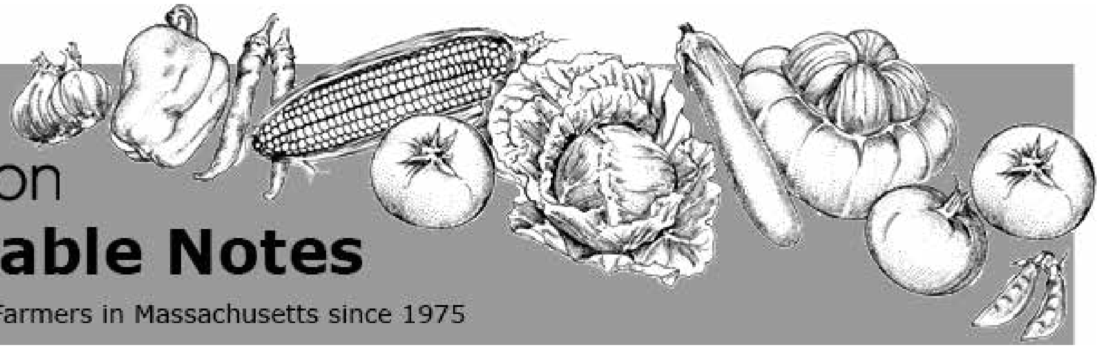
UMass Extension
Vegetable Notes
For Vegetable Farmers in Massachusetts since 1975



Volume 29, Number 16 July 27, 2017

In this issue:

Crop conditions

Crop conditions this week comes from conversations with two growers:

1) A diversified wholesale grower in western Massachusetts who grows both conventional and certified organic crops on 180 acres: "Cool season crops are doing well this year. Warm season crops are very erratic. Crops planted in June are doing better (bigger and healthier) than those planted in May. Herbicide damage is widespread and slow to grow out this season. Poor seed germination was seen in the field this year. Crops with similar germination rates published on the packet did not perform the same under our sporadic germination conditions in the field this year. Some seed is clearly more tolerant to rough conditions despite published germination rates. We will see huge gluts and huge shortages this season. Crops that performed well did so on most farms due to favorable weather conditions at the time of crop establishment, however there will be entire successions of crops like sweet corn, summer squash/zucchini, cucumber, and peppers that will fail to yield much."

Adrienne Shelton of Vitalis Organic Seeds inspects rootstock grown at the UMass research farm. Photo K. Campbell-Nelson

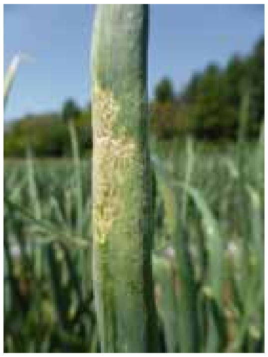
2) A diversified retail and CSA farm in eastern Massachusetts who grows in high tunnels and on about 8 acres said that in a cold wet week following last week's heat, it is easy to forget that we may be seeing heat damage in crops at this time. Two high tunnels in different parts of the state last week had severe scorching in multiple crops after their automatic sides malfunctioned. The effects of the heat damage in tomato may continue to show over a period of several weeks such as aborted flowers, leaf curl, sunscald or uneven fruit ripening. The article 'Heat Effects on Vegetable and Fruit Crops' by Gordon Johnson at the University of Delaware explains that "the plant temperature at which tissue dies is around 115°F", which easily happens in a high tunnel. On another note, this farmer is experimenting with Weed Guard Plus, an organically approved biodegradable mulch, which they are having mixed feelings about. The mulch is certainly biodegradable! (in some cases breaking down mid-season). Once the wind catches a piece of it, a whole row can easily blow off. Also, the mulch is perhaps more effective in non-rocky "perfect soils" (not common in eastern MA) where it can be laid without catching rocks and tearing. They have found the mulch to be beneficial for widely spaced warm season crops. On another farm, this mulch is used as a base layer in low to no-till situations; laid on the ground surface with compost on top.

