



UMass
Extension

Vegetable Notes

For Vegetable Farmers in Massachusetts since 1975



Volume 33, Number 5

May 6, 2021

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Asparagus at D. A. Smiarowski Farm.

CROP CONDITIONS

Corn plantings are going in under plastic and now in bare ground, tomatoes are filling in high tunnels, and potato planting has begun. Interest in home gardening is still high and seedling sales are expected to be very strong again this year. As harvest of the earliest field crop—asparagus—begins, we have this crop update from Tom Smiarowski of the UMass Crop Insurance Education Program and of D. A. Smiarowski Farm in Sunderland, MA:

In a typical year most asparagus growers look at May 1 as the beginning of harvest. It's not unusual to begin harvest a few days earlier or later depending on soil temperatures. This year the earliest report on social media of asparagus availability was April 22, which is unbelievably early! Shortly thereafter several growers noted their asparagus crop had been hit by scattered frost on two consecutive mornings. This slowed the harvest, but most growers began harvest on April 27 or 28. After several light days, temperatures reached the mid to upper 70's on May 2 and 3, and the asparagus crop really took off. Current weather forecasts call for high temps in the mid- to lower-60's for the next several days, slowing down harvest again. Quality of the crop is excellent, and demand is unbelievable!

As with the past few springs, we had a warm start to the season, followed by a long stretch of cloudy weather over the last few weeks. Gray skies and cold, wet soils can cause issues in seedlings, both in the field and in greenhouses, including [damping off](#), [edema](#), and ammonium toxicity. Ammonium in soilless media can build up if the media contains unfinished compost or if the bacteria that convert ammonium to nitrate are inactive due to cold temperatures, waterlogging, or because they are not present in sterilized media. Ammonium toxicity can cause transplant stunting and yellowing, irregular growth, and/or marginal leaf burn. During cloudy, cool periods, increasing greenhouse temperatures and reducing irrigation frequency to allow soils to dry out between waterings can help avoid all of

these issues.

As we head into some sunnier days, be prepared to prevent sun scorching on tender foliage by slowly increasing exposure to direct sun using shade cloth or a protective spray like Surround.

Transplants may be at the perfect growth stage to plant into the field, but if reoccurring rains prevent field preparation or the ability to plant into a prepared field, then transplants need to be held. There are three ways to do this: using growth regulators (e.g. Sumagic), manipulating the difference between day- and night-time greenhouse temperatures, or by brushing the plants twice a day with a smooth wand or stick. See the our [Transplant Height and Hardening Off](#) article for more information on all of these methods.

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

Brassicas:

Cabbage root maggot (CRM) eggs are being laid now in transplanted brassica crops in Franklin Co., and CRM flies are being reported widely in greenhouses full of brassica seedlings. Most of the state is around 60% emergence of this first generation. Far western MA is only at 30% emergence. There are 3 generations of CRM throughout the growing season. The first and third generations cause the most damage—tunneling on root crops and stunting and plant death in heading and leafy crops. The 2nd generation usually does not cause significant damage as soil temperatures are usually high enough to kill most of the eggs in mid-summer. Scout for 1/8-inch long, oblong, white eggs at the base of plants. Cover new plantings immediately with row cover while the spring flight is occurring. Soil drenches of Coragen (chlorantraniliprole) or Verimark (cyantraniliprole) may be applied at planting, and Radiant (spinetoram) or Entrust (spinosad) may be applied at planting and in up to 2 additional applications. See the [article in last month's issue of Veg Notes](#) for more info and photos.

Flea beetles are active now in uncovered brassica fields. Be sure to protect direct-seeded crops and young transplants with a chemical control or row cover. A complete list of labeled products can be found in the [New England Vegetable Management Guide](#). Spinosad (e.g. Entrust) is the most effective OMRI-listed material. Kaolin clay (e.g. Surround) will protect young transplants but needs to be frequently reapplied to cover new growth and will wash off in rain.

Solanaceous:

Rhizoctonia root rot was reported in tomatoes planted out into a high tunnel in RI this week. Rhizoctonia is a weak fungal pathogen that is present in most soils and primarily causes disease in slow-growing, otherwise weakened plants, usually in cold, wet soil. Spring soil conditions can be conducive to Rhizoctonia development. Avoid root rot by managing soil moisture as much as possible: avoiding over-irrigating when plants are not actively transpiring, avoid planting into cold, wet soil, and plant only healthy, robust seedlings.

Fusarium dry rot was reported in seed potatoes in MA and ME this week. If a seed lot is highly contaminated, it may not be worth planting out, but if necessary plant into warm, coarse-textured and well-drained soil and cover as shallow as possible to limit spread of the disease to the new plant. Communicate with your seed supplier about quality issues. See [this fact sheet](#) from Meg McGrath at Cornell University for more information.

