UMass Extension
Vegetable Notes
For Vegetable Farmers in Massachusetts since 1975

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In this issue:

Crop conditions

We've made it to August, and farms are busy! All but the latest fall transplanted crops are in the ground, fall roots have been seeded, for the most part, and growers are starting to burn down potato fields in preparation for harvest. We are in the part of the season now where bulk harvests are beginning (most garlic has already been harvest, onions, potatoes and sweet potatoes soon, followed by winter squash and fall roots), on top of regular weekly harvests and weed and pest management. It can be really challenging to be super busy with farm work and to simultaneously see crops that have been lost due to flooding, leached nutrients, or disease pressure. Many sweet corn growers are expecting gaps in availability soon, with crops becoming stunted or distorted due to the rain and nutrient leaching and not being able to get into fields to seed during the rain.

Scouting for diseases and insect pests in pepper at a farm in Sunderland, MA. Photo: L. McKeag

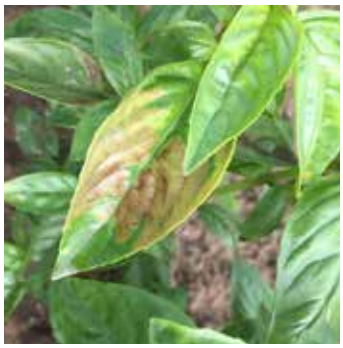
It can be helpful to know that if you are struggling on the farm this year, you are not alone; it has been a really tough season so far for all farms. If you're having a hard time, remember to reach out—to friends, family, other farmers, even to us! The weeds (both real and metaphorical) are tall now and it can be hard to get your head out of them to see what's happening off of the farm, but talking to friends, family, and neighbors can sometimes give you new perspectives.

We have two upcoming twilight meetings the next two Wednesdays: on August 11 in Ipswich, MA, we'll be discussing cover crops and on August 18 in Sharon, MA, we'll be discussing research on using UV light to reduce diseases in cucurbits and we'll hold a roundtable discussion on pest and crop issues from this year. See the Events section of this issue for more details and registration links for both of these meetings; we hope to see many of you there!

Pest alerts

Basil

Basil downy mildew has been reported on resistant varieties in several New England states. It has not yet been reported on the resistant varieties 'Amazel' or 'Prospera'. If you plan on controlling basil downy mildew with fungicides, apply preventatively now if you haven't started already—chemical control, even with conventional fungicides, is largely ineffective once symptoms are present, and the threshold for damage is very low. For organic growers: in Cornell Cooperative Extension trials, Regalia + Stargus alternated with EcoSwing + copper effectively prevented the disease. Be sure to choose a copper material that does not leave significant visible residue on the leaves.



Sunburn on basil.

We are also seeing widespread **sunburn** in basil this week, which can look similar to

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.

basil downy mildew at first glance. Sunburn tends to occur when the sun comes out after a several days of cloudy weather. Sunburned leaves turn bronze to gray and there is often a triangle of unaffected tissue at the base of the leaf. Undersides of sunburned leaves are gray but have no sporulation, whereas basil downy mildew produces characteristically fuzzy, gray mycelial growth on the undersides of leaves.

Brassicas

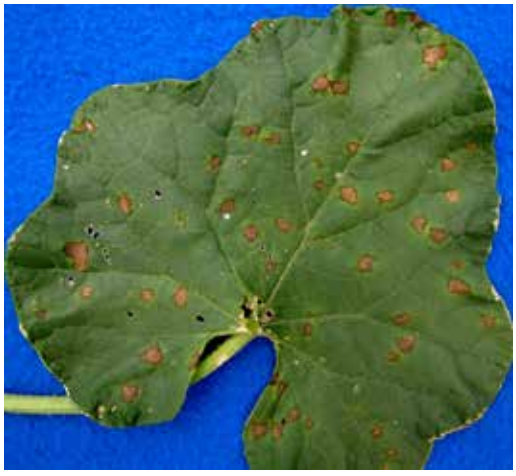
Cross-striped cabbageworm. Photo: T. Kuhar

Large cross-striped cabbageworm (CSCW) larvae were found in Middlesex Co. last week. Unlike other caterpillar pests of brassica crops, CSCW eggs are laid in groups so caterpillars emerge in clusters and can do significant damage quickly. The treatment threshold for CSCW is 5% of plants infested. Use targeted materials to preserve beneficial insects. Bt products (e.g. Dipel, Javelin, Xentari) are the most-effective OMRI-listed materials. Conventional products include spinosads (e.g. Radiant), neonicotinoids (e.g. Brigade, Asana, Declare, Warrior, Mustang), pyrethroids (e.g. Assail), and diamides (e.g. Exirel, Verimark). Neonicotinoids are highly toxic to pollinators but are lower risk to use in brassicas because they are not a flowering crop. Diamide products are more expensive but are systemic, have long residuals, and will also protect against flea beetles, cabbage root maggot, and cabbage aphid. Use a spreader-sticker.

