

## *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, 217-333-6651, [weinzierl@uiuc.edu](mailto: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 address above.

*This issue's words of wisdom ... the jokes ... are at the end of newsletter. Check the last page.*

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

### *Crop and Regional Reports*

**In northern Illinois**, recent weather has been characterized by mostly clear days with day temperatures in the upper 70s to mid 90s except on July 24-25 when day temperatures were in the 99-104 range in many areas. Night temperatures have been in the upper 50s to 60s except on July 24-25 when temps remained in the upper 70s. Between July 20 and August 2, rainfall of about 1.2 inches was recorded in many areas in the region; some areas recorded more than others, for example some sites in Kankakee County received more than 3 inches of rainfall, while other parts of the county received about 1 inch during the same period. Similar variations were reported in the other counties. Soil moisture is still low to very low in many areas, and irrigation equipment has been used at all vegetable farms and orchards that have it available.

Orchardists with fruit on trees are continuing summer spray programs. Apples are sizing well but are a bit smaller at this time of the year compared to last year, particularly in orchards without irrigation. Powdery mildew on leaves and subsequent leaf curling have been observed on apples. There are a lot of western corn rootworm beetles flying around and some of them are feeding on peach fruits. Peaches are ready for harvesting in many farms, and summer-bearing raspberry picking is over. Some early grape varieties are in the veraison stage and need protection from birds.

Harvesting of cucumbers, squash, sweet corn, early tomato varieties, and other vegetables continues on most farms. Muskmelon harvest is underway in the Kankakee area and will soon commence in other areas in the region. Corn borer and corn earworm moth counts are still low. Other insects and related pests observed in vegetable farms are: western corn rootworm beetle feeding on pepper, pumpkins and sweet corn leaves; aphids feeding on leafy vegetables; squash bugs on pumpkins; and spider mites on melon leaves. I received reports on blossom end rot on tomato fruits, smut on sweet corn ears, mosaic virus on pumpkins and squash leaves, and downy mildew on pumpkin leaves.

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## ***Upcoming Meetings and Programs***

### ***From the July 12<sup>th</sup> twilight meeting in St. Charles ...***

About 30 people were on hand for the July 12<sup>th</sup> St. Charles Horticulture Research Center twilight meeting. Topics included insect management in green beans, pumpkin weed control, reflective mulches for pumpkin production, monitoring aphid vectors of cucurbit viruses, and colored mulches for pepper production. A few pictures ...



Above left: Lloyd Nichols looks on as Rick Weinzierl explains the solar-powered suction trap used to monitor aphids. Above right: Bill Whiteside answers questions about a pumpkin weed control trial.

Below: Laboratory-reared European corn borer egg masses on wax paper pinned to a snap bean leaf to artificially infest a plot for an insecticide evaluation.



**September 8, 2005, Illinois Pumpkin Field Day**

SIU Belleville Research and Education Laboratory, Belleville, Illinois. 10:00 a.m. -2:30 p.m. Contact Elizabeth Wahle at 618-692-9434 or [wahle@uiuc.edu](mailto:wahle@uiuc.edu).

**January 17-19, 2006, Illinois Specialty Crops Conference**

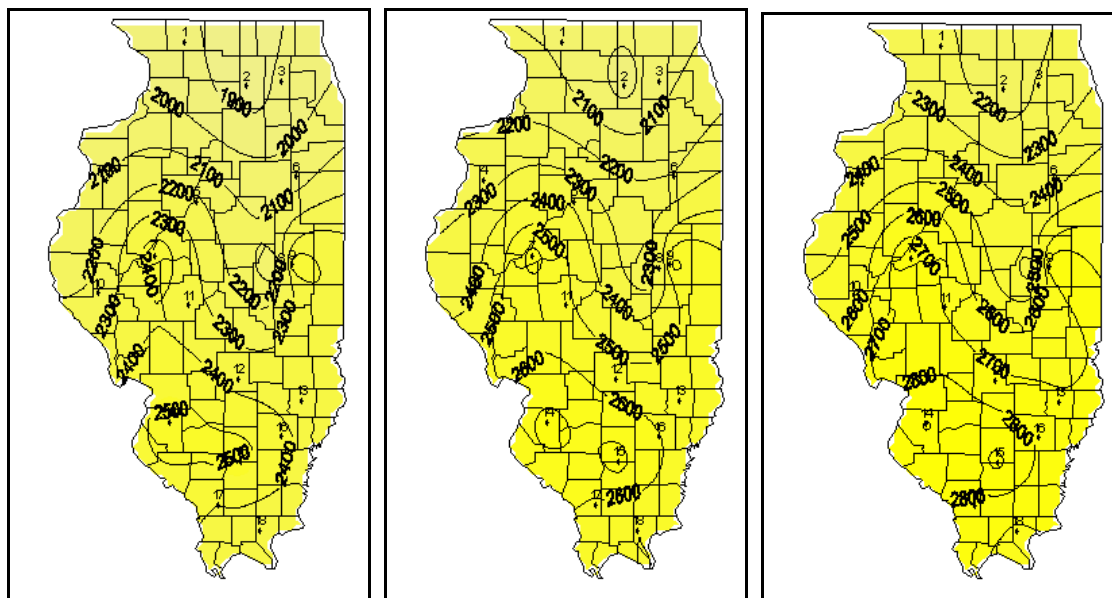
Crowne Plaza, Springfield, Illinois. Details will follow in upcoming weeks.

