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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, 217-333-6651, 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 ... which usually means the jokes ... are at the end of newsletter. Check the last page.

In this issue ...

Crop and Regional Reports

In the south and southwest, the weather had been dry for the past two weeks, but rain started falling early this week. Temperatures are on the rise, and growth is rapid. Several sweet corn plantings are already in, with the earliest planting going in the first week of April.

As Chris Doll mentioned in his notes, bloom looks good on apples and pears, and peaches are highly variable. Grapes are pushing bud, and most vineyards are finished with pruning or just finishing up.

With apple thinning coming up, it has come to my attention that K-Salt Fruit Fix 200 will no longer be registered for use in Illinois. American Vanguard Corporation has made the decision to restrict registration to states west of the Rockies, so availability is limited to what is on hand locally.

Be sure to take a look at the list upcoming educational programs later in this issue of the newsletter. And for those planning to attend the twilight meeting in Calhoun county on the April 14, note that the location has changed to the Calhoun County

Extension Office in Hardin. Additional details on meetings in the southern region will be posted at http://web.extension.uiuc.edu/regions/hort/ .

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

In northern Illinois, day temperatures have been in the low 50s to upper 70s, and night temperatures have been in the upper 20s to low 50s from late March through early April. The area received a trace to 1 inch of rainfall since the beginning of April and about 8 inches since January 1. Along with 30 inches of snowfall through the winter, these rains have resulted in abundant soil moisture.

Tree fruit and grape bud development stages are as follows: apples at silver tip/tight cluster, peaches at green tip, pears at green tip, and grapes at dormant bud. Pruning and training of non-bearing fruit trees is still going on in many orchards, but fertilizer and herbicide application is almost done in most fruit crops. It is getting late for grape pruning, as some of the bushes pruned during the last couple of days tend to bleed a lot. Dormant oil and fire blight control spray programs are going on in many orchards. Growers have planted cool season vegetables such as potatoes, beets, and onions, and those with greenhouses are starting vegetable seedlings that should be ready for transplanting in May.

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

Upcoming Meetings and Programs

Here are a few dates to add to your calendar. 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

April 14, 2005. Twilight Meeting for Tree Fruit Growers
5:30-7:30 p.m. Meet at the Calhoun County Extension Office in Hardin.

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.

May 21, 2005. Viticulture Workshop
9:00-11:30 a.m. Central Illinois -Location to be announced. 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)

Notes from Chris Doll

A nice April shower last night and today (April 12) is nice, as it had been 17 days without any measurable rain. In fact, we had not had an apple scab releasing rain since green tip, and the Back-40 is now in the early bloom stage. We also sailed through the peach bloom season without any brown rot infection periods. It is petal fall time on peach, 10-40 percent bloom of early blooming apples, full bloom of most pears, and full bloom of sweet cherries. These bloom events are happening on the same dates as in 2004. Some peach pruning continues in downstate orchards.

Apple bloom potential in the orchards viewed to date appears pretty good. The variable peach bloom remains puzzling. In commercial blocks, I saw little difference between Red Haven and Newhaven, and in most cases Loring and Bounty had a better bud survival. Cresthaven was much better than any of the above, but only about 50 percent of the buds survived on Contender and Encore. Saturn had good survival at Alto Pass and at home. Some varieties that had the least bud survival (and yet enough for a crop if good set occurs) were Blazing Star, Coralstar, Redstar, Gala, and PF 7. Two blocks of Blazing Star, about a mile apart, had survival rates of 3 percent of the buds versus 30 percent.

Traps in the Back 40 caught the first Oriental fruit moths on the 7th, and they continue to catch more. The San Jose scale trap is empty, and the Codling moth trap will go out in a day or two. The Spray Calendar says that egg hatch of red-banded leaf roller and red mites should have begun, and that infections of fire blight, cedar apple rust, powdery mildew, and apple scab can happen on apples. On peaches, it is about time for scab control, as well as curculio and stink bug.

