

College of Agricultural, Consumer, and Environmental Sciences

## *Illinois Fruit and Vegetable News*

Vol. 11, No. 12, July 20, 2005

*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, [weinzier@uiuc.edu](mailto:weinzier@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.*

### ***In this issue ...***

**Crop and Regional Reports** (from Elizabeth Wahle and Maurice Ogutu)

**Upcoming Meetings and Programs** (Grape Seminars by Richard Smart, Dixon Springs Field Day, and Pumpkin Field Day)

**Degree-Days**

**Vegetable Production and Pest Management** (cucurbit pests and pollinators, "Leps" in crucifers, onion thrips, bean leaf beetle, downy mildew of cucurbits, southern blight of tomato)

**Fruit Production and Pest Management** (apple maggot)

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

### ***Crop and Regional Reports***

**In the south and southwest**, like much of the state, we received welcomed rain from the tail end of Hurricane Dennis last week. Much of the area received sufficient rain to benefit crops, but not enough to recharge depleted irrigation ponds. Some areas received as much as 4 inches. With temperatures soaring into the 90s and high relative humidity, conditions are very conducive to disease development. Mohammad Babadoost put out an alert recently to be prepared for downy mildew development in pumpkins, and the same can be said for several diseases in fruits and vegetables, including brown rot in peaches, sooty blotch-fly speck in apples, and black rot in grapes.

Mite infestations seem to have exploded in several crops. I have seen several very heavy infestations in watermelons, tomatoes, and eggplant. Mites and especially their eggs are difficult to see with the naked eye, so having a magnifier (jeweler's loop) really helps to identify this pest. I use a 10X magnifier, but more powerful ones are available as well. One source of magnifiers is Gemplers; they also carry neck lanyards (<http://www.gemplers.com/>). Not only can you get a better view of small insects with a magnifying lens, but disease propagules are more readily seen as well.

Redhaven peach harvest is wrapping up, and growers are expecting to pick varieties like Glohaven, Fire Prince, Jim Dandee, PF-17, and White Lady next. Bounty and Blushing Star are coming on. Fruit size is still up. Correction on the peach picture I included for the last newsletter: The caption should have read PF-15A instead of PF-5A. PF-15A is supposed to come a little after Redhaven, but for the grower in Calhoun, it came just after the Garnet Beauty this year. Blackberries are in full harvest, and quality looks good this year.

Dr. Richard Smart, a world renowned viticulturist, will be visiting Illinois the last week of July. He will be conducting three open seminars, one at Galena Cellars Winery in Galena, one at Belleview Hollow Vineyard just east of Belleview, and one at Southern Illinois University in Carbondale. The cost of the seminar is \$35.00 and includes wine tasting and dinner for those preregistered. Reservations are required. To make a reservation for the Galena (July 26<sup>th</sup>) or Carbondale (28<sup>th</sup>) workshops, contact Bill McCartney at (217) 473-6845 or email: [pbm2@verizon.net](mailto:pbm2@verizon.net). To make reservations for the Belleview (July 27<sup>th</sup>) workshop, contact Jim Nickell at (217) 734-9307 or e-mail: [nickell@adams.net](mailto:nickell@adams.net). In addition, Dr. Smart will be available for private consultations for vineyard owners and managers for a fee. For more information, go to the Illinois Grape Growers and Vintners Association website at [www.illinoiswine.com](http://www.illinoiswine.com) or visit UI Extension at <http://web.extension.uiuc.edu/regions/hort/>. To learn more about Dr. Smart, visit his website at [www.smartvit.com.au](http://www.smartvit.com.au).

The Dixon Springs Agricultural Center is having a field Day August 4<sup>th</sup>. Tours will start at 8:00pm and run to 12:00pm. The walking tour of the horticultural facilities will last 1¼ hours and will include talks on weed control in blueberries and brambles, ideas and options for marketing fresh produce, growing produce in a plasticulture system, and IPM and organic management of apple insects. In addition to the horticultural tour, tours will be available for animal science, crop science, and veterinarian medicine. Lunch will be provided and there is no registration fee. For additional information, contact Bronwyn Aly at 618-695-2444 or [baly@uiuc.edu](mailto:baly@uiuc.edu).

