UMASS EXTENSION

Vegetable Notes

For Vegetable Farmers in Massachusetts

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CROP CONDITIONS

Rainfall was highly localized, leaving some farms nicely watered and others very dry. Hail caused damage in some locations. Some of the 'dreaded diseases' such as late blight, downy mildew of cucurbits, and Phytophthora capsici have not been reported so far in this state, but growers should be on the lookout for them. Powdery mildew is moving into winter squash as well as summer squashes; squash bug eggs are hatching into the small grey nymphs; cucurbit fruit set has benefitted from steady. Flea beetles are munching on their favorite host (eggplant or brassicas), spider mites are being found in eggplant, and the first fall armyworms are showing up in corn. Meanwhile growers are working hard harvesting great quality midsummer produce, keeping on top of weeds, diseases, insects, and water, and making sure their fall crops are underway. Weeds seem to have been especially vigorous this past month. If your tomatoes are looking good, consider sending a few to Boston to compete in the 27th annual Massachusetts tomato contest and help to highlight our high quality, locally grown tomatoes. Getting cover crops into fields as quickly as possible after harvest is completed is worth the extra effort, see cover crops article below.

LATE BLIGHT MOVING CLOSER – KEEP SCOUTING AND PROTECT YOUR CROP

Regional Update. On August 3, late blight was confirmed in a home garden in northwestern Vermont near Burlington. Other new reports of late blight this past week were on potato in Maryland, New Brunswick, and Prince Edward Island. Additional new locations were found on Long Island in unsprayed tomato in gardens and in conventionally managed potato during the past two weeks. Symptoms observed on Long Island resembled drought stress more than late blight, perhaps reflecting the unfavorable conditions for disease development. Images plus additional information have been posted at http://www.hort.cornell.edu/lateblight under 'Symptoms seen during heat wave' near the bottom of the page. Locations can also be

Cumulative GDD starting Jan 1, 2001. Base 40 and 50 ºF						
Base temp 40 ºF is for maggot flies; base temp 50 ºF is for most other insects.						
Cumulative GDD are higher when base temp is 40 ºF.						
Date	Location	Date	Location	Rainfall 7 days (inches)	7-day SV	SV -Season total
4-Aug	Pittsfield	4-Aug	Pittsfield	0.2	8	67
4-Aug	Ashfield	4-Aug	Ashfield	0.5	7	88
4-Aug	S Deerfield	4-Aug	S Deerfield	0.2	3	66
4-Aug	Dracut	4-Aug	Dracut	0.0	3	51
4-Aug	Tyngsboro	4-Aug	Tyngsboro	0.7	9	60
4-Aug	Bolton	4-Aug	Bolton	0.5	5	69
4-Aug	E Bridgewater	4-Aug	E Bridgewater	0.0	8	80
4-Aug	New Bedford	4-Aug	New Bedford	0.5	3	53
Weather data from NEWA, other New England locations are available						
http://newa.cornell.edu/index.php?page=degree-days						
SV= Severity Value, based on BLITECAST						

Table 1. Late Blight Severity Values for Week Ending August 4

	Hours of RH > 90%						
Average Temp. Range F*	0-9	10-12	13-15	16-18	19-21	22-24	25 +
45-53	0	0	0	1	2	3	4
52-59	0	0	1	2	3	4	4
59-80	0	1	2	3	4	4	4
Above 80°F No severity values accumulated							

Table 2. Severity Value Accumulation Using Wallin's System of Forecasting Late Blight

viewed on a map at http://www.usablight.org

In Massachusetts, on-farm weather station data indicate relatively favorable conditions for late blight at a number of locations, including those that had rainfall and those that did not. Protective sprays should be continued; Blitecast recommended spray interval remains at 5 days for locations with weekly SV at 6 or higher and at 7 or 10 days with lower weekly SV. See tables, below.

Meanwhile, it is also important to protect tomato and potato from early blight, which is progressing steadily.