We are seeing issues again this year with **rootstock incompatibility** in tomatoes grafted onto 'Shin Cheong Gang rootstock'. Plants are stunted and unthrifty, with root rot and hollow stems. Roots of affected plants have a "rat-tail" appearance. This variety is susceptible to corky root rot disease and is not recommended for high tunnel production in the Northeast.



*Fusarium dry rot in seed potato.
Photo: A. Smart, UMaine*

SUCCESS WITH GREEN PEAS IN THE NORTHEAST

--Written by Julie Kikkert, Cornell Cooperative Extension, Cornell Vegetable Program. Originally published in the Veg Edge Newsletter Volume 17:4 on April 21, 2021. All photos by Julie Kikkert

Editor's note: This article was originally written for a New York grower audience where peas are commonly grown on a

larger acreage for processing. It has been modified slightly to be more relevant to our New England grower audience.

Nothing says spring like the planting and harvest of green peas, one of my favorite eat-in-the-field vegetables! Peas are a cool season crop that thrive in the humid climate of the Northeast. Below are tips for a successful crop along with some of the most common problems that I have seen over my 20+ career in extension. Best wishes to all pea growers this season and please reach out to one of our specialists if you have questions or issues in your fields.



Pods of green peas ready for harvest.

Varieties

While you have probably already obtained your seed for 2021, here are some resources to help in future decisions. Keep track of your own experience this year and compare with what the researchers have observed. The 2020 fresh market pea variety trial report from Crystal Stewart-Courtens, Extension Vegetable Specialist with the CCE in eastern NY is available as a pdf for printing or as a podcast at https://enych.cce.cornell.edu/submission.php?id=733&crumb=crops|crops|peas|crop*22

Processing pea growers have their seed provided to them by the processor. Cornell University and the University of Delaware run processing pea variety trials regularly. If you are interested to learn more, the reports are available at the following websites:

- Cornell University: <https://www.vegetables.cornell.edu/crops/processing-vegetable-research-and-extension-program/>
- University of Delaware: <https://www.udel.edu/academics/colleges/canr/cooperative-extension/sustainable-production/variety-trials/>

Planting

Preparation for planting peas begins the previous year with perennial and winter annual weed control, soil testing, zone building and planting cover crops. Spring tasks include field and seedbed preparation followed by planting. Make sure to select fields that have good soil health and are well-drained because peas generally have weak root systems and easily succumb to seed rots, root rots and subsequent die-off when the crop is filling the pods, especially if drought and heat stress are prevalent. **PLANTING IN WET OR COMPACTED SOILS IS THE NUMBER ONE PREDICTOR OF PEA CROP FAILURE!** Planting can begin in late-March for the earliest varieties and continue until late-May. Pea seed will germinate at soil temperatures as low as 40°F, however the optimum temperature is between 50° to 75° F. Some growers inoculate the seed with symbiotic bacteria that fix nitrogen, however, this is generally not needed except for fields with no history of peas in the rotation and low nitrogen levels. A pre-emergent herbicide may be applied (see [Weed Control section](#)). Seeds should be planted at a maximum of 1 inch depth unless the soil is very dry. Fresh market growers typically plant 18-20 plants per yard in the row and 32-36 inches between rows. Processing growers use 7-inch rows, with 16-22 plants per yard in the row depending on variety. Seeding rate must be adjusted to the seed size, which can vary greatly. Seedlings will begin to emerge in about 10 days depending on the weather.

Weed Control

Weed management is an important component of pea production. Weeds in pea fields reduce yields and interfere with machine harvest. Flower buds of Canada thistle, corn chamomile “daisy”, and nightshade berries are all contaminants in processing peas because they cannot be easily separated from the shelled peas. Processing growers also need to keep fields free of wheat and small grains because of concern over gluten contamination.

Peas do not compete well with weeds and it is wise to avoid fields with known serious weed problems. Growers may begin blind cultivation with a tine weeder or flexible harrow, prior to the ground cracking. The goal is to kill very tiny weeds at the white thread stage. Be aware that peas are very susceptible to breakage if they are in the crook stage before ground crack, until the seed leaves are unfolded and horizontal. Organic growers may continue tine weeding or other cultivation depending on planting configuration for fresh or processing market. There is a concern with processing peas of bringing up stones that will be picked up with the harvest machine. Young processing peas will withstand a light rolling to tamp down the soil and stones after tine weeding. For more tips on weed management for organic peas, refer to the Cornell

Conventional growers should note that peas are sensitive to residues of several herbicides. Peas are very sensitive to atrazine. Do not plant in fields where more than one pound of atrazine was applied the previous year. There is an 18-month restriction for planting into fields where mesotrione (Callisto, Instigate, Halex GT, Lexar, Lumax, Realm Q, Zemax) and clopyralid (Hornet WDG, Stinger, SureStart, TripleFlex) have been applied. Make sure to know the history of herbicide use in your field and note planting restrictions for peas.

Herbicides labeled for use in peas include pre-plant incorporated, pre-emergence, and post-emergence products (see the New England Vegetable Management Guide [weed section](#)). Herbicide choice should be based on the weed species, crop growth stage, weather, and pre-harvest interval. Applicators should read the product labels carefully for full details. Post-emergence herbicides need to be applied at the correct stage of pea growth to avoid crop injury.

