

Illinois Fruit and Vegetable News

Vol. 11, No. 6, April 27, 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, 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 ... which usually means the jokes ... are at the end of newsletter. Check the last page.

In this issue ...

Crop and Regional Reports (from Elizabeth Wahle – with comments on thrips in strawberries – and Maurice Ogutu)

Upcoming Meetings and Programs (viticulture workshops, twilight meetings, Summer Horticulture Day, Dixon Springs Field Day, and Pumpkin Field Day)

Degree-Days

Vegetable Production and Pest Management (note from John Masiunas, weed control research plans, herbicide updates, black cutworm flights, corn flea beetle)

Fruit Production and Pest Management (more on fire blight and apple scab, notes on San Jose scale and dogwood borer control from New York and Michigan newsletters)

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

Crop and Regional Reports

In the south and southwest ... Plasticulture strawberries are in harvest in southern areas, and matted row strawberries have set bloom. Just a reminder that with these spring frontal systems, eastern flower thrips will make their presence known in strawberry fields. Strawberries resulting from thrip-damaged flowers are quite noticeable with their bronze to brown coloration. These berries also display a decrease in their development and have a somewhat seedy appearance. At first glance, this discoloration can be mistaken for leather rot. Eastern flower thrips are very small, making them difficult to view with the naked eye. To aid in their detection, tap flowers onto a white or very dark plate, and look for the slender yellow thrips. Thrips are visible with the aid of a 10X magnifying lens. Thrips influx is not a one-time event, so control has to be maintained throughout the critical bloom period if reinfestations develop. Although thresholds have not been determined for the Midwest, data from outside growing areas suggest that control is warranted if counts of thrips exceed 2 per blossom. Once harvest is underway, control is recommended for unaffected fruit less than dime-size if thrips are detected at or above the threshold level. Of the insecticides labeled for use in strawberry, Capture (bifenthrin) is a good choice during harvest because of its 0-day harvest restriction. Danitol (fenpropathrin) has a 2-day harvest restriction, followed by Thiodan (endosulfan), which has a 4-day harvest restriction. See other preharvest listings in the 2005 Midwest Small Fruit & Grape Spray Guide, but be aware that controlling thrips – if they are present – at the outset of bloom and early in berry development is usually the key to preventing losses.



Left: An eastern flower thrips next to an anther in a strawberry blossom. Right: A thrips-damaged strawberry.

A hard freeze warning went out for most of the state this past weekend, but fortunately temperatures stayed above 30 degrees F for most of the southern region, with no reports of injury so far. I spoke with one grower in the Rockford area (far northern IL) who had experienced temperatures hovering around 25 degrees F, but no frost due to wind movement. For peaches, fruit has set and shucks are off in the southern-most portions of the state. Apples range from full bloom to fruit set, and fruit thinning has started. These are some of the temperatures I recorded throughout the southern and into the central region at 5:00 am on Sunday, April 24.

Metropolis	37	Edwardsville	33	Hardin	34
Golconda	34	Salem	35	Hannibal, MO	32
Cape Girardeau, MO	33	Centralia	37	Winchester	34
Carbondale	36	Olney	33	Springfield	33
Shawneetown	34	Marshall	33	Decatur	32
West Salem	36	Effingham	35	Newman	32
Mt. Vernon	35	Hillsboro	34		
Waterloo	36	Jerseyville	34		

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

In northern Illinois, day temperatures have been in the upper 60s to low 80s, and night temperatures in the low 40s to 50s between April 9 and 19. The trend shifted after April 20, when day temperatures dropped to 60s and 40s with night temperatures in the low 40s to low 30s. In some parts of northern Illinois, night temperatures dropped to below freezing on April 24. This may have caused some injury to fruit tree blossoms. It has been very dry since the beginning of the month, with rainfall of 0.4-1 inch recorded in many counties during the April 9 to 24 period.

