UNIVERSITY OF ILLINOIS EXTENSION
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, weinzier@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.

In this issue ...

Upcoming Programs

- **Tree fruit twilight meeting, 5:30 p.m., May 14, 2009, at Eckert's Grafton Orchard.** *From Grafton* (IL-100), take IL-3 north about 2.5 miles to Otterville Road. Take a left onto Otterville Road, and Eckert's is approximately 1.3 three miles on the right. *From Jerseyville*, take IL-16 west to Otterville Road, approximately 3.4 miles. Turn onto Otterville Road and Eckert's is approximately 7.2 miles on the left.
- **Mid Mississippi Valley Orchard and KSHS Orchard Tour, May 19, 2009, Reid's Orchard,** Owensboro, KY. Contact Annette Heisdorffer 270-685-8480 or John Strang 859-257-5685.
- **Grape Growers Workshop, May 23, 2009, at the Lazy L Grape Ranch, near Mechanicsburg, IL.** The vineyard, owned by Brad Lindquist, is located east of Springfield, just south of Mechanicsburg. From I-72, take the Mechanicsburg Exit (#114) into Mechanicsburg. As you come into town, turn left (east) onto W. Main Street, then right onto S. Church Street, which turns into Roby Road. Continue south past Darnell Road and turn left (east) onto Moomey Road. The vineyard will be on the left (south) and visible from the road. Brad Taylor from Southern Illinois University and Elizabeth Wahle will discuss and demonstrate canopy management practices. The meeting will begin at 10:00 a.m., with registration at 9:30 a.m. Please contact Elizabeth Wahle if you plan to attend (for an accurate lunch count). Registration is $25.00 per person at the door and includes lunch. For further details, contact Elizabeth Wahle at wahle@illinois.edu or 618-692-9434. Grape Growers Workshops are sponsored by IGGVA, UI Extension, VESTA, and IDA.
- **2009 Illinois Summer Horticulture Day, June 11, Royal Oak Farm near Harvard, Illinois**, beginning at 8:30 a.m. For more information and/or reservations call Don Naylor, Executive Secretary of the Illinois State Horticultural Society at 309/530-7678 or by email at ilsthortsoc@yahoo.com. To register in advance, mail a check for $25 per person to: I.S.H.S., 15962 Old Orchard Rd, Bloomington, IL 61705. Advance reservation deadline is the June 9. On-site registration is $30.

- **2009 Sustainable Agriculture Tours that involve fruits and vegetables:**
  - **June 19, Growing Strawberries, Naturally.** Jed's Farm, Thompsonville
  - **August 13, Creative Community Co-op Farming.** Basu Natural Farms, Pembroke
  - **September 22, Fresh Fruits and Vegetables.** River Front Berry Farm, Martinton (http://www.riverfrontberryfarm.com)

  A fee of $20 per person will be charged for each tour, which includes lunch. Registration at least one week in advance is required. For more information on these and other tours, see https://webs.extension.uiuc.edu/registration/default.cfm?RegistrationID=2845. To register by phone, contact Donna Cray at 217-241-4644. For more information, contact Deborah Cavanaugh-Grant (217-968-5512; cvnghgrn@illinois.edu).

Regional Updates

At the Dixon Springs Agricultural Center, some sunshine on Saturday and Sunday brought a good harvest of plasticulture strawberries on Monday, with good size, color, and flavor, Scouting last week found a few flower thrips in open strawberry blooms and several thrips in open blackberry flowers. Blackberries are in full bloom now at DSAC. We have received several new advanced breeding lines from Dr. Clark in Arkansas that we will be adding to the blackberry trials at DSAC.

On the vegetable side of things it remains too wet for field work at DSAC and throughout much of southern Illinois. We will be planting tomato and sweet corn observation plots at Bob Fournie's in Collinsville on May 12 with the help of Dr. Wahle. One more day of dry weather would be wonderful for DSAC, but the forecast is for more rain tonight. We have our fingers crossed.

