



UNIVERSITY OF ILLINOIS EXTENSION

College of Agricultural, Consumer, and Environmental Sciences

Illinois Fruit and Vegetable News

Vol. 14, No. 12, August 27, 2008

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@illinois.edu. The *Illinois Fruit and Vegetable News* is available on the web at: <http://www.ipm.illinois.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

- **Pumpkin Field Day, 9:30 a.m. on September 11, 2008** ... at the SIU Belleville Research Center. See the note below from Elizabeth Wahle.

Regional Updates

From southwestern Illinois ... Commercial pumpkin growers and others interested in pumpkin production are encouraged to come to Belleville, IL on September 11th to participate in the 2008 Illinois Pumpkin Field Day. This event provides attendees with an opportunity to hear from researchers and extension specialists discuss issues in pumpkin production as well as to showcase on-going pumpkin field research. This event for 2008 is being hosted by the Southern Illinois University Belleville Research Center. Speakers from the University of Illinois, UI Extension and Southern Illinois University will be on hand. Attendees should arrive for on-site registration by 9:30 a.m. (slight change from previous announcements). Research Tours will begin promptly at 10:00, and lunch will be at 12:30. Participants coming west on I-64 can find the Southern Illinois Belleville Research Center by taking exit 23 and going south on IL Rt. 4 until the intersection with IL Rt. 161 is reached (about 1.5 miles), then take a right and it is about 2 miles west of IL Rt. 4 on IL Rt. 161 on the left side of the road. Participants coming east from the St. Louis area can take exit 19 off of I-64 and go south until the intersection with IL Rt. 161 is reached, then take a left and follow IL Rt. 161 east for approximately 3 miles and the Southern Illinois Belleville Research Center will be on the right. Questions may be directed to Alan Walters (618-453-3446, awalters@siu.edu) or Elizabeth Wahle (618-692-9434, wahle@illinois.edu).

Peach harvest is at or beyond 'Cresthaven' and apple harvest has started as well. 'Gala', 'Jonathan', and 'Honeycrisp' are among the first. Nights have cooled, allowing for good coloration of reds. Blackberries and everbearing raspberries are still producing.

Prior to the more recent cool-down, tomatoes were ripening at a snail's pace but seemed to have finally kicked in with more abundant harvest weights. Sweet corn harvest and sales are still strong. Corn earworm moth catches are coming up again after a bit of a lag.

On behalf of University of Illinois Extension, I offer my condolences to the family of Jacob Hagen. Jacob, son of Keith and Rita Hagen and grandson of Kenny and Carolyn Hagen, died Saturday, August 16th after sustaining head injuries from a fall down concrete

steps at St. Mary's School in Brussels on August 10th. My heart breaks for the family to have lost one so young, only 22. Memorials may be made to Saint Mary's Catholic School in Brussels or Saint Mathew's Lutheran Church in Brussels.

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

In northern Illinois, the last 2 weeks have seen clear, sunny days with temperatures in the upper 70s to mid 80s and night temperatures in the upper 60s to low 70s. The area received less than inch of rainfall during the August 6-25 period. Soil moisture content is very low, and irrigation equipment has been used widely on in many farms. Orchardists are continuing with summer spray programs to control apple scab and other summer diseases such as sooty blotch and flyspeck. Insect pest control is still going with sprays targeting codling moths, Japanese beetles, apple maggot adults, mites, and leafrollers. Calcium sprays also are continuing in orchards, and it is the time to increase the rates to 12 lb of calcium chloride per acre or equivalent amounts depending on the product in use to control calcium deficiency-related apple fruit disorders. Many pick-your-own apple orchards are open, and customers are picking early maturing apple varieties such as Redfree, Pristine, Prima, Ginger Gold, Mollies Delicious, William's Pride, and Zestar. Peaches and pears are also ready for picking in some orchards. Birds are a problem in grapes, and it is time to cover the vines with nets and use other bird scaring devices. Adequate soil moisture is very crucial in orchards during this period when fruits are sizing so it is important to irrigate fruit trees during extended dry periods particularly the varieties grafted on dwarfing rootstocks that tend to be shallow rooted. Japanese beetle population remain very high in the region.

