UMASS EXTENSION

# Vegetable Notes

For Vegetable Farmers in Massachusetts

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## CROP CONDITIONS

In the past two weeks we've had great weather for growing, and the crops are showing it. Summer squash and zucchini production is steady. Sweet corn from Connecticut Valley farms is being sold in farmstands around the state, and quality is good though ears are small, as is typical for early varieties. Fruit set is good on peppers and eggplants. Tomato fruit loads are growing, and early field cherry tomatoes are starting to ripen. It's been a good growing year for potatoes. New red potatoes are showing up at farmers markets and CSA's, while larger, early potato fields may start to be harvested next week. Broccoli quality is good for midsummer – this is a crop that does well in cooler, wet conditions. While it was dry enough to irrigate last week in some areas, this week has brought from 1 to four inches of rain around the state. Humidity has been high, and we have seen prolonged leaf wetness periods this week. Using the Pre-Sidedress Nitrate Test is helping growers to decide which fields need more nitrogen, how much, and when. Growers are planting late Brassicas, as well as succession crops like lettuce, greens, carrots, the last of the sweet corn blocks. Carrots, cucumbers, squash, peas, beans, green onions, sweet corn, greenhouse tomatoes, lettuce – most everything but the fruiting crops and fall crops are now being harvested. Garlic is about ready for harvest.

Insect pressure is changing. While corn pests are at a low ebb for the moment, and some other pests that have a midsummer gap between generations are also at lower levels, we are seeing the arrival of migratory pests like potato leafhopper and (very sporadically) fall armyworm. We also see the emergence of midsummer pests. Watch for Mexican bean beetle, Japanese beetle, sap beetle, tarnished plant bug, and spotted cucumber beetle. Summer emergence (a new generation) of flea beetles, Colorado potato beetles, striped cucumber beetle, whose pupae have been underground, can be expected to start within the next week or two.

We hope to see you at the twilight meeting July 18, Twin Oaks Farm in Hadley. See flyer enclosed or consult our website, www.umassvegetable.org.

*Reminder: Please register soon for the July 26, 2006 Twilight Meeting on Solar Energy. For more information, conact Tina Smith at (413) 545- 5306 or visit www.umass.edu/floriculture/

*--R Hazzard, F Mangan, R. Bonanno, A. Duphily*

## CUCURBIT CONDITIONS

We still haven't seen much change in the cucurbit conditions since last week, with summer squash and zucchini being harvested and winter squash in varying stages of development. Some of the earlier winter squash fields are flowering. The initial flowers are all male – it takes a while for the plant to start producing female flowers – but we have seen some fields with female flowers as well. One of our teams will be scouting pollinators in winter squash fields this summer, so we should be getting some interesting information on how well pollinated many winter squash fields are, and how pollination is affecting crop yield. We'll post our findings in the newsletter as soon as the data is collected and analyzed.

Other than a small number of plants at our South Deerfield research farm, we haven't seen any **powdery mildew** in the Connecticut valley yet – but that doesn't mean it isn't here, or won't be soon. Keep an eye on your squash, and spray should be applied at the first sign of the disease. Cabrio, Flint, and Quadris fungicides all have the same mode of action, and therefore should be rotated with other labeled fungicides such as Bravo, Nova, and Topsin-M to delay resistance. Please consult the *New England Vegetable Management Guide* for more detailed information (available online at www.nevegetable.org).

**Bacterial wilt** is beginning to show up on plants that had high stiped cucumber beetle damage early in the season, but it's really too late to do anything about it beside wail and gnash your teeth. In terms of Downy Mildew, we haven't had any reports of it showing up further north than Delware or further east than norther Ohio. We started seeing **squash bug nymphs** last week, and it looks like there might be quite a few of them coming. If you're going to spray for squash bugs, the nymphs are the stage you want to hit, but remember to be careful not to kill off all you pollinators.

*-- Andy Cavanaugh, UMass Extension*

## SWEET CORN: ECB IS DOWN, CEW IS LOW

**European corn borer:** we are still cleaning up fields from the first ECB flight, but pressure is dropping. Moth flight (trap captures) were down everywhere, and many sites had no moths at all in E or Z traps. **Silking corn:** Where captures are above 5 moths per week (eg Whately, Rehobeth) we would recommend a weekly spray on silking corn for ECB. However at several locations in the Connecticut Valley with flight over, no new eggs hatching, and fresh silk blocks showing no remaining borers in tassles, stalks or behind the ears, we did not recommend any silk sprays at this time. (This of course was based on CEW catches of 0 as well). Check behind the developing ears to be sure that ECB is cleaned up. Pretassel corn was variable this week: some blocks were completely clean, while others were over 50% infested with ECB. Scout new blocks as tassels develop. We are finding that two sprays are needed if infestations are >30%: one as tassels frist emerge and open from the whorl, and one at green tassel just before first silk (about 5-7 days later).