In most orchards, apples are in full bloom to petal fall. Apple scab and powdery mildew control spray programs are going on in many orchards. Sprays for controlling European red mite, San Jose scale, and adult spotted tentiform leafminer also are going on as needed. Grapes are in bud break to bloom, and sprays for anthracnose, European red mites, flea beetles, cutworms, and scales are being applied. Tomatoes, peppers, and other warm season vegetable seedlings have been started in greenhouses.

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

Upcoming Meetings and Programs

Here are dates of currently scheduled programs. Additional details for programs in the southern region will be posted as they become available at <http://web.extension.uiuc.edu/regions/hort/>. Contact: Elizabeth Wahle at wahle@uiuc.edu or 618-692-9434

May 13, 2005. Mississippi Valley Peach Orchard Tour (Kentucky's year to host, Illinois was last year) Jackson's Orchard and Nursery, Bowling Green, Kentucky. Contact Elizabeth Wahle.

May 21, 2005. Viticulture Workshop

9:00-11:30 a.m. Hill Prairie Vineyard and Winery, Oakford Illinois. RSVP to Elizabeth Wahle.

May 26, 2005. Twilight Meeting for Tree Fruit Growers

5:30-7:30 p.m. Kamp's Orchard, southeast of Brussels just off the Illinois River Road.

June 16, 2005. ISHS Summer Orchard Day

Edwards Apple Orchard, Poplar Grove, IL.

June 25, 2005. Viticulture Workshop

9:00-11:30 a.m. Hill Prairie Vineyard and Winery, Oakford Illinois. RSVP to Elizabeth Wahle.

August 4, 2005. Dixon Springs Agricultural Center Field Day

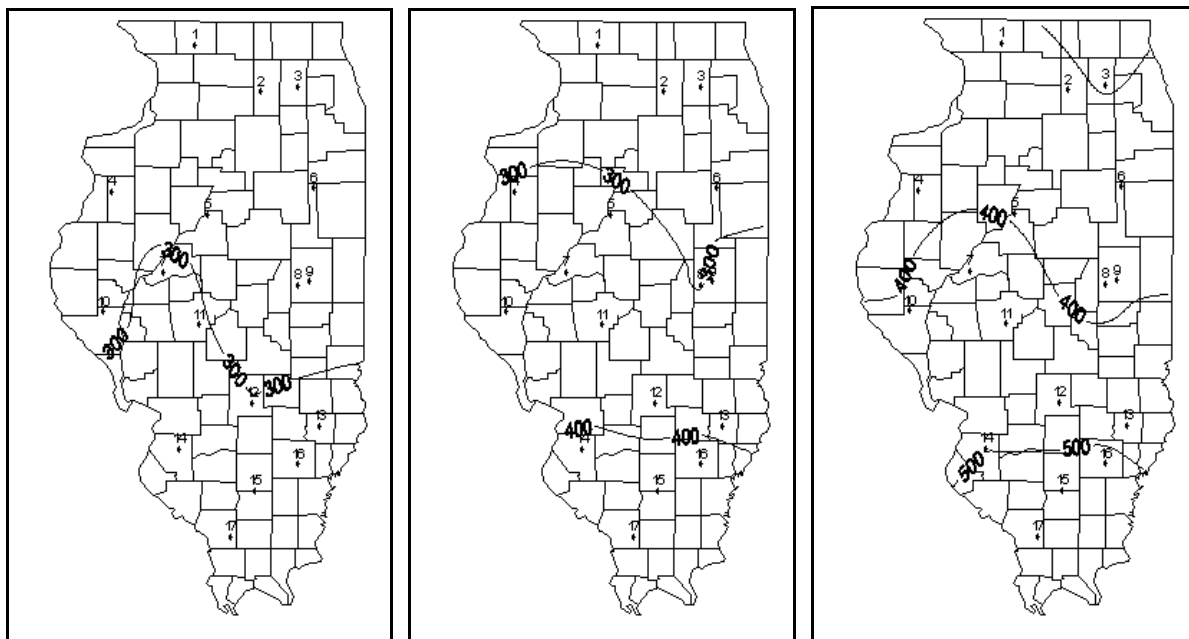
University of Illinois DSAC, Simpson, IL. Contact Bronwyn Aly at 619-695-2444 or baly@uiuc.edu.