What to look for: As the late blight activity steadily moves closer to central New England, scout early and often! Look in shadier, lower areas of the field. The most common symptoms on tomatoes are sunken, dark green or brown to black lesions on leaves and brown to black lesions on stems, with white fungal growth developing under moist conditions. Classic symptoms are large (at least nickel-sized) olive-green to brown spots on leaves with slightly fuzzy white fungal growth on the underside when conditions have been humid (early morning or after rain). Sometimes the lesion border is yellow or has a water-soaked appearance. Brown to blackish lesions also develop on upper stems. Firm, brown spots develop on tomato fruit.

	Total severity values during last 7 days					
	<3	3	4	5	6	>6
Total rain/ irrigation for past 10 days	Spray Interval for late blight control (in number of days)					
>1.2 inches	10-14	10	7	5	5	5
<1.2 inches	10-14	10-14	10	7	5	5

Table 3. Recommended spray intervals based on Severity Values and Rainfall. (from University of Maine Cooperative Extension Potato Program).

Tomato hornworm

Hornworms have arrived in tomato fields. These large caterpillars typically appear in small numbers and cause their impressive feeding damage to just a few leaves or plants. Larvae consume large amounts of foliage on peppers, tomatoes, eggplant, potatoes, and related solanaceous weeds. Now is the time to scout, by searching leaves for damage, frass or larvae. They are very well camouflaged. Often you'll find defoliated stalks or pellet-like dark-green droppings before the caterpillar is located.

This day flying hummingbird moth is in the same family (Sphingidae) as the 5-spotted hawk moth that produces tomato hornworm caterpillars

There is one generation per year in northern areas. The adults are large moths, predominately gray or gray-brown with lighter markings. They are commonly referred to as sphinx, hawk, or hummingbird moths. The adult tomato hornworm (*Manduca quninquemaculata*) is known as the five-spotted hawk moth while the adult tobacco hornworm (*Manduca sexta*) is called the Carolina sphinx. The wingspread may reach five inches and the hairy, robust abdomen has yellow spots. They emerge from over wintered pupae in the soil in late spring or early summer. The moths are commonly seen at dusk, hovering hummingbird-like over beds of petunias and other flowers with long corollas. Nectar is extracted through their long, coiled, tube-like mouthparts.

The spherical greenish-yellow eggs are deposited singly on the undersides of host plant leaves. The eggs hatch in approximately one week and larvae

begin feeding on foliage. Larvae feed for 3-4 weeks, molt five times, and may reach four inches in length and 1/2 inch in width when full grown. Both species are green with a distinct "horn" on the top of the tail end. The sides of the tomato hornworm are marked with a series of white marks resembling a "v" laying on its side and pointing toward the head. The white marks on the sides of the tobacco hornworm form a series of seven diagonal lines. The tip of the tomato hornworm's horn is black while that of the tobacco hornworm's is red.

Full-grown larvae burrow 3-4 inches into the soil and form dark brown, two-inch long pupae. A sheath for the mouthparts projects from the head of the pupa and curves downward, resembling the handle of a pitcher.

What are the white cocoons all over hornworm caterpillars? A parasitic Braconid wasp, *Cotesia congregatus*, is an important and fairly common natural enemy of the hornworms. The wasps lay their eggs inside the body of the caterpillars. After feeding within the caterpillar body, the larvae of the wasps eat out through the skin and spin the cocoons on the caterpillar surface. The adult wasps later cut out circular lids and escape from the cocoons to attack other hornworms. If one is hand-picking hornworms, those with cocoons of parasitic wasps on their back should not be killed.

Cocoons of a parasitic Braconid wasp attached to Tomato Hornworm caterpillars

Controls. There is no set economic threshold for this pest in tomato. Where damage is unacceptable, or if there are high numbers, foliar sprays can be used. Use a selective material that will conserve beneficial insects, because those predators and parasites are very likely keeping your aphid populations under control. Insecticides which are specific for caterpillars include Bacillus thuringiensis (Bt) kurstaki or aizawi strain (Dipel DF, Agree, or Xentari, etc.), indoxycarb (Avaunt), tebufenozide (Confirm 2F), spinosad (Entrust), spinetoram (Radiant), or chlorantraniliprole (Coragen) . Several synthetic pyrethroids are also labeled (note: these could result in aphid outbreaks). Although Bt usually works best on small larvae, in this case it will work very well even against large hornworms. In peppers, any controls used for European corn borer should control hornworms.