Jeff Kindhart and Bronwyn Aly (618-695-2444 & 618/638-7799; jkindhar@illinois.edu, baly@illinois.edu)

In southern and southwestern Illinois, some rough weather on May 8 in the Murphysboro and Carbondale area resulted in widespread power outages and significant tree and structural damage. Orchards are reporting many trees down, fruit on the ground, and many trees wallowed around, though at this time enough fruit remains for a commercial crop in the area. In addition to 110+ mph winds, significant rainfall and hail resulted in what is being called an in-land hurricane. Wallowed trees need to be reset and backfilled with "soft material" like soil or pea gravel to avoid standing water around the base of trees. Avoid sharp edged materials like crushed gravel which can pierce bark on young trees.

Thrips are still being reported and growers are reminded to continue scouting strawberry and bramble blooms. Thrips come in on weather systems and then produce subsequent generations after they are established in an area, so control is not necessarily a once-a-season event. Depending on expected harvest date, select a control measure that best suits PHI needs.

Overall temperatures remain mild with above desirable rainfall. There are still many unplanted fields throughout the region. A bit of warmth would go a long way towards drying soils and ripening strawberries. Asparagus harvest is ongoing. Blueberry fruit is visible, and apple and peach fruits are sizing. Early plantings of sweet corn are up and visible from the road.

As noted above, the next tree fruit twilight meeting is scheduled for May 14 at Eckert's Grafton Orchard. *From Grafton* (IL-100), take IL-3 north about 2.5 miles to Otterville Road. Take a left onto Otterville Road, and Eckert's is approximately 1.3 three miles on the right. *From Jerseyville*, take IL-16 west to Otterville Road, approximately 3.4 miles. Turn south onto Otterville Road and Eckert's is approximately 7.2 miles on the left. The meeting is scheduled to begin at 5:30 pm.

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

In northern Illinois, the last two weeks have brought mostly sunny days with temperatures in the low 60s to upper 70s and night temperature in the low 40s to mid 50s. Soil moisture remains high because of April rains, including 1-2 inches during the last 1-2 weeks. Northern Illinois is not, however, as waterlogged as much of southern Illinois.

Early blooming apple varieties are at petal fall, and late blooming varieties in are in full bloom. Cold injury to newly planted peach trees, shoots of mature peach trees, mature apple trees, and canes of some varieties of raspberries and blackberries is becoming more obvious. Strawberries are in full bloom, with raspberries still in pre-bloom; grapes are in the 2- to 5-inch long shoot stage. Ground has been worked in most vegetable fields, and black plastic mulch has been laid in some. Cool season vegetables such as cabbage and potatoes have been planted, and some growers have planted sweet corn as well. Tomatoes, cucumbers, peppers, melons, and other warm loving vegetables are started indoors and will be transplanted before the end of the month.

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

Notes from Chris Doll

Once again, Nature has taken some of the fun out of fruit growing. Many growers in southern Illinois experienced a severe wind and rain storm last Friday that has been called an inland hurricane, as very high winds and heavy rain covered a multi-county are. Tree losses and crop assessments are being made while the chain saws are running full time some three days later. Lots of fruit is on the ground, and probably many of the survivors have been blemished. I have had questions about post-storm spraying, which is needed to replace the wash-off from the excess of two inches of driving rain; about wallowing peach trees for which stabilization with pea gravel in the hole is suggested, righting and bracing trees if possible while the soil is wet and soft;, and combating potential bacterial disease problems such as fire blight and bacterial spot, which is doubtful for fireblight but might be practical for the bacterial spot of peach.

Locally, St. Louis says that the rainfall is two inches below normal, but in the Back-40, another 2.0 inches has extended the soil saturation situation. Looking back, I saw that at this time in May, 2008, we had 17.0 inches of rain, so it was wet then too. At this time, major apple varieties range from 15 to 19 mm in diameter, peaches are sizing nicely, black raspberries are in full bloom, blackberries range from petal fall to white bud, depending on the type and variety, first color is seen on Earliglow strawberry, and grass and weeds are growing vigorously. It is a year for abundant white Dutch clover mixed in the sod cover crops and also red clover where started. With high nitrogen prices, the clovers might be good for the trees.

