UMASS EXTENSION

Vegetable Notes

For Vegetable Farmers in Massachusetts

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Crop conditions

Conditions are getting dry. Growers are getting irrigation set up and running – or at least ready to run. As you lay out irrigation, whether it is drip or overhead, pay attention to where water might puddle as a result of pipes leaking or emptying out after the system is shut down. Make sure that every such area has a path for water to drain away. Dig drainage ditches if necessary! Those wet areas are prime spots for Phytophthora capsici to get started. If you don't ever let it get a toehold, it can't spread to the rest of the field.

In general, growing conditions have been excellent. Corn is looking good, but because of the late start the earliest plantings are not quite as far along as usual for this time of year. Some fields do have silk and are forming ears. In the Berkshires, conditions have been cool and growth has been slow.

Harvest of summer squash and zucchini ramped up to full speed this week on farms that specialize in early squash. Early cucumbers, beets, chard, radishes, and broccoli were harvested, and cutting of early cabbage is just beginning. All Brassicas have grown well this spring. See article on summer broccoli if you would like to seed varieties that can take the summer heat for harvest in late August. Harvest of lettuce, spinach and other assorted greens continues.

Vine crops are growing well. Cucumber beetle is active but seems to be less intense than most years. Melon aphid was found in one melon field. Potato leafhopper is in the area. Mexican bean beetle has been observed in the Connecticut Valley – if this is typically a problem on your farm, it is time to watch for it (see article from June 7 regarding biological control of this pest). Potato beetle larvae have hatched out and are reaching the fourth instar – the large "grubs" that do 80% of the feeding damage. Be sure to apply controls before this stage. Rotate chemistries. Spinosad (Entrust or SpinTor 2SC), Rimon, Provado or Actara (if no systemic neonicotoids were used at planting), Avaunt, and Agi-mek can be used for larval control.

--R Hazzard, A. Cavanagh

Update on weed control

There are many farms where warm season crops are still being planted on plastic mulch that may have been down for 2 weeks or more. If weeds are emerged prior to planting, consider making an application of Gramoxone. If it is banded between the plastic prior to planting, crops can be planted the same day. If a broadcast spray is used, growers must wait 3 days for sunlight to break down the Gramoxone on the plastic. Residual herbicides should be banded between the plastic only. The reason for this is to avoid the herbicide washing into the holes during a rain event and potentially causing crop stunting, injury, or death.

-Rich Bonanno, UMass Extension

Summer broccoli

Many vegetable growers in central and southern New England avoid growing summer broccoli because head quality suffers from the heat. Some grow it all summer, but have to deal with lower quality and more head rot during the hottest part of the summer. As part of a SARE-funded project on Brassica crops, in the summer of 2005 & 2006 we looked at possible variety and planting schedule combinations for a late August or early September broccoli harvest. Growers in this project see a good market potential for broccoli and would like to harvest in late summer, around Labor Day. This means the crop will begin developing heads during hot weather.

Based on various recommendations, the varieties we chose to test were Asmodeus, Gypsy (Johnny's), Hepathlon (Noresco), F71-29A (Know-You), BL 10, Concord, Marathon (Rupp), Arcadia (Johnny's), and Windsor (Harris). Out of those earliest varieties in the trials from 2005-2006, the F71-29A and the Windsor were of the best quality. Based on the two years of research we would recommend those two varieties more highly than any of the others for late summer production.

Growing quality broccoli through the hottest part of the summer is a tricky proposition, and while these aren't silver bullet varieties that will ensure a perfect crop, they can provide an acceptable harvest. F71-29A develops into a dome-shaped head with short branches and a tight bud pattern. It runs a little on the smaller side, with heads averaging about 325 grams or ¾ lbs. When we published the results of our trials last year, we had not yet secured a US source for this seed. We have learned that Siegers Seeds has a relationship with the Tiawanese seed company that supplied us with the F71-29A seed, and has agreed to be a US source for this variety. You can reach them at (800) 962-4999. Windsor was similar in shape and size to F71-29A, though a little smaller. This variety had issues in the 2005 trials with developing an excess of leaves in the head, though these can easily be removed at harvest. In 2006 we did not experience the same problem. We acquired the Windsor seed for our trials from Harris seed. They can be reached at (800) 544-7938.

Whatever variety you choose, broccoli benefits from a steady, adequate supply of water and nutrients throughout its growth.