Cucurbits

Table 1. Squash Vine Borer trap captures, week ending August 4, 2021

Location	SVB
Deerfield	-
North Easton	2
Westhampton	2
Whately	0
Sharon	3
Leominster	2



Cucurbit downy mildew on cantaloupe. Photo: M. T. McGrath

Squash vine borer trap counts are dropping throughout New England. Larvae are still being found in stems and also in maturing winter squash fruit. Some larvae that were boring into stems earlier this season have likely exited the plants to pupate in the soil. If the temperatures remain low for the rest of the summer, we may not accumulate enough growing degree days for another generation of SVB to develop. If temperatures rise enough, the pupating SVB may emerge as adults to lay another round of eggs which would hatch into larvae that primarily bore into winter squash fruit. Till under infested crops promptly to kill larvae within stems, and plan to rotate next year's susceptible cucurbits (thin-stemmed crops like pumpkins, cucumbers, watermelon, and some winter squash are not susceptible) as far as possible from this year's infested crops.

Cucurbit downy mildew is spreading across the region on cucumber and is now being seen in cantaloupe as well. This week CDM was reported on cucumber in Worcester Co., MA, Litchfield Co., CT and Newport Co., RI and on cantaloupe in Franklin Co., MA and on Long Island. There are several strains of CDM; cucumber and cantaloupe are susceptible to the most strains and so CDM develops in these crops most years. Symptoms on cantaloupe are quite different from those on cucumber—lesions are brown, surrounded by a yellow halo and are less angular than on cucumber. At this point, cucumbers and cantaloupe should be regularly sprayed with a tank mix of a broad-spectrum and a targeted DM material. For effective control with fungicides, protectant sprays should begin before the disease is reported in your area, and targeted DM materials should be incorporated into the sprays as soon as the disease is nearby, in the crop you are protecting.

Solanaceous

Late blight has only been reported in Wisconsin and Georgia so far this year. We are seeing significant defoliation in tomatoes in MA caused by fungal pathogens like **early blight**, **Septoria leaf spot**, and **Stemphylium or gray leaf spot**. Gray leaf spot is less common, but is being reported around the region and is often seen in very wet years. We are also seeing bacterial diseases including **bacterial canker** and **pith necrosis**. All of these diseases are favored by warm, wet weather and are spread by splashing rain and workers and equipment moving through fields. Fungicides can effectively prevent or slow the spread of early blight, Septoria leaf spot, and bacterial spot and speck; fungicides should be applied before or just after symptoms first appear. Labeled materials can be found in the outdoor tomato or greenhouse/high tunnel tomato disease control sections of the New England Vegetable Management Guide. For information on identifying and managing bacterial diseases of tomato, see the article in the July 22 issue of Veg Notes. For fungal foliar diseases of tomato, see the June 10 issue of Veg Notes.

Table 2. Sweetcorn pest trap captures for week ending August 4

Location	GDD (base 50°F)	ECB NY	ECB IA	FAW	CEW	CEW Spray Interval
Western MA						
Deerfield	1692	0	0	10	0.5	*no spray*
Southwick	1637	0	0	0	2	*6 days*
Whately	1758	11	0	2	0.5	*no spray*
Central MA						
Bolton	1666	1	0	-	0	*no spray*
Lancaster	1627	4	0	1	2	*6 days*
Leominster		0	0	-	5	*5 days*
Northbridge	1521	2	3	1	0	*no spray*
Spencer	1607	0	0	0	0	*no spray*
Eastern MA						
Ipswich	1565	0	0	0	5	*5 days*
Concord	1647	1	0	0	1	*no spray*
Millis	-	3	2	N/A	3	*6 days*
North Easton	1700	0	1	-	5	*5 days*
Sharon		0	1	N/A	0	*no spray*
Seekonk	1875	0	0	52	0	*no spray*
Swansea		0	0	0	3	*6 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

Pepper maggot eggs were found in pepper fruit in Worcester Co. last week. Oviposition marks appear as dimples in fruit. The maggots feed within the walls of the pepper then drop to the soil to pupate. Control with insecticides requires targeting the adults during egg laying, which means spraying when the first oviposition marks are observed. See the article in the July 22 issue of Veg Notes for management recommendations.

