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College of Agricultural, Consumer, and Environmental Sciences

Illinois Fruit and Vegetable News

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a newsletter for commercial growers of fruit and vegetable crops

"We are what we repeatedly do. Excellence, then, is not an act, but a habit." Aristotle

Address any questions or comments regarding this newsletter to the individual authors listed after each article or to its editor, Rick Weinzierl, 217-244-2126, weinzierl@uiuc.edu. The *Illinois Fruit and Vegetable News* is available on the web at: <http://www.ipm.uiuc.edu/ifvn/index.html>. To receive email notification of new postings of this newsletter, call or write Rick Weinzierl at the number or email address above.

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University of Illinois Extension Specialists in Fruit & Vegetable Production & Pest Management

Upcoming Programs

- **St. Charles Research Center Twilight Meeting, July 24, 2008 ...** details to be provided in the next issue of this newsletter; contact Bill Shoemaker at 630-584-7254 or wshoemak@inil.com.
- **Organic Apple Field Day, August 8, 2008 ...** at the University of Illinois Dixon Springs Agricultural Center, Simpson, IL. More information will be available soon on the [Illinois Small Farms](http://www.illinois-small-farms.org) site at the [Sustainable Ag Tours](http://www.sustainable-ag-tours.org) page. This tour is being co-sponsored by the [Midwest Organic Tree Fruit Growers Network](http://www.midwest-organic-tree-fruit-growers-network.org).
- **Pumpkin Field Day, September 11, 2008 ...** at the SIU Belleville Research Center. Details to come.

Regional Updates

In southern Illinois, rivers on both sides of the state are still at or above flood stage, causing significant damage to low-lying farm land and homes in Missouri, Illinois and Indiana. Cresting of the Mississippi River occurred Wednesday in the Calhoun County area and is moving south slowly, with significant flooding reported downstream. To the east, both the Embarrass and Wabash River floodwaters are receding, and cleanup and recovery continue.

Strawberry season is over or winding down in the southern region and renovation is starting. Strawberries move into a semi-dormant period after final harvest, making it a critical time to control broadleaf weeds. 2,4-D should be applied over the top of healthy strawberries a few days (~4) prior to mowing. Strawberries can then be mowed, fertilized and rows narrowed. Blueberry, raspberry, and some summer apple harvest started last week.

Peach thinning is finished, and attention is moving to orchard floor management in preparation for harvest. Herbicide effectiveness has been an issue this season due to heavy rainfall, with many orchards and vineyards reporting a shorter than normal window of control following early season preemergent herbicide application. For licensed applicators, paraquat (RUP) can be used for a quick burn-down, making sure no contact is made with desirable foliage.

Grape growers are in various stages of shoot and cluster thinning. Those with vigorous varieties are beginning the skirting and hedging process. Downy mildew has been reported in some vineyards, so be diligent in your scouting. Application of phosphorous

acid products provide most control on foliage when applied within a few days after the start of an infection period, providing only a few days of additional residual (protective) activity. See the 2008 Midwest Commercial Small Fruit and Grape Spray Guide for other pesticide options (<http://hort.agriculture.purdue.edu/pdfs/08SprayGuide.pdf>). Heads-up that Japanese beetle emergence is underway in the far south and expected soon in more northerly locations. Growers with newly planted grapes in grow tubes need to keep a lookout for Japanese beetles.

Vegetable production, despite early establishment problems around excessive spring rains, moves forward. Early sweet corn harvest is on schedule and there is no shortage of corn earworm moths being caught. Sweet corn growers, especially those with Bt corn/reduced spray schedules, need to scout for Japanese beetle feeding on silks throughout the season. Pumpkin planting has started.

Erosion in fields, orchards and vineyards is very evident this year, making access and other operations difficult. Compaction problems have also been reported, mainly difficulty getting soil prepped for planting and failure of plantings to rapidly establish. Bolting in recent high temperatures has resulted in more than normal plowdowns and/or replanting.