Adequate amounts of boron applied prior to planting, a proper balance of calcium and magnesium, and adequate but not excessive amounts of nitrogen all play a role in preventing disorders of broccoli heads such as brown bead, as well as hollow stem.

-Andy Cavanagh, Dept Plant Soil and Insect Science, UMass Extension

NUTRIENT MANAGEMENT FOR BRASSICA CROPS

Soil pH should be in the range of 6.5 to 7.0. Use ground limestone in fall or spring, or split between spring and fall if the pH needs to be raised a lot. If club root is a concern, the soil pH should be increased to 7.2. Non-organic growers should use about 1,500 lb of hydrated lime per acre along with ground limestone. Organic growers can use 1,500 lb of pulverized lime instead, since hydrated lime is prohibited. Pulverized lime is limestone ground to a mesh size of 200 or smaller and is very fast acting. The liming materials should be thoroughly incorporated and mixed into the soil by harrowing or rototilling. The soil test lab normally makes lime recommendations based on target pH of 6.8. A grower can request that this be based on a target pH of 7.2.

Calcium and magnesium. Tip burn has occasionally been a problem with some Brassicas, including cabbage and kale, but no crop is immune. Internal tipburn may occur in cabbage, in the inner layers of the head. This is caused by an insufficient amount of calcium reaching developing (younger) leaves. To prevent this there should be adequate levels (high) of calcium in the soil and a steady and adequate soil moisture level. Avoid using urea or ammonium sources of nitrogen for side-dressing. The latter is not a problem in organic systems. The base saturation as reported on the soil test should be as follows: potassium (K) 2-5%; magnesium (Mg) 5-15%; and calcium (Ca) 60-85%. If these conditions don't exist, the possibility of tip burn is increased, but it won't necessarily happen. A long term goal should be to bring these nutrients within these ranges. Continued use of dolomitic lime leads to a decline in the Ca level of a soil. Alternating use of calcitic lime (if available) is recommended to supply more Ca. Gypsum can supply Ca without changing pH.

Nutrient levels. Phosphorous (P), potassium (K), calcium (Ca) and magnesium (Mg) should be maintained in the high or optimum level in most soils. (Those with high cation exchange capacities above 15 can easily handle higher levels). Higher levels are unnecessary, can lead to imbalances and could cause environmental problems (nitrogen and phosphorous). Lower levels may limit crop growth and may result in certain deficiencies. When soils levels of a nutrient are above optimum, avoid adding any more until the level comes down. This may take several years. If levels are below optimum, make an effort to add materials that will increase the nutrient(s) of concern. Once levels are in the high or optimum range small amount can be added regularly to replace what is removed from the field at harvest. If soils are tested every one or two years, you can take action to prevent any potential deficiencies or excesses well before they cause a problem.

If Phosphorus is in the 'low' or 'medium' range on a soil test, lack of P may inhibit the crop growth. Sources of available Phosphorus are more difficult for growers using organic methods. To help in the short term, put bone meal close to plants as a starter. This can be applied close to roots without risk of burning. For direct seeded crops, use some mechanism for applying a concentrated band near the seeding band, and mix it in to a depth of at least two inches. This will be much more affordable than if the bone meal were broadcast and tilled in; by using a smaller amount concentrated near the plants you can use one fourth or one fifth as much. For beds for transplants, incorporate bone meal with light tillage after the bed is made. Bone meal ranges from 18-34% P; If you estimate 25% P, then you'd need 800 lb bone meal per acre to get 200lbs per acre of P_2O_5 but if concentrated in a band it would be more like 40 to 50 lb on a per acre basis.

Phosphorus. Fall applications of animal manure or unfinished compost will tend to build up P levels (fall application is needed to meet the 120 day limit for organic certification). Only compost that was made according to NOSB guidelines can be used in the spring if you are certified organic. Compost from animal manure is good long-term strategy to build Phosphorus over time. Rock phosphate is very slow and dollar for dollar, even if you are buying the compost, compost is a better value.

Potassium. Brassicas have a little higher requirement for potassium than other crops; you should aim for well up into the high or very high range. For a good yield of Brassica crop expect it to use about 200 lb of potassium per acre. Remember that plant roots are not going to take all the K that's in the field. Apply K in the spring after plowing, then harrow it in, at same time as incorporating compost. Don't plow it under because that might put it too deep and out of reach of the roots. Broadcast, don't try to sidedress. Remember that K does leach, so it is better not to apply in the fall. Leaching is less likely when the cation exchange capacity is around 10 and more likely when cation exchange capacity gets down below 5.