Diseases

Seed Decay and Damping-off

In the Northeast, *Pythium ultimum* and *Rhizoctonia solani* are the principal pathogens causing seed decay and/or seedling damping-off diseases of peas grown throughout the production regions in the state. Seeds of poor quality and vigor as well as those planted in suboptimal soil conditions germinate rather slowly, and thus are most prone to attack. Infected seeds often become discolored, exhibit soft rot, and eventually decay. Seeds may not germinate or seedlings may die before reaching the soil surface or die shortly afterwards, resulting in poor emergence and stand establishment. The first and most important management option against these diseases is the use of high-quality seeds that are pathogen-free and treated with effective products, where possible. Captan and Thiram fungicide seed treatments are fair against *Pythium*, *Rhizoctonia*, and *Fusarium* sp. Apron fungicide is best for *Pythium*, while Maxim fungicide is best for *Rhizoctonia* sp. Organic (OMRI approved) seed treatments are being studied.

Root Rot

Several pathogens alone or in combination can cause root rot symptoms in peas. Fusarium cortical rot (*Fusarium solani* f. sp. *pisi*) has been the most prevalent disease of peas in Western NY in recent years, followed by Fusarium wilt and near wilt (*F. oxysporum* f. sp. *pisi*) (G. Abawi, Cornell). These pathogens only infect peas and you will only see these diseases if peas have been grown in a field before. These fungi can survive for a very long time in soil. Root and stem rots can also be caused by *Rhizoctonia* and *Pythium* spp., which can affect a number of other vegetable crops as well. If that isn't enough, pea roots can also be infected with *Thielaviopsis* and *Aphanomyces* spp.

Damage caused by root disease pathogens is greatest in poor quality soils. Thus, improving soil health status will directly or indirectly improve root health and reduce damage of root pathogens. It has been shown that assessing root health is a highly correlated biological indicator of soil health in general. Roots growing in healthy soils generally are of larger size, firm, have large numbers of fibrous rootlets, penetrate deeper into the soil profile, and exhibit limited or no symptoms of infections by root pathogens. Such roots are more tolerant to environmental stress conditions and more efficient in absorbing water and nutrients. In addition, it is known that all soil health management practices (various modifications of tillage systems, cropping sequences, cover crops and soil amendments) directly or indirectly affect the populations of root pathogens and their damage to vegetable crops.

Best Practices to Keep Pea Roots Healthy



Yellow patches, coupled with poor growth are symptoms of weak root development and/or root rot.



Pea plants with severe root rot.

- Use high quality, pathogen-free, and fungicide treated seed.
- Well-drained soils, free of compaction
- Plant peas only once every four years in a field
- Avoid fields with a history of severe root rot
- Rotations with grain crops will improve soil structure and reduce disease severity.
- Use tolerant varieties

Foliar Diseases: Although peas are susceptible to many foliar diseases they are uncommon and to date have not caused obvious losses in NY.

Insects: are generally not a major problem in peas in NY, but seedcorn maggot and aphids are occasional pests. Aphids can feed on pea leaves and pods, but are usually not a concern unless populations get very high. Seedcorn maggots are most severe when cool, moist spring conditions slow seed germination and growth of young plants. Seedcorn maggot adults emerge from overwintering pupae. Mated females fly close to the ground in search of suitable egg laying spots—preferably near decaying organic material or germinating seed to provide a food source for the newly hatched larvae. Eggs hatch 2-3 days after being laid, and the maggots feed on and burrow into the seed and stems. Maggots develop through larval stages for 2–3 weeks depending on the temperature. If damaged plants aren’t killed outright, the injury provides wounds for plant pathogens to attack, causing root and stem rots to develop. Prevention is the key to control because there are no effective rescue treatments. Among the most important steps are to incorporate crop residues and cover crops 2 to 3 weeks prior to planting and avoid manure applications right before planting as this attracts egg-laying adults. In small, fresh market plantings, row covers may prevent egg laying and subsequent plant damage, however, they will not protect crops where pupae are already in the soil.

UMASS WINTER SPINACH VARIETY TRIALS: 2020-21 REPORT

A recording of our Virtual Winter Spinach Field Day, including photos of varieties discussed in this article, is available to view [here!](#)

Background: Spinach downy mildew (DM), caused by the fungal-like 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. It produces characteristic fuzzy gray sporulation on the undersides of spinach leaves. 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 now 19 strains—called “races”—of the pathogen, as well as novel races that don’t match any of the 19 numbered races. Spinach varieties have resistance to different sets of spinach DM races, so whether or not a disease outbreak occurs depends on the spinach varieties, DM races, 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.