In addition to spraying for insect and disease pests, it is time to prepare for Promalin sprays for fruit elongation at 1 pint per acre at full bloom of Delicious, and for Apogee sprays for fire blight reduction at petal fall of blight susceptible varieties. These sprays will be followed in rapid succession by the early thinning sprays where needed.

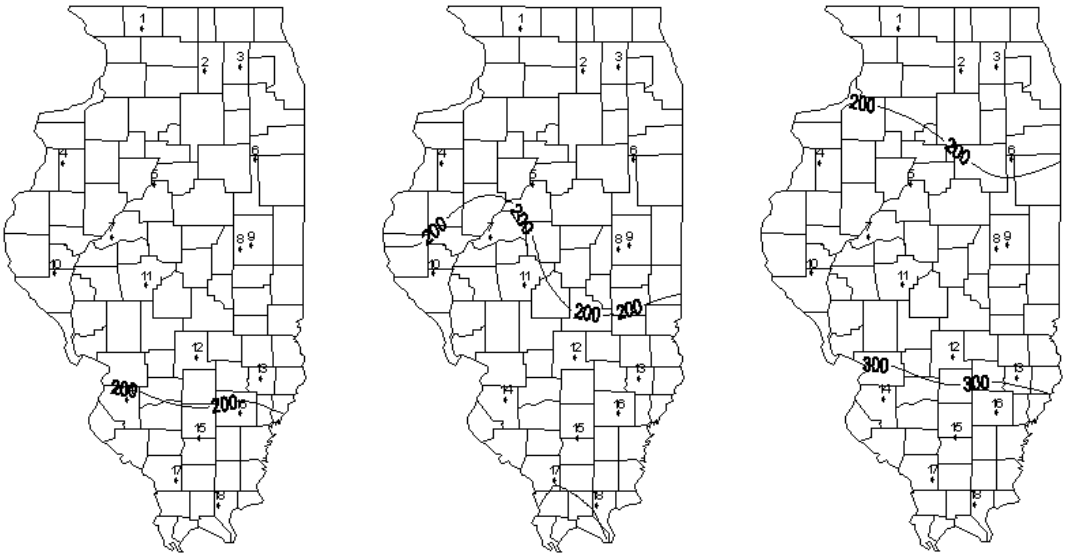
Phil Schwallier, District Extension Agent at Michigan's Clarksville Station, had an excellent write-up on his thinning thoughts in the March 29, 2005 ALERT, Volume 20, Number 1. It was an update on the current thinners and their use and timing. I would add the following comments that affect thinning effectiveness:

- Cloudy skies before and during the thinning period tend to increase chemical activity.
- Temperatures below 60 degrees greatly reduce activity of NAA.
- Temperatures below 70 degrees greatly reduce activity of Sevin.
- Temperatures above 90 degrees may result in overthinning of Sevin and NAA.
- Amid-Thin works best with slow drying conditions; NAA does the opposite.
- Apply two-thirds of the spray volume to upper half of the tree.

According to a Rutgers newsletter, orchards with a history of late season annual grass pressure should be treated with 1.0-4.0 pounds of Solicam 80DF plus 1.0-2.0 pounds of Diuron 80F per acre plus a contact herbicide if needed, with applications made in April. It should be a good time to apply most herbicide treatments to all tree fruit plantings. For bramble plantings that have begun growth, caution is needed if any contact product is used, and also liquid applications of Princep and Sinbar. Leaf and shoot burn has been observed from such treatments.

Chris Doll

Degree-Day Accumulations



Degree-day accumulations, base 50 F, from January 1 though April 10 (left) and projected through April 17 (center) and April 24 (right), 2005.

Degree-day accumulations, base 50 F, January 1 through April 11 (2004 and 2005).