A twilight meeting is in the making for vegetable growers and a date should be set by the next newsletter. We are targeting late July or early August, and the meeting will be held at Fournie Farms in Collinsville. Sweet corn and tomato variety trials have been planted there, along with insecticide and fungicide demonstrations on tomatoes.

Elizabeth Wahle (618-692-9434; wahle@uiuc.edu)

In northern Illinois, the last 2 weeks have seen mostly sunny days with highs in the 70s and 80s and lows in the 50s to around 70. Many areas received less than 1 inch of rainfall during this period, but counties close to the Mississippi River picked up more than 3 inches, and some new flooding of fields occurred.

Apple and pear fruits are sizing well, and fruit thinning is continuing in many orchards. I have seen some dead shoots due to winter injuries on peaches and tart cherries. Tart cherry picking will commence very soon in many orchards. Most varieties of grapes have been pollinated, and berries are developing. Picking of June-bearing strawberries is still going on in some farms.

Planting of vine crops is done on many farms, but cool weather during the first week of June slowed growth, particularly in northern counties close to Wisconsin border. Cucumber beetle control is going on in vine crop fields. Corn earworm adult counts have been very high in the region. In the Kankakee area, harvesting of cabbage continues, and the first-planted sweet corn is in full silk. Watermelon, muskmelon, and cucumbers are doing well. Phytophthora was reported in some pepper fields.

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Notes from Chris Doll

The news here is all about Mississippi River flooding in Illinois and Missouri, and a terrible thing it is. On the 24th, I saw the early flooding from a levee break at daybreak, and by late afternoon, the water expanse was horrific. In the interim, I made an orchard visit near Augusta, Missouri, that wanted rain because less than an inch had fallen in June. In contrast, I've had 4.0 inches from nine showers this month. The wet hours recorded by the data logger shows 325 hours since petal fall. But things are green and growing, like the apple and peach fruits, and other crops that did not suffer from saturated soils. My raspberries, both red and black, are 50-75 percent dead from 30 days of the saturated soils, and 6 of 50 peach trees have expired also. Needless to say, I did not pick the ideal site for my plantings.

Local apple orchards have shown only a few entries by codling moths, and trap catches continue to remain light. My degree day total from May 3 is near 1000, or near the end of the first generation. Some red mites were found in only one orchard of five inspected, and San Jose scale appears much better controlled than last year. Potato leaf hopper injury was moderate in an orchard using mating disruption for codling moth control and no recent insecticides.

Fire blight strikes are variable by location and sometimes by rows. Most of the infections occurred three to four weeks ago, although some new wilting has been reported from a rain 5 days ago.

Plenty of bacterial spot is showing on susceptible peach leaves, but little or none is visible on the fruit. Peach scab concerns also prevail, although nothing has been seen as yet.

The season continues to be later than normal, with only some early apples and blackberry varieties showing some color change, and I assume that some early peaches are turning also. The bad news of the day is that Japanese beetles were trapped for the first time today. This is 18 days later than last year.

