UMass Extension
Vegetable Notes
For Vegetable Farmers in Massachusetts since 1975

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In this issue:

Tomatoes are ready to be staked, and Have-A-Heart traps are set up to catch groundhogs - 27 caught on this farm last year! Photo by K. Campbell-Nelson

Crop conditions

Garlic scapes are being harvested, successions of lettuce and greens are going in, the earliest corn has tasseled, and some is even silking. Bunching onions, radish, beets, and some carrots are on retail shelves, and sales of vegetable transplants have slowed down.

In western Massachusetts, farmers 5 miles apart are heard comparing rainfall data: "I had 1 inch of rain this week." "Well, I had 1.15 inches of rain." All want to know if Monday's thunderstorms, which also brought tornado warnings to the western part of the state, evenly distributed rain to our thirsty crops. According to NEWA weather station data, the inches of rainfall measured on June 18th going east to west across the state are as follows: Pittsfield = 0.13", South Deerfield = 0.86", Phillipston = 1.71", Leominster = 0.39", and Waltham = 0.18". Rain was so heavy in some places, tattering cucurbit leaves, growers wondered if they had gotten some hail. However, apparently we did not all receive the needed rain and most of the state is still considered 'abnormally dry' according to the U.S. Drought Monitor.

With the threat of late blight looming in nearby NY and PA, and cucurbit downy mildew making its slow march northward (now in Maryland), growers are preparing their sprayers to handle the larger crops that these diseases threaten; potato, tomato, and all the cucurbits. Need help calibrating your sprayer? Come to our Fruit and Vegetable Twilight Meeting on Monday, June 25th, 4-7 pm at Kimball Fruit farms in Pepperell, MA, and see a demo with George Hamilton of UNH Extension. See events section to register.

Pest alerts

Alliums:

Garlic samples are coming into the diagnostic labs across the Northeast and several fungal pathogens have been identified including Fusarium basal rot and *Penicillium*, in addition to bulb mites in some locations, and garlic bloat nematodes in NY state. At this point there is not much to do about these mostly seed-borne pests and diseases except rogue out affected plants and don't save seed from fields where disease or pest damage is present. Remove scapes, keep weeds down, don't over-fertilize plants, and maintain adequate soil moisture (1" per week) to produce the best bulbs possible.

Onion thrips numbers are on the rise and have reached the threshold of one thrip/leaf in some fields in MA. Thrips feeding causes whitish flecks, curling, and bending of the leaves that can reduce plant vigor and bulb size. Wounds produced by their feeding provide entry points for bacteria, which can later cause bulb rots in storage. There are many effective insecticides, both organic and conventional, that can be used to control thrips populations; find them listed here: http://nevegetable.org/crops/insect-control-14. Include a spreader/sticker to help the spray stick to waxy leaves.

Brassicas:

Eggs and caterpillars of imported cabbageworm, diamondback moth, and cabbage looper were all found in central MA this week, though still at low numbers. Use the brassica scouting sheet found here (http://ag.umass.edu/vegetable/resources-services/scouting-resources) to check plants weekly for caterpillars and spray when the following thresholds are reached: 35% plants infested before heads have formed in heading crops like cabbage or broccoli, and 15% plants infested for leaf crops or after heads have formed.

Cabbage aphids are starting to be in seen colonizing brassica crops now. These pests mostly impact Brussels sprouts, broccoli, and cauliflower, where they infest marketed heads or buds, while other crops are less affected—though curly kale can be hard to clean of aphids too. Treat Brussels sprouts, broccoli, cabbage, and cauliflower if more than 10% of the plants are infested with aphids anytime after heads or sprouts begin to form. For the latest research updates on organic insecticide efficacy and insectary plantings check the Brassica Pest Collaborative site, http://ag.umass.edu/vegetable/resources-services/brassica-pest-collaborative,where we will be continuing to add new resources and this year's findings. You can also join our email list by signing up here: https://ag.umass.edu/vegetable/signup-for-bpc-mailing-list

Cucurbits:

Striped cucumber beetle are still present at low numbers in all the fields we have been scouting. Keep an eye out for these guys as they can spread bacterial wilt. Thresholds are 1 beetle/plant for seedlings, 5 beetles/plant for mature plants.

