



UNIVERSITY OF ILLINOIS EXTENSION

College of Agricultural, Consumer, and Environmental Sciences

Illinois Fruit and Vegetable News

Vol. 17, No. 8, June 30, 2011

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.

In this issue ...

Upcoming Programs

New University of Illinois Extension Structure and Educators

Fruit Production and Pest Management (codling moth and oriental fruit moth flight at Urbana; be on the look-out for Comstock mealybug in peaches in southern IL))

Vegetable Production and Pest Management (notes on corn earworm, squash vine borer, and squash bug)

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

Upcoming Programs

- **"Is Entrepreneurial Farming for You?" Workshops** will be held in University of Illinois Extension offices from 5:30 p.m. to 9:00 p.m. on **June 30, July 7, and July 14** at the following locations: Sangamon County Extension Office on **June 30** (2501 North 8th Street, Illinois State Fairgrounds, Bldg #30, Springfield), McLean County Extension Office on **July 7** (402 North Hershey Road, Bloomington) and the Peoria County Extension Office on **July 14** (4810 North Sheridan, Peoria). Registration for each workshop is \$30 and includes a light supper. Payment can be processed online at <http://central.illinoisfarmbeginnings.org> or by contacting The Land Connection at 217-688-2570.
- **University of Illinois Dixon Springs Agricultural Center Field Day, August 4, 2011**, at the Dixon Springs Ag Center near Simpson, IL. Tours begin at 9:00 a.m. Speakers will discuss a variety of topics, including high tunnels for tomato and small production in southern Illinois. There is no cost to attend this event, and a free meal will be provided. The Dixon Springs Agricultural Center is located on Illinois Route 145 near Glendale. It is 25 miles south of Harrisburg and 25 miles north of Paducah, Ky. More to follow in the July 18 issue of this newsletter. Certified Crop Advisor credits will be provided. For more information, call the Dixon Springs Agricultural Center at 618-695-2441.

New University of Illinois Extension Structure and Educators

The reorganization of University of Illinois Extension's field staff takes effect July 1, 2011. It includes the establishment of 27 multi-county units, each staffed with different combinations of educators. For readers of this newsletter, the most important change is the establishment of 13 positions (2 are yet to be filled) for educators devoted to Local Food Systems and Small Farms and several positions in Horticulture. The positions are located in multicounty units that chose to allocate funding for these efforts. A lot of operational details are yet to be fully sorted out, but we're working on the general idea that roughly 70 percent of the educators' efforts are to serve the counties in their units, and that this will include some trading of expertise among units. Roughly 30 percent of each educator's efforts can extend well beyond his or her multicounty unit to provide broader benefits regionally or statewide.