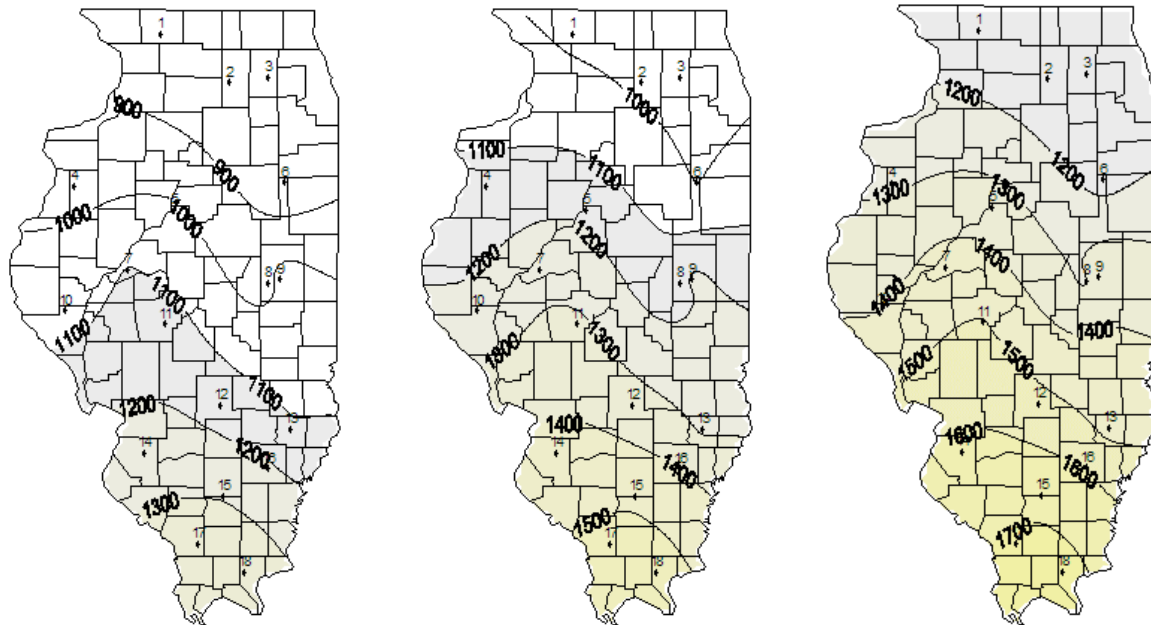
The Illinois State Horticulture Society Summer Orchard Day at Tanners Orchard was well worth the time and gas. The family gave an "all-out" show of the orchard and market, which is a testimony to their dedication and expertise. Growers got to see a chemical thinning test on Goldens, plum varieties, various spacing of varieties and rootstocks, trellising, weed control, and an unsuccessful grafting demo (100 percent failure) by this author. In the market, cider donuts were a hit, as were all the items being marketed from old gas stoves to antiques, popcorn, honey, and everything that helps draw a crowd. Thanks and kudos to the Tanner Family.

Chris Doll

Degree-day accumulations

Degree-day accumulations, base 50 degrees F, starting January 1.

Station	County	Base 50F DD Jan 1 – June 24, Historic Average	Base 50F DD Jan 1–June 24, 2008	Base 50F DD Jan 1–July 1, 2008 (Projected)	Base 50F DD Jan 1–July 8, 2008 (Projected)
1. Freeport	Stephenson	991	827	983	1138
2. Dekalb	Dekalb	1054	826	985	1140
3. St. Charles	Kane	967	826	974	1123
4. Monmouth	Warren	1135	964	1123	1282
5. Peoria	Peoria	1183	1017	1185	1356
6. Stelle	Ford	1114	830	997	1165
7. Kilbourne	Mason	1301	1104	1271	1443
8. Bondville	Champaign	1227	948	1115	1284
9. Champaign	Champaign	1236	1052	1225	1400
10. Perry	Pike	1245	1055	1221	1392
11. Springfield	Sangamon	1316	1137	1317	1504
12. Brownstown	Fayette	1408	1154	1337	1527
13. Olney	Richland	1400	1108	1288	1473
14. Belleville	St. Claire	1480	1257	1438	1626
15. Rend Lake	Jefferson	1549	1295	1485	1680
16. Fairfield	Wayne	1493	1215	1403	1596
17. Carbondale	Jackson	1497	1347	1523	1708
18. Dixon Springs	Pope	1556	1363	1542	1729



Degree-day accumulations, base 50 F, January 1 – June 24, 2008 (left), and projected through July 1 (center) and July 8 (right).