Downy mildews are very 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 new 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 total crop losses. The downy mildew pathogen has quickly evolved to overcome resistance bred into spinach varieties, so spinach varieties available from seed producers change quickly, 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



*Spinach downy mildew on the underside of a spinach leaf.
Photo: G. Higgins*

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](#) and [2019-20 Spinach Variety Trial](#).

Methods: 18 spinach varieties were trialed in 2020. This group was comprised of fast-growing varieties with complete or near-complete DM resistance recommended by seed producers, varieties commonly grown by winter spinach producers, and 1 variety with no DM resistance (Viroflay). See Table 1 for the varieties trialed in 2020 and their DM resistance. [Click here for photos of each variety throughout the growing season.](#)



UMass spinach variety trial, December 8, 2020, prior to the first harvest.

The high tunnel was prepared by disking the soil, irrigating to allow a flush of weeds to germinate, then spreading fertilizer based on soil test results (20# N/A in the form of blood meal). The tunnel was then disked again to incorporate the fertilizer and kill the flush of weeds. All spinach varieties were seeded by hand on October 13, 2020. Plots were organized in randomized complete blocks, in 4' wide beds. Plots were 2' long, with 5 rows of spinach per plot, seeded at a rate of 3,000,000 seeds/A (550 seeds/plot)—a rate commonly used by large-scale spinach growers in California and Arizona. Seeds were sown at a ½" depth.

For the duration of the trial, circulating fans remained on, exhaust fans remained off, and roll-up sides were programmed to open at 50°F and close at 40°F. The tunnel was coldest on January 30, when the air temperature reached 7.8°F and the soil temperature 2" beneath the surface reached 31.6°F. The tunnel was irrigated with overhead sprinklers as needed to maintain soil moisture at 30-60 centibars according to Watermark soil moisture sensors soil moisture sensor reading and was hand-weeded once after all spinach had germinated. Soil nitrate was measured monthly throughout the course of the trial. Soil nitrate levels began at 103 ppm on November 23 and steadily declined to 29 ppm by February 16. The recommended threshold at which to add N is 30 ppm, but the trial was almost complete when that threshold was reached, so no N was added.

Germination and post-emergence damping off were rated twice—both 1 week and 2 weeks after seeding. Beginning 3 weeks after seeding, plot vigor was rated weekly, taking into account stand, plant size, and after the initial harvest, regrowth quality. Each variety was harvested as it sized up, resulting in 6 harvest dates, the earliest being December 22 and the latest being March 30. Plots were harvested by hand; plants were clear-cut just above the growing tip.

Results: Platypus and Viroflay had significantly lower germination rates than all other varieties in the trial (<15% germination). When

Variety	Seed Producer	Downy Mildew Resistance	# of Harvests	Days to 1 st Harvest
Corvus	BASF	1-17	3	94
Dracus	BASF	1-17	3	94
Nembus	BASF	1-17	3	94
Sculptur	BASF	1-17	3	94
Patton	Bejo	1-15, 17	3	70
Responder	Bejo	1-12, 14-16	3	70
Crosstrek	Enza Zaden	1-17	3	70
Colusa	Pop Vriend	1-17	3	70
Nevada	Pop Vriend	1-17	3	94
Dallas	Pop Vriend	1-17	3	70
Laredo	Pop Vriend	1-17	2	94
Sunangel	Rijk Zwaan	1-9, (10), 11-17	4	70
Bandicoot	Rijk Zwaan	1-16, (17)	3	70
Kodiak	Rijk Zwaan	1-17	3	70
Platypus	Rijk Zwaan	1-15, 17	3	70
Kolibri	Rijk Zwaan	1-9, 12-15, 17	3	94
Auroch	Rijk Zwaan	1-12, 14-16	3	70
Viroflay	Univ. of AR	none	3	94

Platypus and Viroflay were excluded from the dataset, there were no significant differences between germination rates of the remaining 16 varieties. Platypus and Viroflay were excluded from the dataset for the vigor and yield analyses.

Figure 1 shows vigor ratings from immediately before the first harvest on December 22. Average vigor, calculated across the entire season, showed a similar pattern to the December 22 vigor ratings. Crosstrek and Dallas were the most vigorous varieties on December 22, followed by Patton, and those 3 varieties along with Sculptur were also the most vigorous varieties when averaged over the full season.

Some notes about some varieties that stood out:

- **Dallas** also had the highest yield (just above 0.9 lbs/ft²), significantly higher than about half of the varieties trialed. **Crosstrek** and **Nembus** also had high yields, around 0.8 lbs/ft².
- **Auroch** and **Bandicoot** had the lowest yields, both less than 0.5 lbs/ft², and, along with Bandicoot, had consistently low vigor ratings. Both Auroch and Bandicoot had high rates of post-emergence damping off, which contributed to both the low vigor ratings and low yields.
- **Dallas** description: a dark-green variety that was fairly flat when small but became more upright after it was harvested for the first time.
- **Crosstrek** description: produced dense, fairly upright plants, with slightly curly leaves. Crosstrek had even regrowth that didn't show the cuts from the previous harvest(s). **Patton** and **Responder** had similar appearances to Crosstrek, and Patton had notably very even growth. Both Patton and Responder had numerically lower but not significantly lower vigor and yield.
- **Nembus** was among the highest yielding varieties, but had middle-range plot vigor. It was an average-looking variety with a medium growth height.
- **Sculptur** had a high seasonal vigor rating, but a middle-range yield.