Squash bug adults and eggs are just starting to be found now. The coppery brown eggs can be found in neat clusters on the undersides of leaves. Scout for egg masses and note first arrival of nymphs—they look similar in shape to the adults but are light gray with black legs and crawl on the undersides of leaves. Thresholds are an average of one egg mass per plant and when the first nymphs are seen. Good coverage of undersides of leaves is needed for chemical control. For newly laid eggs and nymphs, consider a foliar application of acetamiprid (Assail 30 SG) which has moderate toxicity to bees (lower than other neonicotinoids). Adults and larger nymphs are more difficult to control, partly because they hide in the lower canopy and near the soil. For organic control of nymphs, use a mixture of pyrethrin (a contact toxin) and azadiractin (an insect growth regulator, made from neem). This program is easier on bees than a high rate of pyrethrin alone, and includes two modes of action. Insect growth regulators work to disrupt the molting process so are useful only on immature stages. Treat late in the day when the flowers are closed to reduce risk to bees. Take note of days to harvest limits on summer squash, zucchini, and cucumbers that are being harvested frequently.

Squash vine borer moth (above). Photo by A. Eaton
Squash vine borer egg at the base of a cucurbit plant (below). Photo by K. Campbell-Nelson

Squash vine borer trap captures have increased in MA this week (see map) and now is the time to start scouting weekly for eggs near the base of cucurbit stems (photo), especially if you are not trapping. If you are trapping, thresholds for treatment are: 5 per trap for for bush varieties and 12 per trap for vining varieties. If present, adults can be seen flying now in cucurbit fields (photo). If using row cover on new cucurbit successions, keep the cover on during this first flight of the vine borer.

Cucurbit downy mildew was diagnosed on cucumbers in Maryland this week. Other crops affected so far this year include butternut, summer squash, and cantaloupe. Monitor disease progress as the disease moves north at cdm.ipm.pipe.org.

Solanaceous:

Late blight was found on tomato transplants last week in Onondaga Co., NY and Susquehanna Co., PA. This is an early occurrence of this disease in the Northeast. The isolate is a new genotype that we have not seen before, and it is not yet clear if it will also affect potato. All potato and tomato growers should be vigilantly scouting fields and protecting foliage when conditions are favorable for disease spread. You can assess the risk of late blight on your farm by using

the NEWA Tomato and Potato Disease Forecasts. The isolate does not appear to be sensitive to mefenoxam so Ridomil is not thought to be effective against this strain. For current recommendations please see the New England Vegetable Management Guide.