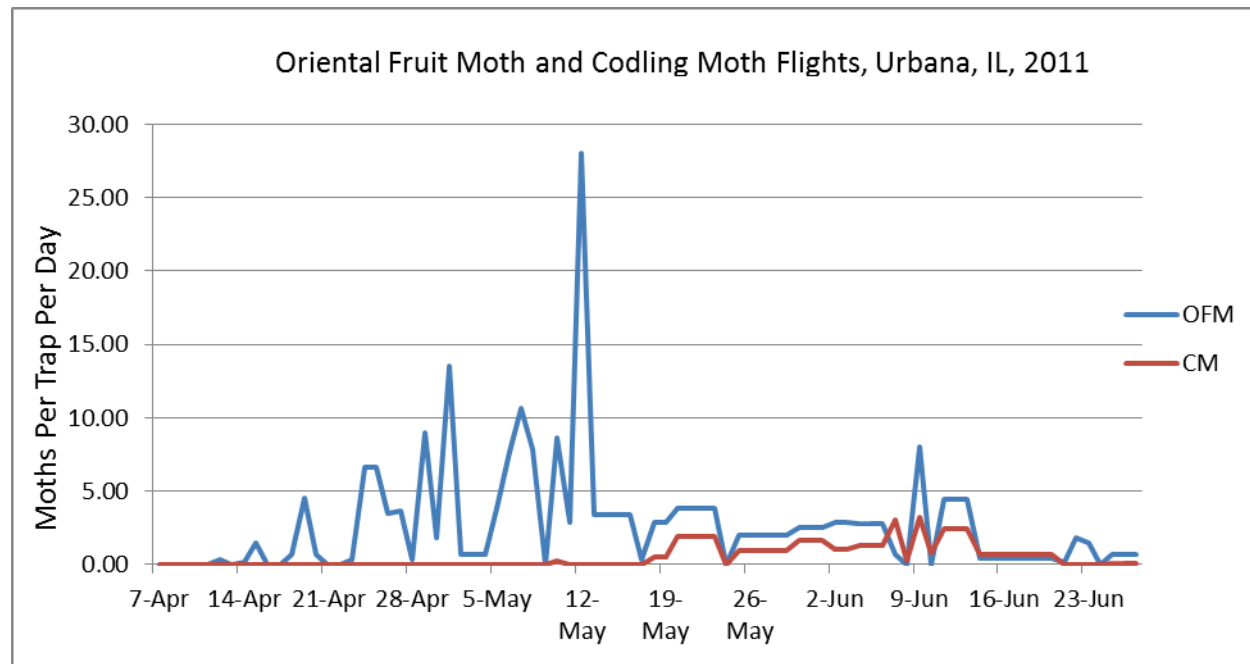
The Local Food Systems and Small Farms educators and the Horticulture educators bring a wide range of skills and expertise their new positions. Some, like Maurice Ogutu and Elizabeth Wahle, are familiar to many who grow fruits and vegetables commercially in Illinois. Others bring expertise in different areas, including business planning, marketing, organic production, and pest management. This issue of the newsletter lists the locations and contact information for all the Local Food Systems and Small Farms educators and for the Horticulture educators who have (so far) indicated their intent to work with commercial fruit and vegetable producers. We likely will add more names to the Horticulture list in the near future. Over the course of the next few months I hope to provide brief profiles of educators who will be available as resources for fruit and vegetable producers, but for now, be sure to check the list at the end of this issue.

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

Fruit Production and Pest Management

Oriental Fruit Moth and Codling Moth Flights

The graph below tracks counts of oriental fruit moth and codling moth in traps at the University of Illinois orchard at Urbana ... note that the scale indicates moths per trap per DAY.



For oriental fruit moth, I used April 16 as the biofix (first consistent capture of moths in traps) even though counts later dropped back to zero on a few nights when temperatures were too low to allow flight. These counts came from an old unmanaged seedling block of apples that we leave standing to help supply pests for insect control trials in the nearby new plantings. And yes, on one night, the average for 6 traps was over 25 moths per trap! As of June 29, the degree-day total (base 45 F) since April 16 is 1509, which normally suggests second generation flight here should be just past peak. Counts from traps do not indicate such an intense flight for second generation, but new entries into nearby peach shoots (and the flagging that results from those entries) do indicate that second generation larvae feeding now (and will be entering fruit as well).

Codling moth flight started later than usual, with a biofix date of May 19 at Urbana. Although the graph does not appear indicate a very impressive first flight, 3 moths per trap per night is the equivalent of 21 moths per trap per day. As of June 30, the degree-day total (base 50F) since biofix is 912. At this total, we expect that first generation flight has all but ended ... and that second generation flight is about to begin.

Several insecticides are effective at preventing oriental fruit moth and codling moth entry into peaches and apples; see the [2011 Midwest Tree Fruit Spray Guide](#) for a listing.

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

A Reminder about Last Year's Mealybugs on Peaches

Last summer and fall I reported on an infestation of mealybugs on peaches in southern Illinois. Trunks, branches, twigs, and fruit were infested. Dr. Gregory Evans, USDA APHIS PPQ Systematic Entomology Laboratory, identified specimens as the **Comstock mealybug**, *Pseudococcus comstocki* (Kuwana) (Hemiptera: Pseudococcidae). This was the first record of Comstock mealybug on peaches in Illinois. Although last year's infestation was isolated, growers throughout southern Illinois are urged to be on the look-out for this insect. If you see signs or insects that resemble the photos below, be sure to call or email me. Fact sheets on Comstock mealybug are available from Cornell (<http://www.nysipm.cornell.edu/factsheets/treefruit/pests/cmb/cmb.asp>) and the University of California (<http://www.ipm.ucdavis.edu/PMG/r107300511.html>).