-R. Hazzard

LATE SEASON COVER CROPS

Good late season cover crops grow organic matter, scavenge any remaining nitrogen or other nutrients, choke out weeds, and make sure soil will not erode during fall and winter rains. Grains and grasses can provide all of these functions. Legumes can add additional nitrogen. Each has strengths and weaknesses. Below is a list of several good choices, depending on your specific goals and field conditions. Look for more on Brassica cover crops in future issues.

Winter rye is easily the most common cover crop used by growers in Massachusetts, and for good reason. It is inexpensive, easy to get and establish, and can be seeded fairly late into the fall and still take. It consistently overwinters here and will continue to grow in the spring producing lots of organic matter. Planting rye or oat after September 15 dramatically reduces the ability of the roots to reach the available N in the soil and to produce enough canopy to protect soil from erosion. Cover crops planted in August develop larger, deeper roots and more canopy – providing better Nitrogen uptake, less leaching, and more protection of soil from erosion. Seeding rate: 90 – 120 lbs/acre.

Oats can be seeded in the late summer or fall and will come up quickly, similar to winter rye. Unlike winter rye, oats will winterkill here in Massachusetts and will not re-grow in the spring. For this reason some growers prefer it over winter rye since it is easier to manage in the spring. It might have to be lightly incorporated into the soil in order to germinate. To maximize nitrogen provided to the following crop, mix with a legume that will overwinter such as hairy vetch. Enough growth is required in the fall to give adequate cover through the winter and early spring. Try to seed by Sept. 1 or no later than 40 days before killing frost. Growers along the coast can plant later. Make sure the oats have not been cooked (used as an animal feed); cleaned, bin-run seed is fine. Seeding rate: 100 lbs/acre. As a nurse crop for hairy vetch or clover, use 35-75 lb/A.

Ryegrass is used by some growers because of its thick root system that is thought to mop up more nitrogen than winter

rye or oat. There are two types: annual and perennial. Despite their names, the annual ryegrass may overwinter and the perennial ryegrass may winterkill depending on when you seed them. If you have not seeded them before and would like to evaluate them, plant a little of each in order to see their growth habits. These can also be used as cover crops in the early spring. The seed is small and light, so specialized equipment will be needed if seeding a large area. Seeding rate: 5-10 lbs/acre if drilled; 15-30 if broadcast.

Winter Wheat. There is increasing interest in wheat both as a cereal grain and as a cover crop. It is easier to manage in the spring compared to winter rye: it does not grow as tall or mature as quickly as rye so there is no rush to kill it in early spring and risk compacting soils. Wheat is excellent for erosion control, for scavenging N, P and K in fall (takes up N slowly in fall, heavily in spring), suppressing weeds in spring and fall, and building soil organic matter and tilth. In spring, it can be grazed or tilled under. Plant in late summer to early fall, before mid September. Best growth will be in well-drained soils with moderate fertility; wet or heavy soils are tolerated but flooding is not. Rye is a better choice on poor soils. As a cover crop, use 60-120 lbs/A if drilled or 60 to 160 lb if broadcasted. Seed depth should be about ½ to 1.5 inches. Wheat works well as a nurse crop for legumes such as hairy vetch or clover, either fall seeded or frost seeded in spring.