*Elizabeth Wahle (618-692-9434; [wahle@uiuc.edu](mailto:wahle@uiuc.edu))*

**In northern Illinois**, mid July has been characterized by hot, sunny conditions with day temperatures in the 80s to 90s and night temperatures in the 60s to 70s. The region has received less than 1 inch of rainfall since the beginning of July, and this was preceded by dry conditions in June. This has led to extremely low soil moisture levels that are affecting fruit trees, small fruits, and even drought-hardy vegetables such as pumpkins and winter squash to a point where they are showing water stress symptoms. Orchardists are continuing summer cover spray programs, including calcium foliar sprays. Apples and grapes are sizing well. Some Japanese beetle feeding has been observed on grapes, and I have received a report about downy mildew on grapes as well.

Sweet corn, cabbage, summer squash, and cucumber harvesting is ongoing on many farms. Tomato, pepper, and muskmelon harvesting will commence this week in the Kankakee area and in some farms in counties farther north. Watermelon fruits are sizing well, and pumpkin and winter squash are blossoming in some farms despite the dry weather conditions in the region. Insect pest pressure is building up in vegetable fields, with the following species most common: cucumber beetles and squash bugs on pumpkins and other cucurbits; diamondback moth and cabbage looper on cole crops, particularly cabbage and broccoli leaves; aphids, white flies and leafhoppers on peppers; thrips on onion leaves; bean leaf beetles on green beans; and mites on muskmelon leaves.

*Maurice Ogutu (708-352-0109; [ogutu@uiuc.edu](mailto:ogutu@uiuc.edu))*

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

Here are dates for upcoming programs. Additional details for programs in the southern region will be posted as they become available at <http://web.extension.uiuc.edu/regions/hort/>. Note the correction (from issue 11) on the dates of Richard Smart's seminars on grapes ... the dates are July 26, 27, and 28.

### **July 26, 2005. Grape-growing seminar by Dr. Richard Smart**

Galena Cellars, Galena, IL. Contact Bill McCartney at (217) 473-6845 or email: [pbm2@verizon.net](mailto:pbm2@verizon.net).

### **July 27, 2005. Grape-growing seminar by Dr. Richard Smart**

Belleview Hollow Vineyard, Belleview, IL. Contact Jim Nickell at (217) 734-9307 or e-mail: [nickell@adams.net](mailto:nickell@adams.net).

### **July 28, 2005. Grape-growing seminar by Dr. Richard Smart**

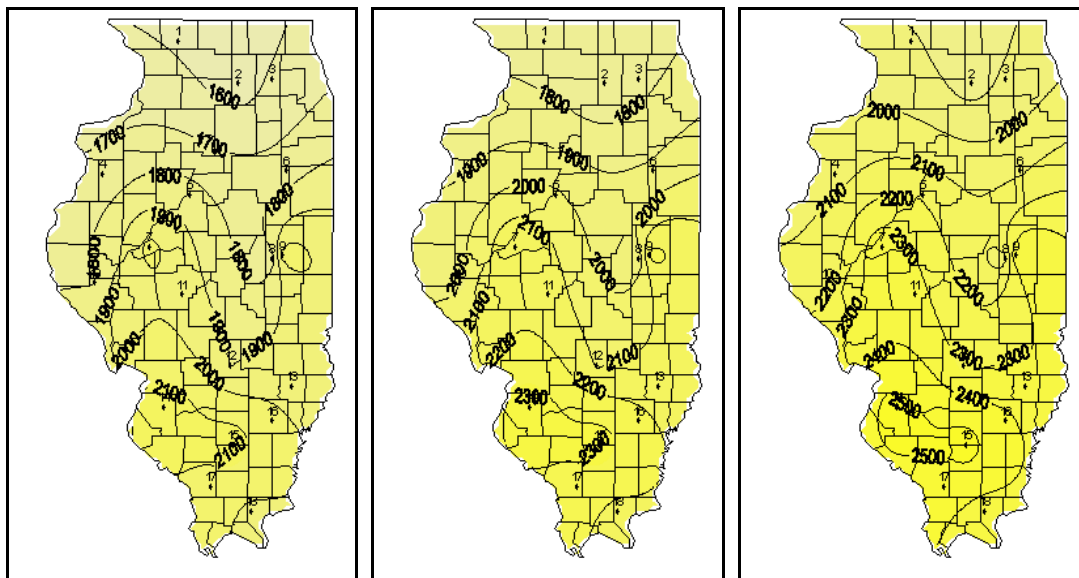
S. Ill. Univ. Horticultural Research Center, Carbondale, IL. Contact Bill McCartney at (217) 473-6845 or email: [pbm2@verizon.net](mailto:pbm2@verizon.net).