The first apple scab lesions and fireblighted shoots were observed at this latitude a week ago. Time and spray programs will determine the extent of these and other infections. Codling moth and oriental fruit moth trap catches continue to be variable, ranging from light to heavy, again putting pressure on the fun of fruit growing. Most growers apply lots of pesticides without leaving untreated trees or blocks to determine control, including me. However, this year I was debating about cutting out two apple trees and by-passed them with the oil spray. A nice crop of rosy apple aphids is present on these trees at this time.

Time-wise, the season for adding calcium to apples is here. Young apple and peach trees have made sufficient growth to begin spreading crotch angles with clothes pins or toothpicks.

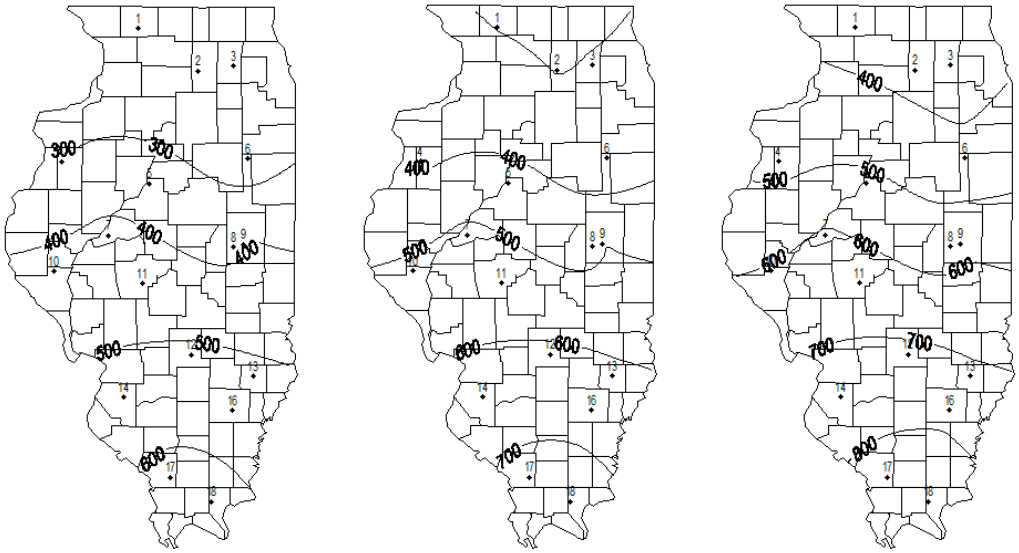
Chris Doll

Degree-day Accumulations

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.uiuc.edu/degreedays/index.html). The list below 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 Estes) 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).

Degree-day accumulations, base 50 degrees F, starting January 1, 2009.

Station	County	Base 50F DD Jan 1 – May 10, Historic Average	Base 50F DD Jan 1–May 10, 2009	Base 50F DD Jan 1–May 17, 2009 (Projected)	Base 50F DD Jan 1–May 24, 2009 (Projected)
1. Freeport	Stephenson	304	229	298	370
2. Dekalb	Dekalb	342	222	297	374
3. St. Charles	Kane	312	240	305	371
4. Monmouth	Warren	387	301	383	467
5. Peoria	Peoria	426	350	436	521
6. Stelle	Ford	381	251	333	416
7. Kilbourne	Mason	512	429	521	611
8. Bondville	Champaign	442	369	457	546
9. Champaign	Champaign	444	412	500	590
10. Perry	Pike	483	427	517	607
11. Springfield	Sangamon	482	447	545	645
12. Brownstown	Fayette	553	515	616	719
13. Olney	Richland	551	518	617	717
14. Belleville	St. Claire	612	535	640	747
15. Rend Lake	Jefferson	648	Missing	Missing	Missing
16. Fairfield	Wayne	608	561	671	783
17. Carbondale	Jackson	643	626	728	833
18. Dixon Springs	Pope	680	624	733	844



Degree-day accumulations, base 50 F, January 1-May 10, 2009 (left), and projected through May 17 (center) and May 24 (right).