All varieties were harvested 3 times between December 22 and March 30, with the exception of Laredo, which was harvested only 2 times, and Sunangel, which was harvested 4 times. Despite being harvested 4 times, Sunangel had middle-range vigor and yield.

Conclusions: Overall, most of the varieties grew similarly well in terms of germination, vigor, and yield and would be good choices for winter tunnel production in the Northeast. Two varieties, Dallas and Crosstrek, stood out as having significantly higher vigor and yield and have resistance to races 1-17 and would be excellent choices for winter growing. Some of these varieties may not appear in seed catalogs but seed reps may be able to special order unlisted varieties from producers, especially if smaller-scale growers collaborate to meet minimum order requirements. Ask your seed rep, and if you cannot locate the variety you want, please get in touch with us and we may be able to help you track the variety down or find other growers interested in ordering the same variety.

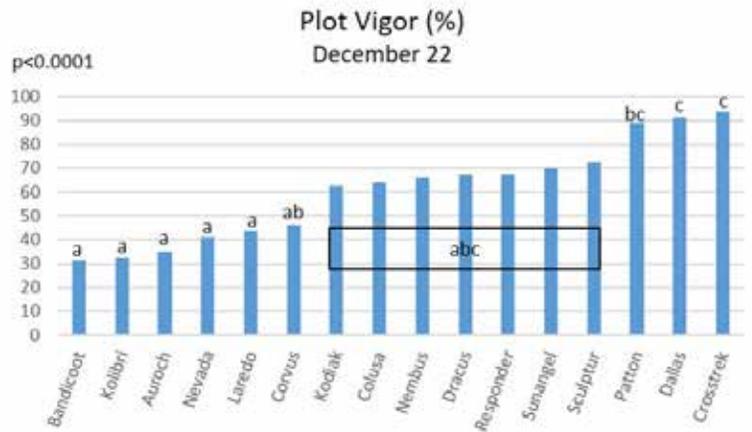


Figure 1. Plot vigor (%) on December 22, immediately before the earliest harvest date. Statistical significance was determined using analysis of variance. Means were separated using Tukey's HSD at α -level 0.05. Varieties that share one or more letters are not significantly different from each other. Crosstrek, Dallas, and Patton were significantly more vigorous on December 22 than Bandicoot, Kolibri, Auroch, Nevada, and Laredo. Dallas and Crosstrek were also significantly more vigorous than Corvus.

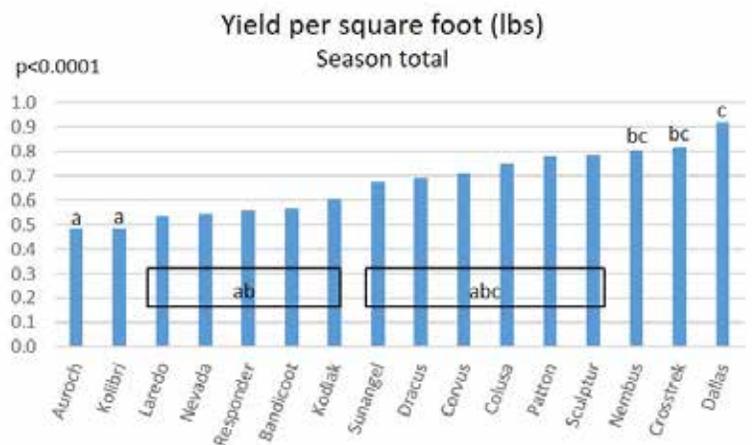


Figure 2. Yield per square foot, in lbs. Dallas, Crosstrek, and Nembus produced significantly higher yields than Auroch and Kolibri. Dallas also produced significantly higher yields than Laredo, Nevada, Responder, Bandicoot, and Kodiak.

--Written by Genevieve Higgins

PEAK TICK SEASON HAS BEGUN!

The earlier springs and longer summers that come with a changing climate mean more pressure from pests that are active in warm weather. That means the pests that feed on your plants but also the pests that feed on you! The first peak period of tick activity in Massachusetts has begun and will last through August, with a second peak in October-November, according to the Mass.gov [Monthly Tickborne Disease Reports](#). The trend over the last several years is that the amount of time that ticks are active is increasing, their feeding time is earlier, and their overall numbers seem to be going up as well.