Sweet corn, muskmelons, tomatoes, peppers, eggplant, and squash harvesting is going on in the region. Corn earworm moth counts are increasing but very spotty, and growers need to check traps daily and spray when necessary. Sun scald has been very common on fruiting vegetables, particularly in some pepper varieties. Bacterial speck, bacterial spot, septoria leaf spot, and early blight were observed on tomato fruits and leaves, respectively. Western corn rootworm beetles and cucumber beetles were observed on vine crop leaves and blossoms. Flea beetles were observed feeding on leaves of egg plant and cole crops. Aphids have also been observed in vegetable fields, particularly on the underside of the leaves, and squash bugs in cucurbit fields. In pumpkins, I observed powdery mildew and bacterial leaf spot on leaves.

Maurice Ogutu (708-352-0109; ogutu@illinois.edu)

Notes from Chris Doll

This area has received spotty rains this month, and my total is now 0.8 inch. But the record says that I am almost 13 inches above the normal for this year. An unusually cool August has alleviated the stress of low rainfall, and also has made peach picking pleasurable and apple coloring ahead of normal. However, the season continues to be later than normal. For instance, in comparison with 2003, my diary said that this date was midseason for Honeycrisp, the end of Gala, with Cresthaven being picked on the 18th instead of the 26th this year. For some reason, my Loring have only been picked once so far. There has been lots of red color on peaches this year, and I saw some Jonathans this morning that are color-ready, but maturity lacking. If the sugars were present, there would be more red apples.

The cool August temperatures and the later season have made it possible to harvest some nice red raspberries this year. It makes me envious of the growers in the interstate 80 latitude that can grow such a nice crop. But it's nice to be in an area where peaches do well, and that I can be eating the fruits of my labors day in and day out.

The thornless blackberry harvest is nearly complete, and several grape varieties are edible. Reliance, Alden and Canadaigua grapes are picked, and Concords will not be far behind. Bartlett pears are in season, and the apple varieties being harvested are Gingergold, Mollies Delicious, Gala, Prima, Shinsei, and the first Honeycrisp. Sansa had very good color and flavor this year.

Time has been flying and I missed getting the nitrogen fertilizer on matted row strawberries in the middle of the month. Assuming that we will have a long fall, in spite of the warnings for a cold winter by the Farmer's Almanac, plants could still benefit from 35-50 pounds of N at this time, if rain or irrigation takes it into the root zone. New fields with high vigor might be exempted from this treatment.

Another task for mid-August or early September is to level new planting sites and sow the grass cover crop ... then hope for some good rains for seed germination and growth before erosion sets in.

In the Back 40, it has been a season without many insect pests. Nary a codling moth nor Oriental fruit moth has been seen, and mites were not a problem. Diseases were more of a problem, with some peach scab present on both peaches and nectarines, and brown rot on some donut peaches and nectarines. On apples, some bitter rot has been present on a few varieties. An old fungus disease called blotch has shown up on my Gingergold and Cortland. This is a disease that Dr. Turner Sutton mentioned at an Illinois meeting

recently, and I was the only one to recognize it (from my childhood). Control suggestions are welcome.

Stop-drop sprays for apples may be needed before long, especially when the hot weather comes in. NAA is the most common material, and is usually used at 10 ppm, unless grower experience deems higher rates are necessary. There is no need to apply the standard rate until some dropping is noted, and then it takes 3-4 days to become effective. It should be effective for 7-10 days and can be re-applied if needed. There may be some increase in fruit ripening, but that is better than having fruit fall on the ground.