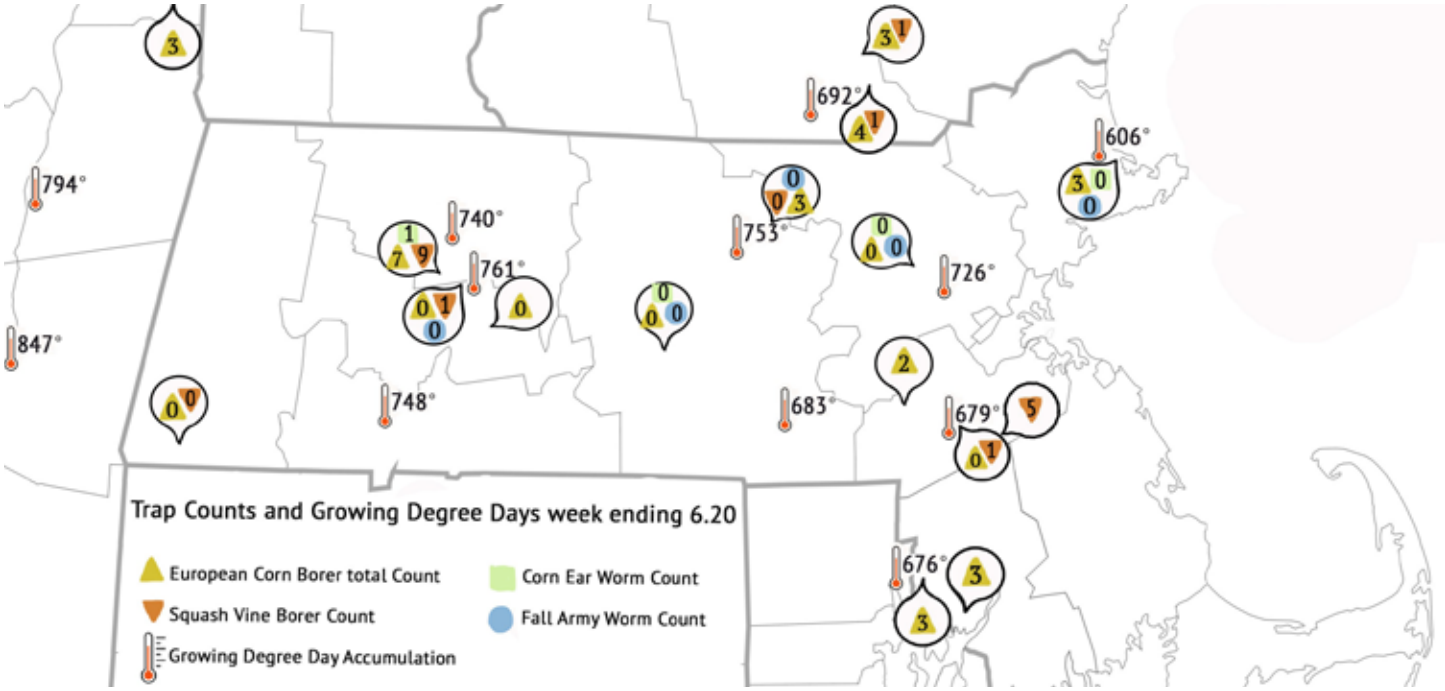
Colorado potato beetle eggs have hatched and small and large larvae are present in potato fields around the region. Sprays are most effective on small larvae. Since flowers are now open, insecticides with lower bee toxicity should be chosen, including *Beauveria bassiana* (Mycotrol ESO), chlorantraniliprole (Coragen), flupyradifurone (Sivanto), *Bacillus thuringiensis* subsp. *kurstaki* strain SA-11 (Javelin), and novaluron (Rimon 0.83EC). All of the listed products are in different insecticide classes, making rotation easy.

Late blight lesions appear olive-green, water soaked, and may develop white sporulation. Photo: UMass Vegetable Program

Sweet Corn:

Corn earworm (CEW): The first CEW has arrived in our state with the thunderstorms on Monday. Only one was captured in a trap this week in Whately, MA (see map). With some of the year's earliest sweet corn in silk, and many successions tasseling, it is time to begin scouting. Sprays are not warranted until 2-4 moths are caught in traps per week and corn has begun silking.

European corn borer first generation is nearing hatch or has already hatched and we are bout at the treatment period (800-1000 GDD Base 50F) for the first generation of ECB if scouting results in a 15% infestation (see map). Marion Zuefele of Cornell Extension has narrated an excellent video for training you how to scout, watch it here: http://sweetcorn.nysipm.cornell.edu/how-to-scout-fresh-market-sweet-corn/



Map by Annalisa Flynn.

Various crops:

Salt marsh caterpillars were seen causing minor damage in Hampshire and Franklin Cos., MA, in broccoli fields. While infestations may appear alarming, they are usually only present on one or two leaves in a field (photo to the right).

Potato leafhopper adults and the first nymphs are now being found in potatoes, eggplant, bean, and raspberry, among other host crops. Because

low numbers of adults or nymphs cause injury and reduce yield, it is important to protect plants before a damaging population becomes established. If you see one adult per plant fly up when you shake the foliage, a damaging infestation level is present. Once nymphs develop, they can be monitored by visually inspecting lower leaf surfaces on lower leaves. Treat potato if more than 15 nymphs are found per 50 compound leaves. In green beans, thresholds are 0.5 per sweep or 2/ft of row at the seedling stage, and 1/sweep or 5/ft of row from 3rd trifoliate leaf to bud stage. Use a threshold of 1.5 leafhopper per leaf in eggplant. Lots of organic and conventional options are effective including pyrethroids, azadiractin-based products, and neonicitinoids—for details check the New England Vegetable Management Guide.

Fertilizing mulched acres

Written by Judson Reid, Extension Vegetable Specialist, CCE Cornell Vegetable Program. Originally published in VegEdge, June 13, 2018

As growers lay plastic mulch across the region, they gain benefits such as season extension, improved fruit quality, moisture and weed control. Another benefit is the opportunity to reduce fertilizer applications, saving input costs and reducing environmental risk. Since the crop and most root growth is confined to the irrigated, mulched bed we can reduce our field acre fertilizer rates to a 'mulched acre' rate.