A few different species of ticks are found in Massachusetts. Most common are black-legged (deer) ticks and dog ticks along with the as-yet more rare lone star tick. Troublingly, a recent article in the [Hartford Courant](#) reports that additional new species—the Asian long-horned tick and the Gulf Coast tick—were found to have extended their range as far north as Connecticut. Black-legged ticks can carry several different human pathogens but are the only among these species that carry the bacterium that causes Lyme disease. However, each tick species can vector organisms that cause disease in humans. Other tick-borne diseases include anaplasmosis, babesiosis, Powassan virus, tularemia, and Rocky Mountain spotted fever. Of these, Lyme disease remains the most prevalent. According to a [2020 report](#) by the Connecticut Agricultural Experiment Station, nearly half (46%) of the adult ticks they tested in Connecticut were infected with the Lyme disease pathogen.

While tick encounters are a routine and inevitable part of outdoor work, the serious health risks they pose should not be underestimated. Affected farmers can lose valuable time in the field recovering or suffering from these illnesses and from their possible long-term consequences. Preventing or responding quickly to potential infections is critical, as is proper diagnosis and treatment.

There are several things you can do on your farm to reduce your exposure to ticks.

Manage tick hosts and their habitat. Ticks feed on and are carried by animal hosts and, though their preferred host may be tick species-specific, they can feed on mammals, birds, reptiles and amphibians. They become infected with human pathogens when they feed on reservoir animals. Studies suggest that white-footed mice, common throughout Massachusetts, are the primary reservoir host for several human disease pathogens transmitted by black-legged ticks. Ticks have to feed on multiple hosts throughout their lifecycle and are often carried into yards or fields by deer. Farmers are already motivated to keep deer out of their fields for many reasons and preventing tick exposure is just one more. Use effective deer repellants, including deer-resistant plant borders, and install deer fencing to keep them out of areas where you and your employees work. Similarly, minimize rodent habitat around your farm. Keep areas like woodpiles and areas around barns, sheds, and equipment clear of grass, leaves and debris to prevent them from becoming habitat for mice and other rodents.

Manage tick habitat. Ticks like shaded, moist areas and can be found at the borders of woodlands and in field edges with tall grass and shrubby vegetation. Keep areas where people will be walking or working mowed and clear of tall grass and weeds. Ticks don't jump, or, as some believe, fall out of trees. Instead, they use a technique called "questing", where they climb to the top of vegetation and wait for a host to come by so they can grab on. The ditches and grassy borders commonly found around farm fields and barns or along the road are perfect spots for questing. Keep field entrances or paths between fields and along roads where you frequently travel or park clear of tall grass. Enter fields through cleared areas rather than taking shortcuts through tree lines or brush, and park in areas that are more tightly mowed or maintained.

Manage your personal exposure. When working outside, wear light colored clothing so that ticks will be easier to spot and tuck your pant legs into your socks so that ticks can't crawl up your leg. Treat clothing, especially socks and pants from the knees down, with permethrin, which can both repel and kill ticks and which can remain active on clothing through several washes. You can buy pre-treated clothing, send clothing away to be treated by a company (e.g. [Insect Shield](#)), or buy permethrin spray to treat your own clothes. Sprays labelled specifically for clothing are often carried by outdoor equipment stores or farmers' supply stores. Be sure to follow any instructions for washing provided with the clothing on or on the product labels. When you come in from working outdoors, put clothing into a clothes drier and dry

on hot for 30 minutes.

The [Tick Encounter](#) program and website at the University of Rhode Island has great resources to help you properly identify ticks, including different tick species, and whether what you find is actually a tick or something less dangerous. Perform a thorough (not just a cursory) tick check when you come in from outdoors. Ticks like moist places and will head toward those—like your armpit, groin area, or scalp, especially under your hat line—so be sure to check yourself carefully. If you do find a tick, it can be removed with tweezers. Disinfect the area, hold the head with the tweezers, and slowly pull it straight out. [Here](#) is a good illustration of the process. Consider sending the tick to a lab (see below) to find out if it is infected with a pathogen and contacting your doctor about the possibility that you may have been infected. Rutgers Extension put together [this table](#) of common symptoms of various tick-borne diseases along with the symptoms of heat stress and Covid-19. Understanding how each of these is similar or different may help lead more quickly to a diagnosis if there is a risk from one or several of these ailments.

Sending in tick samples. UMass is no longer accepting tick samples, but there are several laboratories where you can send a tick for diagnosis. Here is a list of laboratories along with contact and pricing information and the pathogens they test for: <https://ag.umass.edu/resources/tick-testing-resources>

If you're interested in learning more about ticks, the **UMass Extension Landscape, Nursery and Urban Forestry Program** hosts regular webinars, which you can find on their [events page](#) and which are archived [here](#).

Other resources consulted:

- URI Week in Vegetables, April 12, 2019: <https://web.uri.edu/coopext/files/4-20-19-TWIV.pdf>
- Crop Scouting and ...Ticks? Michigan State University Extension, June 2, 2016: https://www.canr.msu.edu/news/crop_scouting_andticks

--Written by Lisa McKeag

NEWS

CORN EARWORM MANAGEMENT IN SWEET CORN NEEDS ASSESSMENT SURVEY

Represent New England pest management needs by filling out this survey: https://ume.qualtrics.com/jfe/form/SV_9vRh1xHnDp4KEaa

Dr. Kelly Hamby, Associate Professor/Extension Specialist with the Department of Entomology at University of Maryland, is leading a team of researchers who have developed a survey to prioritize research and extension efforts for improving corn earworm management in sweet corn throughout the Northeast. We appreciate your participation in this survey and will use results to develop a grant proposal to try to get federal funding to address these needs.