### **August 4, 2005. Dixon Springs Agricultural Center Field Day**

University of Illinois DSAC, Simpson, IL. Contact Bronwyn Aly at 619-695-2444 or [baly@uiuc.edu](mailto:baly@uiuc.edu).

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

### Degree-Day Accumulations



Degree-day accumulations, base 50 F, from January 1 through July 18 (left) and projected through July 25 (center) and August 1 (right), 2005.

### Degree-day accumulations, base 50 F, January 1 through July 18, and projections through July 19, 2005.

Site No.	Station	County	DD, Base 50 Jan 1 - July 18 11-yr historic average	DD, Base 50 Jan 1 - July 18 2005	Projected DD, Base 50 Jan 1 - July 25 2005	Projected DD, Base 50 Jan 1 - Aug 1 2005
1	Freeport	Stephenson	1434	1588	1750	1909
2	Dekalb	Dekalb	1547	1546	1703	1855
3	St. Charles	Kane	1614	1614	1768	1917
4	Monmouth	Warren	1729	1728	1895	2054
5	Peoria	Tazewell	1673	1840	2017	2189
6	Stelle	Ford	1619	1753	1922	2085
7	Kilbourne	Mason	1746	2025	2202	2369
8	Bondville	Champaign	1678	1724	1895	2060
9	Champaign	Champaign	1726	2054	2236	2412
10	Perry	Pike	1726	1796	1976	2148
11	Springfield	Sangamon	1852	1961	2151	2334
12	Brownstown	Fayette	1951	1897	2091	2278
13	Olney	Richland	1910	1944	2132	2313
14	Belleville	St. Clair	1973	2166	2358	2543
15	Rend Lake	Jefferson	2109	2153	2253	2547
16	Fairfield	Wayne	2080	2039	2238	2429
17	Carbondale	Jackson	2000	2054	2246	2433
18	Dixon Springs	Pope	2093	1977	2172	2361

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/>.

Kelly Cook (217-333-4424; [kcook8@uiuc.edu](mailto:kcook8@uiuc.edu)) and Rick Weinzierl (217-333-6651; [weinzier@uiuc.edu](mailto:weinzier@uiuc.edu))

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

### ***Vegetable Insect Updates***

**Cucurbit pests and pollinators:** Where control of squash bug is necessary in addition to control of cucumber beetles, products such as Sevin XLR and Adios that are formulated in ways that reduce the hazard they pose to honey bees and other pollinators are not adequate (because they are not effective against squash bug). Capture (containing the pyrethroid bifenthrin) is most effective against squash bugs and also at least moderately effective against twospotted spider mite, but it presents a greater hazard to pollinators than Sevin XLR or Adios. Where it is necessary to use Capture for squash bug or mite control (or other miticides such as Danitol or Dimethoate), be sure to make applications late in the evening when bees are not actively foraging in cucurbit fields. Where mite control is the primary reason for applying a pesticide to blooming cucurbits, Agri-Mek, Acramite, and Kelthane are relatively low in toxicity to honey bees.

**“Leps” in crucifers:** Where diamondback moth and cabbage looper are present in cabbage, broccoli, and other crucifers, choosing the right insecticide is essential. Products containing *Bacillus thuringiensis* (Bt), such as Agree, Xentari, Dipel, Biobit, and others) are alternatives for diamondback moth control where resistance to pyrethroids limits their effectiveness. Ambush, Pounce, Asana, Capture, Danitol, Fury, Mustang, and Warrior are all pyrethroids. Although these pyrethroids differ considerably in effectiveness against individual pest species, where the effectiveness of a given one of these products seems to drop dramatically over the season, pyrethroid resistance in the local diamondback moth population is likely the cause. Switching to a different pyrethroid is very unlikely to solve the problem. Instead, switching to alternatives such as the Bt products, Avaunt (at the high end of the labeled rate), Proclaim, or even Lannate may provide control of pyrethroid-resistant diamond back moths. Where cabbage looper control is necessary, pyrethroids still offer the greatest effectiveness. Large cabbage loopers are not very susceptible to Bt products, so where Bt is the mainstay of spray program, be sure to treat while loopers are small.