Pest alerts

Alliums

Purple blotch on onion. Photo: UMass Vegetable Program

Purple blotch has been confirmed in onion fields in Bristol and Franklin Cos., MA. This common fungal disease first appears as small, water-soaked lesions that quickly develop white centers. As lesions age, the lesions turn brown to purple, surrounded by a zone of yellow. Lesions can coalesce, girdle the leaf, and cause tip dieback. Occasionally, bulbs are infected



Allium downy mildew. Photo: K. Campbell-Nelson

through the neck or wounds on the scales. Purple blotch can defoliate the onion crop prematurely, compromise bulb quality and can result in storage rot caused by secondary bacterial pathogens. The purple blotch pathogen can overwinter as fungal threads (mycelium) in onion debris. See New England Vegetable Management Guide for fungicide options.

Downy mildew has also been confirmed in Bristol Co., MA. It first infects older leaves, occurring as pale, elongated patches that may have a grayish-violet fuzzy growth appear early in the morning during moist periods. Infected leaves become pale green then yellow and can fold over and collapse. Lesions can be violet-purple in color; affected leaves become pale green then yellow and can fold over and collapse. Unlike other downy mildews this one can produce oospores in crop residue which survive for about 5 years in soil. See New England Vegetable Management Guide for fungicide options.

Garlic common latent virus was confirmed on two farms in MA that had planted seed from different sources and from their own saved seed. The virus usually does not cause symptoms unless environmental conditions are favorable and plants are under some stress—one grower found symptoms only in areas where straw had blown off during the winter. Symptoms may include yellow streaking, stunting, excessive sprouting, and leaf deformation.

Table 1. Accumulated Growing Degree Days: 1/1/17 - 7/26/17

Location	GDD (base 50°F)
Western, MA	
Amherst	1397
Westfield	1493
South Deerfield	1363
Central, MA	
Leominster	1422
Stow	1509
Eastern, MA	
Sharon	1492
Seekonk	1492
Ipswich	1335
Falmouth	1282
Hollis, NH	1396
Burlington, VT	1431
Newport, RI	1304
Castleton, NY	1531

Beets, Spinach, Swiss Chard

Cercospora leaf spot is being reported widely on these crops as well as on amaranth. High temperatures, high humidity, and long leaf wetness periods (overnight dew) provide favorable conditions. Leafy greens become unmarketable, and beet roots fail to grow to full size when disease is severe. See the leaf blights section of the New England Vegetable Management beet section for fungicide recommendations.

Brassicas

Cabbage aphids are being found now on brassica crops across MA. Treat Brussels sprouts, broccoli, cabbage and cauliflower if greater than 10% of the plants are infested with aphids anytime after heads or sprouts begin to form. See the New England Vegetable Management Guide for labeled insecticides. A study at UNH showed good control of cabbage aphids in organic Brussels sprouts using a weekly scouting protocol and alternating applications of M-Pede and Azera.

Swede midge is active in several counties in VT and in northern NH but has not been found elsewhere in New England. This new and invasive pest can cause serious damage to all cultivated brassicas, as larvae feed on and disfigure or destroy the growing tip of the plant. For details on identifying damage and finding midges check out this Cornell University factsheet.

Swede midge larvae and damage on red cabbage.

Cucurbits

Downy mildew continues to spread across western NY and PA but has not been confirmed yet in New England. The disease is predicted to spread to southern New England with storms occurring today and tomorrow. Protective fungicide applications should be made now, especially to cucumber and cantaloupe fields.

Plectosporium blight was confirmed on zucchini in Franklin Co., MA this week. The fungus overwinters in crop residue in soil and in warm, wet weather causes small, white, lens-shaped lesions on leaves, petioles, and fruit causing reductions in yield and marketability of fruit. Strobilurin fungicides (Group 11), Inspire Super, and mancozeb are labeled for control of this disease. A two year rotation is recommended.

Plectosporium on zucchini stems.