September 8, 2005, Illinois Pumpkin Field Day

SIU Belleville Research and Education Laboratory, Belleville, Illinois. 10:00 a.m. -2:30 p.m.

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

Degree-Day Accumulations



Degree-day accumulations, base 50 F, from January 1 though April 24 (left) and projected through May 1 (center) and May 8 (right), 2005.

Degree-day accumulations, base 50 F, January 1 through April 24 (historic average and 2005), and projections through May 8, 2005.

Site No.	Station	County	DD, Base 50 Jan 1 - Apr 24 11-yr historic average	DD, Base 50 Jan 1 - Apr 24 2005	Projected DD, Base 50 Jan 1 - May 1 2005	Projected DD, Base 50 Jan 1 - May 8 2005
1	Freeport	Stephenson	120	213	251	310
2	Dekalb	Dekalb	138	206	247	310
3	St. Charles	Kane	123	205	240	294
4	Monmouth	Warren	175	258	304	371
5	Peoria	Tazewell	198	271	322	394
6	Stelle	Ford	171	233	280	348
7	Kilbourne	Mason	241	320	376	453
8	Bondville	Champaign	197	246	294	365
9	Champaign	Champaign	200	270	320	392
10	Perry	Pike	239	279	331	403
11	Springfield	Sangamon	230	304	361	440
12	Brownstown	Fayette	285	302	363	447
13	Olney	Richland	275	329	388	471
14	Belleville	St. Clair	314	349	412	499
15	Rend Lake	Jefferson	343	373	443	536
16	Fairfield	Wayne	327	360	427	520
17	Carbondale	Jackson	338	383	448	536
18	Dixon Springs	Pope	Unavailable	Unavailable	Unavailable	Unavailable

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)

Vegetable Production and Pest Management

Note from John Masiunas, Extension Specialist for weed management in fruit and vegetable crops

Many may know me from talks at meetings or through telephone and e-mail exchanges. I was lucky to visit some of your farms before I was paralyzed in an automobile accident a few years ago. In the past year, I have been fighting a pressure (or bed) sore that has kept me confined to bed for much of the time. I am now well on the road to recovery. I want to apologize to anyone whose telephone call or e-mail I was unable to return during the past year. I also want to thank my colleagues, especially Dr. Elizabeth Wahle, who covered for me, sometimes at short notice. Now that I am recovering, I hope to see many of you at field days or meetings.

John Masiunas, (masiunas@uiuc.edu)

Vegetable weed control research plans

Over the next few years, I am planning to start two new studies, and I want to hear your experiences or suggestions. I am also looking for a few sites on farms to conduct some of the trials. The first study is on non-herbicide methods to control Canada thistle. There has been some discussion and evidence that intensive use of competitive cover crops, such as buckwheat and cereal rye, possibly combined with tillage, can suppress or eliminate Canada thistle. I am planning a few small trials this summer and the study to start in earnest next summer (2006). Please let me know if you have patches of Canada thistle on your farm or have experience in suppressing Canada thistle using non-herbicide methods.

The second study we are planning is to evaluate mustards (i.e. white mustard, brown mustard) for their value as biofumigants or preemergent herbicides. In the Northwest (Washington, Idaho, and Oregon), mustards are being used successfully in rotation for nematode control but are also providing some weed suppression. The system has been commercially adopted with potato growers using it and agriculture supply companies selling special blends of mustards. We conducted a preliminary evaluation in Champaign and Havana and found some suppression of weeds, sandbur in particular. But many questions remain, and the system needs to be optimized before it might have a fit here in Illinois. I want to hear your thoughts and any experiences with mustards.

I hope in future issues to highlight some of the research we are currently conducting. I also invite your suggestions for future research on weed management in specialty crops. What weed problems have you been experiencing which need a solution? Please contact me.