Potassium sulfate – if from a natural source – is approved for organic production. It is 50% actual K: if you apply 200 lb potassium sulfate then you would get 100 lb of actual K. Sul po mag is another source of readily available K. If you are using compost and it tests high, you can figure that into the total. K, because the Kin compost is readily available. A full compost test is available from the UMass Soil and Tissue Testing Lab for $30.00

(see HTUhttp://www.umass.edu/plsoils/soiltest/services1.htmUTH)

If K is low to medium, apply 150-125 lb actual K. If Potassium is in the high range, then add more for what the plants will use up (approximately 50 lb.) to keep it in the high or 'optimum' range.

Nitrogen (N) is a special case. Crops such as cabbage, broccoli and cauliflower require about 130 to 150 lb/A of N. Short season crops such as greens, turnips and rutabagas require less for a single crop. However these short term crops are usually part of a double or triple cropping system. Taken as an aggregate of crops, the seasonal need for N would be about the same as for a long term crop. Much if not all the needed N (some times too much N) can be supplied by soils with good levels of organic matter. As the OM breaks down, N and other nutrients are released. This

is most rapid (and most N is released) when the soil temperature is over 70 degrees F, the soil pH is above 6.0, the soil is well aerated and there is adequate soil moisture. Under good conditions N release can be 30 to 40 lb /A for each % soil organic matter. Thus a soil with 4 to 5 % OM can supply the seasonal needs of Brassicas if the above conditions are good. A soil nitrate test (PSNT) can be used in June to check the N level. If the level is 30 ppm, there should be adequate N (unless there is leaching due to heave rain).

Nutrient release is slow in the spring when soil temperature are cool. A small amount (20 lb/A) of soluble starter N may be helpful for early planting. There are many choices of starter fertilizers for non-organic growers. For organic growers blood meal or fish emulsion are readily available sources of N which can be helpful. Compost tea may be useful, but might not provide enough N.

Boron (B). Trace or minor elements are generally not a problem with the exception of boron (B). If soil test levels are not in the normal soil range (as indicated on the test), boron should be applied at 1 to 2 lb/A actual B (5 lb/A for cauliflower) for most Brassicas. There a number of soluble sources of boron, including Solubor and Fertibor, which are OMRI listed. Solubor is 20% B so you'd need 10 lb per acre to achieve 2 lb actual. If you are broadcasting an organic blended fertilizer, ask if your supplier will add boron to the mix. Another way to apply it is to mix it in water, spray it on the soil, and mix it in. A boom sprayer, or a siphon mixer with check valve for garden hose will work. Lack of adequate boron causes hollow stem in broccoli.

-John Howell, University of Massachusetts Extension Vegetable Program and New England Vegetable and Berry Growers

FLEA BEETLE TRAP CROP: REPORT ON 2006 SARE PARTNER GRANT

Pesky flea beetles:

Crucifer flea beetles are a consistent pest of Brassica crops in the Northeast. A first flush of adult beetles emerge in the early spring from overwintering sites outside the field, feed voraciously on Brassicas. They lay eggs in the soil at the base of the crop and the larvae feed on the Brassica roots. These larvae turn into adults that emerge in the late summer as a second generation. This emergence of flea beetles causes damage to the fall Brassicas that are planted in late July and August. Flea beetle feeding results in holes in the center of leafy crops and along the margins of the waxier crops, such as broccoli and kale. The feeding may be severe enough to defoliate seedlings, and can result in unmarketable leafy crops. Flea beetles can be well controlled with row cover that is completely buried along each edge, but this method is expensive and difficult to use, especially in long-season Brassicas that require several cultivations for weed control and may be harvested over a long period of time.

Flea beetle food preferences:

Feeding preference trials at the University of Massachusetts Crop Research and Education Center showed that crucifer flea beetles find *Brassica oleracea*, which includes most of the traditional European crops such as cabbage, broccoli, cauliflower, kale and collards, significantly less attractive than *Brassica rapa* crops, which include many of the greens (bok choi, tatsoi, mizuna, etc).