Phytophthora blight is being reported around New England in fields where it is endemic. Warm wet weather and saturated soil favor spread of this soil-borne disease, which causes whole crowns to collapse. *Phytophthora capsici* can affect all cucurbits, peppers, tomato and eggplant. Avoid introducing this pathogen into uninfested fields or spreading it across the farm—work in clean fields first, wash equipment and boots after working in infested fields. Management should focus on improving soil structure and crop rotation but fungicides can be helpful, see the New England Vegetable Management Guide for recommendations.

Table 2. Sweetcorn Pest Trap Captures for 7/19/17 - 7/26/17

Location	ECB	FAW	CEW	Spray Interval for CEW
Western, MA				
Sheffield	1	-	4	*5 days*
Whately	-	-	-	-
Central, MA				
Leominster	4	-	7	*5 days*
Lancaster	2	2	3	*6 days*
Northbridge	0	2	2	*6 days*
Eastern, MA				
Concord	0	2	2	*6 days*
Ipswich	2	5	3	*6 days*
Millis	0	-	4	*5 days*
Sharon	0	-	9	*4 days*
Swansea	2	-	12	*4 days*
Seekonk	0	-	12	*4 days*
NH				
Litchfield	0	2	7	*4 days*
Hollis	0	8	2	*6 days*
Mason	0	2	2	*6 days*
Washington County, NY	0	0	2	*6 days*
Albany, NY	2	0	2	*6 days*

European corn borer (ECB), Fall armyworm (FAW), Corn earworm (CEW)

Sweet Corn

European corn borer moth activity remains low (see table 2 for corn pest trap captures), as the second generation flight has just begun (at 1,400 GDD base 50F, see table 1) or has not yet begun in MA. In addition to sweet corn, peppers may also be affected by this second generation so some of you may want to setup traps in your pepper fields as well.

Corn earworm: Many locations across MA are at 4-6 day spray intervals for this pest. More are expected to arrive from the south with continued storms, but read article in this issue on the importance of monitoring for CEW on your own farm to help make management decisions.

Fall armyworm moths are still being captured in low numbers in MA and NH. It is time to scout fields for this pest and treat if there is a 15% infestation.

Multiple

Potato leafhoppers are truly terrible this year. Many reports of mysterious disease or nutrient deficiencies have ended up being hopperburn on crops like bean, eggplant, potato, raspberries, apples and cantaloupes. Keep up with spraying to maintain plant health especially on young successions. Leafhoppers can reduce yield in multiple crops by limiting the plant's photosynthetic ability.

Spotted Wing Drosophila numbers have increased rapidly and are very high across New England. It is very important for all fruit growers to take this pest seriously this year. It was earlier by 2 weeks than in previous years. This means 2 things, 1) a head start on population buildup so that late season fruit will have higher pressure than in past years, and 2) some early ripening crops have been hit for the first time this year, notably Cherries and Strawberries.

WHAT WILL HAPPEN IN 2017 WITH THE SWEET CORN INSECT PESTS?

We have three major insect pests of sweet corn in New England and we are monitoring a fourth insect that could cause damage in the future:

European corn borer (ECB), corn earworm (CEW), and fall armyworm (FAW) are the three most common sweet corn pests in New England. The new insect that can potentially become a pest is the western bean cutworm (WBC). Occasionally we have problems with other insect pests such as cutworms, common stalk borer, common armyworm (a different species from fall armyworm), or sap beetles. These insects vary in numbers and timing of entering into sweet corn fields.

European corn borer is the most predictable of the three major species since there is a Growing Degree Day model for its life stages (see Fig 1). There are generally two generations per year of ECB, though the second generation has been virtually unnoticeable in the past several years. The first generation occurs from late May to early July. The second generations occurs from mid July to September. In southern New Hampshire the two periods of moth flight are separated by 10 to 14 days (usually about mid-July to the first of August) when very few or no ECB moths fly. Insecticide resistance for this pest can and should be managed locally by rotating to different classes with each application because ECB overwinters in nearby field edges.