A field of peppers on black plastic mulch in Yates Co., NY. Photo by J. Reid

From Cornell Guidelines: "to calculate fertilizer rates for trickle irrigation under mulch, base the amount applied on mulched acres rather than actual acres. For example, if the soil surface covered by the mulch is three feet wide and the row center is six feet wide, you should apply 1/2 or 50 percent of the rate that would have been calculated for broadcasting on a per-field-acre basis." In other words, divide the plastic bed width by the exposed row middle. If the mulch is 4 ft wide with 6 foot row middles this would lead to 66% of the acre under plastic and a 1/3 reduction in total fertilizer applied.

Now, how much do we apply and when? This will depend on soil test results and crop demand. Total crop demand will vary with variety and season. For peppers a general recommendation is 125 lbs of nitrogen per acre. If these are transplanted on May 25, 12 weeks of fertigation would take us to mid-August, at which point we'd like to reduce or cease fertilizer applications due to declining daylength, temperature, fruit load and growth. Adjusting total rate based on the mulched acre example above, we budget about 82 lbs of actual N. Divided over 12 weeks this takes us to a delivery of around 7 lbs N per mulched acre per week. Crop growth and weather may lead us to fine tune this on a weekly basis, and even divide the 7 lbs nitrogen into multiple applications per week. Depending entirely on fertigation through drip systems has risks too. If we experience overcast skies or saturated soils we may need to add nitrogen, but can't due to excess field moisture.

Once we begin looking at calcium, phosphorus, potassium and magnesium demands, the calculations become more complicated, depending on soil test, and preferred fertilizer source. For this reason many growers prefer to apply these materials pre-plant and focus on nitrogen in-season, or make as-needed adjustments to other nutrients. Conventional nitrogen is available in several forms and there are more and more soluble OMRI approved N sources for organic production. To take your mulched bed fertility to the next level, consider foliar nutrient sampling. We'll address this topic in another article.

Heat necrosis in transplants

Written by Gordon Johnson, University of Delaware Cooperative Extension Vegetable & Fruit Specialist. First published in Weekly Crop Update Issue 12, June 15, 2018.

Heat necrosis is a common problem on black plastic mulch in late spring and summer plantings in clear weather and at high temperatures. This is a common problem in later plantings of peppers and tomatoes grown in smaller cell sizes.

Black plastic can heat up to well over 110°F on hot days in the late spring and summer. Vegetable transplants are exposed to these high soil temperatures at the soil line around the transplant hole. The stem tissue just at or above the level of the plastic may be killed at these high temperatures and the transplants will then collapse and die. Small transplants do not have the ability to dissipate heat around the stem as roots are not yet grown out into the soil and water uptake is limited. Another factor in heat necrosis is that there is little or no shading of the mulch with the leaves of small transplants.

There are a number of practices that can reduce heat necrosis in later planted vegetable transplants:

- Avoid using tender transplants that have not been hardened off.
- Use larger transplants with greater stem diameters and more leaves to shade.
- Make a larger planting hole, cutting or burning out the plastic.
- When transplanting into the plastic, make sure the stems of transplants do not touch the plastic once set.
- Water sufficiently in the hole to reduce heat load.
- Plant in the evening once the plastic has cooled down or in the very early morning. Avoid transplanting on very hot days or when extended hot, sunny weather is forecasted.
- Switch to white or aluminized plastic mulch for later plantings. This will reduce the heat loading significantly.
- In smaller plantings you may paint the planting zone on the black plastic mulch white with latex paint and then plant through this white strip once dry. Another option is to spray on white particle film at the plant base. You can also mulch around the planting holes with wet straw to reduce heat loading.
- Use overhead irrigation after planting to keep the plastic cooler.

