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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, 217-244-2126, weinzierl@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.

This is the final issue of the 2009 subscription year for the Illinois Fruit and Vegetable News. If you receive this newsletter by US Mail, you will need to renew your subscription by sending in the attached form and a check for \$20.00 payable to the University of Illinois. If you receive email notifications each time a new issue is posted on the web, your subscription to this service will renew automatically. If you wish to discontinue receiving email notifications, contact Rick Weinzierl at the phone number or email address above.

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

Upcoming Programs

- **International Herb Association Annual Meeting. July 11-15, 2010.** Collinsville, IL. (More details in future issues of this newsletter.)
- **2010 Sustainable Agriculture Tours**
 - **May 27, The Business of Vermiculture**, Wilken Farms, Iroquois County
 - **June 18, Feeding Universities Sustainably**, Farmer Brown's Production Company and Mulberry Hill Farm, Jackson County
 - **July 26, Illinois Berries**, J & J Berry Farm, Jersey County
 - **August 13, Romance Tour – Flowers and Wine**, Bright Flower Nursery and Famous Fossil Vineyard & Winery, Jo Daviess County and Stephenson County
 - **September 15, Agritourism – Farm Fresh Fun**, Country Corner, Henry County

A fee of \$20 per person will be charged for each tour, which includes lunch. This year two adults pay \$30 when registered together and children under the age of 10 attend free. Registration at least one week in advance is required. Visit http://web.extension.illinois.edu/smallfarm/ag_tours.cfm to register and for more details about each of the tours including a map and agenda. To register by phone, contact Donna Cray at 217-241-4644. For more information, contact Deborah Cavanaugh-Grant (217-968-5512; cvnghgrm@illinois.edu).

References and Web Sites

Several key references are available to fruit and vegetable growers in the Midwest. Here are few that are especially useful ...

- A link to Midwest newsletters on vegetable production and related topics: <http://www.vegedge.umn.edu/>
- 2010 Midwest Vegetable Production Guide: <http://btny.purdue.edu/Pubs/ID/ID-56/>
- Purdue's "Facts for Fancy Fruit" newsletter: <http://www.hort.purdue.edu/fff/fff.shtml>
- Cornell's "Scaffolds" newsletter: <http://www.nysaes.cornell.edu/ent/scaffolds/>
- The Mid-Atlantic Regional Fruit Loop: <http://www.caf.wvu.edu/kearneysville/fruitloop.html>
- Michigan State University's newsletters for fruit and vegetable crops: <http://www.ipm.msu.edu/aboutcat.htm>
- New Jersey's Plant and Pest Advisory Alerts: <http://njaes.rutgers.edu/pubs/plantandpestadvisory/default.asp>
- The Illinois Pest Management and Crop Development Bulletin (field crops): <http://ipm.illinois.edu/bulletin/>
- 2010 Midwest Small Fruit & Grape Spray Guide: http://www.ag.purdue.edu/hla/Hort/Pages/sfg_sprayguide.aspx
- 2010 Midwest Tree Fruit Spray Guide: <http://www.extension.iastate.edu/Publications/PM1282.pdf>
- The Midwest Small Fruit Pest Management Handbook: <http://ohioline.osu.edu/b861/index.html>
- The Midwest Tree Fruit Pest management Handbook: <http://www.ca.uky.edu/agc/pubs/id/id93/id93.htm>
- 2010-11 Pennsylvania Tree Fruit Production Guide: <http://agsci.psu.edu/tfpg>

To order printed copies of the small fruit grape spray guide, the tree fruit spray guide, or the vegetable production guide, Illinois growers should contact the University of Illinois at 1-800-345-6087 (toll-free within the U.S.) or 1-217-333-2007.

Regional Updates

In the southern region, we finally have signs of spring; the peepers are actively singing, daffodils are blooming and field preparations are just getting started. Some areas are still very wet, delaying some operations.