Pepper maggot oviposition marks. Photo: OMAFRA.org

White mold (sometimes called timber rot in tomato) was found in field tomatoes this week in Worcester Co. The pathogen has an extremely wide host range including many vegetables, including brassicas and beans. The pathogen does not infect healthy tissue until after it has colonized dead or senescent plant parts such as flowers or leaves. On tomato, white mold typically starts where dead flower blossoms land, or on damaged stems or petioles. The lesions are initially water soaked, gradually enlarging to cover the stem and becoming tan and papery. If infected stems are split open, fluffy white mycelia and black sclerotia (dense masses of fungal tissue surrounded by a dark rind that is resistant to desiccation and UV-radiation that look similar to mouse poop) are sometimes visible inside. If possible, remove infected plants from the greenhouse or field to prevent the sclerotia from getting into the soil, where they will overwinter and germinate to infect crops for many years. Contans is a biofungicide labeled

Sclerotia and mycelium of white mold in a tomato stem. Photo: P. Flynn

specifically for white mold control—it attacks sclerotia—and is best applied at the end of the season so it has all winter to find and destroy sclerotia in the soil. Priaxor Xenium, Luna Sensation, and Cabrio are labelled for disease suppression only.

Sweet corn

European corn borer numbers remain low in most locations in MA, and corn earworm numbers are dropping from last week across the region. CEW trap counts are dictating *no spray* at most of our trapping locations, with a few sites requiring a 6- or 5-day spray schedule. Small fall armyworm larvae are just beginning to be seen in whorl-stage corn in MA. If CEW trap counts don't warrant a spray on your farm, scout for ECB and FAW larvae and treat if 15% of plants are infested.

Ragged feeding damage from fall armyworm. Early damage from small larvae may be just pinholes in leaves of whorl-stage corn.

Harvest and Curing Tips for Onions

Deciding when and how to harvest onions, then where and how to cure them can be challenging. When are they really ready to be pulled? Is the weather too wet or too hot to field cure? How did my onion field get so weedy? What should I do if there is a lot of foliar disease in my crop? Here are a few tips, originally from University of Minnesota Extension:

Proper lodging in onions. Photo: C. Hoepting

Harvest: Optimum harvest from the standpoint of maximum storage life (before bulb sprouting), occurs while the onion foliage is still partially (30-40%) erect, and long before maximum yield is attained (when tops are completely down and dry). Since yields may increase 30-40% between the stage when tops begin to go down, and the leaves are fully down and dry, it is tempting to leave onions to cure in the field as long as possible. The optimum time for harvest therefore, must be a balance between highest yields and reduced bulb storage quality. Furthermore, excessively field-drying onions increases the risk of bald onions in storage. From UGA Extension: "Maturity is best determined by pinching the neck of the growing onion. Necks of immature onions are stiff, while necks of optimally mature onions are soft and limber. When the necks are so weak that they cannot support the tops, the onions are over-mature. Simply observing the percentage of tops having fallen over is not a true indication of maturity, since the tops can be knocked over by strong winds, rain or become limp from lack of moisture."

Digging and windrowing: To facilitate curing onions for harvest and storage, onion rows are undercut, lifted and windrowed for field curing. Rod-weeder diggers and knife undercutters are most often used. After an appropriate interval, the undercut onions are lifted and windrowed. This may be done with tops on or off, but most commonly with tops on to protect the onions form sunscald damage. Windrows are often mechanically "fluffed" to facilitate curing and later combined to facilitate loading. This will also shorten the drying period and should be done after each rainfall. After field drying has occurred, the onions may be topped and placed in storage buildings.

Topping: If onions are to be bulk-stored it is best to store them without their tops. This facilitates handling, loading and unloading the storage. If onions are to be topped and stored, tops must be totally dry, or only the dry portion cut and removed. Cutting through any portion of the top while it is still green or moist may result in excessive Botrytis neck rot in storage. In very wet years, do not top onions until after they have been cured. When all or a portion of the onion top is left on, the remaining tops are removed during grading and packing using roller toppers at the storage or packing facility.