Heat necrosis on the stem of a pepper transplant in black plastic. Photo by G. Johnson

EFFECTIVELY MANAGING CUCURBIT POWDERY AND DOWNY MILDEWS

Written by Meg McGrath, Cornell University and originally published online: http://vegetablemdonline.ppath.cornell.edu/NewsArticles/NewsList.htm

Effectively managing powdery and downy mildews is essential for producing a high-quality cucurbit crop. The two diseases are widely dispersed and occur every year. The key to successful management of both diseases is using resistant varieties when available and using targeted, mobile (translaminar) fungicides. See the table at the end of this article for mobile fungicides for managing powdery mildew, downy mildew, and Phytophthora blight in cucurbits. Below are descriptions of the pathogens and links to more resources on choosing varieties with disease resistance and complete fungicide recommendations.

Powdery mildew

This foliar, fungal disease is common wherever cucurbits are grown, including in the northeastern U.S. This is because the pathogen produces an abundance of asexual spores (the powdery growth) easily dispersed by wind that allow it to spread widely. The pathogen can also produce a sexual spore in fall that enables it to survive over the winter. Leaves affected by powdery mildew die prematurely which results in fewer fruit and/or fruit of low quality (poor flavor, sunscald, poor storability).

White powdery mildew colonies appear on the upper and lower sides of cucurbit leaves. Photo by M. McGrath

Powdery mildew is managed with resistant varieties and fungicides. An integrated program with both management tools is the best approach for achieving effective control because the pathogen is adept at evolving new strains resistant to individual tools such as resistant varieties or a specific fungicide. It is more difficult for new pathogen strains to develop when an integrated program is used, and effec-

tive control is more likely. Powdery mildew management programs often needs adjustments as the pathogen and management tools change.

Resistant varieties can be found here: http://vegetablemdonline.ppath.cornell.edu/Tables/TableList.htm

A complete guide to the most current fungicide recommendations is found here: http://vegetablemdonline.ppath.cornell.edu/NewsArticles/Cucurbit%20Powdery%20Mildew%20MGT%202017-NY-McGrath.pdf

Downy Mildew

Similarly to powdery mildew, downy mildew is a common foliar disease in the northeast because the pathogen produces a large quantity of asexual spores that are easily dispersed long distances by wind, which enables it to spread widely. Unlike powdery mildew, there has been no evidence that the pathogen is surviving between growing seasons where winter temperatures kill cucurbit crops (outdoors above the 30th latitude); however, recently both mating types have been found, albeit typically on different cucurbit crop types, meaning that there is the potential for the pathogen to produce sexual oospores that could enable the pathogen to overwinter in the northern U.S. The downy mildew forecasting program has documented movement of the pathogen throughout the eastern U.S. each year via its wind-dispersed asexual spores. The pathogen does not affect fruit directly; however like leaves affected by powdery mildew, leaves affected by downy mildew die prematurely which results in fewer fruit and/or fruit of low quality (poor flavor, sunscald, poor storability).

Gray downy mildew sporulation appears interveinally on foliage. Photo by G. Higgins

The most important component of an effective management program for downy mildew is an effective, properly-timed fungicide program. And the key to that is applying mobile fungicides targeted to the pathogen starting when there is a risk of the pathogen being present. Mobile (or translaminar) fungicides are needed for control on the underside of leaves. Each year, there often are changes to the fungicides recommended for control of downy mildew as the pathogen develops resistance or new products are registered. Because downy mildew is an oomycete and not a true fungus, fungicides that control powdery mildew will not control downy mildew, and vice versa. Additional fungicides must be added to programs when there is a need to manage both downy mildew and fungal diseases, like powdery mildew. Phytophthora blight, also caused by an oomycete, will usually also be controlled by fungicides that are effective for downy mildew.

Resistant varieties can be found here: http://vegetablemdonline.ppath.cornell.edu/Tables/TableList.htm

A complete guide to the most current fungicide recommendations is found here: http://vegetablemdonline.ppath.cornell.edu/NewsArticles/Cucurbit%20Downy%20Mildew%20MGT-NY-2017-McGrath.pdf

Table: Mobile Fungicides for Managing Powdery Mildew, Downy Mildew, and Phytophthora Blight in Cucurbits - 2018

Tank-mix each of the fungicides in the table on the next page with one of the protectants listed below, with the exception of Zing! or Gavel, which are formulated with chlorothalonil or mancozeb. The need for tank-mixing is specified in use directions on many labels.