In orchards, pruning for the most part is done in apples and teams have moved into peaches. Though some have finished, grape pruning is ongoing as well. Be thinking about dormant copper sprays for both apple and peaches, targeting apples at silvertip if fire blight was severe last year and anytime before bud swell in peaches. Do not use oil if temperatures below freezing are predicted within 24 hrs. It is best to remove brush before spraying. If grape anthracnose was a problem last year, a dormant application of lime sulfur solution or Sulforix is a must and should be applied to just prior to bud swell. If you have blueberries, a dormant application of lime sulfur solution or Sulforix is recommended for control of Phomopsis and twig blight, targeting the application as buds begin to break.

As a general rule, young peach and apple trees may require 0.01 to 0.04 pounds of actual nitrogen per year of age up to 0.03 pound actual nitrogen per tree at maturity—adjusting up or down depending on pruning, size of crop, leaf analysis, etc. For peaches, a split application is recommended in case of crop failure. The first split application of nitrogen should be targeted three weeks pre-bloom followed by the second half at shuck split if a good crop is present. If your soil/leaf analysis shows any deficiency of P or K, a complete fertilizer should be used in the first split application. For most soil types, use something like 16-8-8 (2-1-1 ratio). Calcium nitrate would be preferred for the second split application.

A Cover Crop Field Day has been scheduled for March 25th in the Campbell Hill area. This joint program between University of Illinois Extension, Natural Resources Conservation Service, and Illinois Soil & Water Conservation District will feature Mike Plumer, University of Illinois Natural Resource Extension Educator. The program will run from 10:00 a.m. to 12:30 p.m. and will include lunch. This will be an opportunity to see the growth habit of various cover crop species, learn the benefits of growing cover crops over the winter, and also the benefits of mixing cover crop species together. This program is sponsored by Miller Farms, 918 Calvary Cemetery Road, Campbell Hill, IL. To RSVP and/or additional information, contact John Miller at 618-426-1094.

Get your calendars out. The North American Fruit Explorers have scheduled their annual meeting for August 19-21, 2010 at the Best Western Motel/Conference Center in Lafayette, IN. To view the program and registration form, go to

the following link: <http://web.extension.illinois.edu/edwardsvillecenter/foodcrophort3031.html>. For additional details or questions: contact Ed Fackler at cefackler@gmail.com or 812-366-3181.

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

At the Dixon Springs Ag Center, we're putting up 3 high tunnels at the Dixon Springs Ag Center this year. Construction of the first high tunnel is about 70% complete, and it should be skinned in a few days. Some growers have already planted their tomatoes in high tunnels while others are waiting until after this weekend's forecast cold snap has passed. Again, growers using these season extension techniques benefit from larger quality transplants in order to maximize early yields and ultimately to maximize their return on their investment in the high tunnel.

Pruning on blueberries is underway here at DSAC and we continue to see a great interest from individuals looking to make new blueberry plantings. Pruning on blackberries should also be completed this week.



One of the new high tunnels under construction at DSAC.



Tomatoes ready for transplanting in high tunnels.

Jeff Kindhart (618-695-2770; jkindhar@illinois.edu)

Notes from Chris Doll

What a difference a year makes! On this date in 2009, things were growing and sprayers were running for some of the early sprays. Today, all I could see in the Back-40 was some flower bud swelling on some Japanese plums and early apricots. It was hard to see any swell of peach buds or silver tip on apple. March has seen a continuation of February weather, which was several degrees colder than normal, with 57 degrees the highest temperature. Except for a couple of 70-degree days last week, cool temperatures with lots of clouds have been the norm. Rainfall is a couple of inches below normal, but soils remain saturated. Plants are somewhat like people in that they are waiting for spring weather, and a few warm days can make a lot of difference. Sprayers and pesticide inventories had better be ready.

A check on personal records in the Back-40 for the last 40 years shows that the earliest full bloom date for peaches was March 27 in 2007 (and also in 1976 and 1991). For apples the earliest full bloom date was April 7, 1990. The latest full bloom date for peaches was April 19, 2008 and the latest date for apples was May 4, 1984.