Curing: Onions should be adequately cured in the field, in open sheds, or by artificial means before or in storage. Adequate curing in the field or in open sheds may require 2 to 4 weeks, depending on the weather. The best skin color develops at 75 to 90°F. This should be continued until the outer skins and neck are dry. Onions are considered cured when the neck is tight and the outer scales are dry and make a rustling sound when handled. This condition is reached when onions have lost 3-5% of their weight. If not adequately cured, onions are likely to decay in storage. The common form of decay

is gray mold rot (*Botrytis*), which occurs at the top of the bulb - hence its name "neck rot". High temperatures and high humidity (80%) during curing with good air circulation favor development of desirable skin color.

Topped and cured onions are brought into a well ventilated barn to bring them down to temperature slowly for storage. Photo: R. Hazzard

Here are our low-tech recommendations for curing and storage in New England: A greenhouse or hoophouse provides a good environment for curing, where temperature, airflow, and moisture can be controlled. Be sure to keep the temperature in the house **below 85°F**, which will probably require turning on fans and/or leaving sides and doors wide open—consider using shade cloth over the house to help moderate temperature. Curing can be done in the field, but it is harder to achieve good conditions for curing in an uncontrolled field setting. Avoid field-curing onions if rain is forecasted and, if it does rain, let the onions dry fully before handling—don't handle the bulbs when they are wet. If the field is weedy, it may be excessively moist and air circulation may be limited; these conditions are not suitable for curing. Temperature and sun are also factors to consider—sunshine and temperatures in the 80s will enhance the bronze color in the skins, but extremely hot sun and temperatures in the 90s can cause sunscald. Onions curing on a sandy soil will heat up more quickly than those curing on a heavier soil.

Storage: To ensure maximum storage life, onions must be promptly stored after curing. Get them out of the sun as exposure to light after curing will induce greening of the outer scales. The optimum temperature for long-term storage of onions is 32°F with 65-70% relative humidity, but it is important to bring them down to this temperature slowly. In fact, holding onions in a barn or garage so that they cool along with the average outdoor temperature in late-summer and fall works quite well. Avoid cooling bulbs to well-below the average daily temperature because they will draw moisture from the warmer air, which can lead to disease. If you are selling the onions within a couple of months, keeping them in an uninsulated barn is fine. An insulated storage room is needed for longer-term storage.

Harvest Tips for Best Quality

Be sure onions are well-dried and necks are tight (i.e. the tissue does not slide when you roll the neck between your fingers) before topping. Bacterial diseases and Botrytis neck rot can move through green tissue into the bulbs. These diseases do not move in dry tissue.

Leave 2-3 inches of neck on the bulb. This increases the distance from the cut surface to the bulb for these pathogens to travel.

Minimize mechanical injury during harvest & topping. Reduce drops to 6" and pad sharp surfaces. Bruises provide direct entry points for diseases to get started.

Grade out damaged onions before putting them into storage. Damaged bulbs give off moisture, which is favorable for development of diseases in storage.

--Written by the UMass Vegetable Program

SCOUT FOR ONION THRIPS IN BRASSICAS

While growers have been scouting for and battling onion thrips (*Thrips tabaci*) in their alliums since May, the struggle doesn't end with the onion harvest. Onion thrips can be a significant problem on cabbage, where thrips feed on inner leaves of the head, which are difficult to target with sprays. Damage may also occur on leafy brassicas such as broccoli, kale, and collards, especially fall plantings near a maturing onion crop. Thrips damage manifests as rough, golden or brown scars on the undersides of open leaves, scars and discolored layers within cabbage heads, and generally reduced vigor in plants. Inspection with a 10X lens shows wounds to the epidermis from the rasping mouthparts, and scars from wounds that healed over. Thrips damage can be confused with oedema, a physiological disorder that causes small, bump-like protrusions to form on leaf surfaces.

Tolerant varieties are the most cost-effective means of controlling thrips in cabbage, but are generally not available in other brassicas. Cabbage varieties that have shown tolerance in trials (see here for a summary of Cornell trial data) include Capture, Celebrate, Benelli, Cairo, Superkraut 86, Bravo, Brutus, Cheers, Huron, and the various Vantage varieties.

Varieties that are rated as susceptible include Atlantis, Bajonet, Charmant, Checkmate, Market Prize, and Rinda. There are a great number of varieties, and not all have been tested. Also, available varieties change. Some seed catalogues rate thrips tolerance. Consult your seed suppliers and search recent research trials regarding thrips tolerance on new varieties. The Cornell Organic Production and IPM Guide for Cole Crops has an extensive list of cabbage varieties and their thrips tolerance.