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

Fruit Production and Pest Management

Northern Illinois Grape Management

Over the last few weeks grapes in northern Illinois have moved out of dormancy and are now well past budburst. Shoots should range from _ inch to 3-4 inches, depending on variety and location. The picture should be clear now how much bud mortality each variety sustained. Growers should record that information, along with the temperatures the

vineyard experienced and notes on the condition of the vineyard going into the winter. This record should prove useful in the future, long after the details of this season have slipped from memory.

This is the time of the season when grapes are at their most vulnerable for disease establishment. The disease organisms are in full activity now, reproducing vigorously and spreading into the vineyard canopy. The canopy may not seem like much, but the tender green tissue that's exposed is a perfect place for new colonies of pathogens to establish; unless, of course, you are growing resistant varieties. If not, protective sprays are critical during this pre-bloom period of active growth. This is especially true in wet weather, and we are seeing plenty of that. Refer closely to the ***2009 Midwest Small Fruit and Grape Spray Guide*** to develop an action plan, and spend some time studying the ***Midwest Small Fruit Pest Management Handbook*** for a better understanding of grape pathogens and the conditions that favor or deter infection.

During this stage growers have a great opportunity to fine tune their crop-load balance goals. The vines have a history, hopefully recorded, that should inform decisions about how much crop to carry this season. Shoot-thinning can begin now, by knocking out excessive growth and weak shoots. Concentrate production in strong shoots that have better clusters. Consider average cluster size and number of clusters per shoot. Aim for a number of shoots that will provide the crop-load per vine you think is reasonable for your yield goal and for vine health. Don't over-crop them, or yield potential next season may be reduced. Even worse, vine health may be diminished.

Growers with young vines need to remove excessive growth and concentrate the vines' growth into a few key shoots. If 1-yr-old vines have weak budbreak in the upper portion of the vine, cut it back to a point where the next bud down shows strong growth. It'll quickly make up for the material that gets cut out. Vines with spotty budbreak in the cordon probably have some damage from the extreme cold this winter. Cut the cordon back to replace it with strong wood and evenly spaced buds. The damage may not be an indicator of a tender variety. Young vines and thin wood are often more susceptible to cold temperatures than more mature wood.

New dormant nursery stock should be in the field, or planted soon. Water is critical right now. These vines need to have new roots develop quickly to reconnect the plant with the ground and to support the strong growth that will quickly develop with warm temperatures. If you water in with a starter fertilizer (soluble, high in phosphorus), that will stimulate rapid root growth. If you're using grow tubes, these need to be set up soon to take advantage of the greenhouse effect inside the tubes.

The season always seems to race ahead, leaving us behind schedule with our crop management. Try to take advantage of sunny days to get caught up, or even a little ahead of crop development. The whole project gets a little easier if practices are done in a timely manner.

Bill Shoemaker (630-584-7254, wshoemak@illinois.edu)

New Fungicides for Fruit Crops

Inspire Super MP. Inspire Super MP is a new fungicide for control of pome fruit diseases. The active ingredient in this fungicide is difenoconazole and is in Group 3 (FRAC code 3). It is manufactured by Syngenta Crop Protection, Inc. Inspire Super MP contains 2.08 pounds of active ingredient per gallon and can be used to control diseases of apple, pear, and quince, including Alternaria blotch (*Alternaria* spp.), Brooks fruit spot (*Mycosphaerella pomi*), flyspeck (*Zygophiala jamaicensis*), powdery mildew (*Podosphaera leucotricha*), rust diseases (*Gymnosporangium* spp.), scab (*Venturia* spp.), and the sooty blotch complex. The preharvest interval (PHI) is 72 days. To help prevent resistance development in pathogens, it is recommended to make no more than 2 consecutive applications of Inspire Super MP or another Group 3 fungicide. Read the label (http://www.cdms.net/LDat/ld8HF004.pdf) before using Inspire Super MP.