There is still time to get pruning done in both tree fruits and small fruits. In fact, is approaching the best time to prune peaches as they get near bloom time. This usually gives a grower more time to assess potential freeze injury, and the pruning wounds heal more rapidly to prevent disease infection. A survey of peach flower buds indicates that a good bloom is expected, and usually that means lots of thinning to follow. Dr. Rich Marini of Penn State University has studied peach growth and fruiting and found that peach size on 18- to 30-inch shoots tends to be larger than on shoots less than 12 inches long, and writes that it can be advantageous to remove the short, thin shoots for that reason.

Since apple scab was more of a problem in 2009, some growers will need to adjust the timing and maybe the composition of fungicides this year. I have not been able to determine if resistance to apple scab is a problem in this area, as most growers use a good selection of fungicides. I like Dr. Dave Rosenberger's analysis of scab materials in a 2009 report in which he says that "mancozeb (Penncozeb, Manzate, Dithane) and captan have been around for over 60 years and still rank as the two most important fungicides for apple disease control. Both are widely used to control scab, and captan has shown superior control in many studies." There are many other good compounds that can give the control needed when some systemic and kick-back action is needed.

Based on the number of attendees at the recent Small Fruit and Strawberry schools in Mt. Vernon, there is considerable interest in these fruit crops for the local markets. Two basic talks on growing blueberries were given by Jeff Kindhart of the University of Illinois and Dale Bryant of New Salisbury, IN. They pretty much concurred on the requirements

for establishing a successful blueberry farm. These included (1) money and lots of it; (2) having a soil with a pH of 4.6 to 4.8 for optimum growth and yields; (3) have irrigation available to maintain soil moisture at optimum levels for the shallow-rooted plants; (4) mulch with an organic product like sawdust to help with weed control, water conservation and cooler soil temperatures; and (5) a well-drained soil both internally and on the surface. Blueberries do not like wet feet.

In the strawberry session, Nate Nourse of Nourse Farms in S. Deerfield, MA gave the reasons and basics for an annual plasticulture system with dormant plants of varieties adapted to the Midwest. With a little extra labor and care, the system can be held over for a second harvest season. The benefits are that dormant plants are used instead of plug or growing plants. The plastic mulch helps control weeds and reduces soil moisture losses. Picking is easier, berries are larger, and fruit loss is minimal. It does require a trickle tube beneath each row of plants, and the winter protection can be row covers or straw mulch. I have not seen this in practice in Illinois but have heard about it for several years.

More information about these two schools can be found in the 2010 Proceedings, available from Bronwyn Aly, DSAC, Rt. 1, Box 256, Simpson, IL. 6285

Chris Doll

Fruit Production and Pest Management

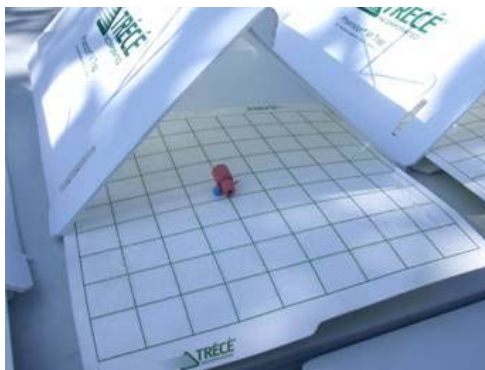
Pheromone Traps for Fruit Insects

It's time for the usual annual reminders about pheromone traps for fruit insects. This includes a fair bit of repetition from previous years, along with some updates for 2009.

For apple, peach, and grape growers, NOW is the time to order pheromone traps for key insects if you've not already done so. (Yes, sooner would have been better, and I tried to get this message out at all our winter meetings as well.) Although traps are available and useful for monitoring many insects of fruit crops, the ones listed in the table that follows are probably the most important for most Illinois fruit growers. Other pests that may be worth monitoring with traps include dogwood borer, spotted tentiform leafminer, redbanded leafroller, and obliquebanded leafroller in apples and peachtree borer in peaches. Contact me if you want more information on these insects.

What kind of traps should I use?