- **Sulfur***: Very effective, inexpensive product for powdery mildew. Has no efficacy for other diseases.*
- **Oils***: Several botanical and mineral oils are available. Oils are also a good choice for powdery mildew only.*
- **Chlorothalonil** *and* **copper***: Have broad-spectrum activity. Copper is also effective for bacterial diseases.*
- **Mancozeb***: Recommended when only downy mildew is occurring.*

Apply fungicides for a particular disease in alternation to manage resistance and to ensure effective control if resistance develops. The maximum number of consecutive sprays for a given product can be found in the use directions on many labels; typically 1 or 2 consecutive spray maximum.

Previcur Flex, QoI fungicides (including Amistar, Cabrio, Quadris, and Flint), and Ridomil fungicides are not recommended due to resistance.

Fungicide	FRAC Code	Diseases	Recommended Rate/A (labeled)	REI	PHI	Seasonal Limits
Vivando	U6	Powdery mildew	15 fl oz	12 h	0 d	3 sprays
Quintec [b, c]	13	Powdery mildew	6 fl oz (4-6)	12 h	3 d	24 fl oz
Luna Experience*	7 + 3	Powdery mildew	10-17 fl oz (6-17)	12 h	0 d	34 fl oz
Proline [c]	3	Powdery mildew	5.7 fl oz	12 h	7 d	2 sprays
Procure [c]	3	Powdery mildew	8 fl oz (4-8)	12 h	0 d	40 fl oz
Torino [a]	U8	Powdery mildew	3.4 oz	4 h	0 d	2 sprays
Endura [c]	7	Powdery mildew	6.5 oz	12 h	0 d	4 sprays
Orondis Ultra [i]	49+40	Blight, Downy mildew	5.5 - 8.0 fl oz	12 h	0 d	4 sprays or 33% of applica-tions
Orondis Opti [i]	49+M5	Downy mildew	1.75 – 2.5 pt	12 h	0 d	
Orondis Gold [i]	49	Blight	2.4 - 19.2 fl oz	12 h	0 d	
Ranman [a, d]	21	Blight, Downy mildew	2.75 fl oz (2.1-2.75)	12 h	0 d	6 sprays
Omega [e]	29	Blight, Downy mildew	0.75 – 1.5 pt	12 h	7/30	4-7 sprays
Zampro *	40+45	Blight, Downy mildew	14 fl oz	12 h	0 d	3 sprays
Gavel	22+M3	Blight, Downy mildew	1.5 – 2 lb	48 hr	5 d	8 sprays
Forum	40	Blight, Downy mildew	6 fl oz	12 h	0 d	5 sprays
Revus [a, c]	40	Blight, Downy mildew (low efficacy DM cucum-ber)	8 fl oz	12 h	0 d	4 sprays (32 fl oz)
K-Phite, etc.[f]	33	Blight, Downy mildew	2.5 – 5 pt	4 h	0 d	7 sprays
Tanos [h]	27+11	Blight, Downy mildew	8 oz	12 h	3 d	4 sprays
Presidio [g]	43	Blight, (Not recommended now for DM due to resis-tance)	4 fl oz (3 – 4)	12 h	2 d	2 sprays (new label)
Zing!	22+M5	Downy mildew	36 fl oz	12 h	0 d	8 sprays
Curzate [h]	27	Downy mildew	3.2 oz	12 h	3 d	9 sprays

Originally published online: http://vegetablemdonline.ppath.cornell.edu/NewsArticles/Cucurbit%20Fungicide%20List%202018-NY.pdf

[*]Luna Experience and Zampro are NOT permitted for use on Long Island.

[a]Organosilicone and/or non-ionic surfactant required (Revus) or recommended.

[b]Quintec is labeled for use on non-edible-peel cucurbits (melon, pumpkin, winter squash, gourd). 10-14 day spray interval.

[c]Limited use recommended because resistance could affect efficacy especially when applied often. No more than one application of Endura or Torino recommended. Pristine not recommended now that Endura is labeled on cucurbits.

[d]Rate range applies for downy mildew; high rate for Phytophthora blight.

[e]PHI is 30 days for cucumbers and melons, 7 days for other crops.