Buckwheat establishes quickly and provides a weed-smothering canopy within two to three weeks. It's one of the best cover crops for filling a short niche during the growing season. It scavenges phosphorus from soil and makes it unavailable to subsequent crops. It does well in poor or worn-out soils and newly tilled land, likes light or sandy soil, but does not grow in wet heavy soils. The dense fibrous roots take up nutrients and leave top soil loose and friable. It is easy to incorporate. If mowed before 25 percent bloom it will re-grow. However, seed matures quickly and can regrow after the buckwheat is tilled in; incorporate mid-bloom if this could be a problem. Pollinators as well as natural enemies of insect pests thrive on the shallow white blossoms. It is frost sensitive and will winter kill. Drill at 50 -70 lb/A, 0.5 to 1.5 inches deep or broadcast at 2 bu (96 lb)/A on a firm seedbed and disk or tine lightly. Broadcast at 60-100 lb/A. If left overwinter, it can provide adequate soil cover with easy spring management, but it may be best used to fill a window between early and late crops.

Sorghum-sudangrass hybrids (sudex). By late August it is getting late to get the most out of this cover crop, since it establishes and grows best in hot weather. However it could still be planted and would grow until frost-killed – which could be well into October in some years and locations. Sudex is one of the best for building organic matter, penetrating and loosening compacted layers in subsoil competing with weeds. If left overwinter, the dead residue protects soils and is easy to manage in spring. Mowing at 3-4 feet stimulates root depth (from 6-8 to 10-12 inches) and root mass as well as production of more tillers. It provides the most organic matter for the cost of seed of any cover crop. Incorporate while green to obtain nematode suppression. Seed at 2 inches deep if needed to reach moist soil, drilled at 35-40 lb/Aor broadcast at 40-50 lb/A.

Legume cover crops: hairy vetch and red clover. If well managed, legume cover crops can provide as much nitrogen as 100 to 150 lbs per acre to the following crop. Mid August through early September is the best time to establish a legume cover crop. Hairy vetch and medium red clover are both reliable and economical. Hairy vetch is sown at 15-20 lb/A if drilled, 25-40 lbs per acre if broadcast. Additionally, hairy vetch usually benefits from a nurse crop to help reduce matting during spring growth and to keep weeds down. Small grains such as rye, oats, or wheat are used as nurse crops and are sown at a rate of 30-40 lb/A (rye) or 40-50 lb/A(oat). Both the vetch and the grain can be mixed together in the seed drill. In the spring, vetch are incorporated at early bloom, typically in late May. Medium red clover is sown at 8 to 10 lbs per acre if drilled and 10-12 lb/A if broadcast or sown onto prepared ground. Can be overseeded at last cultivation in fall crops, or seeded with a nurse crop of small grain. Red clover may be incorporated in spring or allowed to grow through a full season. Allow a couple of weeks for breakdown before planting your vegetable crop.

- adapted from work by R. Hazzard & F. Mangan, UMass; and Thomas Bjorkman, CU. Resources: Managing Cover Crops Profitably, 3rd edition, published by Sustainable Agriculture Network; New England Vegetable Management Guide (www.nevegetable.org). Note: seeding rate recommendations may vary with regional differences.

CERCOSPORA LEAF SPOT OF SWISS CHARD, BEETS AND SPINACH

This disease caused by *Cercospora beticola* occurs wherever table beets, Swiss Chard, sugar beet, and spinach are grown and is one of the most important diseases affecting the Chenopodium group. It can result in significant losses, particularly in late summer when conditions are favorable (high temperatures, high humidity, long leaf wetness periods at night). Leafy greens become unmarketable, and beet roots fail to grow to full size when disease is severe.

Identification. Symptoms occur as numerous, initially small circular leaf spots. Spots have a pale brown to off-white center with a red margin. Lesions expand in size, coalesce, turn gray as the fungus sporulates, and can result in extensive loss of foliage. Leaves at the center of the plant are often less severely affected. The pathogen produces sclerotia or stromata which can be seen with a hand lens as small, black dots in the center of lesions. Lesions may also occur on petioles, flower bracts, seed pods, and seeds. Leaf symptoms are similar to those caused by Beet Phoma (*Phoma betae*), except that the phoma will have more obvious tiny fruiting bodies in the lesions and can also affect the roots.