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**Degree-Day Accumulations**

Degree-day accumulations, base 50 F, January 1 through August 1, and projections through August 15, 2005.

Site No.	Station	County	DD, Base 50 Jan 1 - Aug 1 2005	Projected DD, Base 50 Jan 1 - Aug 8 2005	Projected DD, Base 50 Jan 1 - Aug 15 2005
1	Freeport	Stephenson	1930	2083	2232
2	Dekalb	Dekalb	1816	1961	2104
3	St. Charles	Kane	1933	2075	2216
4	Monmouth	Warren	2098	2250	2401
5	Peoria	Tazewell	2223	2387	2549
6	Stelle	Ford	2049	2206	2362
7	Kilbourne	Mason	2473	2635	2797
8	Bondville	Champaign	2030	2185	2339
9	Champaign	Champaign	2465	2632	2799
10	Perry	Pike	2212	2377	2544
11	Springfield	Sangamon	2338	2525	2691
12	Brownstown	Fayette	2357	2537	2717
13	Olney	Richland	2360	2534	2707
14	Belleville	St. Clair	2550	2728	2907
15	Rend Lake	Jefferson	2551	2737	2922
16	Fairfield	Wayne	2420	2604	2787
17	Carbondale	Jackson	2397	2576	2754
18	Dixon Springs	Pope	2318	2500	2681



Degree-day accumulations, base 50 F, from January 1 through August 1 (left) and projected through August 8 (center) and August 15 (right), 2005.

Degree-day data are summarized from records provided by the Midwestern Climate Network, Illinois State Water Survey, Champaign, IL. For more information, consult the Midwestern Climate Center at <http://sisyphus.sws.uiuc.edu/index.html> and the Degree-Day Calculator at <http://www.sws.uiuc.edu/warm/pestdata/>.

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## *Notes from Chris Doll*

*Weather and Phenology:* July high temperatures and low rainfall extended drought conditions in some orchards, and others had over six inches of rain to offset the heat. Recorded amounts in this area range from 1.1 inch to 7.0 inches for the month. Walking orchards with these variations is quite a contrast. The driest orchard has mature trees with yellow, wilting leaves and generally small fruits. The wettest orchard has great fruit size, green foliage and cover crop and weeds that keep on growing. Some of us have seen dry years, but few have seen few mature trees die from drought. In 1954 in western Iowa, a 10-year old apple orchard survived when the total available water to an 8-foot depth in August was less than 0.5 inch. Mature trees can survive pretty well, but the crop suffers.

Some of the old text books talk about drought spot, which they related to calcium or cork spot. In other words, the effects of low calcium uptake was known many years before the application of foliar calcium to help alleviate the problem. To date, I have only seen two fruits that show cork spot, but expect more where the drought persists. Some growers hesitate to maintain calcium chloride sprays in the absence of rain, but it is best to keep applying it until some foliar damage is seen.

Dr. Peter Hirst of Purdue University reported last week that Indiana appears to be about a week behind "normal" in maturing fruits. He also questions when "normal" is. For that reason, I will say that my phenology records continue to run very close to 2004 so that you can make that comparison.