Degree-day accumulations

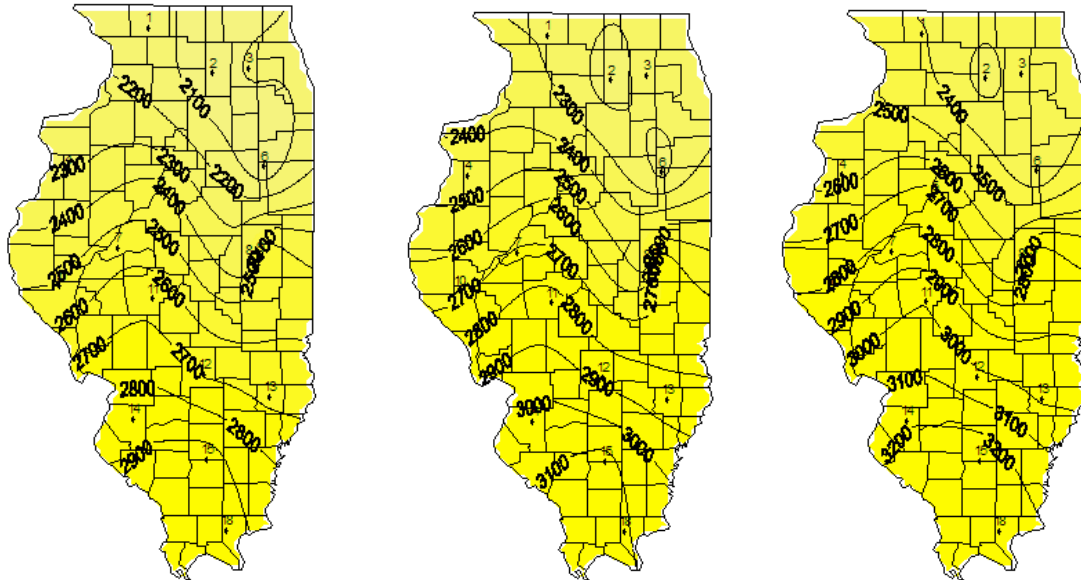
This is the last time for 2008 that degree-day accumulations will be summarized in this newsletter. As days shorten in late August and September, day length becomes as important a determinant of insect development as temperature is. Many pests enter diapause – a form of dormancy or inactivity – in late summer and early fall even though temperatures are warm enough to support continued development. Diapausing in a stage that can overwinter successfully in cold temperatures allows the species survival, whereas continued development in the fall might lead to a vulnerable stage being present as temperatures drop. A significant percentage of late stage larvae of codling moth and European corn borer are among many common pests that enter diapause around this time of year.

Degree-day accumulations presented below 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.illinois.edu/degreedays/index.html>). The list for 18 locations 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@illinois.edu).

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

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

Station	County	Base 50F DD Jan 1 – Aug 26, Historic Average	Base 50F DD Jan 1–Aug 26, 2008	Base 50F DD Jan 1–Sep 2, 2008 (Projected)	Base 50F DD Jan 1–Sep 9, 2008 (Projected)
1. Freeport	Stephenson	2324	2149	2289	2409
2. Dekalb	Dekalb	2353	2007	2139	2253
3. St. Charles	Kane	2253	2120	2253	2368
4. Monmouth	Warren	2513	2276	2424	2553
5. Peoria	Peoria	2632	2449	2606	2742
6. Stelle	Ford	2477	2023	2172	2303
7. Kilbourne	Mason	2742	2556	2713	2846
8. Bondville	Champaign	2554	2309	2458	2588
9. Champaign	Champaign	2717	2606	2767	2910
10. Perry	Pike	2676	2507	2669	2805
11. Springfield	Sangamon	2869	2674	2845	2996
12. Brownstown	Fayette	2977	2689	2864	3017
13. Olney	Richland	2944	2673	2840	2988
14. Belleville	St. Claire	3042	2871	3043	3191
15. Rend Lake	Jefferson	3789	2953	3134	3294
16. Fairfield	Wayne	3104	Missing	Missing	Missing
17. Carbondale	Jackson	3053	Missing	Missing	Missing
18. Dixon Springs	Pope	3118	2927	3106	3263



Degree-day accumulations, base 50 F, January 1 – August 26, 2008 (left), and projected through September 2 (center) and September 9 (right).

Fruit Production and Pest Management

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 to date based on a threshold of 45 degrees F. Moth flight, egg-laying, and larval hatch are all pretty much ongoing by now, as the “slowest” individuals of one generation blur into the “fastest” developers of the next. Flights continue to be light in most regions, but we have seen a modest surge in counts in our traps near Urbana since mid August.