Development Stage	GDD Base 50F
First Generation	
First spring moths	374
First eggs	450
Peak spring moths	631
First generation treatment period	800-1000
Second Generation	
First summer moths	1400
First eggs	1450
First egg hatch	1550
Peak summer moths	1733
Second generation treatment period	1550-2100

Figure 1. *European corn borer (bivoltine) development estimated using a modified base 50F degree day calculation.*
J. W. Apple, Department of Entomology, University of Wisconsin-Madison

Corn earworm and fall armyworm do not survive New England winters, and re-invade from the south each year. Frontal systems coming from the south frequently carry many thousands of CEW or FAW moths here. The numbers can drastically change overnight, so monitoring is very helpful. Since these insects are blown in, each frontal system that comes through New England has the potential to introduce more CEW and FAW moths. There are very effective pheromone traps available and growers can monitor these insects in their own fields.

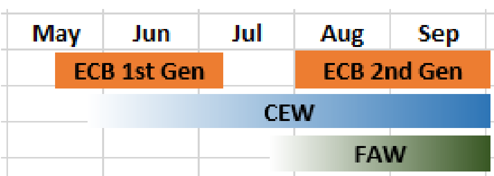


Figure 2. *Timeline of relative activity of corn pests in the Northeast*

The adults of all three of these pests are moths. Economic damage to corn is caused by the larvae (caterpillars or worms) of these moths. Due to differences in the larval feeding habits of each species, management decisions are based on different monitoring techniques. Feeding damage from corn earworm usually remains hidden within the ear and is difficult to find when scouting a field. For this reason, we determine the need for CEW controls using the average number of moths caught in pheromone traps.

In contrast, damage from FAW and ECB is readily visible on corn leaves, stalks, ears and tassels. Pheromone traps for these two pests alert us to the presence of adult moths and signal the need for field scouting. You can monitor their field density, and make accurate pest management decisions by learning to identify FAW and ECB feeding (see photos, right).

FAW moths migrate from the south each year, usually arriving in late July or August. The larvae are voracious feeders. FAW feeding damage cause large, ragged holes in leaves, and the FAW frass is described as being like wet, messy sawdust. Large populations may kill or stunt young corn plants.

The first generation of ECB larvae can be found feeding on developing leaves in the whorl. When these leaves unroll, the characteristic 'shot hole' injury is seen. European corn borer larvae also tunnel into the tassel as it grows out of the whorl resulting in holes in the stalk with dried pale powdery excrement

ECB feeding in whorl.
Photo Ontario Crop IPM

FAW frass and feeding damage.
Photo UMass Veg Program

and broken tassels. Both larvae of fall armyworm and European corn borer may also invade the ear itself. ECB numbers have really dropped in recent years, and identification of ECB moths in traps is challenging. Therefore, field scouting is recommended before making an insecticide application.

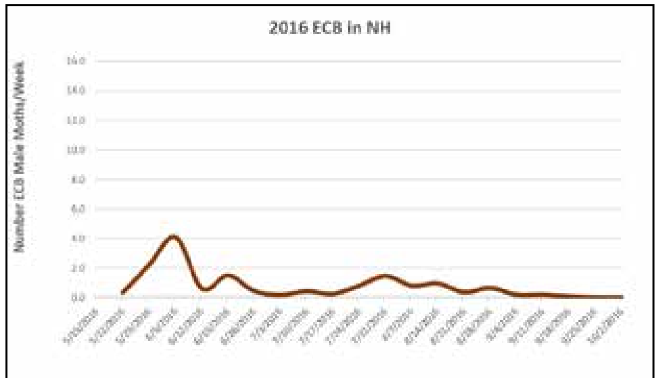


Figure 3. 2016 ECB trap captures in NH

At present, western bean cutworm (WBC) trap counts have been very low in New England. We need to keep monitoring the population to determine if widespread trapping efforts are needed.

By having traps on your farm, you can monitor the actual insect numbers in the traps to determine if a spray is needed, and for CEW, trapping numbers will determine how often you need to spray. The differences in the numbers of insects caught between farms that are only a few miles apart is remarkable. Many times growers/farmers are caught off guard by the amount of damage insects have caused, when relying on trapping information from traps on a farm across town or elsewhere in the state.