[f]*Other phosphorous acid fungicides include ProPhyt and Fosphite. Rate and seasonal limits vary a little among products. Recommended tank mixed with other fungicides. Note that there are also phosphate fertilizers, which are not fungicides.*

[g] *Presidio cannot be applied more than 2 times per season, and applications cannot be consecutive. Plant-back restriction for most non-labeled crops is 18 months.*

[h]*Short residual; apply another fungicide within 5 days.*

[i]*Make no more than 2 consecutive applications of any before rotating to a different fungicide. When at least 3 applications, Orondis fungicides can be no more than 33% of the applications, or a maximum of 4 applications per planting, whichever is fewer. Orondis Opti is labeled for several other diseases because it contains chlorothalonil. It is only recommended used for these diseases when downy mildew is also present. Orondis Gold 200 is labeled for application to soil for Phytophthora blight. Its use in a crop prohibits foliar application of Orondis fungicides for downy mildew.*

Events

Twilight Meeting Summer Series

This series of Twilight meetings is an opportunity to learn from fellow farmers and find out what's new in Extension research. A light meal will be provided at each program.

Fruit and Vegetable Twilight Meeting

Featuring: Carl Hills and Kimball Fruit Farm's hydroponic tomato greenhouse.
George Hamilton, UNH Extension, will demonstrate and discuss proper boom sprayer calibration for fruit and vegetable crops.

Sonia Schloemann, UMass Extension, will provide an update on managing spotted wing drosophila.

**1.5 Pesticide recertification credits have been approved for this meeting

When: Monday, June 25th, 2018 from 4:00 pm to 7:00 pm

Where: Kimball Fruit Farm, 184 Hollis St. Pepperell, MA 01463

CLICK HERE TO REGISTER: https://www.surveymonkey.com/r/MDYZCFP

Click here to request special accommodations for this event.

Organic Weed Management

Featuring: Langwater's Kevin O'Dwyer and their flame weeder and leaf mulching techniques. Invited presenters include: Katie Ghantous (UMass Vegetable Weed Technician) with a vinegar weed injector, on-farm trial and information on weed ecology; Sonja Birthisel (UMaine PhD candidate studying Weed Management) with results of her research using occulation and solarization, and farmer Tyson Neukirch with his experiences using silage tarps in a reduced tillage system for weed management.

When: Tuesday, July 24th, 2018 from 4:00 pm to 7:00 pm

Where: Langwater Farm, 209 Washington St., North Easton, MA 02356

CLICK HERE TO REGISTER: https://www.surveymonkey.com/r/X9WLFYS

Click here to request special accommodations for this event.

UMass Extension Vegetable Program Research Tour and Round Table

Featuring: Sue Scheufele's research on cucurbit downy mildew resistance, pollinator protection in butternut squash, effects of different mulches on broccoli pests, and natural predators of cabbage aphid. Also, Madelaine Bartlett's research on corn genetics and the importance of genetics in crop development and improvement, Omid Zandvakili's research on lettuce nutrition, Kelly Allen's research on Fusarium wilt of basil, presentations on pollinators & agriculture and solar & agriculture, and more! Research presentations will be followed by dinner and a round table discussion.

When: Tuesday, August 14th, 2018 from 4:00 PM to 7:00 PM (Rain date: August 16th)

Where: UMass Crop and Animal Research and Education Farm, 89-91 River Rd., South Deerfield, MA 01373

CLICK HERE TO REGISTER: https://www.surveymonkey.com/r/X3JYR55

Click here to request special accommodations for this event.

Reduced Tillage and Transplanters for Vegetable Farmers

Featuring: Farmer Jim Ward and his reduced till vegetable cropping systems which he has practiced for over 10 years with the help of an Unverferth Deep Zone Tiller, Davidian Farm's two-row Monosem vacuum precision planter mounted with Dawn Biologic roller crimpers (first ones in the state!), the UMass Research Farm's grain drill and roller crimper, and Brookdale Fruit Farm's new line of no-till transplanters from Checchi-Magli. There will also be demonstrations on Soil Health with Maggie Payne, Soil Scientist at NRCS.

When: Tuesday, August 28th, 2018 from 4:00 PM to 7:00 PM

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

CLICK HERE TO REGISTER: https://www.surveymonkey.com/r/XF8JQYD

Click here to request special accommodations for this event.

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Vegetable Notes. Katie Campbell-Nelson, Genevieve Higgins, Lisa McKeag, Susan Scheufele, co-editors.