Cercospora damage

Source and survival. *C. beticola* survives between crop cycles in residues from infected crops (as sclerotia), in weed hosts, and on seed. It can survive in the soil for up to two years. High levels of disease can result from just a few infected plants, since each lesion produces numerous conidia. Several cycles of infection and conidium production may occur with favorable environmental conditions. Spores can penetrate the leaf directly through open stomates. The pathogen is favored by high relative humidity and temperatures between 75-85˚ F and is spread by rain splash, wind, irrigation water, insects, workers, and equipment. Leaf wetness during the night, even with dry conditions during the day, encourages disease. Successive plantings made close together can allow disease to move from one planting into the next.

Cultural management. Bury infected crop residues and destroy volunteer plants and weed hosts. Start with certified, disease-free seed or treat seed with hot water or fungicides. Rotate to non-host crops (not in the Chenopodium family) for 2-3 years. If disease is present, do a once-over cut rather than cutting chard or spinach for regrowth. Avoid planting succession crops close together. Avoid overhead irrigation if it will result in prolonged leaf wetness periods (eg, through the night); irrigate mid-day when leaves will dry fully or use drip irrigation.

Chemical controls. For optimum results use protectant fungicides as a preventive treatment, prior to infection and symptom development. Pathogen populations resistant to sterol demethylation-inhibiting (DMI's, FRAC Group 3) fungicides have been reported, so although these products are labeled, fungicides with other modes of action should be used. These include azoxystrobin (Quadris) (Group 11); basic copper sulfate (Basic Copper 50W HB and other copper products) (Group M1); pyraclostrobin (Cabrio) (Group 11); trifloxystrobin (Flint) (Group 11). Do not alternate Group 11 strobilurin fungicides with each other (Cabrio, Quadris and Flint). Products that simply kill spores on contact will not prevent the continuing production of spores nor protect leaves from new infections. For more details check the Beets and Chard section of the New England Vegetable Management Guide, www.nevegetable.org

--by Bess Dicklow, Rob Wick and Ruth Hazzard, UMass Plant Soil and Insect Science Dept.

MASSACHUSETTS TOMATO CONTEST TO BE HELD AUGUST 22ND

The 27th Annual Massachusetts Tomato Contest will be held at Boston's City Hall Plaza Farmers' Market on Monday, August 22nd in conjunction with the City Hall Plaza Farmers' Market and the start of Massachusetts Farmers' Market Week. 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 City Hall Plaza Farmers' Market between 9:00 am and 10:15 am on August 22nd or drop their entries off with the corresponding registration form to one of several locations around the state on August 20th or 21st. These tomatoes will be brought in to Boston on Monday. For the complete details,

including contest criteria and a registration form, go to http://www.mass.gov/agr/markets/tomato_contest.htm.

The 27th Annual Tomato Contest is sponsored by the Massachusetts Department of Agricultural Resources, New England Vegetable and Berry Growers Association and Mass Farmers Markets.

NORTHEAST ANIMAL-POWER FIELD DAYS

The fifth annual Northeast Animal-Power Field Days (NEAPFD) is right around the corner! This year's event will be held in conjunction with the NOFA Summer Conference on August 12 – 14 and will be primarily held in South Deerfield, MA at the UMass Crops and Animal Research and Education Farm. NEAPFD is an educational event serving the draft-animal community, which has been held annually since 2007 in Tunbridge, VT. The Draft Animal Power Network is a group which has grown out of the Northeast Animal-Power Field Days event.

This year's program has a fantastic lineup of teamsters and presenters from across the Northeast with three days of workshops including Sunday morning workshops at two local animal-powered farms - Natural Roots horse-powered CSA and Simple Gifts Farm, which is integrating ox power into their fairly large CSA operation. Several Amish equipment manufacturers, including Pioneer Equipment and I & J Manufacturing, who will be bringing an extensive line of equipment featuring several ground-breaking innovations in animal-power technology. Come see the new ground-drive PTO forecarts powering the new I & J sickle mower and see this ground-drive technology even power a hay baler! People have been asking for years if this were possible, and now it is! The Pioneer motorized PTO forecart will power a line of modern hay equipment as well. This is not just a "big equipment" show though. We've got extensive workshops for beginners, using the single horse, oxen, logging, haying, tillage, training, health care, equipment and even workshops for kids! So please come and be inspired. Please tell your friends, family, and neighbors to come. I guarantee this will be quite an event.