MASSACHUSETTS COLLABORATIVE SOIL HEALTH PRODUCERS SURVEY

American Farmland Trust, MDAR, NOFA/Mass, and UMass Amherst are working together to build a network of soil health resources in the Commonwealth. The following survey will provide us with valuable data on what kinds of education, technical support, and financial support would be most helpful to producers and will include questions about your tillage, cover crops, residue management, and other practices. We also want to know what kinds of field days, case studies and grants might help you increase those practices on your farms.

Your input will directly inform the shaping of financial, educational, and technical support programs for healthy soils practices adoption for farmers in MA.

The survey should take approximately 15 minutes. Participants who complete the survey before 5/31 will be entered for a chance to win one of five \$50 gift cards.

For questions about the Massachusetts Coordinated Soil Health Program, contact newenglandsoilhealth@farmland.org or visit farmland.org/ma-soil-health-program

FEDERAL ASSISTANCE EXTENDED FOR VEGETABLE & FRUIT PRODUCERS

Two Federal programs, the Coronavirus Food Assistance Program 2 (CFAP 2) and the Paycheck Protection Program (PPP), which can provide financial assistance to vegetable and fruit producers, recently announced the reopening/extension of signup periods. This is an excellent opportunity for producers who did not sign up initially for either or both programs!

Coronavirus Food Assistance Program 2 (CFAP 2)

Signup reopened on April 5 and will continue for at least an additional 60 days (actual signup deadline is yet to be determined) for the second round of Coronavirus Food Assistance Program payments (CFAP 2) at the USDA Farm Service Agency (FSA). The purpose of CFAP 2 is to provide financial assistance to producers who faced market disruptions and incurred increased costs because of COVID-19.

CFAP 2 uses 2019 calendar year sales of eligible vegetable and fruit crops as the basis for payments. Crops purchased for resale are ineligible for CFAP 2. Value-added or processed crops (such as apple cider) are eligible but applicants will have to determine the value of the commodity prior to processing and use that figure rather than the sales of the value added or processed commodity. Eligible crops sold through CSA's may be eligible provided they meet the FSA requirements for eligible CSA's.

More detailed information can be found at: <https://www.farmers.gov/cfap>

Producers are encouraged to contact the FSA Office that serves their farming operation with questions they have along with procedures to file an application and related paperwork.

Producers should call their FSA Office before visiting the FSA Office since FSA may have restrictions in place for in-person office visits. Sales records are not be required at the time of signup but producers will have to provide evidence of total sales if the application is selected for a later spot-check.

Bottom Line: If you grew and marketed an eligible crop, you likely are eligible for a CFAP 2 payment!

Paycheck Protection Program (PPP)

The U.S. Small Business Administration (SBA) announced on March 30, 2021, that signup for PPP has been extended to **May 31, 2021**. We strongly encourage producers who have not taken advantage of the PPP to take a close look at the PPP, which can provide financial assistance to vegetable and fruit operations. We have found that many agricultural operations don't believe they are eligible for PPP benefits since the PPP is not administered by USDA, however agricultural operations are eligible!

PPP provides loans to help businesses (including agricultural operations) keep their workforce employed during the Coronavirus (COVID-19) crisis. PPP is offered by the U. S. Small Business Administration (SBA) with applications processed by approved local lenders. A key component of the PPP is that the entire loan (or a portion of the loan) may be forgiven provided certain criteria are met! We believe that the PPP has been an under-publicized/under-utilized program in the agricultural community and encourage all types of agricultural operations to take a closer look at the PPP.

Further details can be found at the SBA website: <https://www.sba.gov/funding-programs/loans/covid-19-relief-options/paycheck-protection-program>.

Our program at UMass Extension conducted a Zoom meeting on the PPP back on February 23 to go over the general provisions of the PPP. To view the presentation (which begins at the 2:30 mark), click [here](#).

CITY OF BOSTON FOOD ACCESS RECOVERY INITIATIVE

The Boston Office of Food Access (OFA) has announced the availability of grants to support businesses to provide consumers at small farmers markets a wider variety of products.

The OFA works to improve the accessibility and affordability of healthy food in Boston. This year, OFA is focusing on supporting the recovery of Boston residents and small business by ensuring that they have the resources they want and need to thrive.

Grant opportunities are available to vendors/businesses who would like to join small farmers markets by bringing a variety of produce and products across the City's neighborhoods. Funding is only available to vendors offering fruits

& vegetables, dairy, meats, fish, eggs, and baked goods. Grant funding can be used to pay for personnel, travel expenses, marketing costs, and market fees. The purpose of the funding is to connect vendors with Farmers Markets to promote an equitable economic recovery.