What happened in 2016?

During the 2016 growing season, we saw a definite first generation for ECB, but the second generation was non-existent (see figure 3)

FAW was over threshold by the week of July 24 and stayed over the threshold of 3 moths per week until we removed the traps during the week of September 25 (see figure 4). In 2016, FAW was the driving force determining when to spray sweet corn fields

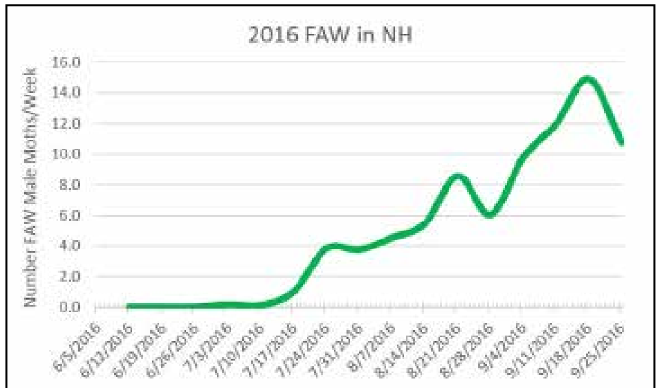


Figure 4. 2016 FAW trap captures in NH

CEW trap captures were very low all season (see figure 5). This correlates with the fact that we had a drought and therefore, very few storms during the 2016 growing season to blow this insect in from the southern states. The few storms we had came more from a westerly direction which is where most of the FAW came in from.

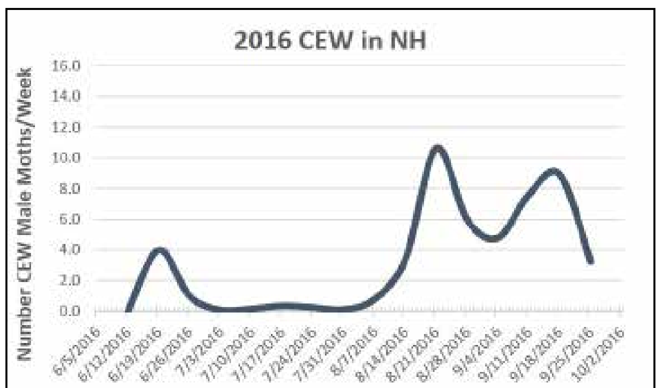


Figure 5. 2016 CEW trap captures in NH

Therefore, without IPM traps in your sweet corn fields, and scouting your sweet corn plants, you are only guessing if you should or should not spray, and how often should you spray.

Who knows what will happen in 2017? So, trap and monitor!

Resources for trapping and monitoring may be found here:

Sweet Corn IPM Scouting Guide & Record Keeping Book: https://ag.umass.edu/vegetable/publications/guides/sweet-corn-ipm-scouting-guide-record-keeping-book

--by Alan Eaton and George Hamilton, UNH Cooperative Extension

About Phosphorus Acid (PA) Fungicides

What are they? Phosphorous acid (PA) fungicides, also referred to as phosphite or phosphonate fungicides, are effective in controlling plant diseases caused by oomycetes such as downy mildews, and species of *Pythium* and *Phytophthora*. They have targeted activity against oomycetes since these organisms contain phosphonate in their cells (fungi and bacteria do not), and have a unique mode of action which directly inhibits growth and development of oomycetes, and may also trigger plant immune response. Because of their broad activity against oomycetes the potential for rapid resistance development is not as strong as with some other oomycete-specific, systemic fungicides, and therefore are great tools to use in rotations with other materials. Furthermore, PA fungicides are systemic within the plant, and unlike most other systemic fungicides, they can be transported by both the xylem and phloem, and therefore can move up and down in the plant. Because of this they are very useful in controlling soil-borne diseases e.g. damping off caused by *Pythium* spp. And Phytophthora blight caused by *P. capsici*. Another benefit is that because of their low toxicity, PA fungicides are considered biorational, though they are not approved for use in organic systems.