Site No.	Station	County	DD, Base 50 Jan 1 - Apr 11 2004	DD, Base 50 Jan 1 - Apr 11 2005	Projected DD, Base 50 Jan 1 - Apr 17 2005	Projected DD, Base 50 Jan 1 - Apr 24 2005
1	Freeport	Stephenson	89	113	139	171
2	Dekalb	Dekalb	105	108	137	171
3	St. Charles	Kane	94	109	134	165
4	Monmouth	Warren	140	143	177	217
5	Peoria	Tazewell	147	148	187	232
6	Stelle	Ford	128	119	154	194
7	Kilbourne	Mason	205	180	224	275
8	Bondville	Champaign	167	129	167	210
9	Champaign	Champaign	163	140	179	224
10	Perry	Pike	209	162	205	254
11	Springfield	Sangamon	186	163	208	258
12	Brownstown	Fayette	235	160	213	270
13	Olney	Richland	228	187	238	293
14	Belleville	St. Clair	278	206	261	321
15	Rend Lake	Jefferson	285	218	281	347
16	Fairfield	Wayne	264	208	266	329
17	Carbondale	Jackson	300	239	299	361
18	Dixon Springs	Pope	323	233	298	366

Degree-day accumulations caught up a lot on long-term averages during the first 10 days of April. In northern Illinois the current cumulative totals are now even with or ahead of last year, and totals in the south are a lot closer than they were a couple of weeks ago.

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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Vegetable Production and Pest Management

Quick Notes on Early Season Vegetable Insects

Cutworms. According to Ron Hines and Kelly Cook, black cutworm moth captures have begun in traps in southern Illinois and northward as far as Adams and Piatt counties (western and east-central IL). Counts have been low so far – not enough to constitute a biofix starting degree-day models that would predict the timing for scouting.

Bean leaf beetles: Overwintered adults are active and searching for legumes to feed on. They prefer soybeans and snap beans, but they also show up on alfalfa and a number of vegetable crops. They do not damage vegetables other than beans, so be sure to distinguish between them and the cucumber beetles. Check the descriptions and illustrations below for keys to identifying several similar beetles.

A bunch of beetles that don't really look alike

Among the many small beetles in gardens and fields around Illinois in the spring are the bean leaf beetle, striped cucumber beetle, and spotted cucumber beetle. Later in the summer they're joined by the adults of the western rootworm and northern corn rootworm. Although these beetles are somewhat similar in appearance, distinguishing among them is important. The cucumber beetles are vectors of the pathogen that causes bacterial wilt of cucumbers and muskmelons; the others are not. Bean leaf beetles are more likely to cause serious damage to beans than the other species (although spotted cucumber beetle will feed on bean foliage and pods. Here are the key characters that help in identifying these species.

Bean leaf beetles vary in color and marking, some with black spots or bars on the elytra (shell-like forewings), and some without these marks. All are marked with a black wedge immediately behind the prothorax. **Spotted cucumber beetles** resemble bean leaf beetles but always have 12 distinct spots on the elytra. The front, center spots are distinct and do not form a triangle as they do on the bean leaf beetle. **Striped cucumber beetles** have distinct black stripes along the inner and outer edges of the elytra, and the stripes run all the way to the ends of the elytra. The underside of the abdomen is black. All of these insects overwinter as adults and move into fields and gardens in April through May, as soon as temperatures warm up and their food plants become available. They lay eggs at the base of their host plants, and larvae develop below ground, feeding on the roots. Two summer generations of adults of these species emerge and feed, mate, and lay eggs; adults of the latter of these summer generations overwinter.

Left to right: bean leaf beetles, spotted cucumber beetle, striped cucumber beetle.

Western corn rootworm beetles resemble striped cucumber beetles because of the stripes on their elytra. The edges of these stripes tend blur or fade on the western corn rootworm, and they do not extend all the way to ends of the elytra. The underside of the abdomen of the western corn rootworm is yellowish. **Northern corn rootworm** beetles have no stripes and no spots ... they're uniformly yellowish green. These two species overwinter as eggs in the soil. Larvae that hatch in the spring feed on the roots of corn, then eventually pupate and emerge as adults, usually beginning in July. Western and northern corn rootworm adults undergo just one generation per year. The adults present in later summer and fall mate, and females lay eggs in the soil; those eggs overwinter to start the cycle again the next spring.

Western (left) and northern (right) corn rootworm beetles.