Degree-day accumulations presented above for weather stations in the Illinois State Water Survey WARM data base have been summarized using the Degree-Day Calculator on the University of Illinois IPM site (<http://www.ipm.uiuc.edu/degreedays/index.html>). The list above includes only degree-day accumulations and projections based on a 50-degree F developmental threshold and a January 1 starting date, but other options that use different thresholds and specific biofix dates are available on the Degree-Day Calculator. The degree-day calculator is available as a result of a joint effort of current and former extension entomologists (primarily Kelly Cook) and Bob Scott of the Illinois State Water Survey. If you have questions about how to use the site, contact me or Bob Scott (rwscott1@uiuc.edu).

Rick Weinzierl (217-244-2126; weinzier@uiuc.edu)

Fruit Production and Pest Management

Great Press for Southern Illinois Peaches

The July/August issue of *Midwest Living* magazine sports a picture of a bowl of peaches on the front cover and some great press for Illinois peaches in an article titled “Just Peachy.” Rendleman’s and Flamm’s are featured, along with recipes for great-tasting uses of peaches. Congratulations to the Sirles and the Flamm’s on the great impressions they made on the magazine’s senior food editor. (Next we’ll have to get them to expand their peach-tasting efforts and favorable press to the peach orchards around Centralia, Belleville, and Calhoun County, as well as a few other locations.)

Oriental fruit moth and codling moth phenology updates

Biofix dates for first flights of **oriental fruit moth** (OFM) are presented in the table below, along with degree-day (DD) accumulations based on a threshold of 45 degrees F. Second generation flight should be well underway at all locations in the southern half of Illinois, and traps in the far south and at Urbana indicate that numbers are fairly low. That said, growers are advised to always rely on data from traps in their own orchards. Check the [June 10, 2008 issue of this newsletter](#) for comments on making OFM control decisions based on degree-day accumulations.

<i>Oriental fruit moth</i>	OFM Biofix Date	DD Base 45 F, through June 24	DD Base 45 F, projected through July 1	DD Base 45 F, projected through July 8
Murphysboro (Dixon Springs weather data)	April 20	1409	1622	1842
Brussels (Brownstown weather data)	April 21	1255	1474	1699
Urbana (Champaign weather data)	April 25	1112	1320	1531

Biofix dates for codling moth at six Illinois locations are listed in the table below, along with degree-day accumulations (base 50F) and projections for weather stations near each location.

<i>Codling moth</i>	CM Biofix Date	DD Base 50 F, through June 24	DD Base 50 F, projected through July 1	DD Base 50 F, projected through July 8
Murphysboro (Dixon Springs weather data)	May 3	962	1139	1325
Belleville (Belleville weather data)	May 7	857	1039	1228
Brussels (Brownstown weather data)	May 9	786	970	1160
Urbana (Champaign weather data)	May 16	711	834	1060
Speer (Peoria weather data)	May 18	656	825	996
Malta (Dekalb) (Dekalb weather data)	May 27	500	658	813

Developmental events for the **codling moth** based on degree-day accumulations are presented below. Remember that “biofix” refers to the date of the first sustained capture of first-generation moths in traps.

50 percent of first generation eggs hatched	~500 DD ₅₀ after biofix
99 percent of first generation eggs hatched	~920 DD ₅₀ after biofix
First moths of second generation emerge	~900 DD ₅₀ after biofix
First hatch of second generation larvae	~1100 DD ₅₀ after biofix
50 percent of second generation moths emerged	~1340 DD ₅₀ after biofix
50 percent of second generation eggs hatched	~1580 DD ₅₀ after biofix

(Table based on *Orchard Pest Management* by Beers et al., published by Good Fruit Grower, Yakima, WA.)