John Masiunas (masiunas@uiuc.edu)

Herbicide changes for the 2005 growing season

There have been several herbicide changes for the 2005 growing season. Dacthal's label has been changed, removing several crops. Aim has been labeled for stale seedbed and row-middle treatment with hooded sprayers. BASF has labeled Raptor on peas, snap beans, and succulent lima beans.

Dacthal (DCPA) is manufactured by Amvac. It once had registration on a wide range of vegetable crops. This made Dacthal good for the small-acreage market gardens where many different crops were being planted together. Because of concerns about DCPA and its metabolites contaminating groundwater, effective April 1, 2005, use of this herbicide has been terminated on several crops including, beans, beets, cucumber, eggplant, garlic, kale, pea, potatoes, squash, sweet potato, and turnips. Existing stocks of Dacthal with these crops on the label can be used for two more years, but start planning for this loss now. In most situations there are replacement herbicides available. Use on strawberries at planting appears to have been maintained.

Aim (carfentrazone-ethyl) has received a label for use on many vegetable crops before planting as a stale seedbed treatment or in row middles if Aim is applied with a hooded sprayer. The keys to successful use of Aim are to avoid contacting the vegetable crop and to know which weeds Aim best controls. I will highlight some information on Aim. If you are considering using Aim, read the excellent article by Liz Maynard in the April 8 edition of the Indiana Vegetable Growers Hotline (<http://www.entm.purdue.edu/entomology/vegisite/commercial/hotline2005.html>) along with the product label.

Aim is effective on small broadleaf weeds generally less than four inches in height. It is particularly effective against common lambsquarters and eastern black nightshade, two troublesome weeds for Illinois vegetable farmers. Aim also controls small morningglories, although its effectiveness depends on the particular morningglory species. Aim does not control ragweeds and grasses.

Aim is a contact herbicide with little if any residual activity. It does not move (translocate) in plants and will not kill root systems. Aim in many ways fits a similar niche as glyphosate, Gramoxone (paraquat), and Scythe (pelagonic acid). Liz Maynard's article compares the fit of the four herbicides.

Raptor (imazamox) has received new labels for use postemergence in snap bean, succulent lima bean, and English pea. Raptor can injure these crops and label directions must be carefully followed. BASF and I recommend that you conduct a small trial on the cultivar you use and under your growing conditions. A nonionic surfactant must be included when applying Raptor.

For snap beans and succulent lima beans, Raptor should be applied at 4 ounces/ acre tank mixed with Basagran (bentazon) at 6 to 16 ounces/ acre. The Basagran reduces the potential of crop injury from Raptor. Apply Raptor + Basagran to snap beans and lima beans at the first or second trifoliolate stage before flowering and at least 30 days before harvest.

Raptor can be applied to peas at up to 3 ounces/acre without Basagran. The peas should be at least three inches tall and five nodes before flowering. Using a trifluralin (i.e. Treflan) containing product on the peas increases the potential for pea injury from Raptor. Weed control can be improved by addition of a nitrogen-based fertilizer but the potential for crop injury is also increased. Raptor must be combined with Basagran at 6 to 16 ounces/ acre when a nitrogen-containing fertilizer is used.

Weeds should be less than 3 inches tall at application. Raptor + Basagran will control nightshade, puncturevine, pigweeds, morningglory, smartweed, barnyardgrass, and foxtails, among others. Having a postemergence option for nightshade and puncturevine control with improved crop safety is one of the biggest advantages of the Raptor + Basagran tank mixture.

John Masiunas (masiunas@uiuc.edu)

Black Cutworm Update

Marc Rigg of Pioneer Hybrids, Good Hope, IL, reported the first intense capture of black cutworm moths (9 or more moths in 2 consecutive days – the number used as a biofix to start the phenology model that predicts the time to sample for cutting of plants) on April 12 and 13 in his trap on the Mason/Tazewell county line. After an intense capture is recorded, we can calculate degree-days to project when black cutworm injury, specifically cutting of corn plants, will occur. Black cutworm larvae are expected to begin feeding on and cutting corn plants with the accumulation of approximately 300 degree-days (base 50°F) after an intense capture. We project the cutting of corn plants to occur between May 14 and May 16 near Mason/Tazewell counties.