Quash 50WDG. Quash 50 WDG is another new fungicide in Group 3 (FRAC code 3) for control of fruit crop diseases. This fungicide is manufactured by Valent Corporation. Quash 50 WDG is a water dispersible granule with 50% active ingredient (metconazole). The fungicide is effective against stone fruit diseases, including brown rot (*Monilinia* spp.), powdery mildew (*Podosphaera* spp.), and scab (*Cladosporium carpophilum*). Not more than 2 consecutive applications of Quash 50 WDG or another Group 3 fungicide should be made. The preharvest interval (PHI) is 14 days. More information on Quash 50 WDG is available at http://www.cdms.net/LDat/ld8NN000.pdf.

Adament 50 WG. Adament 50 WG is a new fungicide manufactured by Bayer CropScience. Adament 50 WG has two active ingredients: tebuconazole (Elite) and trifloxystrobin (Flint), for control of diseases of fruit crops. Tebuconazole is in Group 3 (FRAC code 3) and trifloxystrobin is in Group 11 (FRAC code 11). Adament 50 WG can be used to control stone fruit diseases, including Alternaria fruit rot (*Alternaria* sp.), Anthracnose (*Colletotrichum* spp.), Botrytis rot (*Botrytis cinerea*), brown rot (*Monilinia* spp.), cherry leaf spot (*Blumeriella jaapii*), powdery mildew (*Podosphaeria* spp.), rust (*Tranzschelia discolor*), scab (*Cladosporium carpophilum*), and shot hole (*Wilsonomyces carpophilus*). Adament 50 WG also is registered for control of grape diseases, including black rot (*Guignardia bidwellii*), botrytis bunch rot (*Botrytis cinerea*), downy mildew (*Plasmopara viticola*), Phomopsis cane & leaf spot (*Phomopsis viticola*), and powdery mildew (*Uncinula necator*). Adament 50 WG should not be used on concord grapes. Not more than 2 sequential applications of Adament 50 WG should be made. The PHI for Adament 50 WG for stone fruit is 1 day and for grapes is 14 days. For more information on Adament 50 WG, see http://www.cdms.net/LDat/ld8IC003.pdf.

Mohammad Babadoost (217-333-1523; babadoos@illinois.edu)

Oriental fruit moth, codling moth, and lesser peachtree borer updates

Establishing biofix dates for oriental fruit moth was a little confusing in far southern Illinois, as traps near Murphysboro began catching moths in late March, then 2 to 3 weeks passed without further activity. I've listed two possible biofix dates for OFM phenology models for the far south as well as biofix and degree-day accumulations for Calhoun County and Urbana. Degree-day accumulations and projections, base 45 F, from nearest Illinois State Water Survey weather stations are:

Oriental fruit moth biofix dates and degree-day (base 45F) accumulations:

	Biofix Date	DD Base 45 F, through May 10	DD Base 45 F, projected through May 17	DD Base 45 F, projected through May 24
Murphysboro (Carbondale weather data)	***March 25*** *OR*	590	724	863
Murphysboro (Carbondale weather data)	***April 17***	440	574	712
Hardin (Brownstown weather data)	April 15	423	557	694
Urbana (Champaign weather data)	April 18	350	470	593

Key timings for sprays aimed at controlling oriental fruit moth are:

- First generation: first application at 175 DD base 45 F after biofix; second application after another 175 DD base 45
- Second generation: 850-950 and 1150-1250 DD base 45 after biofix
- Third generation: 1800-1900 and 2100-2200 DD base 45 after biofix
- Fourth and fifth generations: Threshold = 6 to 8 moths per trap per week; make sprays at 175 and 350 DD base 45F following captures that exceed this threshold

For growers in Calhoun County who are using Isomate OFM Rosso pheromone dispensers to control oriental fruit moth by mating disruption and are timing applications so that dispensers are in place just before second generation flight, keep in mind that second flight will begin around 950 DD base 45 F after the beginning of first generation flight. The degree-day projections above (694 through May 24) suggest that applications can wait until very late May or early June.