Other Fruit Insect Notes

- **Altacor and Delegate** are newly registered insecticides for control of codling moth and oriental fruit moth in apples and peaches. Early evaluations of these two insecticides in unreplicated plots in growers’ orchards in southern Illinois confirmed that both were highly effective against codling moth where pressure was moderate. In separate blocks, each was applied for 3 or 4 successive cover sprays, beginning at first cover, with no other insecticides used during this period. Examination of over 1,000 fruits per block resulted in finding no signs of fruit entry; this level of control (complete or nearly so) matched that observed in nearby blocks treated with Assail as an industry standard. Tom Schwartz of southern FS has announced that he now has a supply of Altacor available; you might check with other distributors now as well.
- **Potato leafhoppers** are damaging apples (and other plants) throughout the state. We’ve had to treat for them in newly planted blocks of apples at Urbana and St. Charles, and I saw damage in orchards south of Carbondale earlier this week as well. Usually the infestations develop in nonbearing blocks where no insecticides are otherwise needed (no fruit to protect), and the result is curling and cupping of new foliage and a reduction in new shoot growth. The same damage can occur in bearing trees where narrow-spectrum insecticides such as Rimon, Altacor, or Delegate are used in cover sprays; these compounds do not control leafhoppers. Depending on the crop (and registration status of specific insecticides), Assail, Calypso, Clutch, Imidan, Guthion, Sevin, and the pyrethroids are among the insecticides that are effective. (Note ... potato leafhopper (PLH) is NOT the same insect as white apple leafhopper (WALH); PLH is not resistant to the organophosphates Imidan and Guthion while WALH generally is).



Left to right: cupping of apple leaves as a result of potato leafhopper feeding, potato leafhopper nymph, and adult.

- **Japanese beetles** are out in force in the far south, and those of you a little farther north, they will be coming soon to orchards and fields near you. The quick reminder on controlling this insect goes like so ... adults emerge from the soil over a period of several weeks, and each individual may live (and eat) for several weeks as well. Expect to see adults on fruits and vegetables (and a number of ornamental plants) until well into September. Other than excluding them from a small number of plants with screening or row cover-like materials, using insecticides of one sort or another is the only effective way to control them. Traps that are sold under the claim that they will catch enough beetles to reduce the population density fail to provide a meaningful level of control unless many (dozens or more) are used even in a small acreage, and then only if the reservoir under the trap (the container that holds the captured beetles) is large. Even then, many Japanese beetles come to the vicinity of a trap and do not enter it, instead remaining in the area and feeding on host plants near the trap. Insecticides that are effective against Japanese beetles and labeled for use on fruits and vegetables kill the beetles present at the time of application, and in some instances the residues repel or kill beetles for a couple of days after application. They do not, however, provide high levels of control for an extended period after application. The best approach to management includes scouting plants again a couple of days after treatment and basing the need for another spray on the observation of

reinfestation and renewed feeding damage. Among the fruit crops they eat (foliage and/or fruits) are apples, peaches, blueberries, brambles, and grapes. Check the spray guides for these crops for specific insecticide recommendations. In general, Sevin, the organophosphates (Imidan, for example), and the pyrethroids are effective. Among the newer codling moth and oriental fruit moth insecticides, Assail and Rimon give some Japanese beetle control, but Altacor and Delegate generally do not (nor do Intrepid, Confirm, Entrust, or SpinTor). Of the OMRI-listed insecticides available for organic growers, only pyrethrins show any meaningful effectiveness against Japanese beetle adults, and they must be used at the upper ranges of their label rates to give much control.

- **European red mite** infestations are building in at least a few apple orchards. The threshold for treatment at this time is (in general) 5 motile mites per leaf (count nymphs, larvae, and adults but not eggs). If predators are present, they may reduce infestations without the need for a miticide application. Among the effective miticides available for use on apples in mid-summer are Nexter, Fujimite, Acramite, Zeal, Envidor, and Kanemite.