Please see www.nofasummerconference.org for details and information on registration.

--David Fisher, Coordinator, Northeast Animal-Power Field Days

CUCURBIT SCAB

Scab, caused by *Cladosporium cucumerinum* is a significant problem for summer and winter squash, pumpkin, melon, and watermelon. Resistant cultivars of cucumber are widely available. The fungus can infect all above ground portions of the plant, but is most serious when it occurs on fruit.

Identification:

On leaves, symptoms consist of gray to brown lesions with a yellow halo that may become shot-holed in appearance. Numerous lesions may cause leaf twisting and deformation. Fruit lesions at first resemble insect stings and appear as small, sunken, gray areas. Dark green sporulation may occur in the lesions. A sticky substance may ooze from infected tissue and secondary decay organisms may invade. The spots become darker with age and may create a cavity in summer squash fruit, which are very susceptible.

Life Cycle:

The pathogen survives in the soil on infected crop debris for up to three years, may be seedborne, and is capable of saprophytic growth. The disease is favored by fog, heavy dew, light rains, and cool temperatures. The pathogen spreads on moist air, on insects, equipment, and humans.

Cultural Controls & Prevention:

Rotate with non-cucurbit crops for 2-3 years.

Plant resistant cultivars if available.

Use seed that does not have significant levels of the pathogen.

Select sites with well-drained soil and good air movement for rapid drying of foliage and fruit.

Avoid overhead irrigation and dense plant canopies.

Protectant fungicides are recommended for control. Fungicide sprays may not be effective during extended cool, wet weather due to the short disease cycle of this pathogen.

To be effective, fungicides must be applied before fruit formation.

Chemical Controls & Pesticides:

azoxystrobin (Quadris): 11.0-15.5 fl oz/A. (1 dh, REI 4h, Group 11). Do not alternate with other Group 11 fungicides. Resistant isolates of Black Rot (Didymella) have been reported.

chlorothalonil (BravoWeather Stik): 1.5 to 2.0 pt/A (0 dh, REI 12h, Group M5). Apply when disease first appears. Repeat at 7- to 10-day intervals. Bravo can cause injury to watermelon fruit; see label.

pyraclostrobin (Cabrio EG): 12-16 oz/A. (0 dh, REI12h, Group 11). Do not make more than one application of Cabrio before alternating to a labeled fungicide with a different mode of action.

pyraclostrobin plus boscalid (Pristine): 12.5-18.5 oz/A. (0 dh, REI 12 h, Groups 11 plus 7). Use caution in the addition of adjuvants or additives (see label).

thiophanate-methyl (Topsin-M 70W): 0.5 lb/A. (0 dh, REI 12h, Group 1). The repeated exclusive use of Topsin M may lead to buildup of resistant strains of fungi and loss of disease control.

For the most up to date information on disease recommendations in specific crops including information on chemical control & pesticide management, please visit the New England Vegetable Management Guide website.

Sweet corn report

Fields are still dry, irrigation is happening where possible. Farm stands are flooded with the best corn of the season and consumer demand is keeping up. The balance between supply and demand seems to be working right now. The trap counts this week indicate that the second generation of European corn borer adults are active which means new eggs are being laid and hatch will occur in about 4-9 days depending on temperature. These newly hatch larva will begin feeding right away and bore into the side of developing ears. Caterpillars must be controlled before this happens, once inside the ear chemical controls will not be effective.