A few companies manufacture traps, and all have a similar range of designs. Trecé is still the best known, but Scentry, Suterra, and others are also reliable providers. Over the last few years, the trap design that has become most widely used for fruit insects in general is the large plastic delta trap; Trecé sells it as the Pherocon VI trap, and Suterra and Scentry simply call it a large plastic delta trap (LPD). This trap is quick to set up and easy to maintain, because unlike earlier "wing traps," the sticky trapping surface is provided by an exchangeable card that slides in and out quickly and easily. It is MUCH faster to change sticky liners on this trap than it is to change the bottoms of the wing traps we used several years ago. If you bring the trap "shell" indoors at the end of the season, you can expect to get 2 to 3 years use from each trap (while replacing lures and liners as needed).



A Pherocon VI trap (an example of a large plastic delta trap), with the sticky liner partially removed, showing a pheromone lure.

What attracts moths to traps?

For all the moths typically monitored using sticky pheromone traps, the trap must be baited with a pheromone lure – usually a small piece of rubber or plastic containing a synthetic blend of chemicals that is very similar to compounds used by female moths to attract males. When traps capture male moths, that serves as an indication that females are also present, and mating and egg-laying are occurring. When you order pheromone traps, you also must order lures for the specific insect(s) you wish to monitor. (Sometimes you may order “kits” that come with a combination of traps and enough extra sticky liners and lures to last the season.) Remember that although you may use the same type of trap to monitor different pests, you must use only a single lure per trap ... it does not work to put lures for codling moth and tufted apple bud moth in the same trap. Depending on the pest species, lures usually last 2 to 8 weeks (suppliers can tell you the effective life of the lures they sell), so you have to order enough lures to last through the whole season.

What about apple maggot?

For apple growers in the northern half of Illinois, monitoring the flight of apple maggot flies also is necessary. Traps for apple maggot flies rely on appearance (especially the color and shape of a bright red apple) and the use of a food odor (“apple volatiles”) instead of a pheromone, and they are designed to capture female apple maggot flies ready to lay eggs on fruit. All the major suppliers of insect traps carry these kinds of traps. Growers should order the red spheres, tubes or tubs of stick-um or tanglefoot, and the food lures recommended by the supplier. Apple maggot traps may be used without any food lures; counts are interpreted accordingly.



An apple maggot trap.

How many traps should I use?

There are no precise answers, but in general, for the moths that are pests in Midwest fruit crops, I consider it adequate to use 2 to 3 pheromone traps per pest species per each block of trees or vineyard up to 10 acres in size. Guidelines often recommend at least 3 traps per pest species for any orchard up to 10 acres in size and 1 more trap for every 3 to 5 acres above 10. To monitor 50 acres of trees in 3 or 4 separate blocks, use at least 3 traps per block and at least 9-12 traps total. Always use at least 3 apple maggot traps (red spheres) per block of trees. See the table below regarding placement of traps.

If you have only one relatively small block of trees, you may want to order 3-trap "kits" that suppliers package for each of the major pests. Kits with "standard" lures will include 3 lures per trap, but because the lures for most will have to be replaced every 4 weeks, most Illinois growers will need yet another 2 extra lures per pest species per trap to get through the entire season. Suppliers also sell these extra lures and extra "liners" (the sticky trapping surface) for traps. If you operate an orchard larger than 10 to 15 acres, you'll need more traps, so don't "mess with" 3-trap kits; contact the suppliers and make plans to order supplies in bulk. "Long-life" lures are available for the codling moth and the Oriental fruit moth (and some other species) ... these lures last 8 weeks between changes and are the best choice for almost all Illinois growers.

For apple growers in southern Illinois ... it has been a few years since we saw some problems with tufted apple bud moth in orchards treated pretty much exclusively with organophosphates. With greater reliance on alternative

chemistries in recent years, this pest has not reached economic levels in any Illinois orchards in the last 5 years (to my knowledge), but I'm including it in the following table because it still warrants attention in some orchards.