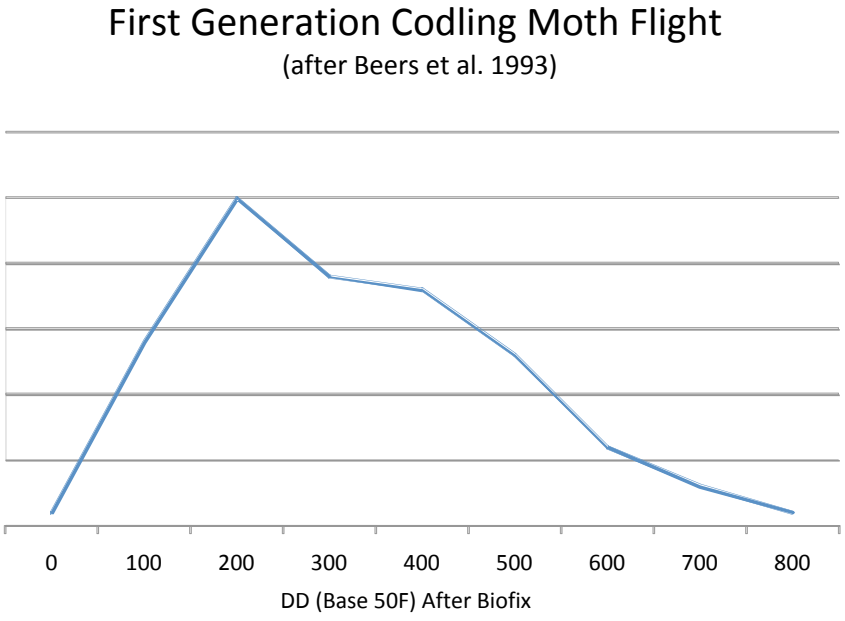
Initial flight of codling moth in far southern Illinois occurred around April 24; initial flight near Centralia was probably April 28; and first flight at Urbana appears to have been May 10. I'll add biofix dates for additional locations in the next issue of this newsletter. Egg hatch begins approximately 220-240 DD base 50 F after biofix.

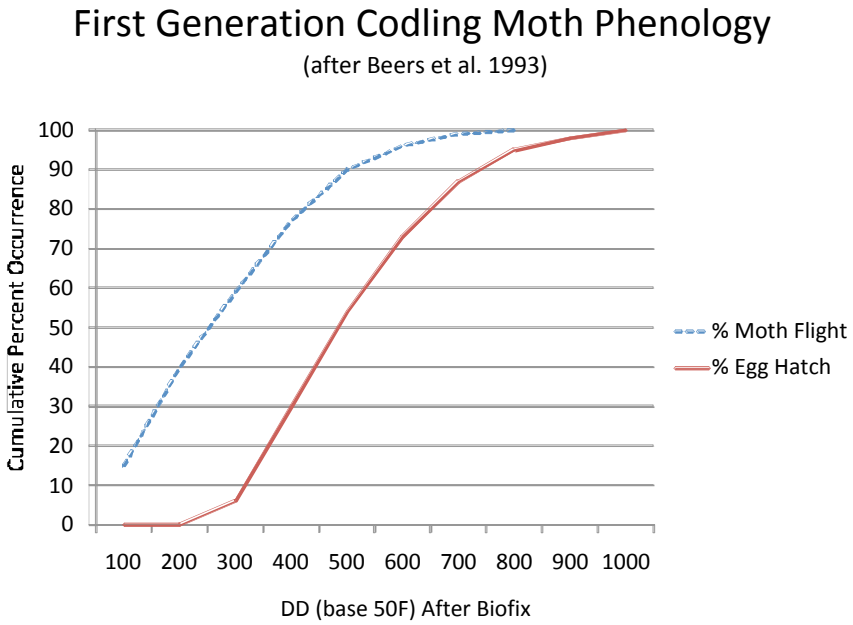
Codling moth biofix dates and degree-day (base 50F) accumulations:

	Biofix Date	DD Base 50 F, through May 10	DD Base 50 F, projected through May 17	DD Base 50 F, projected through May 24
Murphysboro (Carbondale weather data)	April 24	264	366	472
Centralia (Carbondale weather data)	April 28	155	265	378
Urbana (Champaign weather data)	May 10	8	96	187

Note the recommended timing for first application of various codling moth insecticides based on degree-day accumulations in the table on page 16 of the ***2009 Midwest Tree Fruit Spray Guide***.

Orchard Pest Management: A Resource Book for the Pacific Northwest, by Beers et al. (1993) includes a table that summarizes codling moth flight and egg hatch according to degree-days. I've graphed the numbers presented in that table to produce the two illustrations below. Although here in the Midwest we often see a first generation flight pattern that has two separate peaks, the first of the figures below is still useful for envisioning moth flight (and egg *laying*) according to degree-days. The second figure shows cumulative flight and egg *hatch* as a percentage of the total for first generation according to degree-day accumulation after biofix. Note that about 80 percent of first generation egg-hatch occurs between 350 and 700 degree-days (base 50F) after biofix. Most of the insecticides used to control codling moth – including Guthion, Imidan, Altacor, Assail, Calypso, and Delegate – are effective mainly against newly hatched larvae before they enter fruit, so it is during this period of 350-700 DD after biofix that having effective residues on fruit is especially important. (Rimon is recommended for use so that eggs laid on top of residues on foliage or fruit are killed by spray residues on those surfaces, so earlier application timing is recommended.) Sometimes we tend to "frontload" spray programs a little too much and not concentrate enough on the period when egg hatch is greatest a few weeks later.





Traps at the University of Illinois Dixon Springs Agricultural Center and at Echo Valley Orchard near Murphysboro picked up lesser peachtree borer moths last week (May 4 May 2, respectively). The general rule for spray timing where this insect is a problem is to make an initial spray to trunk and scaffold branches 7 to 14 days after traps first begin to catch moths in the spring. Another application in August may also be necessary. See pages 33-34 of the ***2008 Midwest Tree Fruit Spray Guide*** for more comments on the control of this insect and for a list of registered and effective insecticides. For growers using mating disruption (with the dual dispenser that disrupts both lesser peachtree borer and "greater" peachtree borer mating), dispensers should be on now r as soon as possible in the southern part of the state (typically by around 500-600 base 50 degree-days since January 1 … see the maps and table earlier in this issue).

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

Vegetable Production and Pest Management

Striped cucumber beetle: The following paragraph, written by Rick Foster of Purdue University, is reprinted from the May 8, 2009, issue of the Purdue's ***Vegetable Crops Hotline*** newsletter:

Striped cucumber beetles are out, sometimes in very large numbers, in many areas. If you are lucky enough to have cucurbits in the field, you should be watching them carefully at this time. You should visit your fields at least 3 times per week to catch the beetles as soon as they arrive. Young plants tend to be especially susceptible to beetle feeding and/or bacterial wilt, so detecting the infestation early is important. Treatment with a foliar insecticide is recommended when populations exceed an average of 1 beetle per plant on muskmelons, cucumbers, and young pumpkin plants. Cucurbit crops that are not susceptible to bacterial wilt, watermelons and squash, should be treated when populations exceed 5 beetles per plant, or if young plants are being defoliated. The pyrethroid insecticides (Ambush/Pounce, Asana, Baythroid, Brigade, Danitol, Mustang Max and Warrior) will all provide excellent control of cucumber beetles.

Less seriously

A man runs into the Emergency Room and yells, 'My wife's going to have her baby in the cab.' The ER doc grabbed his stuff, rushed out to the cab, lifted the lady's dress and began to take off her underwear. Suddenly he noticed that there were several cabs … and the woman in this cab was not pregnant.

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