Feeding damage from onion thrips in cabbage. Photo: G. Holmes, Bugwood.org

Avoid thrips by not planting cabbage or fall brassica crops near alliums or field crops such as alfalfa, clover, wheat, or oat, as thrips may migrate to brassicas when these crops are cut or harvested. Scout young plants for presence and feeding injury. Begin insecticide applications when damage is first noticed; in cabbage, apply foliar treatments before heads form. In fall brassicas, the need for thrips control may coincide with sprays for flea beetle or caterpillars and some insecticides control both. Broad-spectrum products include neonicotinoids (Admire Pro, Assail), numerous synthetic pyrethroids (including Warrior, Pounce, Baythroid, Brigade, and Mustang), and the Group 23 insecticide spirotetramat (Movento). In Cornell trials, imidacloprid applied to the base of transplants and again 4 weeks after transplanting provided the most effective control. Biorational or organic products include spinosad (Entrust, OMRI listed; has both contact and ingestion toxicity), spinetoram (Radiant SC), novaluron (Rimon 0.83EC, insect growth regulator for immature stages only; not for mustard greens), and pyrethrin (PyGanic EC5.0, OMRI listed; contact activity only). Repeat applications at 7- to 10-day intervals based on scouting and label allowances. Use a shorter interval in hot, dry weather. Use a spreader-sticker for better coverage. Apply in early evening, using high pressure and 100 gal water/A for best results. Systemic insecticides applied as a side dress up to 4-6 weeks after transplanting may provide adequate control in long-season cabbage. Rotate between insecticide groups to help prevent or delay resistance development.

--Written by the UMass Vegetable Program, based on research by Christy Hoepting, Cornell Cooperative Extension

IDENTIFYING POTATO TUBER DISEASES

We're starting to see new potatoes on the shelves and burn down of potato fields in our travels around the state, which means that harvest can't be too far behind. There are many diseases that affect potato tubers, so as you begin to sort through your potato harvest this year, take a moment to check for disease symptoms. Proper identification will help you decide which tubers will store well and which should be sold as tablestock, and will give you a better idea of which soilborne diseases are present in your fields, improving your future crop rotations. To be sure of a diagnosis, samples can be submitted to the UMass Plant Diagnostic Lab.

Left: Common scab. Photo: R. W. Samson, Purdue Univ., Bugwood.org
Right: Early blight. Photo: S. Jenson, Cornell Univ., Bugwood.org

Common scab (*Streptomyces* spp.) produces tan to dark brown, circular or irregular lesions, which are rough in texture. Scab may be superficial (russet scab), slightly raised (erumpent scab), or sunken (pitted scab). The type of lesion is dependent on potato cultivar, tuber maturity at infection, organic matter content of soil, strain of the pathogen, and the environment. Common scab is controlled or greatly suppressed at soil pH levels of 5.2 or lower, though a closely related but less common species of *Streptomyces* known as acid scab can survive down to 4.0.

Early blight (*Alternaria solani*) usually affects potato foliage but tuber infections can also occur. Tuber lesions are dark, sunken, and circular, and are often bordered by raised, purple to gray tissue. The underlying flesh is dry, leathery, and brown. Lesions can increase in size during storage, causing tubers to become shriveled.

Dry rot caused by Fusarium *spp.*
Photo: C. Averre, Bugwood.org

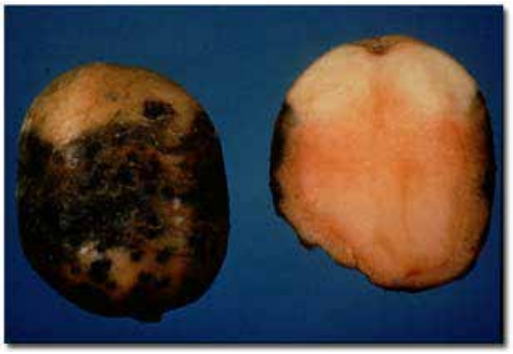
Fusarium dry rot (*Fusarium* spp.) causes internal, light to dark brown or black dry rot of the potato tuber. The rot may develop at an injury site, such as a bruise or cut. The pathogen penetrates the tuber, often rotting out the center. Extensive rotting causes the tissue to shrink and collapse, usually leaving a dark sunken area on the outside of the tuber and internal cavities.

Black dot (*Colletotrichum coccodes*): On potato foliage, symptoms of black dot are nearly indistinguishable from early blight. On tubers, it produces tiny black sclerotia (fungal resting structures). Symptoms on tubers can be easily mistaken for silver scurf.