Pheromone trapping guidelines

Crop and pest	When should you use traps?	Where do you hang the traps?
Apples -- all of Illinois Codling moth	Early bloom through harvest	At eye level or higher (upper third of canopy is best), spaced throughout the block, including one somewhere near the upwind edge and one near the downwind edge.
Apples -- south of I-70 Tufted apple bud moth	April 15 through harvest	Same as above for codling moth.
Apples -- north of Springfield Apple maggot	June 1 through harvest	In the outer portion of the canopy of trees on the edge of the block ... VERY visible to adults flying into the block (remove foliage around the sticky red spheres). Hang in border rows or end trees nearest any woods or brush outside the block
Peaches -- Lesser peachtree borer	Bloom or petal fall through harvest	Similar to codling moth, but trap height should not exceed 5 to 6 feet.
Peaches -- Oriental fruit moth (In southern IL, trapping for Oriental fruit moth in apples is also recommended.)	Green tip to pink through harvest	Similar to codling moth, but trap height need not exceed 6 feet.
Grapes -- Grape berry moth	Bloom through harvest	Hang traps on the top trellis wire. Place traps in the outside rows and near ends of rows; concentrate traps on edges near wooded areas.

Midwestern suppliers of pheromone traps include:

Supplier	Address	Phone & Fax
Great Lakes IPM	10220 Church Road Vestaburg, MI 48891 email: glipm@nethawk.com On the web at: http://www.greatlakesipm.com	Ph. 989-268-5593 Ph. 800-235-0285 Fax: 517-268-5311
Gempler's	P.O. Box 270 Mt. Horeb, WI 53572 On the web at: http://www.gemplers.com/pheromone-lures	1-800-382-8473 (U.S.A.)

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

Vegetable Production and Pest Management

Seed and Root Maggots

The February 26, 2010, issue of Purdue University's Vegetable Crops Hotline included a very timely and pertinent article on seed and root maggots by Rick Foster. It includes an evaluation of Admire and Actara for control of seedcorn maggot in muskmelons, and none of the rates of either product used in the trial provided good control. Check it out at ... <http://www.btny.purdue.edu/Pubs/vegcrop/VCH2010/VCH517.pdf> .

Background information on seed and root maggots (seedcorn maggot, cabbage maggot, and onion maggot) is available by “googling” them on the web and in the book *Vegetable Insect Management*, edited by Rick Foster and Brian Flood (Purdue Research Foundation, West Lafayette, IN 47907; ISBN 1-892829-15-0; published by Meister Media, 2006, Willoughby, OH). Brief sampling and threshold information, along with listings of insecticides registered for the control of these insects, are presented in the *2010 Midwest Vegetable Production Guide*, available on-line at <http://btpn.purdue.edu/Pubs/ID/ID-56/>.



Left: Seedcorn maggot larva and damage (from E.A. Heinrichs et al., *Maize Insect Pests in North America*, at ipmworld.umn.edu/chapters/maize.htm); right: seedcorn maggot adult flies (photo by Jeff Hahn at www.extension.umn.edu/.../YGLN-June1502.html).

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

Less seriously ...



Some days all you can do is smile and wait for some kind soul to come pull your butt out of the bind you've gotten yourself into.

2010 ILLINOIS FRUIT AND VEGETABLE NEWS

The *Illinois Fruit and Vegetable News*, a newsletter for commercial growers of fruit and vegetable crops, will be published on the web and in print in 2010. University of Illinois Extension specialists and educators, along with experts from other institutions and the private sector, will write 20 issues for the 2010 season. From March through October, the newsletter is published every two weeks; one issue is published each month from November through February. The price for US Mail delivery of the printed “hard copy” is \$20 for 20 issues.

For those with internet access, the 2010 *Illinois Fruit and Vegetable News* issues will be posted on the web and available free of charge at: <http://www.ipm.uiuc.edu/ifvn/index.html>

If you wish to subscribe to the email notification service, you will receive an email announcement on the date each new issue is posted on the web.

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Rick Weinzierl, Department of Crop Sciences, University of Illinois,
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If you have questions, call Rick Weinzierl at 217-244-2126 or email weinzier@uiuc.edu.

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