Location	Z1	EII	Total ECB	CEW	FAW
CT Valley					
Sunderland	0	19	19	4	0
Hadley	3	1	4	5	0
Feeding Hills	2	6	8	0	0
Amherst	2	0	2	4	0
Hatfield	2	21	23	2	0
Central & Eastern MA					
Lancaster	2	3	5	1	0
Northbridge	2	3	5	0	0
Spencer	1	3	4	0	0
Dracut	1	12	13	1	0
Concord	2	6	8	4	0
Still River				8	
Tyngsborough	0	3	3	2	0
NH					
Litchfield, NH	1	2	3	12	2
Hollis, NH	0	3	3	6	0
Mason, NH	0	4	4	3	0

Currently, in some spots ECB trap counts are driving the spray decision rather than corn earworm. A spray should be made for ECB in silking corn when weekly trap counts (the sum of two traps) are at 12 or above. Recently I have been asked why our trap count table has two columns for European corn borer. In New England, there are two strains of ECB: the Iowa (EII) and New York (ZI) strain, which are present in different ratios in different regions. The names most likely come from the different US introduction sites of the pest, Iowa and New York. Because of this, at each scouting location there are two different taps with different pheromone lures that attract the two different strains. Although spray decisions should be based on the total number

Corn Earworm Threshold		
Moths/ Night	Moths/ Week	Spray Interval
0-0.2	0-1.4	no spray
0.3-0.5	1.5-3.5	every 6 days
0.6-1	3.6-7	every 5 days
1.1-13.0	7.1-91	every 4 days

of moths caught in one location, it is still interesting to see the differences in emergence in the two strains. Since emergence of the two strains can be somewhat different, it is important to have both lures present where trapping to make sure that you are getting an accurate picture of flight.

The number of generations of ECB ranges from 1 per year in the extreme north to 4 per year in the southeastern U.S. In mid-New England there two generations of ECB per year with a possible partial third in late summer. Farther west in New York, there is also a strain that has one generation per year, which is active between the first and second flight periods of the two-generation strain.

Corn earworm counts are just slightly above what they were last week in most locations. Fresh silk remains on a 5-7 spray schedule for CEW depending on location (see table). Growers are continuing to experiment with the newer chemistries that are available to them such as Belt, Coragen and Radiant with good success even with high infestation levels and trap counts. All three are labeled for a 1 day pre-harvest interval.

Fall armyworm damage has been seen in fields in the northeastern part of the state in whorl and pre-tassel stage corn. Flight was caught in the southern New Hampshire this week. If you are seeing ragged looking feeding in your fields you may have a FAW infestation. Caterpillars are smooth and dark green or brown with lengthwise stripes and dark spots. Full-grown larvae can reach up to1.5 inches. The head capsule is dark with a distinctive light colored marking in the form of an upside down Y. This is contrast to the CEW which always has a plain tan colored head. FAW needs to be controlled in whorl stage corn when 30% of the plants are infested and when 15% of the plants are infested in pre-tassel and tassel corn.

UPCOMING MEETINGS

Agricultural Composting Workshop – August 5th & 6th

Belchertown, MA. Registration fee $80 (limit 25 students). Learn all the important elements to successfully run and manage an agricultural composting operation. Workshop will include classroom lectures, hands-on exercises, and field demonstrations. Preference given to agricultural composters currently registered with MDAR; however, others are welcome, space permitting. Hosted by MDAR, MassDEP, and New England Small Farm Institute. For more information contact Gerard Kennedy, 617-626-1773, Gerard.Kennedy@state.ma.us .

Northeast Organic Farming Association 2011 Summer Conference

August 12-14, 2011

UMass Amherst

To register: www.nofasummerconference.org

Email: info@nofasummerconference.org

Call: 978-355-2853

Vegetable Notes. Ruth Hazzard, Amanda Brown, and Andrew Cavanagh, co-editors. Vegetable Notes is published weekly from May to September and at intervals during the off-season, and includes contributions from the faculty and staff of the UMass Extension Vegetable Program, other universities and USDA agencies, growers, and private IPM consultants. Authors of articles are noted; author and photographer is R. Hazzard if none is cited.