Silver scurf (*Helminthosporium solani*) affects only tuber periderm (skin). Lesions start at the stolon end of the tuber as small, pale brown spots which may be difficult to detect at harvest but will continue to develop in storage. In storage, lesions may darken and the skin may slough off. Many small circular lesions may coalesce to form large affected areas. Tubers may also dry out and become wrinkled due to excessive moisture loss in storage.

Left: Black scurf, caused by Rhizoctonia solani*. Photo: Michigan State Univ.*
Right: Rhizoctonia canker. Photo: Clemson Univ., Bugwood.org

Black scurf and **Rhizoctonia canker** (*Rhizoctonia solani*): Black scurf is purely cosmetic and does not reduce yield, even in storage. Irregular, hard, black masses that develop on tuber surfaces are overwintering structures (sclerotia) of the fungus. Development of these sclerotia may be minimized by harvesting tubers soon after vine-kill and skin set. While the sclerotia themselves do not cause damage, they allow the pathogen to survive in the soil and serve as evidence of its presence. In cool, wet soils, *R. solani* can cause dark, sunken lesions on underground sprouts and stolons. These lesions can cut off the supply of nutrients and kill tubers, or can reduce the transfer of starches to the tubers, reducing their size. Cankers can also form on the tubers themselves, usually at the stolon or in lenticels. Tuber cankers vary greatly in size, from small and superficial to large, sunken, and necrotic.



Pink rot caused by Phytophthora erythroseptica*.*
Photo: Univ. of Minnesota

Pink rot (*Phytophthora erythroseptica*) and **Pythium leak** (*Pythium* spp.): Pink rot infections start at the stolon end of tubers and result in rotten and discolored periderm with a clear delineation between healthy and diseased tissue. When exposed to air, tuber flesh turns pink and then brown-black. The *Pythium* species that cause leak infections invade tubers through harvest wounds and continue to develop in transit and storage. Infections result in internal watery, gray or brown rot with well-defined red-brown lines delineating healthy and diseased tissue.

Late blight (*Phytophthora infestans*) affects potato foliage and tubers. Foliar symptoms start with brown to black, water-soaked lesions on leaves and stems, which produce visible white sporulation at the lesion margins under humid conditions. Whole plants and fields may collapse rapidly. Tuber infection is initiated by sporangia from foliage being washed down into the soil and usually begins in wounds, eyes, or lenti-

Late blight causing water-soaked spots on tubers. Photo: R.W. Samson, Purdue Univ., Bugwood.org.

cels. Lesions are copper brown, red or purplish and white sporulation may occur on tuber surfaces in storage or cull piles. Infected tubers are susceptible to infection by soft rot bacteria, which can turn entire bins of potatoes in storage into a smelly, rotten mass.

Potato virus Y can cause necrotic ringspots on tubers, depending on which strain of the virus is present, which potato variety is grown, and the time of infection. Affected tubers have roughened rings of darker brown or reddened skin. Necrosis beneath the rings may extend into the tuber flesh. Necrotic symptoms in tubers often increase after storage. Potato varieties vary in their susceptibility to PVY and the symptoms they exhibit on foliage and on tubers; Yukon Gold is particularly susceptible to tuber necrosis.

Right: Necrotic ringspots on Yukon Gold potatoes caused by PVY. Photo: potatovirus.org

Physiological Disorders

Black heart is caused by lack of oxygen during storage, which causes the tissue to die from the inside out and turn black. The condition is not reversible, but if you notice it quickly and correct your storage conditions you can prevent the whole crop from being affected.

Hollow heart. Photo: B. Phillips, Michigan State Univ., Bugwood.org

Brown center and **hollow heart** are internal physiological disorders of potato that often occur together. Brown center is an area of dead pith cells that turn brown, while hollow heart is a star- or lens-shaped hollow area in the center of the tuber. These disorders make fresh-market tubers unattractive and can reduce repeat sales. Severe hollow heart negatively impacts the quality of chip-processing potatoes and can result in shipments not making grade. Both disorders are related to stress, and occur at a higher incidence when growing conditions abruptly change during the season. Brown center and hollow heart likely form during tuber initiation but could also form during tuber bulking. If the disorder occurs during the early part of the season, it most often begins as brown center that forms in the stem-end of the tuber, while late-forming hollow heart usually occurs near the bud-end with no brown center symptoms. Conditions such as soil temperatures below 56°F for 5-8 days, or available soil moisture above 80% initiate brown center formation. Incidence of brown center and hollow heart also increases with periods of stress caused by high or low soil moisture, especially if heavy rains occur suddenly after a dry spell. Large tubers are more prone to develop the disorder, so using closer spacing and avoiding skips in the row can reduce incidence of brown center and hollow heart. There are also differences in the susceptibility of potato varieties: 'Atlantic', a widely grown potato for chip processing, is relatively susceptible to both disorders. In 'Russet Burbank', susceptibility to both brown center and hollow heart is highest soon after tuber initiation when the tubers are small.