In 2006 a trial was conducted to test whether the beetles' preference for Komatsuna (a *Brassica rapa*) could be used in a perimeter trap cropping system to prevent beetles from colonizing a main crop of *Brassica oleracea*, resulting in less damage to the main crop and a subsequent reduction in insecticide sprays.

Perimeter trap crop concept:

The concept of a perimeter trap crop (PTC) is to delay pests on their way from overwintering sites in the vegetation on the outskirts of the fields to the main crop in the field. The insects are "trapped", or delayed, by a preferred host, where they are targeted and killed with insecticides before they get to the main crop. If the border is truly a preferred feeding host, is complete around the crop, and the border is monitored for pests and sprayed when they first show up, it should allow you to reduce your pesticide use in that field by as much as 95%, depending upon the size of the planting. The important thing to note is that the insects in the border must be killed—if allowed to survive for long in the border they treat it like an appetizer and move into the main crop. If they are eliminated before they get the itch to move, the main crop is protected.

The 2006 crucifer flea beetle PTC trials:

The 2006 trial took place on three organic vegetable farms in New York, Massachusetts and Vermont. Komatsuna (*B. rapa*, an Asian green) was planted as a perimeter trap crop around *Brassica oleracea* crops. In each location, a double row of Komatsuna plants was established around the main crops. Komatsuna is highly attractive to flea beetles and, once past the cotyledon stage, continues to grow even after heavy beetle feeding. The same spacing was used for the Komatsuna as for the main crops (in-row and between row). Use of a double row of Komatsuna helped ensure a strong border.

When beetles were found in the borders, they were sprayed with Entrust at the rate of 3 oz/A. The protocol called for sprays to be applied as soon as beetles appeared, and weekly thereafter, with the goal of having continually attractive but also continually lethal borders. However, in several cases border sprays were delayed or separated by more than one week.

To assess how well the trap crop was working to prevent beetle damage in the main crop, we counted flea beetles on yellow sticky cards and feeding holes in plant leaves in the borders and in the main crops.

Results:

We found that Komatsuna border was decidedly more attractive to flea beetles than the main crop. Although the numbers of beetles caught on sticky traps in the crop was sometimes higher than in the borders (most likely an effect of the border sprays), there was almost always more feeding damage in the Komatsuna border than in the main crop.

The most successful border establishment method was to transplant the Komatsuna at the same time as crop transplanting.

Direct seeding the Komatsuna ahead of crop transplanting did not work because the tiny seedlings were not protected with row cover and were rapidly decimated by flea beetles at the cotyledon stage. Establishing the border well before crop planting in order to have a large, thriving, highly attractive trap crop when the main crop was planted also did not work because it was difficult to maintain an intact border, especially at the field ends, while making beds and planting the crop.

In NY, the main crop exceeded the tolerable level of flea beetle damage, but the border was not faithfully sprayed as it should have been. Flea beetle pressure was exceedingly high due to the proximity to last year's Brassica fields and the presence of early season brassica weeds.

In VT, the main crop and border were both sprayed soon after transplanting, but while the border was sprayed twice more during the season, another full field spray was not required to keep damage down to a tolerable level.

In MA, border sprays were used and the flea beetle pressure in the main crop never reached levels great enough to cause the grower concern. However, it would be difficult to deduce from these plantings the effectiveness of the Komatsuna border against high flea beetle pressure, because the flea beetle numbers in these fields were relatively low. It is probable that the rotation schedule that the grower used was the main cause of the low flea beetle numbers. Both fields were well away from the early season brassicas, which had been bombarded with flea beetles.

In the MA plantings it was seen that having an attractive border can concentrate flea beetles, and that border sprays will have a positive effect on decreasing the feeding damage and flea beetle counts in the main crop.

Try PTC on your farm:

The following recommendations are for growers who wish to try this method on their own:

1. Rotate

Moving a new crop planting far away from a previous Brassica crop and from Brassica weeds is a simpler and more effective way to avoid flea beetle damage than using a trap crop with little distance between plantings. If a farm has enough land, try rotating long distances. Using a Komatsuna border may complement this approach and provide additional protection at a lower cost than full field sprays.

2. Establish and maintain border integrity

Establish the integrity of the border before or as the main crop is planted into the field. Make sure there is a full border (2 rows recommended) around the entire crop. Care should be taken on curved fields that no gaps in the border spacing exist. Make sure border plants at the ends of the rows remain. It is a good idea when transplanting to have extra Komatsuna transplants to fill in gaps or lost plants. Don't harvest the border until you are comfortable withhaving any remaining flea beetles moving into the main crop.