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Sampling for Nutrient Analysis in Fruit Trees

Nutrient deficiency and toxicity can reduce yield and cause problems to trees and fruit. Problems such as poor shoot length and leaf color, smaller fruit size, presence of cork spots, soft fruits, low fruit sugars, inadequate crop load, and many other symptoms suggest poor tree nutrition. Growers are encouraged to sample leaves for analysis on an annual basis. Soil analysis should also be done before planting and every two to four years to evaluate the long term nutrient status of the orchard. Soil testing in an established orchard is essential for measuring soil pH because soil pH affects the availability of most nutrients. However, soil testing is not a good indicator of the nutrient status of the tree. The reason is that fruit trees tend to have roots at different soil levels, which makes it difficult to get a good representative sample. Also, the presence of nutrients in the soil does not mean that they are available to the plant. Take, for example, potassium. Many soils in Illinois show adequate potassium levels, yet some orchards can use some potassium, especially in young trees early in the season. For these reasons, the best indicator of the nutrient status of mature orchards is leaf analysis.

When to collect leaf samples. Timing is very important when collecting samples for leaf analysis. **Middle July to early August** is the best time to collect leaf samples. During this period the nutrient status of the tree is most stable. Sampling sooner or later than this period will not give reliable values. Try to take samples at about the same time for each fruit crop. Avoid sampling damaged or diseased leaves and avoid sampling after a cover spray. Some fungicides, such as Mancozeb, contain zinc and manganese. It is difficult to wash pesticides off the leaf surface, so wait a few days after a cover spray before you take samples.

How to collect leaf samples. Consult with the laboratory that will do the testing for you. Most laboratories will ask for about 60 to 100 leaves, but 20 to 30 are sufficient. You need to collect fully expanded, healthy leaves, somewhere from the middle of this year's shoots. Avoid taking young leaves at the tip of the shoot and those that are on the bottom end of the shoot. Also avoid taking damaged or diseased leaves, and avoid mixing leaves from non bearing and bearing trees and from trees of different cultivars. It is also advisable to keep leaves from different rootstocks separate, since rootstocks affect leaf size. You can use one of two ways to collect leaf samples. One way is to walk through the orchard and pick no more than two leaves from shoots that are in the middle of the canopy. Pick from random trees, but avoid taking leaves from the edge of the orchard. Another way is to pick leaves from 10 to 12 representative trees in the orchard. Make sure to keep record of cultivar, rootstock, air temperature, relative humidity, location in the orchard, and date of sampling. Place leaves in paper bags and keep in a dry place until shipped to the laboratory for analysis. There are several laboratories in Illinois and in surrounding states that analyze leaf samples. Call your local extension office for information.

The following table lists adequate levels of macro and micronutrients in apples and peaches. These rates are based on a fully grown tree of medium size. Fertilizer rates should be adjusted for tree age and size.

Adequate nutrient ranges in apple and peach leaves

Macro nutrients in %	Apples	Peach
Nitrogen	2.0 – 2.8	2.5 – 3.5
Potassium	1.5 – 2.5	1.2 – 2.8
Phosphorus	0.15 – 0.4	0.3 – 0.4
Calcium	1.0 – 2.0	1.5 – 2.5
Magnesium	0.2 – 0.5	0.2 – 0.5
Micronutrients in ppm		
Iron	50 -400	50 - 400
Manganese	20 – 200	20 - 200
Boron	20 – 60	20 - 80
Zinc	15 – 70	15 - 70
Cu	5- 20	5 - 20

Adapted from D. Meador and R. Marini, 1987

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Vegetable Production and Pest Management

Update on the Recent Salmonella Outbreak in Tomatoes

Between April 10 and June 10, an outbreak of salmonella traced to eating raw tomatoes was reported in New Mexico and Texas. Since then, government officials have indicated that more than 550 people in 32 states including Illinois and the District of Columbia have been infected. The FDA issued a warning to consumers not to eat red Roma, red plum and round red tomatoes because most of the reported illnesses involved these types. Several fast-food restaurants and grocery stores pulled raw tomatoes from their menus and shelves until it was determined that tomatoes from certain states are not linked to the outbreak. Last week the FDA had concluded its trace-back investigation and found that the sources are likely linked to a few farms in Mexico and Florida. The FDA is continuing its investigation in order to determine the exact source(s) of the outbreak.