**Corn earworm** is being reported in Connecticut and in Coastal Maine and New Hampshire at low levels ranging from 1 to 14 moths per week. In Massachsuetts scouting locations, the highest level of CEW reported was 3 moths per week (Feeding Hills, Tyngsboro). At 2 or more moths per week, growers need to be on a 6 day schedule on silking corn. Throughout the CT Valley north of Feeding Hills, there were no CEW captured and no sprays recommended for controlling CEW in silking corn. We do not have CEW reports at this time from southeastern MA or from the North Shore.

Want to know what the numbers are on YOUR farm? For less than $100 you can have a trap (Scentry Heliothis net trap) and lures (Hercon luretape for Helicoverpa zea) for the season. Sources: Great Lakes IPM, Gemplers.

**Fall Armyworm** showed up in whorl stage corn at one farm in Easthampton. Typical of this pest, it was heavy in parts of one field, and totally absent at farms within a few miles of that field. Spray late whorl or pretassle stage corn if infestation of FAW combined with infestation of ECB is >15%. Several growers are testing Avaunt, which has shown to be effective against this pest.

**Corn leaf aphids** can soon be expected to start infesting tassels, stalks, and husks of corn plants. These small, green and black insects excrete waste called “honeydew” on the plants, which stimulates the development of sooty mold. This dark fungal growth on the husks can reduce the value of the corn. Predatory insects can control aphids in many cases. Later in the season, sprays applied for corn earworm will usually also control aphids. A spray specifically for aphids would only be recommended if sooty mold were becoming a problem.

•Weekly European Corn Borer and Corn Earworm Trap Counts:

| Location | Z I | E II | Total ECB | CEW |
|---|---|---|---|---|
| Pittsfield | 0 | 0 | 0 | 0 |
| S. Deerfield (UMass) | 0 | 0 | 0 | - |
| Deerfield | 0 | 0 | 0 | 0 |
| N. Hadley | 0 | 0 | 0 | 0 |
| Whately | 7 | 2 | 9 | 0 |
| Hadley (1) | 3 | 1 | 4 | 0 |
| Hadley (2) | 0 | 0 | 0 | - |
| Easthampton | 4 | 0 | 4 | 0 |
| Feeding Hills | 0 | 3 | 3 | 3 |
| Still River | 2 | 1 | 3 | 1,0 |
| Concord | 2 | 1 | 3 | 0 |
| Leicester/ Spencer | 0 | 0 | 0 | 0 |
| Northbridge | 0 | 0 | 0 | 1 |
| Tyngsboro | 1 | 2 | 3 | 3 |
| Sunderland | 0 | 0 | 0 | 0 |
| Dracut | 1 | 2 | 3 | - |
| Rehobeth | 6 | 8 | 14 | - |
| Mason, NH | 0 | 0 | 0 | 3 |
| Hollis, NH | 0 | 0 | 0 | 1 |
| Litchfield, NH | 0 | 12 | 12 | 1 |

•Corn Earworm Thresholds:

| Moths/Night | Moths/Week | SPray Interval |
|---|---|---|
| 0-0.2 | 0-1.4 | no spray |
| 0.2-0.5 | 1.4-3.5 | 6 days |
| 0.5-1 | 3.5-7 | 5 days |
| 1.0-13.0 | 7-91 | 4 days |
| over 13 | over 91 | 3 days |

**Note: spray intervals can be lengthened one day if daily temperatures are below 80 degrees F.*

*--Thanks to our scouting network: R.Hazzard, A.Duphily, K. Reidel, J.Mussoni, D.Dumaresq, D.Rose, J.Otto, T.Gallagher, J.Golonka, W.Kingsley, P.Willard, G.Hamilton*

## BUCKWHEAT AS A SUMMER COVER CROP

Buckwheat is an excellent summer cover crop to follow peas, lettuce, and early harvested Cole crops for weed control and soil building at this time. After harvesting these crops, Buckwheat can be drilled at 48-70 lb./A (1-1.4 bushels/A) or broadcast at 60-90 lb./A (1.2-1.5 bushels/A). Buckwheat will cover a soil quickly and keep weeds out of the field. It will also attract beneficial insects to the field, loosen topsoil and rejuvenate low fertility soils. To keep it from becoming a weed problem in subsequent years, mow

it down before it goes to seed. After mowing, it can be disked and planted to a fall cover crop like rye, wheat or barley. Seed cost ranges from 65 to 75 cents per pound.