3. Spray early

Remember that the Komatsuna will not prevent the flea beetles from moving into the main crop, but that it will delay them and give you a time window and location to kill them before they move to the main crop.

Sprays need to be timed to prevent flea beetle movement into the field. DO NOT wait for flea beetles to build up in border; spray border when beetles first appear. This may be the same day as planting, if pressure is high. Alternatively, spray transplants in the trays before planting into the field.

4. Spray consistently

Weekly sprays of the border will keep the flea beetles from moving into the main crop. For flea beetles on Komatsuna, an effective insecticide should always be present on the plants so the border is both attractive and lethal. Entrust is allowed for organic growers (however, always check with your certifying agent) and is labeled for use in Brassica crops. Conventional growers have many additional insecticide options (see the New England Vegetable Management Guide). A spreader-sticker would help keep the Entrust on the Komatsuna, especially during a rainy growing season like 2006. Try to get good coverage of the Komatsuna when spraying, including lower leaves and undersides of leaves.

5. Be patient and particular

Remember that this method is new to you and may take some practice before you get it right. While it can initially take more work because you are learning a new way of managing the crop, ultimately, if it works, it could save time and money.

If you would like to discuss questions about this method, call Pam Westgate at 413-545-3696.

-Molly Shaw, Cornell Cooperative Extension, adapted for Vegetable Notes by Pam Westgate, UMass Extension

Downy mildew in Canada

Downy mildew has been confirmed on greenhouse cucumbers in Essex County in Canada. These are not plug plants for field production but are "hothouse" cucumbers. Essex County is Canada's southernmost county located on a peninsula of land that juts out into the region of the Midwestern United States. At this time, no field outbreaks have been reported in Canada or the Northern US. Dr. Mary Hausbeck is recommending that growers in southeastern Michigan begin to spray cucumber fields preventively to avert a 2007 epidemic and is currently conducting spore trapping to determine when and if the Downy mildew pathogen arrives in Michigan. In addition, North Carolina State University maintains a website that monitors the spread of Downy mildew up the Eastern seaboard from its overwintering sites and creates a forecast of risk based upon the weather and previous disease progress. (http://www.ces.ncsu.edu/depts/pp/cucurbit/.) The UMass Vegetable Team monitors the site daily and will inform growers via e-mail when a real danger for a Downy mildew outbreak exists in the region.

For growers in MA, it is possible that this outbreak could result in an early arrival of downy mildew this year, depending on the weather patterns and whether the spores escape the greenhouse and spread into Canadian fields. There is currently no reason to panic and begin preventive spraying for this disease, but

it is certainly worth being vigilant. Initial symptoms of downy mildew are small yellow to irregular necrotic spots with yellow-green borders. Because infection does not expand beyond veins, the lesions develop an angular appearance as the spots expand. Several spots may occur together forming a yellow patch that can have an orange tint, especially in pumpkin. The Downy mildew pathogen sporulates on the underside of leaves opposite lesions resulting in the dark, fuzzy appearance that gives the disease its name. Spores may be visible with a good hand lens, but they are not always present. Additional images of downy mildew are available at: http://vegetablemdonline.ppath.cornell.edu/NewsArticles/Cuc_Downy.htm.

If you think this disease is present in your fields, a positive identification before you start spraying will save both time and money. Please send samples to the UMass Extension Plant Diagnostic Lab (413-545-3209) or call Andy Cavanagh at 413-658-4925.

-M Bess Dicklow, UMass Extension

Melon aphids

Melon aphids were observed this week in one plot of melons in the Connecticut Valley. This is the time of year when aphids are moving into crop fields and getting established. Melon aphid has a wide host range; vegetable crops attacked include cucurbits, asparagus, pepper, eggplant and okra. Among cucurbits, it is more serious on cucumber, muskmelon and watermelon than in squash and pumpkins. Varieties differ in susceptibility. Melon aphid overwinters in the north on woody plants including catalpa and rose of Sharon; more southerly, adults survive on cold tolerant plants including spinach and dock. Life cycle is similar to green peach aphid; winged females colonize crops in early summer, and wingless females produce live young for about 15 days (70-80 offspring per female) resulting in multiple generations. The time from birth to reproductive adult can be one week. Wingless females are 1-2 mm long. Color varies from light green mottled with dark green (most common) to white, yellowish or dark green. The cornicles at tip of abdomen are always black, a key diagnostic feature. Melon aphid outbreaks are more common in hot, dry weather.

