MA 01301

Registration: Free! Please register in advance. [Click here to register.](#)

Come learn about the nuts and bolts of installing pollinator habitat on your farm, including where to find funding and who to contact for assistance. Includes presentations by Dan Pratt (Astarte Farm) and NRCS biologists Michelle Cozine and Rose Schwartz. Presentations will be followed by a Just Roots farm tour and meet-and-greet with local

service providers. This event is co-hosted by UMass Extension, CISA, NOFA Mass, Greening Greenfield and Just Roots.

[See event flyer here for more information!](#)

NEW ENGLAND VEGETABLE AND FRUIT CONFERENCE 2022 - REGISTRATION OPEN!

When: December 13, 14 & 15, 2022

Where: DoubleTree Hotel and Conference Center, 700 Elm Street, Manchester, New Hampshire

The New England Vegetable & Fruit Conference Steering Committee is excited to announce that the conference will return **in person** this December! The NEVF Conference includes more than 25 educational sessions over three days, covering major vegetable, berry and tree fruit crops as well as various special topics. A Farmer to Farmer meeting after each morning and afternoon session will bring speakers and farmers together for informal, in-depth discussion on certain issues.

For more information on session, accommodations, and registration: <https://newenglandvfc.org/>

THANK YOU TO OUR 2022 SPONSORS!



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

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