So what is salmonella and how does it infect fruits and vegetables? Salmonella is a microscopic rod shaped bacteria that lives in the intestines of poultry, swine, and especially reptiles such as turtles and snakes. In the case of reptiles, the bacteria can survive on the skins of these animals for a long time. Salmonella can also be found in water, soil, insects, animal manure, seafood, and many other sources. Symptoms of salmonella infection are nausea, vomiting, abdominal cramps, diarrhea, and fever. The symptoms usually occur from 6 to 48 hours after infection and may last for 1 to 2 days in healthy adults or longer if the conditions are favorable. A person can get sick from ingesting as little as 15 to 20 cells. Nearly all fruits and vegetables can be contaminated with salmonella. Last March, the FDA reported an outbreak of salmonella in cantaloupe imported from Agropecuaria in Honduras. Most salmonella and other microbial outbreaks occur at or after harvest because workers fail to wash their hands or use unclean water. However, outbreaks can also occur in the field if irrigation water is contaminated with animal manure or if field sanitation is inadequate. The bacteria can survive on produce surfaces and in cracks and wounds, even when the fruits are stored in cold rooms. Sanitizers such as chlorine will reduce salmonella presence on the fruit surface, but they are less effective at killing bacteria in the stem scar and in puncture wounds. Chlorine dioxide gas was shown to reduce salmonella in the stem scar of tomato but was ineffective in killing salmonella in puncture wounds. Good agricultural practices, which include providing clean field toilets with soap, running water, and disposable towels, restricting wild and domestic animals from roaming through the farm during the growing season, use of clean water for irrigation and composted manure for fertilization, and most importantly training farm staff in proper hygiene are key factors in protecting your customers, your staff, and yourself from getting infected.

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Vegetable Insect Notes

- **Heavy and early flights of corn earworm:** Counts of moths of this insect in pheromone traps have been unusually high for so early in the season at locations throughout the state, including several central and northern sites. Counts have topped 100 per night at Collinsville, Quincy, and even in Whiteside County east of the Quad Cities. Counts greater than the 30 to 50 per night range have been common at Urbana, near Morris, and at St. Charles. Growers are advised to get traps out, make counts, and be prepared to control this insect. We are reporting counts from traps to a migration monitoring web site

(<http://www.pestwatch.psu.edu/sweetcorn/tool/tool.html>); check it out to see the status of this insect at various locations in eastern North America. Another site that may be of interest is the Insect Migration Risk Forecast (<http://www.agweather.niu.edu/IMRFForecast.html>) updated regularly by Dave Changnon and Mike Sandstrom of the Northern Illinois University Department of Geography.