--Written by Susan B. Scheufele

News

Guidance for Flood-Affected Food Crops

With the excessive amount of rain we've received recently, there are many farms that have experienced flooding, particularly in the western end of the state. If your farm is susceptible to flooding, please read the FDA's **Guidance for Industry: Evaluating the Safety of Flood-affected Food Crops for Human Consumption**, found at this link: https://www.fda.gov/regulatory-information/search-fda-guidance-documents/guidance-industry-evaluating-safety-flood-affected-food-crops-human-consumption

Per the guidance: "If the edible portion of a crop is exposed to flood waters, it is considered adulterated under section 402(a)(4) (21 U.S.C. 342(a)(4)) of the Federal Food, Drug, and Cosmetic Act and should not enter human food chan-

nels. There is no practical method of reconditioning the edible portion of a crop that will provide a reasonable assurance of human food safety. Therefore, the FDA recommends that these crops be disposed of in a manner that ensures they are kept separate from crops that have not been flood damaged to avoid adulterating "clean" crops (Ref. 1, 2, 3)."

The guidance also addresses potential microbial, chemical and fungal contamination, the safety of food crops when flood waters did NOT contact the edible portion of the crop, as well as flooding vs. pooled water.

Please contact MDAR's Produce Safety Division if you have any questions regarding the safety of your crops.

Kate Bailey, Produce Safety Inspector, Phone: 857-315-7478, Kate.Bailey@Mass.Gov

UMass Extension Diagnostic Lab Now Accepting Hemp Samples from Licensed Growers

The UMass Extension Diagnostic Lab is now accepting hemp samples for analysis and evaluation of insect and disease problems. In addition, a special program in 2021 offers only licensed hemp growers the opportunity to have nematode analysis conducted for free, including a site visit!

For both disease diagnostic services and nematode analysis, samples will be accepted only from licensed hemp growers in Massachusetts. Submission of a copy of the grower's license is required.

For information on collecting, packaging, and shipping hemp samples to the lab, as well as the free nematode analysis program, see the lab's Hemp Diseases and Nematode Assays page or call Dr. Angela Madeiras at 413-545-3209.

Let us know how you use the New England Vegetable Management Guide!

Do you use the New England Vegetable Management Guide as a resource? If so, we want to hear from you!

The authors of the New England Vegetable Management Guide want to learn more about how the guide is used, so that we can make it as useful as possible. While we are revising the guide, we have designed a short survey to better understand what YOU value in the guide. Please consider taking 5 minutes to provide your feedback and suggestions here: https://unh.az1.qualtrics.com/jfe/form/SV_9Ag68WJ1uyjreE6.

Commercial Grape Growers' Survey

The UMass Extension Fruit Program is conducting a survey of commercial grape growers to gather information on how to better serve this audience. If you are a commercial grape grower in New England or New York, please fill in the survey below. Your response will be used to prioritize future Extension and research efforts. It should take between 5-15 min. The deadline is Friday August 6, 2021.

Completing this survey will automatically enter you into a raffle to win a $150 gift certificate & a free subscription to the Grape Notes Newsletter.

Survey link: https://umassamherst.co1.qualtrics.com/jfe/form/SV_dhz2MMPQdvXYC9g

MDAR Seeks Responses for the Specialty Crop Block Grant Program – Round II

The purpose of the Specialty Crop Block Grant Program (SCBGP) is to enhance the competitiveness of specialty crops. Specialty crops are defined as "fruits, vegetables, tree nuts, dried fruits, horticulture, and nursery crops (including floriculture)." Additional specialty crop categories and details here. For details and how to apply, click here.

Applications are due by Tuesday, August 10, 2021 at 5:00pm.

Tree Fruit & Small Fruit Growers: Weeds Needs Survey

Since 2016, the UMass Extension Fruit Program has been operating without an official weeds specialist. The Fruit Team has created this brief survey to assess current weed management challenges in commercial orchard, vineyard and small fruit cropping systems. The results of this survey will be shared but all personal information will be kept confidential.