Tree fruit problems seem to be more physiological than pest-oriented. A fair amount of sunburn has occurred on apples, especially where overloaded shoots have dropped below the horizontal level. Some highly colored red peaches have shown heated flesh problems as well, and blackberries have had plenty of white drupelets where soil moisture was lacking. It appears to be one of the worst years for split peach pits, thanks to the late freeze and other factors. Mites have required control in several apple orchards, but peaches have been fairly free. Some fire blight strikes continued in July when the rains came, and I have seen some bitter rot in apples and brown rot in peach, but in low amounts.

**AUGUST HAPPENINGS:** In a month, the peach crop will be close to history and the apple harvest will begin in this area. There are a couple of plant regulating chemicals available to apple growers to help in harvest management, and proper timing of application is critical to their successful usage (that and uneventful weather).

Ethephon (Ethrel) can be a useful tool to advance maturity and color development in some of the red varieties. Ideal conditions for its use are nighttime lows of 55-63 degrees and daytime highs of 73-85 degrees (F). It should be applied 15-20 days ahead of the normal early harvest of a variety, and under high temperature conditions, this can be reduced to 10-15 days. With "normal" weather, apples should be ready to harvest with increased maturity and color 8-12 days after treatment. Only a small portion of the crop should be treated because the normal crop will follow closely behind. A critical factor in Ethrel usage is the addition of NAA as a stop drop to avoid excess dropping.

RETAIN is a compound designed to delay fruit maturity and extend the harvest season of one or more varieties. For use on apples, it should be applied about 30 days prior to normal maturity, which means that the seasonal phenology and normal dates require study. My experience has been that anything less than 30 days in the warm southern areas does not give very positive results. The product is now labeled for use on peaches for delay of maturity and increased fruit firmness. The time of application should be 7-14 days before harvest, and there can be differences in varietal reaction. If harvest extension will help a grower in the marketing scheme, it deserves a trial.

Mid-August is the usual cutoff date for collecting leaves for nutrient analysis. This is a good technique to chart the status of one or more blocks of apples, peaches, or any of the small fruits. Under drought conditions, leaves may be dirty or have a build-up of calcium and other spray materials that will require washing off after harvest and before drying. Once dry, they can be sent to lab at any time.

Matted-row strawberry growers might need the reminder that mid-month to early September is the time for nitrogen applications for most fields. Fifty units of nitrogen is a base amount to apply before adjusting for individual field conditions. It might also be the time to make an herbicide application to get ahead of the weeds that germinate in September.

It has been a difficult year of for orchardists in this area to establish a good sod in new plantings. Some that were seeded in the spring have a very poor stand and also lack the leveling needed for smooth transport of ripe fruit in years to come. Fall seedings usually have a better chance of establishment than spring plantings in the Midwest.

*Chris Doll*

## ***Vegetable Production and Pest Management***

### ***Tips for Managing Drip Irrigation***

Irrigation in any form is a tool for managing the vigor, productivity and quality of a crop. While many growers choose not to use irrigation due to its cost and the overhead of management, those who do find that they can plan much better on the volume and quality of product from their fields. Rainfall, while sometimes adequate, is hardly ever timely for the full season. In a season like 2005, it's easy to see what a key role irrigation plays in supplementing natural rainfall.

Drip irrigation is especially suited to specialty crops for several reasons. First, it has a natural design advantage where crops are planted in small blocks and where the operation is highly diversified. Growers can design each year's production into zones, which can easily be rearranged from year to year. Different tubings can be purchased where needed. This can be especially useful when the operation grows perennial crops as well as annuals and when the farm has different soil types with widely ranging water infiltration rates. Also, a high number of zones need not make management that much more difficult because control of the whole system can be centralized, even automated.

In choosing a drip irrigation system for specialty crop production, growers need to be aware that setting up the system needs to be done promptly as crops are established. Once the plant is in the ground, it needs water. Providing adequate water for crop growth and development can have a significant impact on timeliness of harvest. Delays and crop water stress can set back production volume and fruit set, resulting in later harvests. It's usually those seasons when water stress is introduced early that growers with irrigation stand to gain much from their systems. Managing them well in such seasons is critical.

Knowing when to irrigate and when to wait is a key to successful economic optimization of a drip irrigation system. It's important to understand that plants use water in several ways, including cooling the plant and respiration, as well as building plant tissue. As temperatures get high, plants consume more moisture to avoid stress from heat buildup. Knowing whether or not soil moisture is adequate to allow the plant to consume more during hot weather is critical to efficient irrigation. Using tools such as tensiometers and gypsum blocks in stations designed to measure moisture at multiple depths gives the grower a tool for monitoring soil moisture and making watering decisions accurately. As water is withdrawn, irrigation can be used to replace it.