- **Corn earworm control:** The [June 10, 2008 issue of this newsletter](#) made the case for using a pheromone trap for monitoring earworm activity and promised recommendations for control were forthcoming. So: (1) **As of June 25, 2008**, the best insecticides for earworm control in sweet corn are still the pyrethroids, particularly Capture, Warrior, Mustang Max, and Baythroid (and their generic formulations). (2) Corn earworm resistance to pyrethroids has been documented, and resistant populations are not controlled well by pyrethroids in small-plot trials. (3) When earworm moths are present and laying eggs, steps that should maximize control include (a) making a first application just before silks emerge to kill adults before eggs are laid on silks; (b) making a second application within 2 days after silks first appear; (c) maintaining a spray interval of no longer than 3 days when pressure is moderate to high (moth counts greater than 10-20 per night and daily mean temperatures greater than 70 degrees F). (4) Currently registered alternatives to pyrethroids include SpinTor/Entrust, Radiant, Sevin XLR Plus, Lannate, and Larvin, but these insecticides have not worked very well as stand-alone alternatives to pyrethroids or as tank-mixes with pyrethroids. **(5) Regulatory agencies in Illinois and other nearby states have requested a Section 18 Emergency Use Exemption for Coragen 1.67SC (rynaxypyr) for use on sweet corn for earworm control, and communications to date make it seem highly likely that the US EPA will grant that exemption by July 1, 2008. Coragen has been very effective against corn earworm (and European corn borer) in research trials in Illinois and elsewhere. If granted, the Section 18 label will allow 3 applications at the rate of 5 fluid ounces per acre. Coragen is not likely to give significant adult control, so using it before silks are present is not recommended. Using Coragen instead of a pyrethroid in the sprays applied 2 days after silks are first present and in 2 of the next 3 sprays will likely give the greatest benefit in preventing large worms from being present at harvest. DO NOT use Coragen on sweet corn unless and until official approval of the Section 18 label is announced ... you will need to have a copy of the Section 18 label in your possession in order for use of Coragen on sweet corn to be legal. You may, however, want to begin trying to source a supply of this insecticide.**
- Furadan's 24-C registration for use in cucurbits is no longer in effect. The 4F formulation of Furadan had been used for several year's under a 24-C label (also known as a state label or special local needs label) that allowed in-furrow application at planting or transplanting for systemic uptake and control of cucumber beetles (and some additional pests). That 24-C label has expired, and Furadan 4F is not to be used on cucurbit crops.
- Potato leafhoppers are present in fruits, vegetables, field crops, and landscape plants. Their feeding causes cupping and browning of foliage and reduced plant growth and yield. Potatoes and snap beans are among the vegetable crops most often damaged by potato leafhopper. Check the [2008 Midwest Vegetable Production Guide](#) for insecticide products and rates for potato leafhopper control.

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Phytophthora Blight of Peppers

During the past two weeks, *Phytophthora* blight, caused by *Phytophthora capsici*, was observed in the commercial fields as well as in experimental plots in Illinois. *Phytophthora* blight is the most important disease of peppers in Illinois and occurs every year. The pathogen survives in soil for more than three years. Plants can be infected at any growth stage.

The first symptom on peppers in the field is commonly crown rot. A lesion girdling the base of the stem causes rapid collapse and death of the plant. Following rainstorms, black, girdling lesions form on the stem and in the exiles of pepper branches, resulting in wilting of leaves and branches. The affected plants gradually die. Leaf symptoms are less common. When leaves are infected, half-moon-shaped, tan lesions form at the margin. Infected fruit develop dark, water-soaked lesions, which are commonly covered with white mold. The water-soaked lesion may not be immediately obvious; however, the soft, infected tissues may slip off, or can be easily punched when touched during picking. Affected fruit wither, but remain attached to the plant.

The most effective practice in controlling *Phytophthora* blight of peppers is preventing the pathogen from being moved into the field. Pepper cultivars resistant to *Phytophthora* blight are available. 'Paladin' has shown high resistance against *P. capsici* isolates in Illinois. Also 'Seigers 9915776', 'Aristatol', and 'Revolution' have exhibited moderate resistance against *P. capsici* isolates in Illinois. Do not irrigate your plants from a pond that contains water drained from an infested field with *P. capsici*. Fungicides can be used to reduce *Phytophthora* infection in pepper fields. Chemical control measures commonly involve soil drenches early in the season and foliar applications during the season. Available effective fungicides for foliar application are: Tanos 50WDG (10 oz/acre), Forum 4.16SC (6 fl oz/acre), and Revus 4.09SC (8 fl oz/acre). Also Ridomil Gold Copper, Agri-Fos, ProPhyt may be used to reduce *P. capsici* infection. For additional information on *Phytophthora* blight of peppers, refer to <http://veg-fruit.cropsci.uiuc.edu/new/Peppers.asp>.



Phytophthora blight of bell pepper, Illinois, 2008

Babadoost

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