Survey link: https://forms.gle/4Ty8RS5n1ETXiTEn9

Events

UMass Twilight Meeting - Cover Crop Strategies for Vegetable Farms

When: Wednesday, August 11, 2021 - 4:00pm to 6:00pm

Where: Appleton Farms, 219 County Rd., Ipswich, MA 01938

Registration: Click here to register for this event.

Join UMass Extension for this in-person twilight meeting all about making the best use of cover crops for weed control, soil health and fertility, and attracting beneficial insects.

- **Appleton's farm manager, Andrew Lawson**, will discuss the farm's current cover cropping practices and demonstrate their high-speed, shallow tillage disc cultivator.
- **UMaine Extension Sustainable Agriculture Professional, Jason Lilley**, will talk about planning cover crops into vegetable rotations, species selection considerations, interseeding into late-season crops, and more.
- **UMass Vegetable Team Educator, Hannah Whitehead** will discuss cover crops and beneficial insects.

Rain or shine--in case of rain, we will meet inside the barn. Masks are required for unvaccinated people inside Appleton buildings only.

Questions? Contact Lisa McKeag at (413) 545-1051 or lmckeag@umass.edu

Twilight Meeting: In-Field Use of UV Light to Reduce Plant Diseases & More

When: Wednesday, August 18, 2021, 3:30-5pm

Where: Ward's Berry Farm, 614 South Main St., Sharon, MA 02067

Registration: https://forms.gle/FP1EHZHtTpZgh9tb6

UV light has been used in several systems including strawberry, squash, and beet to reduce diseases like powdery mildew. In this study funded by the Northeast SARE Novel Approaches for Sustainable Ag, researchers from Mt. Sinai partnered with UMass Extension and Ward's Berry Farm to evaluate efficacy of UV light to reduce downy mildew in cucumbers, a very destructive late-season disease. Jim Ward of Ward's Berry Farm in Sharon, MA worked with the researchers to build a UV-emitting "sprayer" that can be used in the field to combat disease. Nick Skinner of Mt. Sinai will discuss the use of UV light in several disease systems, Jim will share his experience of building and using the UV sprayer, and Sue Scheufele will discuss the cucumber downy mildew experiments conducted in 2020 and 2021.

In addition, Jim will highlight some other experiments happening around the farm, including a pumpkin variety trial, using the UV sprayer on other crops around the farm including for powdery mildew control in zinnias, and describe his ongoing "experiment" with no-till pumpkins.

Lastly, Sue Scheufele and Andy Radin from URI Cooperative Extension will moderate a roundtable discussion of pest and crop issues seen this season.

Questions? Contact Sue Scheufele, sscheufele@umass.edu

Successful Value Added Food Product Development: Managing Food Quality and Safety

Are you an entrepreneur developing new and exciting products? Do you have questions about ensuring the safety of your product? If so, this is the program for you! This course is a program designed specifically to address product development and food safety issues faced by small processors. Throughout the course, we will introduce the food science basics, important considerations when developing a new food product, share key elements required for product labeling, and provide an overview of key regulatory requirements for small and emerging food businesses, such as entrepreneurs and local food processors.

Upcoming Sessions and Registration link:

- Successful Food Product Development for New Food Businesses: Managing Food Quality & Safety- FCCDC: Tuesday, August 10 and Thursday, August 12, 9am-4pm
- Successful Food Product Development for New Food Businesses: Managing Food Quality & Safety- NFU and UoA: Tuesday, August 31, Wednesday, September 1, and Thursday, September 2, 10am-2pm

Massachusetts Tomato Contest to be held on August 24

The 36th Massachusetts Tomato Contest will be held in the KITCHEN at the Boston Public Market on Tuesday, August 24. 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.

Farmers who want to submit entries can bring tomatoes to the market between 8:45 am and 10:45 am on August 24th or drop their entries off with a registration form to one of the regional drop off locations on Monday, August 23rd. Drop off locations include sites in Great Barrington, South Deerfield, Worcester, Dighton and West Newbury. These tomatoes will be brought in to Boston on Tuesday.

For complete details, including drop off locations, contest criteria, and a registration form, click here. Be sure to include this registration form with your entries.

The 36th 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.

Thank you to our 2021 sponsors!

Become a sponsor!

Vegetable Notes. Genevieve Higgins, Lisa McKeag, 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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