*--Lake Plains Pest Minder 2003, Updated July 2006*

## UNITED STATES DEPARTMENT OF AGRICULTURE RISK MANAGEMENT AGENCY 2006 COMMODITY INSURANCE FACT SHEET ORGANIC CROPS FOR MID-ATLANTIC AND NORTHEASTERN STATES

The Agricultural Risk Protection Act of 2000 (ARPA) provides that organic farming practices be recognized as good farming practices. Prior to this ruling, crop insurance policies may not have covered production losses when organic insect, disease, and/or weed control measures were used and such measures were not effective. RMA recognizes organic farming practices as good farming practices. An organic farming practice is defined as a system of plant production practices approved by a certifying agent in accordance with the National Organic Program (NOP) under 7CFR part 205. In general, good farming practices are "production methods utilized to produce the insured crop and allow it to make normal progress toward maturity and produce at least the yield used to determine the production guarantee or amount of insurance."

**Written Agreements**

Written agreements are not available for Catastrophic Risk (CAT), Income Protection (IP), Revenue Assurance (RA) plans of coverage or for pilot program crops, unless permitted by the crop provision.

**Coverage Availability**

Organic crop coverage for crop year 2005 will be available for (1) Certified organic acreage, (2) transitional acreage being converted to certified organic acreage in accordance with an organic plan, and (3)buffer zone acreage in accordance with approved underwriting guidelines and procedures. Crop damage caused by insects, disease, or weeds will be covered if recognized organic farming practices fail to provide effective control (If the damage is due to an insurable cause of loss). If any acreage does not qualify as certified organic or transitional acreage by the final acreage reporting date, such acreage will be insured under the provisions of the standard policy, and applicable rates and coverages for the conventional farming practice will apply.

**Price Election or Dollar Amount of Insurance**

The price elections or dollar amounts of insurance applicable to both certified organic acreage and transitional acreage will be the price elections or dollar amounts of insurance published by RMA for the crop grown under conventional means for the current crop year. Price elections will not increase for the organic practice. The insured is required to maintain separate APH databases for "conventional and transitional or certified organic acreage." Premiums will be adjusted to recognize any additional risk associated with covering the organic crop acreage.

**Crop Losses**

If any acreage qualified as certified organic or transitional acreage on the date you report such acreage, and such certification is subsequently revoked by the certifying agent or the certifying agent no longer considers the acreage as transitional acreage for the remainder of the crop year, that acreage will remain insured under the reported practice for which it qualified at the time the acreage was reported. Any loss due to failure to comply with the organic standards will be considered an uninsured cause of loss. Contamination by application, or drift of any biological, chemical, or other agent that is prohibited under the National Organic Program onto land on which crops are grown using organic farming practices will not be an insured peril on any certified, transitional or buffer zone acreage. Crop losses due to poor quality will be adjusted according to the same procedure that applies to conventional crops.

**Reporting Requirements**

On the date you report acreage, you must have (1) for certified organic acreage, a written certification in effect from a certifying agent; (2) for transitional acreage, a certificate or written documentation from a certifying agent indicating an organic plan is in effect for the acreage; and (3) records from the certifying agent showing the location of each field and acreage maintained and not maintained under organic farming practices.

**Definitions**

- Organic Plan—An annual, written plan that a person and certifying agency agree upon for the management of an organic crop. This plan describes the management practices and inputs the person must use, and identifies all steps the person must take to maintain compliance with the certifying agency's standards.
- Buffer Zone Acreage—Acreage of the insured crop located in a buffer zone. Buffer zone acreage will be included in the organic acreage of the unit it buffers (either certified organic or transitional acreage) and will be reported on the same basis.
- Organic Farming Practice—A system of plant or animal production practices in which only natural biological processes, allowable materials and control methods approved by a certifying agency are used for production purposes.

**More Information**

Producers should consult their crop insurance agent to obtain specific information and applicable deadlines. A list of crop insurance agents is available at: www3.rma.usda.

gov/apps/agents/

**Download Copies from the Web**

Visit our online publications/fact sheets page at: http://www.rma.usda.gov/aboutrma/fields/nc_rso/

This fact sheet gives only a general overview of the crop insurance program and is not a complete policy. For further information and an evaluation of your risk management needs, contact a crop insurance agent.