**Onion thrips on onions:** Treatment thresholds vary from 10 to 25 per plant for susceptible varieties up to 45 per plant for resistant varieties. See page 105 of the [2005 Midwest Vegetable Production Guide](#) or page 219 of the *2005 Illinois Agricultural Pest Management Handbook* for partial listings of susceptible and resistant varieties. The pyrethroid Ammo (cypermethrin) is especially effective against onion thrips; Warrior and Fury/Mustang are other effective pyrethroids, and PennCap-M may also be used for onion thrips control on onions. Direct ground-applied sprays to the centers of plants, and use a spreader-sticker to improve coverage and control. Surround (kaolin) may provide some value in organic production systems. Treating during the early portion of bulb formation is best.

**Bean leaf beetles on green beans** feed on pods and cause scars that make the crop unmarketable. They’re susceptible to several registered insecticides ... the key is to scout often to detect initial infestations and also to detect reinfestations a few days after treatment. Orthene, Capture, Sevin, Dimethoate, Warrior, and Fury/Mustang all are labeled and effective. If timing coincides with the need to kill European corn borer or corn earworm to prevent their entry into pods, choose Orthene or one of the pyrethroids (Capture, Warrior, or Fury/Mustang).

Rick Weinzierl (217-333-6651; [weinzier@uiuc.edu](mailto:weinzier@uiuc.edu))

### ***Vegetable Diseases***

#### ***Downy mildew of Cucurbits***

Downy mildew, caused by *Pseudoperonospora cubensis*, affects all cucurbit crops. In Illinois, this disease usually occurs toward the end of the season. There has been no report of occurrence of downy mildew in Illinois in 2005 yet, but it has been reported on cucurbit crops in the eastern US from Florida up to New Jersey. Periodically scouting cucurbit fields for presence of downy mildew symptoms is the first step in the effective control of this disease.



Downy mildew lesions on the upper surface of a pumpkin leaf



Downy mildew lesions on the lower surface of a pumpkin leaf

Downy mildew affects only leaves. Symptoms vary with the host and environmental conditions. The first symptom is usually the appearance of indistinct, pale green areas on the upper leaf surface. The pale green areas soon become yellow in color and angular to irregular in shape, bounded by the leaf veins. As the disease progresses, the lesions may remain yellow or become brown and necrotic. During moist weather the corresponding lower leaf surface is covered with a downy, pale gray to purple mildew. On watermelons, yellow leaf spots may be angular or non-angular, and they will later turn brown to black in color. Often on watermelons an upward leaf curling will occur.

The downy mildew pathogen survives only on cucurbit hosts. It overwinters in the southern United States where cucurbits are grown during the winter, and it progresses northward with cucurbit production each spring. Usually by the time downy mildew becomes established in the Midwest, it is toward the end of season for most cucurbit crops. Once infection has taken place, the pathogen can produce spores (sporangia) in about 4 days, and those spores initiate another infection cycle. Downy mildew is favored by cool, wet conditions.

Control of downy mildew on cucurbits is achieved by planting resistant cultivars, early planting of crops, and/or fungicide sprays. Cucumber cultivars resistant to downy mildew are available. Early plantings of crops for July harvest often escape infection with downy mildew, while plantings for harvest in August or later in the season are vulnerable. Because of the potential for rapid plant infection, sprays should be initiated on a preventive basis for vulnerable plantings. Fields should be scouted regularly for disease development. When downy mildew is present, fungicides with systemic activity tend to be more effective than protectants. Using systemic fungicides with protectants will minimize resistant development in the pathogen. A disease-forecasting program is available ([www.ces.ncsu.edu/depts/pp/cucurbit](http://www.ces.ncsu.edu/depts/pp/cucurbit)).

Mohammad Babadoost (217-333-1523; [babadoos@uiuc.edu](mailto:babadoos@uiuc.edu))

### ***Southern Blight of Tomato***

Southern blight, caused by *Sclerotium rolfsii*, was observed in southern Illinois in a commercial tomato field earlier this month. This disease occurs on hundreds of plant species worldwide.