As corn – field corn or sweet corn – continues to emerge across the state, we encourage you to scout for black cutworm injury. Small larvae will feed on corn plants, causing small, irregular holes in the leaves. Larvae begin cutting plants when they reach the 4th instar. Feeding primarily at night, larvae will move up the row as they feed. One larva may cut an average of three to four plants in its lifetime. Sizeable sections of fields may be destroyed before the injury is noticed.

For years, the rule-of-thumb treatment guideline for black cutworm injury has been 3% to 5% cutting. No more recent data have been gathered to suggest that this threshold should be changed. However, you can judge the severity of damage and the possible need for an insecticide based on the location of the cut (above or below the growing point), the size of the cutworms, and the soil conditions (moist or dry). Plants cut above ground will recover, to a certain extent; plants cut below the growing point will not recover. Younger cutworms (third and fourth instars) will cut more plants over time than older cutworms (fifth and sixth instars). For more information on black cutworm injury, scouting, and management, please see our black cutworm fact sheet (http://www.ipm.uiuc.edu/fieldcrops/insects/black_cutworm.pdf).

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Corn Flea Beetles Feeding on Seedling Corn

Duane Frederick of Pioneer has noted that there have been several reports of high populations of corn flea beetles in central/west-central Illinois. We discussed overwintering temperatures, likely survival of corn flea beetles, and the need to control them to reduce losses to Stewart's wilt in [Issue 3 \(March 18, 2005\)](#). Be sure to scout for flea beetles, especially in sweet corn hybrids that are susceptible to Stewart's wilt.

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Fruit Production and Pest Management

Apple Diseases

Fire Blight of Apple

Fire blight is a serious threat to apple production in Illinois. It occurs every year, causing blossom blight, shoot blight, canker blight, and rootstock blight on apples and pears. To control fire blight of apple, dormant copper spray and application of antibiotic during bloom are essential. Copper must be sprayed prior to or at silver tip, and it should be applied to the entire

orchard, including non-susceptible cultivars. Fire blight is most active during warm weather. Blossom infection is aggravated by showers which splash the blight bacteria. Labels for streptomycin call for application at 0.5 lb (or 0.25 lb plus 1 pt adjuvant Regulaid) per 100 gal dilute spray. The effectiveness of streptomycin can be increased by including the adjuvant Regulaid at the rate of 1 pint per 100 gal tank mix. Streptomycin remains effective for 3 to 5 days. For more information, consult the “Illinois Commercial Tree Fruit Spray Guide 2004” (<http://www.extension.iastate.edu/Publications/PM1282.pdf>). Also, detailed information on fire blight can be found at the web sites: <http://www.ag.uiuc.edu/%7Evista/abstracts/a801.html>, <http://veg-fruit.cropsci.uiuc.edu/Diseases/Fire%20Blight.htm>, and http://www.caf.wvu.edu/kearneysville/disease_descriptions/omblight.html.



Fire Blight of Apple – Blossom Blight



Fire Blight of Apple – Shoot Blight



Fire Blight of Apple – Root Stock Blight



M. Babadoost

Apple Scab:



Apple Scab on an Apple Leaf



Apple Scab on Apple Fruit

M. Babadoost

Early season sprays for control of apple scab are essential. The first spray must be applied at green tip. Primary scab spores are mature and disseminated at early bloom. There are several fungicides (i.e., Topsin-M, captan, mancozeb, Sovran, Flint, Polyram, Syllit, Vanguard, Scala,...) that effectively control apple scab. For more information on control of apple scab, consult the Illinois Commercial Tree Fruit Spray Guide 2004” (<http://www.extension.iastate.edu/Publications/PM1282.pdf>). Also,

more information on apple scab is available at the web sites: <http://www.ag.uiuc.edu/%7Evista/abstracts/a803.html> and <http://www.ipm.ucdavis.edu/PMG/r4100411.html>.