One of the drawbacks to drip irrigation is that the tape used by most growers is vulnerable to physical damage. This can be caused by equipment driving over it, other mechanical damage, hoes hitting it, or rodents chewing on it. While these things happen, they are addressed simply enough. Plastic couplers can be used to reconnect the tubing after slicing out the damage. It pays to carry a few connectors in your pocket as you walk the fields.

Irrigating in zones means that the farm can be irrigated in stages. Each day, a fraction of the farm is irrigated. At the end of 4-5 days, the whole farm can be fully irrigated. If needed, the cycle can be re-initiated. This means that demands on well resources are minimized in drip systems through reduced daily demand and through more efficient delivery of water resources to the crop.

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### ***Corn Earworm, European Corn Borer, and Western Bean Cutworm***

Although corn earworm numbers remain relatively low in comparison with recent years, counts in traps have increased in late July at Collinsville and as far north as Urbana (though still modest here). Second flight of European corn borer has been light throughout most of the state, with numbers now in the teens to 20s per night at St. Charles. In general, growers who do not operate pheromone traps or light traps for these insects should still be treating vulnerable crops such as sweet corn, peppers,,

tomatoes, and snap beans, but spray intervals may not need to be quite as tight as needed when pressure is high (so spray intervals of 3 to 4 days in silking sweet corn instead of 2 to 3 days). If moth flights increase and higher levels of control are needed in sweet corn later this month and into early September, remember that starting sprays within 2 days after silks first emerge and shortening the spray interval, NOT increasing rates to the highest possible level, are usually the keys to successful control.

Growers in northwestern and north central Illinois in particular may want to review a fact sheet on western bean cutworm ([http://www.ipm.uiuc.edu/vegetables/insects/western\\_bean\\_cutworm/](http://www.ipm.uiuc.edu/vegetables/insects/western_bean_cutworm/)). This insect infests sweet corn in much the same way that corn earworm does, and several larvae can be found in the tip of a single ear. Although this insect has been common in states to our west, it was not known to occur as a sweet corn pest even in eastern Iowa until last year (or perhaps 2003). Traps in Jo Daviess, Mercer, and Whiteside counties have captured modest numbers of western bean cutworm moths in recent weeks, so some potential exists for them to cause damage in sweet corn. Insecticides labeled for corn earworm control should, in general, be the best choices for controlling western bean cutworm as well.

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## ***Fruit Production and Pest Management***

### ***August and September Codling Moth Control***

Pheromone traps at several locations from southern to northern Illinois continue to catch codling moths with little evidence of a decline between second and third generations. Growers are reminded that insect-free fruit can still become insect-infested fruit if timely sprays are not applied where traps indicate that moth flight and subsequent egg laying and fruit entry are ongoing. Where sprays are needed in blocks with multiple varieties and therefore some varieties may be ready to pick while others are later and still need to be sprayed, choosing insecticides with short preharvest intervals is key. Insecticides that provide moderate to good codling moth control at this time include Sevin (3-day PHI) and Imidan, Assail, and SpinTor/Entrust (all with 7-day PHIs). Preharvest intervals for Guthion, Danitol, and all other insecticides that are adequately effective against codling moth are at least 14 days. Be sure to note that Calypso, although similar to Assail in mode of action against codling moth, has a 30-day preharvest interval.

### ***Stink Bugs in Brambles***

Brown stink bug and green stink bug (and perhaps other species?) commonly move from soybeans and certain other crops to brambles during August and September. Tarnished plant bugs may also feed on developing drupelets. Where stink bug or plant bug control is needed in fall-harvested brambles and picking is near or already underway, pyrethroids are generally the most effective choices. Capture and Discipline (both containing bifenthrin) have 3-day PHIs in brambles. Asana (esfenvalerate) also may be used on brambles and has a 7-day PHI.

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### ***This issue's words of wisdom (well, not always wisdom) ...***

I did a bit of traveling into Tennessee and North Carolina last week and harvested these cute sayings from such sophisticated sources as refrigerator magnets and the like ...

*If a man talks in the forest and there is no woman there to hear him, is he wrong anyway?*

*I think, therefore I don't listen to Rush Limbaugh.*

*In traveling the road of life, ignorance is not bliss, it's blisters.*

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