*--Fact sheet provided by USDA/Risk Management Agency. We thank the USDA/RMA for their support of Vegetable Notes.*

## TARNISHED PLANT BUGS

**Tarnished plant bug** adults and nymphs are being found in several vegetable crops, and in some fields they are causing significant damage. We have had calls about damage to the ribs of Romaine lettuce. Most likely it is the second generation of adults that are feeding now. There are several species of tarnished plant bugs in the US, but the most common in central and eastern US is *Lygus lineolaris*. Adults are about 6 mm long (1/4 inch), brown or tan or greenish with darker markings on their wings and back. Nymphs are bright green and progress through 5 molts (instars) from first hatch to the adult stage. The nymphs can be mistaken for aphids, but move much faster when disturbed. Overwintered adults lay eggs in spring, depositing eggs in stems and leaf ribs in host plants. These adults and nymphs attack strawberry flowers in May. A new generation of adults (which is what we are seeing now) will produce another brood in the late summer, for a total of 2 or possibly 3 generations per year.

**Feeding:** Adults and nymphs have piercing sucking mouthparts (stylets) which are used to penetrate plant tissues and suck up cellular contents. TPB select succulent, nutritious tissues such as new growth or newly forming fruits (just after blossoming). While feeding, the bugs secrete a toxic substance from their salivary glands, which kills cells surrounding the feeding site. Usually the first signs of damage are small brown spots on young leaves. As the tissue grows, healthy tissue expands while dead tissue does not, which results in holes and distorted, malformed leaves, buds or fruit. Terminal shoots and flowers may be killed.

**Damage:** Over half of the cultivated crops in the US are listed as hosts. In **strawberry,** this distorted growth of fruits is known as cat-facing. In **lettuce**, leaf stems and ribs are injured, causing localized discolored scars and scabs. In celery, feeding on tender stalks produced large, brown colored wilted spots and blacking of joints, know as "black-joint'. In **beans**, feeding on flowers causes them to drop, and feeding on seeds in young pods causes pitting and blemishing of pods. In **tomatoes, eggplants** and **peppers,** feeding may occur on flowers and stems, causing flower drop. Fruits may also be attacked leading to indentations, bumps, or yellowing of the flesh where the fruit is "stung" by the piercing mouthparts of nymphs or adults. These could be confused with stink bug damage, but they do not have the white pithy areas beneath the skin that is typical of stick bug damage. It is not common to see this damage, but if the damage occurs it may help to determine the cause. In **pepper** and in **basil**, feeding in emerging leaves causes distortion and browning of leaves. In **apples**, adults feed on fruit buds and cause fruit dimpling and scabbing, or dropping off (abscission) of the buds.

We also find TPB damage in **water spinach**, which is grown as a succulent green for Asian markets (Note: this crop is on the US Noxious Weed list because it is invasive in tropical areas. It may be grown legally in Massachusetts ONLY with the proper permit. Contact Frank Mangan 978-422-6374 for more information). TPB feeding occurs in the tiny new leaves in internodes. Holes are punctured in the folded tiny leaves and cells are killed, and as these leaves open up this results in symmetrical holes and distortion of the leaves. Brown scars occur in the internodes. Plants develop more branches in response to dead terminals, which makes them less marketable. Markets want long, single stems with as little branching as possible.

**Weeds and field crops are also host plants**: Tarnished plant bugs attack a large variety of weeds, flowers, forage crops, and orchard crops. Weed hosts include wild carrots and other umbelliferous crops, redroot pigweed (and other amaranths), lambsquarters, mustards, shepardspurse, rocket, goldenrod, and mullein. Alfalfa is a favored host, and harvesting alfalfa often stimulates major lygus migrations. Other legume hosts include vetch, lupine, and fava beans. Where weedy areas or field crops surround vegetable fields, continuous re-infestation of vegetables is possible.

**Management:** Vegetation management on the whole farm is very important for these highly mobile pests. Focus on removing sources of infestation outside the crop. Disk or rototill weeds along field borders to reduce weed hosts, or keep them mowed all season. Similarly, keep grassy areas on the farm mowed short, to reduce their attractiveness as hosts. However, disturbing non-crop areas by mowing can encourage movement of TPB into your crop, so it should be avoided at critical periods when the crop is vulnerable.