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Organophosphate-resistant codling moths and control using Assail and Calypso (neonicotinoids)

An article in the most recent issue of the *Resistant Pest Management Newsletter* by Dunley et al. in the Pacific Northwest (http://whalonlab.msu.edu/rpmnews/vol.14_no.2/abstracts/rpm_a_dunley_etal.htm) noted no evidence of cross-resistance to Assail or Calypso in a codling moth population in an orchard where organophosphate resistance (including resistance to Guthion, Imidan, and diazinon) was prevalent. This observation parallels findings from Illinois orchards where organophosphates had failed to control codling moth, but Assail or Calypso have been very effective. This is good news ... the alternative neonicotinoid chemistry provides an effective management option to organophosphates. Nonetheless, growers MUST avoid over-use of neonicotinoids (particularly Assail and Calypso at present) to slow evolution of resistance to these valuable compounds.

Rick Weinzierl (217-333-6651; weinzier@uiuc.edu)

Scales (insects) and “Boring News”

Borrowing lead-ins from Art Agnello and colleagues ...

Illinois apple (and peach) growers could gain from reading recent newsletter articles from Art Agnello and colleagues in the Cornell *Scaffolds* newsletter (<http://www.nysaes.cornell.edu/ent/scaffolds/2005/050411.html>) and from Mark Longstroth and co-workers in the Michigan CAT-Alert for fruit growers (http://www.ipm.msu.edu/CAT05_fr/F04-12-05.htm#3) on scale control and the control of apple tree borers (including, for Illinois growers, dogwood borer). The combined messages of these articles summarizing research observations from New York and Michigan include:

- Dick Straub, Harvey Reissig, and Peter Jentsch in New York noted that Esteem or Assail should be effective against first generation San Jose Scale crawlers and wrote, “Treatments to be applied at the first appearance of summer brood crawlers are best timed by the use of a degree-day model (1st generation, 500 DD50 from 1 March; 2nd generation, 1451 DD50 from 1 March). Because each generation of crawlers is produced (NOTE: SJS females do not lay eggs, but rather give birth to live young) for extended periods of time, for complete control a second application 14 days later is advised.”
- Bill Shane of Michigan State University noted that Warrior is rated excellent against San Jose scale crawlers. (I have no observations from Illinois on Warrior against SJS.)
- Dave Kain and Terence Robinson wrote on dogwood borer control and noted, “One application of Lorsban will suffice, and it can be applied anytime from prebloom (half-inch green) through midsummer, and into the fall. A spring application will control overwintered larvae and protect the trunk throughout the rest of the season. Waiting until midsummer to apply Lorsban will allow spring feeding but will control the pest for the remainder of the season. Applying Lorsban after harvest will control larvae that are already in the trunk and give protection for at least part of the following season. Other insecticides will also provide some measure of control but need to be applied multiple times beginning in mid-July (when the dogwood borer flight is at its peak [in New York]). Materials tested with some success include: Avaunt, Danitol and Esteem. Endosulfan is also recommended for midsummer use.”

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This issue's words of wisdom ...

New drugs at your local pharmacy ... well, maybe not ...

DAMNITOL ... Take 2 and the rest of the world can go to [heck] for up to 8 full hours.

EMPTY NESTROGEN ... Suppository that eliminates melancholy and loneliness by reminding you of how awful they were as teenagers and how you couldn't wait till they moved out.

FLIPITOR... Increases life expectancy of commuters by controlling road rage and the urge to flip off other drivers.

BUYAGRA ... Injectable stimulant taken prior to shopping. Increases potency, duration, and credit limit of spending spree.

ANTI-TALKSIDENT ...A spray carried in a purse or wallet to be used on anyone too eager to share their life stories with total strangers in elevators or on airplanes.

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