<i>Oriental fruit moth</i>	OFM Biofix Date	DD Base 45 F, through August 26	DD Base 45 F, projected through September 2	DD Base 45 F, projected through September 9
Murphysboro (Dixon Springs weather data)	April 20	3277	3489	3678
Brussels (Brownstown weather data)	April 21	3115	3322	3507
Urbana (Champaign weather data)	April 25	2987	3181	3356

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 August 26	DD Base 50 F, projected through September 2	DD Base 50 F, projected through September 9
Murphysboro (Dixon Springs weather data)	May 3	2509	2686	2840
Belleville (Belleville weather data)	May 7	2472	2641	2786
Brussels (Brownstown weather data)	May 9	2321	2493	2644
Urbana (Champaign weather data)	May 16	2265	2424	2565
Speer (Peoria weather data)	May 18	2088	2242	2375
Malta (Dekalb) (Dekalb weather data)	May 27	1682	1810	1922

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. Again, a point explained last week ... because the first observable stage of codling moth and oriental fruit moth each year is the adult moth, I refer to first generation adults giving rise to first-generation eggs, and at this time of year the wording in the table below refers to third generation moths laying third generation eggs (the third round of egg-laying for the season), etc. If the wording seems to suggest a sequence that is out of order – moths before eggs – at least you know the reason. And again, as for the chicken and the egg, who came first is not my specialty.

50 percent of second generation eggs hatched	~1580 DD ₅₀ after biofix
First moths of third generation emerge	~1920 DD ₅₀ after biofix
99 percent of second generation eggs hatched	~2100 DD ₅₀ after biofix
Beginning of third generation egg hatch	~2160 DD ₅₀ after biofix
*First moths of fourth generation emerge	~2900-3000 DD ₅₀ after biofix
*Beginning of fourth generation egg hatch	~3200 DD ₅₀ after biofix

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

* Extrapolated from the model presented by Beers et al.

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Vegetable Production and Pest Management

Aphids on pumpkin fruits

In the last couple of weeks I’ve received a few questions about aphids on pumpkins ... on the fruits. Similarly, last year I observed heavy infestations in a couple of fields at this time. Where aphids are numerous on leaves or fruit of cucurbits and the infestation includes winged adults and wingless forms as well, the culprit is almost always cotton-melon aphid, *Aphis gossypii*. As vines dry down and the only succulent plant parts in the field are the fruits, thousands of aphids can be found on a single pumpkin. Controlling aphids to prevent colony buildups that result in live insects on fruit at harvest (and a cosmetic or contaminant issue for shipping and sales) can be necessary at this time.



Cotton-melon aphid, *Aphis gossypii* (Univ. of Tennessee)

Under the “Aphids and Leafhoppers” heading of the [2008 Midwest Vegetable Production Guide](#), there are lots of insecticides listed, but several carry the note “leafhoppers only,” and others are labeled for one or two but not all of the vine crops covered in that chapter. For pumpkins ...

- Insecticides that are primarily aphicides and that have at least some locally systemic activity for greater control where complete coverage is difficult are Actara and Fulfill. Another similar aphicide that was registered for use on pumpkins after the 2008 production guide was prepared is Beleaf (though I am not sure that it is available yet in Illinois). Where aphids are THE target for sprays, choose one of these specific aphicides. Preharvest intervals (PHIs) are zero days for Actara, Fulfill, and Beleaf on pumpkins.
- Older products that carry labels against aphids and are fairly effective IF thorough coverage is possible include Endosulfan (2-day PHI), Lannate (1- to 3-day PHI), and Malathion (3-day PHI).
- Organic growers may use M-Pede or other insecticidal soaps ... they are fairly effective against aphids that are contacted directly by sprays.
- Pyrethroids generally are not good aphicides, and this means that Baythroid, Capture, Danitol, and Pounce (and generic versions of all of these) usually do not provide adequate control of aphids in pumpkins. They do, however, kill common predators and parasites of aphids, and as a result, they may trigger greater outbreaks.

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