Consider using phosphorous acid fungicides through drip lines to control Phytophthora blightt in peppers (above). Photo R. Hazzard.

How do they work? PA fungicides interfere with phosphorous metabolism in oomycetes by diverting ATP (chemical energy) from other metabolic pathways, resulting in decreased growth, and by inhibiting function of certain enzymes involved in growth and development. The active ingredient in PA fungicides may seem confusing, often going by different names, but basically when phosphonic acid is neutralized with an alkali salt such as potassium hydroxide (KOH), salts of phosphorous acid are produced (trade names include Fosphite, Prophyt, and K-Phite). Alternatively, phosphonic acid can be neutralized with ethanol and aluminum to form fosetyl-Al (trade name Aliette). This is how you get different active ingredients within the PA fungicides group, FRAC Group 33. All of these materials release phosphite when mixed with water, and it is this phosphite (HPO32-) that does the work. Phosphite ions interfere with phosphate metabolism in the oomycete, diverting chemical energy from other metabolic pathways and reducing growth. Phosphite ions have also been found to inhibit several key enzymes needed for growth and development in *Phytophthora* spp.

PA products should not be confused with phosphate or phosphonate fertilizers. Despite the similarities, these compounds behave very differently in plant tissues. Phosphate (PO4-) is the main source of phosphorus nutrition for plants. Phosphate is not a natural breakdown product of phosphorus acid, nor is phosphorus acid or phosphite transformed into phosphate within plants. Some soil microbes can transform phosphite into phosphate, but this process is very slow and its effects are negligible on crop nutrition. PA products, therefore, do not provide plants with phosphorus in a form that can be utilized as a nutrient.

Using PA Fungicides.

Always read product labels thoroughly and follow label directions.

PA fungicides are extremely useful tools in managing development of resistance to targeted, oomycete-specific, systemic fungicides for which resistance development can be rapid. Because of the broad activity, the risk of resistance development is low for PA fungicides; however, resistance has been reported in some *Phytophthora* species (not *P. capsici* or *P. infestans*) so you do still need to rotate chemistries to prevent development of resistant populations.

Phosphite ions are readily taken up and translocated throughout plants. They are very stable and persistent in plant tissues; for this reason, PA products need to be applied less frequently than many other fungicides.

PA has an average pH of 6-7, so it is only slightly acidic, but it is wise to avoid mixing PA products with copper fungicides, as the acidity increases the potential for copper phytotoxicity to occur. Phytotoxicity may also be a concern when PA products are mixed with sulfur, fertilizers, surfactants, or other pesticides. Test tank mixes on a few plants before spraying an entire crop.

Various studies have shown phosphorus acid fungicides to be effective protectants, but like most fungicides, they are not curative.

For information on fungicides for specific crops, consult the New England Vegetable Management Guide (http://nevegetable.org/crops)

Examples of Effective Use

Phytophthora blight. Some populations of *P. capsici* have become resistant to Ridomil, which was often used to drench plants in the early season, but may not be effective in fields with a long history of treating the disease this way. PA fungicides offer an alternative. Since they work on *Phytophthora* species and can move easily up and down within the plant, they can be used as soil drenches at planting or in the early season, or as foliar sprays once plants vine out or once fruit is present on the ground. Furthermore, they can be used in drip irrigation systems for row crops like peppers which are also very susceptible to Phytophthora blight.

Basil downy mildew. PA fungicides are some of the more effective materials available to control basil downy mildew. Again, because the material can move within the plant, the lower leaf surfaces where sporulation occurs will be well protected. PA fungicides have very low toxicity and are considered biorational, and have no pre-harvest interval.