Chosen vendors/businesses will be issued up to \$500 grant depending on participation in small Farmer Markets. The application **deadline is May 25, 2021**.

Details and application [here](#).

PESTICIDE REGISTRATION UPDATES

• **Important Fungicides Under Review by EPA: Submit Comments by *tomorrow* May 7, 2021**

Several important fungicides are undergoing a routine preliminary risk assessment by the EPA. All fruit and vegetable growers are encouraged to submit their comments to the EPA about the importance of each of the following fungicides: mancozeb, propiconazole, famoxadone, and tetraconazole. The ones most important to vegetable growers are mancozeb and propiconazole.

Comments on the benefits of these fungicides and to maintain their registration are requested and will be helpful in the characterization of the risks involved. Each fungicide must be commented on separately. You can submit your comments for each fungicide until May 7, 2021 at 11:59 p.m. ET. For more details and to submit comments visit [this PA State Extension website](#).

• **State Restricted Use Status for Some Neonicotinoid Products**

Beginning July 1, 2022 certain outdoor uses of neonicotinoids in Massachusetts will be classified as State Restricted Use, per a recent decision by the Massachusetts Pesticide Board subcommittee. This will impact primarily the turf and ornamental uses of these materials, but will leave agriculture-only use products available as general use. A Massachusetts pesticide license would be required to use the affected products. However, farmers would not need a license to purchase or use products UNLESS the product they were using had dual-use language. For example, if a product had agricultural uses and ornamental uses, the product would be State Restricted Use and a farmer would need a license. For more information, see these [slides](#) prepared by UMass Extension Entomologist, Tawny Simisky or contact Taryn LaScola-Miner, Director of MDAR's Crop and Pest Services Division (taryn.lascola@state.ma.us).

• **EPA Has 60 Days to Decide on Chlorpyrifos Status**

[Last week](#), the Ninth US Circuit Court of Appeals gave the EPA 60 days to determine whether chlorpyrifos can keep its registration. Corteva, the manufacturer of Lorsban, stopped producing that product in 2020, but other chlorpyrifos products remain available. The EPA released a revised human health risk assessment and refined drinking water assessment of this active ingredient in November 2016. The risk assessment did show that, based on labeled uses, the expected residues of chlorpyrifos on food crops exceed the safety standard under the Federal Food, Drug, and Cosmetic Act (FFDCA), and the majority of estimated drinking water exposure from currently registered uses, including water exposure from non-food uses, continues to exceed safe levels, even taking into account more refined drinking water exposure. The assessment also shows risks to workers who mix, load and apply chlorpyrifos pesticide products. Despite these risks, the EPA determined then that that it would not cancel registration of the material. California banned the pesticide in 2020 and bans in other states, including New York and Connecticut, will go into effect in 2022.

EVENTS

Need pesticide recertification credits? All of the New England states have reciprocity in regards to recertification credits and NY credits are also accepted by most New England states, including MA. Check with your state pesticide board with questions about NY credits in your state. This means that credits offered at virtual events hosted by these other states will be recognized by MDAR and will count towards your total recertification requirement. We will continue to send out relevant events, UMass Vegetable Program events can also be found on our [Upcoming Events](#) page, and links to event listings from other New England state Extension can be found in the [November 2020 issue of VN](#).

UMASS EXTENSION APPLE BLOOM TWILIGHT MEETING

When: May 6, 5:30-7pm

Agenda includes: Early Season Grape Disease Control, Plum curculio updates and management, other time sensitive insect issues, Bloomtime Fireblight Considerations, Apple Blossom Thinning, and Questions and Answers

Pre-register here: <https://umass-amherst.zoom.us/meeting/register/tJcqc-2orTMtGdJO8BzzPTNd8hXpHrlZBqeH>

FARM FINANCING AND ACCESS TO CREDIT WEBINAR

When: Wednesday, May 19 at 7:30 pm

Hosted by the Massachusetts Farm Bureau Federation. Chris Laughton, Director of Knowledge Exchange at Farm Credit East will present on “Farm Financing and Access to Credit.” He will cover farm financing for both new and established farms, including various sources of capital, credit scores, how loan decisions are made, how to apply for a loan or approach a lender, and will give an overview of FarmStart, an innovative program from Farm Credit East to invest in new and beginning farms in Massachusetts.

To register: <https://mfbf.net/news/farm-financing-and-access-to-credit/>

CHECK OUT PROGRAMMING FROM OTHER UMass EXTENSION PROGRAMS INCLUDING FRUIT, CRANBERRY, 4-H AND MORE!

Some upcoming workshops include 4-H career fairs, protecting yourself from tick and mosquito-borne diseases, and events that might be relevant for teens, home and community gardeners, and fruit growers.

Visit <https://ag.umass.edu/upcoming-events> to see all upcoming UMass Extension events!

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

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