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Fruit Production and Pest Management

Diseases of Fruit Crops

Dormant sprays: Where there's still time to make dormant sprays on apples or brambles, here are reminders of a couple of target diseases and the products to use to control them:

Fire blight of apples. Fire blight is one of the most important diseases of apples in Illinois. Apple trees need to be sprayed for control of this disease at silver tip. A Bordeaux mixture or a fixed copper spray is effective in reducing initial inoculum. Use a dilute Bordeaux spray of 8 lb copper sulfate, 8 lb spray lime, and 1 gallon miscible superior oil per 100 gallons of water. Do not apply after ¼-inch green leaf stage or when drying conditions are slow, as severe injury can occur. There are several fixed copper fungicides registered for use on apple. Fixed copper can be mixed with oil. However, never combine copper sulfate alone with dormant oil. For additional information, consult the "Commercial Tree Fruit Spray Guide 2005" (http://www.extension.iastate.edu/Publications/PM1282.pdf/).

Anthracnose of brambles. The dormant application of lime sulfur solution is important for control of anthracnose of brambles. Liquid lime-sulfur at 20 gallons per acre should be applied when tips of buds show green. Lime-sulfur also controls cane bight and spur blight. This spray may burn the leaves if applied after new shoots are 3/4-inch long. For more information, consult the "Illinois Commercial Small Fruit and Grape Spray Guide 2005" (http://www.hort.purdue.edu/hort/ext/sfg/). Also, for information on disease biology and epidemiology refer to Midwest Small Fruit Pest Management Handbook (http://www.ag.ohio-state.edu/~ohioline/b861/index.html/).

Oriental fruit moth

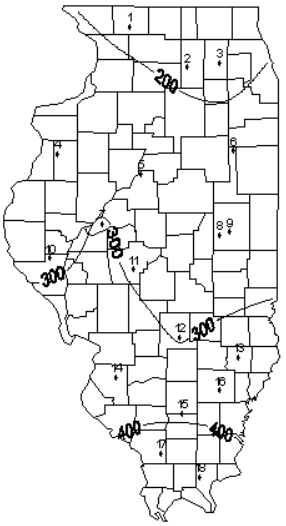
Oriental fruit moth adult (left) and larva (right).

Chris Doll noted that his biofix date for oriental fruit moth (OFM) was April 7. For those who keep track of degree-days and OFM development, it's important to note that the threshold for the OFM phenology model is 45 degrees F, not 50 F as it is for codling moth and many other fruit and vegetable insects. That means that OFM is able to feed and develop at lower temperatures, and that's why it's an earlier pest than many other species of insects that infest peaches and apples. Based on Gus Howitt's ***Common Tree Fruit Pests*** and his observations in Michigan, key stages in OFM development and corresponding degree-day accumulations are listed in the table below. Models developed in California suggest that developmental times are slightly longer (requiring more degree-days). Those models indicate a slightly later start of first

generation flight (227 degree-days after January 1) and longer generation times (approximately 960 degree-days “egg-to-egg” instead of 850 as listed by Howitt).

Degree -days, base 45 F, since Jan. 1	Degree-days, base 45 F, since biofix	Life stage or event
175	0	Beginning of first generation adult flight
250	75	First eggs of the first generation
325-425	150-250	Peak of first generation adult flight
525	350	Peak of first generation egg-laying
950	775	Beginning of second generation adult flight
1100	925	First eggs of the second generation
1300-1425	1125-1350	Peak of second generation adult flight

Cumulative base 45 F degree-days for January 1, 2005 through April 11, 2005, are shown in the map to the right. Clearly, egg hatch is well underway in all areas of the state where peaches are grown. First generation OFM larvae tunnel into new shoots and cause flagging that resembles the symptoms of fire blight in apples. Second and subsequent generation larvae tunnel into fruit.



This issue's words of wisdom ...

- Learn from the mistakes of others ... you will not live long enough to make all of them yourself.
- Don't name a pig you plan to eat.
- A bumble bee is faster than a John Deere tractor.
- Forgive your enemies. It messes with their heads.
- Don't corner something meaner than you.

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