--by Angie Madeiras and Susan B. Scheufele, UMass

PROTECTING HONEYBEES AND NATIVE POLLINATORS

Honeybees and native pollinators visit vegetable crops during flowering and pollen shed. In fruiting crops such as cucurbits, their activity is crucial to the success of the crop. In other crops such as sweet corn or potato, bees are among many beneficial insects who seek out pollen or nectar resources as a food source, but crop yield does not depend upon their activity. Populations of honeybees and native pollinators have declined worldwide in recent years. Current research on the honeybee and native pollinator decline point to a combination of causal factors such as parasites, disease, low genetic diversity, poor nutrition, loss of habitat, management stress and pesticide use. This article addresses the threat of pesticide use on pollinator decline and how to mitigate these threats by reducing pesticide exposure. Pesticides applied to protect vegetable crops can affect pollinators through multiple routes of exposure: direct contact with sprays, contact with treated surfaces, pesticide-contaminated dust or pollen particles that are collected or adhere to the body of the insect (and may be taken back to hive), and ingestion of pesticide-contaminated nectar. Decisions made by the farmer make a difference in the exposure of honeybees, native pollinators and other beneficials to toxic levels of pesticides. While pesticides applied to crops are only one among many factors that threaten pollinators, this is one factor that growers can do something about. Taking precautions to minimize pesticide poisoning of pollinators in all crops is an important responsibility of all pesticide applicators.

Tips to Protect Pollinators from Pesticide Exposure[1]

Do not treat plants in bloom. In crops that bloom over long periods, make applications late in the day or at night when pollinators are not foraging, so that there is sufficient drying time before foraging begins. Control weeds to keep pollinators from foraging near treated crops.

Consider drying time and weather conditions before exposure. Some products are highly toxic when wet, but much less so after the pesticide is dried. Spinosyns have this characteristic. Apply when there will be adequate drying time (usually 2-3 hours, depending on weather conditions and crop canopy) before pollinator activity. Honey bees can become active and forage at temperatures as low as 55F. If temperatures following treatment are unusually low, residues on the crop may remain toxic to bees up to twenty times as long as following normal temperatures. Conversely, if abnormally high temperatures occur during late evening or early morning, bees may forage actively on the treated crops during these times. Stop spray applications when temperatures rise and bees begin foraging.

Avoid drift on non-target areas near the field where blooming plants may be located. Windspeed and application equipment both influence drift.

Use liquid rather than powdered formulations. Wettable powders, dusts and microencapsulated products have a greater toxic hazard than emulsifiable concentrates (or other liquid formulation with active ingredient in solution). Products that do not have acute toxicity but could cause injury to immature bees if carried back to the hive should not be applied in particulate form; this includes insect growth regulators.

Make use of some soil and seed applications, which reduce exposure compared to foliar applications, unless plant uptake of the active ingredient produces residues in pollen or nectar. In the case of neonicotinoids, there is evidence that foraging bees may receive sub-lethal doses in pollen and nectar when cucurbit crops were treated with a systemic at early growth stages. This effect appears to be reduced by using lower rates and applying as early as possible, but may not be entirely eliminated by these methods. A sub-lethal dose may make bees more vulnerable to other stressors, or may combine with doses from contact with other treated plant material.

Read the label for bee hazard rating. The U.S. EPA recently introduced a label change for insecticides that contain one or more of the neonicotinoids to protect bees. The bee icon (see below) will be placed in the Environmental Hazards section of the pesticide label.

Use the least toxic pesticide. See Table 27 in the New England Vegetable Management Guide for information on insecticide active ingredients and toxicity. EPA registration includes an acute, single-dose laboratory study designed to determine the quantity of pesticide that will cause 50% mortality (LD50) in a test population of bees. If a pesticide is used outdoors as a foliar application, and is toxic to pollinating insects, a **"Bee Hazard" warning** can be found in the Environmental Hazards section of the label. The EPA bee toxicity groupings and label statements are as follows:

- **High (H):** Bee acute toxicity rating: LD50 = 2 micrograms/bee or less. The label has the following statement: "This product is highly toxic to bees and other pollinating insects exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees or other pollinating insects are visiting the treatment area." If the residues phrase is not present, this indicates that the pesticide does not show extended residual toxicity.
- **Moderate (M):** Product contains any active ingredient(s) with acute LD50 of greater than 2 micrograms/bee, but less than 11 micrograms/bee. Statement: "This product is moderately toxic to bees and other pollinating insects exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product if bees or other pollinating insects are visiting the treatment area."
- **Low (L):** All others. No bee or pollinating insect caution required.