There are natural enemies of TPB, including a parasitic wasp, which was released for control of TPB in alfalfa (*Peristenus digoneutis*). This was released in New Jersey and has spread throughout the Northeast, and can cause up

to 50% mortality. However, it currently does not reduce the numbers sufficiently to prevent damage in key crops. Common predators, such as ladybeetles, spined soldier bugs and insidious flower bugs also prey on nymphs.

White sticky traps placed above the canopy are used in strawberry and can be used in vegetables to indicate when adults are present. Economic thresholds have been determined for crops where TPB is a key pest, but not in most vegetable crops. It is difficult to sample tarnished plant bugs directly on plants, because they are very mobile and like to hide. In strawberry, nymphs are shaken off the flower clusters onto a flat surface and sprays applied if 4 out of 30 clusters have nymphs.

If damage is unacceptably high, use insecticide applications. Labeled products for TPB on lettuce are listed in the *2006-2007 New England Vegetable Management Guide* and include several synthetic pyrethroids and carbamates. Pyganic may be used by organic growers. Avoid applications during bloom periods. Insecticide labels often list "lygus bug" instead of specifically "tarnished plant bug".

*--Ruth Hazzard*

## FLEA BEETLES: PLANT LATE BRASSICAS FAR FROM SPRING CROPS.

Mid July is often a time of year when adult FB numbers decline, because a large part of the population is underground, in larval and pupal stages. After larvae feed on roots, they pupate in the soil, then emerge again "into the light" as adults—ready to feed on foliage. The time when you will first see these new adults depends on when eggs were first laid on spring Brassica crops, and on soil temperatures since then. Dissections of flea beetles collected from the field in the Connecticut Valley in April and May detected eggs present in early May this year; hence new adults are likely to be emerging now.

In fields where Brassica crops are always present, because succession crops are planted close together, it may appear that flea beetles never go away all summer. In fact, they are likely to increase dramatically and feed heavily in early August because of the new summer adults. If you plant fall brassicas close to your spring crops, you make it easy for these beetles to find food. Fall broccoli, cabbage, kale as well as greens such as arugula, bok choi, nappa and salad mix can get heavily damaged or even killed by flea beetle feeding. However if you manage your plantings so that fall brassicas are in a different, separated field than spring crops, you can significantly reduce your problems in fall crops. How far? As fas as possible - any distance helps. Barriers such as forest, streams, roads, houses, are helpful. Shorter distances delay the arrival, longer distances delay and reduce the population enough to reduce or eliminate the need for row covers or sprays.

At the UMass Research Farm in South Deerfield, flea beetles in brassica crops are still very active and new emergence has been detected. We have succession plantings of brassica crops close together – but in our case, it is on purpose!

In conjunction with researchers and farmers in NY and VT, we are testing the use of komastuna as a trap crop around the waxy type of brassicas (broccoli, kale, collard, cabbage, etc). The whole perimeter is planted to one or two rows of komatsuna (a *Brassica rapa*), which is highly attractive to flea beetle. On an organic farm, the border can be sprayed with Entrust. The organic farm that is testing this (in combination with field rotation to reduce the pressure) has avoided the need for sprays on the main crop. However, greenhouse transplants required a non-heating row cover to keep flea beetles off the seedlings before they reached the field because the greenhouse had a hefty population of flea beetles.

*--R. Hazzard*

## TOMATO EARLY BLIGHT

Early blight symptoms were observed in tomato fields in Connecticut and in Massachusetts last week. Scout your tomatoes by walking the rows and examining lower leaves that show yellowing or spotting. Early blight lesions are circular or angular, dark brown, with concentric rings, often associated with yellowing of the leaves. If you have not started fungicide sprays yet, the first sighting of early blight lesions is time to start. Alternating a strobilurin systemic fungicide (e.g. Quadris, Cabrio) with a protectant fungicide (e.g. Bravo Ultrex EG) will provide good control of the common fungal diseases of tomato – Septoria leaf spot, early blight, powdery mildew, Anthracnose. A spray schedule of 10 days is adequate unless we have a concentrated period of rainfall and high humidity (such as we've had this past few days) in which case it should be shortened to 7 days. During dry periods, the spray interval can be extended to 14 days. Use a copper product in addition to these, if bacterial diseases are a problem. Fortunately, we have had no reports of late blight in central or southern New England or eastern New York state to date.