Symptoms of southern blight of tomato usually appear on plant parts in or near the soil. Plants of any age may be attacked, if environmental conditions are suitable. The most common symptom is a brown to black rot of the stem, which develops near the soil line. The lesion develops rapidly, completely girdling the stem and resulting in a sudden and permanent wilt of all aboveground parts. Under moist conditions, an abundance of white, robust mycelium develops on the lesion and sometimes extends several centimeters up the stem of a mature plant. Tan to reddish brown, spherical sclerotia with an average diameter of 1-2 mm appear on the mycelial mat after a few days.

The fungus can survive for years as sclerotia in soil and host debris. Sclerotia can be disseminated by the movement of soil or infested plant material. The fungus is also highly saprophytic and is capable of producing abundant mycelial growth on various host substrates. The pathogen is favored by moist conditions and high temperatures (between 86 and 95°F).



Control of southern blight is difficult to achieve when inoculum levels are high and environmental conditions are conducive to the disease. Crop rotations with nonsusceptible grass crops such as corn and small grains reduce disease incidence by reducing inoculum levels. Deep-turning the soil to bury host debris and fungal structures is also a useful measure. The fumigation of soils with broad-spectrum chemicals reduces disease incidence, but this practice is limited by economic considerations.

Mohammad Babadoost (217-333-1523; [babadoos@uiuc.edu](mailto:babadoos@uiuc.edu))

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

### ***Apple Maggot in Apples***

We tend to concentrate more on codling moth control than on apple maggot control in Illinois because where conventional insecticides are used against codling moth, the treatment schedule usually provides apple maggot control coincidentally. In addition, apple maggot is a pest only in the northern half of the state ... it is not a concern south of Effingham. That said, growers in the north should note ...

Where Assail or Calypso are used for codling moth control, the rate required for apple maggot control may be a little greater ... 3.4 ounces of Assail 70WP or 4-8 fluid ounces of Calypso 4F. Alternative chemistries used against the codling moth include some that are effective against apple maggot as well – Avaunt and Entrust (as well as the pyrethroids) – and some that are not – such as Intrepid and Confirm. See the listings on page 39 of the 2005 Midwest Commercial Tree Fruit Spray Guide for a listing of the effectiveness of insecticides labeled for use on apples against specific pests.

Rick Weinzierl (217-333-6651; [weinzierl@uiuc.edu](mailto:weinzierl@uiuc.edu))

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

A few Jimmy Buffet quotes ... just because I haven't used any for soooo long ...

Only time will tell if it was time well spent.

Wrinkles will only go where the smiles have been.

Indecision may or may not be my problem. (Along with, "I used to be indecisive, but now I don't know for sure.")

Is it ignorance or apathy? Hey, I don't know and I don't care.

Searching is half the fun ... life is much more manageable when thought of as a scavenger hunt as opposed to a surprise party.

*And of course ...*

If life gives you limes, make margaritas.

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

<b>Extension Educators in Food Crop Horticulture</b>		
Bill Shoemaker, St. Charles Res. Center	630/584-7254	wshoemak@inil.com
Maurice Ogutu, Countryside Ext Center	708-352-0109	ogutu@uiuc.edu.
Elizabeth Wahle, Edwardsville Center	618-692-9434	wahle@uiuc.edu
<b>Extension Educators</b>		
Mark Hoard, Mt. Vernon Center	618-242-9310	hoard@uiuc.edu
Suzanne Bissonnette, Champaign Center	217-333-4901	sbisson@uiuc.edu
George Czapar, Springfield Center	217-782-6515	gfc@uiuc.edu
Dave Feltes, Quad Cities Center	309-792-2500	dfeltes@uiuc.edu
Russel Higgins, Matteson Center	708-720-7520	rahiggin@uiuc.edu
<b>Campus-based Specialists</b>		
Mohammad Babadoost, Plant Pathology	217-333-1523	babadoos@uiuc.edu
Raymond Cloyd, Greenhouse insects	217-244-7218	rcloyd@uiuc.edu
Kelly Cook, Entomology	217-333-4424	kcook8@uiuc.edu
Mosbah Kushad, Fruit & Veg Production	217-244-5691	kushad@uiuc.edu
John Masiunas, Weed Science	217-244-4469	masiunas@uiuc.edu
Chuck Voigt, Veg Production (& herbs)	217-333-1969	cevoigt@uiuc.edu
Rick Weinzierl, Entomology	217-333-6651	weinzier@uiuc.edu

Return Address:

Rick Weinzierl  
Department of Crop Sciences  
University of Illinois  
1102 South Goodwin Ave.  
Urbana, IL 61801