Infestations occur on undersides of leaves where aphids extract plant sap with their piecing sucking mouthparts. Feeding causes yellowing, puckering, leaf curling, and leaf death at high numbers along with shiny honeydew deposits and buildup of sooty mold. Viruses transmitted by melon aphid include cucumber mosaic, watermelon mosaic, and zucchini yellow mosaic. Because transmission occurs within 15 seconds of feeding, insecticides do not prevent initial virus infection though they may reduce its spread in the crop. Oils may reduce virus transmission but test for phytotoxicity. Use row covers or reflective plastic mulch prevent early infestation (direct seeding is recommend in reflective mulch for maximum effectiveness). Cultivars differ in susceptibility to aphid buildup and to virus; plant resistant varieties if they are available. Separate early and late plantings. Use selective insecticides for other pests to conserve natural enemies.

Scout for aphids by searching undersides of leaves or on runners. If 20 percent of fully expanded leaves or of runners or more have five live aphids, treatment may be needed. Note presence of natural enemies and check several times over a week to determine whether the population is increasing. Often natural enemies will come to the rescue, accumulate where they find good food, and bring the aphid numbers down. For insecticidal control, good coverage of undersides of leaves is needed. One new type of chemistry that is specifically for control of aphids is pymetrozine (Fulfill), which is labeled for all cucurbits and has a short days-to-harvest interval. Organic options include insecticidal soap(M-Pede), prethrin (Pyganic EC 5.0) and azadirachtin (Neemix 4.5).

Trap Counts for June 21st, 2007

Location	ZI	EII	Total ECB
South Deefield	5	2	7
Deerfield	23	34	57
Sunderland	0	3	3
Hadley (2)	9	9	18
Whately	12	51	63
Hadley (1)	9	13	22
Amherst (1)	0	1	1
Amherst (2)	0	4	4
Easthampton	4	4	8
Southwick	8	2	10
Lancaster	26	2	28
Concord	12	14	26
Spencer	3	2	5
Northbridge	5	2	7
Tewksbury	0	22	22
Tyngsboro	0	22	22
Still River	3	5	8
Rehobeth	6	7	13
Litchfield, NH	3	1	4
Hollis, NH	0	9	9
Mason, NH	0	3	3

--Thanks to our scouting network: R.Hazzard, P.Westgate, A.Brown, A.Lopez-Swetland, D.Rose, J.Golonka, S.Pepin, G.Hamilton, P.Willard, J.Mussoni

Sweet corn

Sweet corn growth has been excellent over the past couple of weeks. Many growers across the state have silking corn and have made their first sprays if necessary. ECB flights have gone down in most locations but we are still catching flights around 5 per night in Deerfield and 3 per night in Lancaster. We should expect trap counts to continue to decline next week until the second generation emerges. In unsprayed fields this week, we found from 30 to 55 percent of the plants infested. Scout your pretassel corn and if >15% have borers, spray as tassels emerge. This is

when borers are most exposed and easily killed. While scouting we are seeing many newly hatched or partly grown borers in the developing tassels. The ECB larvae start feeding in the young tassels inside the whorl, and move into the stalk of the tassel as it emerges. If not controlled, they will move down the stalk and burrow into the back side of the ear when it forms.

Corn in silk should be sprayed on a weekly basis if flights are still above 7 per week on your farm. New eggs will continue to be laid until the flight goes down. If you have corn in silk and want to monitor corn earworm flight, be sure to get your pheromone traps up soon! The most readily available trap is the Heliothis Scentry nylon net trap. Hercon luretapes for corn earworm (Helicoverpa zea) have proved reliable over many years. Sources include Gemplers and Great Lakes IPM. Place IN the cornfield, in fresh silk, with the trap base at ear height. We have seen an occasional corn earworm larva while scouting tassels; these are not a threat to ears. We have set up earworm traps at a few of our scouting sites this week and will have trap captures by next week.

-Amanda Brown, UMass Extension

Vegetable Notes, Ruth Hazzard, editor and Amanda Brown and Martha Powers, assistant 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.

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