## PEPPERS

Plants are gaining stature, putting out new blossoms, and beginning to develop fruit. Fruit set has been good so far. Scout fields now for **aphids** and **bacterial leaf spot**. Aphids fly into peppers in June and July. The most common species is **green peach aphid**, which is light green, yellow green, or pink, with no distinctive marks. Wingless females feed on the underside of leaves, and give birth to tiny nymphs which look just like them. Most of the time, predators such as ladybeetles, lacewings, and aphid parasites keep aphid numbers under control in peppers. Avoid-

ing unnecessary insecticide sprays will help reduce aphid problems later in the season. Aphids may build up after broad-spectrum insecticides are used, especially synthetic pyrethroids. In field studies comparing aphid numbers in permethrin-treated peppers vs. untreated or Bt-treated, we have found that only the permethrin-treated plots developed high numbers of aphids and sooty mold on leaves and fruit.

Although growers using many Bacterial leaf spot (BLS)-resistant varieties of bell peppers, there are many non-resistant varieties, especially specialty peppers. Leaf symptoms begin as small dark green or water-soaked spots, which turn into black or brown spots of dead tissue, sometimes with a pale central area giving the tissue a shot-hole appearance. Advanced symptoms are irregular blotches and blighting along margins or on the whole leaf. Severely affected leaves drop from the plant. The pathogen can be seed-borne or may be carried over in infected plant debris, so non-rotated fields are more at risk.

The severity and spread of bacterial spot can be reduced with foliar applications of copper-based materials, such as basic copper sulfate, or copper hydroxide, if applications begin before the disease situation is severe. Copper hydroxide, or another fixed copper fungicide, should be applied at a rate of 1.5 to 2.3 pounds of active ingredient per acre on a seven to ten day interval as long as conditions remain favorable for disease development. The combination of copper plus maneb will increase the effectiveness of the application. Maneb does not control bacterial spot when applied alone, but it does enhance the effectiveness of the copper. If maneb is added, it should be applied at a rate of 1.2 to 2.4 pounds of active ingredient per acre, and no more than 14.4 pounds of active ingredient may be applied per acre per season. CAUTION: Use only copper products labeled for this use. Non-labeled formulations of copper can cause severe crop injury!

Low fertility levels are also associated with high disease levels, while high fertility levels usually result in less severe levels of bacterial spot. A series of cool nights, below 60 degrees F, will suppress the disease; however, we may not see that for a while if we have typical July weather.

**Monitoring aphids:** Examine the underside of four leaves per plant on 25 plants. Count aphids found. Calculate the average aphids per leaf (divide total by 100). Threshold: 10 aphids per leaf. At lower numbers, recheck to determine if populations are increasing. This threshold has been used successfully in IPM fields in MA and CT for many years. See the *New England Vegetable Management Guide* for recommended materials.

**Pepper maggot fly** activity begins in mid July. Pepper maggot is an occasional pest at scattered locations in Massachusetts, especially in the southeast and in spots in central Mass. It tends to hit certain farms or fields fairly consistently from year to year. If pepper maggot is historically a problem on your farm, watch for activity – the best indicator is oviposition 'stings' on cherry peppers. Flies lay their eggs under the cuticle of the fruit, and the stings where flies deposited eggs show up as small dimples. Cherry peppers are a favorite host and it works very well to scout cherry peppers as an indicator of activity in other varieties. Research in Connecticut has shown that border sprays of pepper fields can give adequate control (pepper maggot flies come into the field daily from trees outside the field), and perimeter plantings of cherry peppers can retain nearly all maggot fly activity to the border. One or two sprays of Dimethoate for control of adults will prevent infestation of fruit. If Orthene is used for ECB in late July or early August this will provide control of pepper maggot. Check the Univeristy of Connecticut pest hotline (860-870-6954) for updates on this and other pests in Connecticut. The Northeast Pepper IPM Manual has great photos of this and many other pests and diseases – an excellent reference for any pepper grower! This book can be purchased online from the UMass Outreach Bookstore or by calling 413-545-2717.

**European corn borer** is not a problem in field peppers until the second generation flight begins, which usually does not happen until the last week of July or later. Unless pepper maggot is a problem, growers generally do not need insecticides in this crop until August. In many areas of the state, ECB does not cause significant damage in pepper, but in the Connecticut River Valley with its heavy sweet and field corn acreage, we do see damage if this pest is not controlled. Pheromone traps can be used to detect ECB flight. Peppers grown in high tunnels with fruit > 1 inch during early ECB flight may need a spray in early July.

*Vegetable Notes, Ruth Hazzard, editor and Kate Reidel, Assistant Editor. 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.*