In The New England Management Guide, the bee toxicity rating (H, M or L) is listed for each active ingredient in the Insect Management section for each crop.

Resources:

- How to Reduce Bee Poisoning From Pesticides. 2006. Oregon State University. http://www.cdfa.ca.gov/files/pdf/ReduceBeePesticideEffects.pdf
- Pesticide Environmental Stewardship – Pollinator Protection. https://pesticidestewardship.org/pollinator-protection/
- Pesticide Task Force of the North American Pollinator Protection Campaign (NAPPC) www.Pollinator.org/nappc
- Pollinator Protection - EPA Actions to Protect Pollinators. https://www.epa.gov/pollinator-protection/epa-actions-protect-pollinators
- The Xerces Society for Invertebrate Conservation. http://www.xerces.org/pollinator-conservation/
- USDA Report on the National Stakeholder Conference on Honey Bee Health, National Honey Bee Health Stakeholder Conference Steering Committee. 2013. http://www.usda.gov/documents/ReportHoneyBeeHealth.pdf

[1]*Tips to Protect Bees from Pesticide Poisoning adapted from 2014-2015 New England Vegetable Management Guide and 2014 Supplement, Core Training Manual, Pollinator Chapter by Dr. Patricia Vittum and Natalia Clifton, UMass Extension.*

Disclaimer -The most reliable information was included that was available at time this information was compiled. Due to constantly changing laws and regulations, UMass Extension can assume no liability for recommendations. The pesticide user is always responsible for the effects of pesticide residues on their own crops, as well as problems caused by drift from their property to other properties or crops. Always read and follow all instructions on the label.

--Adapted from Ruth Hazzard, New England Vegtable Management Guide and Tina Smith, UMass Extension

Events

Massachusetts Tomato Contest to be held on Tuesday, August 22nd

When: Tuesday, August 22nd

Where: Boston Public Market Demonstration Kitchen, 100 Hanover Street, Boston, MA

The 33rd Annual Massachusetts Tomato Contest will be held in the KITCHEN at the Boston Public Market on Tuesday, August 22nd . Tomatoes will be judged by a panel of experts on flavor, firmness/slicing quality, exterior color and shape. Always a lively and fun event, the day is designed to increase awareness of locally grown produce.

Farmers who want to submit entries can bring tomatoes to the market between 9:00 am and 10:45 am on August 22nd or drop their entries off with a registration form to one of the drop off locations on August 21st. Drop off locations include sites in Amherst, Northboro and Waltham. These tomatoes will be brought in to Boston on Tuesday by a DAR staff member.

For the complete details, including drop off locations, contest criteria and a registration form, click here.

The 33rd Annual 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 and The Trustees.

Massachusetts No-Till Conference 2017: Dairy and Vegetables

When: Monday, October 30, 2017 - 9:00am to 3:00pm

Where: Carter and Stevens Farm, 500 West Street, Barre, MA 01005

Topics will include:

- Why no-till works! (*Kate Parsons, NRCS Resource Conservationist*)
- Nutrient management in No-till systems(*Tom Morris, UConn Plant Science Professor*)
- Pest and Disease Management for No-Till (*Katie Campbell-Nelson, UMass Extension Vegetable Program*)
- No-Till Planter Demo
- Cover crops
- Farmer Presentations

To register contact: Lisa.trotto@ma.usda.gov

Sponsored by the USDA Natural Resources Conservation Service (NRCS), Massachusetts Association of Conservation Districts, and Worcester County Conservation District, UMass Extension, and Sustainable Agriculture Research and Education (SARE)

THANK YOU TO OUR SPONSORS

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

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