Comstock mealybug on peaches. Also see: <http://ipm.illinois.edu/mealybugs/>

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

Vegetable Production and Pest Management

Notes on Vegetable Insects

Corn earworm moths are active in much of the state and laying eggs on silking sweet corn, tomatoes, peppers, and other host plants. If you have a pheromone trap in place, be sure to check it daily. If you do not, you have to assume that this insect is present now. See [last week's newsletter](#) for notes on control, and see the [2011 Midwest Vegetable Production Guide](#) for listings of registered insecticides for various vegetable crops.

Squash vine borer and squash bug also are active now. Some background on each ...

The squash vine borer tunnels in the vines of pumpkins and summer and winter squash; it rarely is found in cucumbers or melons and cannot complete its development except in squash or pumpkins.

Identification. The squash vine borer adult is a black and reddish moth called a clearwing moth because large portions of its hind wings lack scales. These moths are $\frac{3}{4}$ - to 1-inch long, with a 1- to 1 $\frac{1}{2}$ -inch wing span. They are active during the daytime and superficially resemble wasps as they fly about. Larvae are yellowish-white with a brown head, 3 pairs of thoracic legs, and 5 pairs of fleshy abdominal prolegs that bear tiny hooks called crochets. Fully-grown larvae are about 1 inch long. Brownish pupae are slightly less than 1 inch long, and they are found in the soil inside a dark, silken cocoon.



Squash vine borer adult (left) and larva (right)

Life Cycle. Squash vine borers overwinter as mature larvae or pupae within cocoons 1 $\frac{1}{2}$ to 3 inches below the soil surface. Moths emerge and begin to mate and lay eggs in June and July in much of the Midwest (earlier, beginning in May, in southern Illinois and similar latitudes). Moths lay eggs singly at the base of plants or on stems and petioles, beginning when plants start to bloom or “run”. Larvae feed within stems or petioles for 2 to 4 weeks, leaving brown, sawdust-like frass (droppings) at holes where they entered the stem. In southern Illinois these pupate and produce a second flight of moths in late summer; in the north, larvae or pupae of the first (and only) generation remain in the soil through the winter.

Plant Injury. Tunneling within vines destroys water- and food-conducting tissues, reducing plant vigor and yield and sometimes killing vines.

Management. Disking or plowing to destroy vines soon after harvest and bury or destroy overwintering cocoons reduces moth populations within a field in the spring. Staggering plantings over several dates also allows some plantings to escape heaviest periods of egg-laying. Early detection of moths and initial damage is essential for timing insecticide applications. For insecticides to be effective, they must be applied before larvae enter stems or petioles. Scout for moths (pheromone lures and traps are available for monitoring flight periods) and look for entrance holes and

frass as soon as plants begin to bloom or vine. Apply insecticides beginning 5 to 7 days after moths are first detected and at weekly intervals for 3 to 5 weeks, or begin when injury is first noted and make a second application a week later. See the [2011 Midwest Vegetable Production Guide](#) for listings of registered insecticides.

Late June and July usually bring the beginning of squash bug infestations in Illinois. The squash bug, *Anasa tristis* (De Geer) (Hemiptera: Coreidae), is a perennial and severe pest of pumpkins and squash; it rarely injures cucumbers and melons in the Midwestern United States.



Squash bug adult (above), eggs (lower left), and nymphs (lower right).

Identification. The squash bug is a “true bug” in the order Hemiptera. Like all adult Hemiptera, adult squash bugs have two pairs of wings, with the front wings hardened at the base and membranous at the tips. Its mouthparts form a needle-like beak that arises from the tip of the head. Adults are brownish black, with yellowish to red-orange markings; they appear oval shaped when viewed from above, and somewhat flattened when viewed from the side. Females lay yellowish-white eggs in small clusters or masses on the upper and lower surfaces of leaves; the eggs quickly darken to a reddish brown color. Eggs hatch to produce grayish-white, wingless nymphs with black legs. The nymphs darken in color as they grow older, and wing pads (the beginnings of adult wings) begin to develop.

Life Cycle. The squash bug overwinters as an adult, and survival is greatest in plant debris, mulch, and field borders or woods. Adults become active in the spring, mate, and females begin feeding and laying eggs in June and July. Nymphs grow to the adult stage in 5 to 6 weeks, and new females mate and begin laying eggs immediately. Populations are greatest during hot, dry summers. Females that reach the adult stage after late July or early August do not mate or lay eggs but instead enter an inactive stage and seek overwintering sites. Squash bugs may be present as nymphs or adults in pumpkins and squash from June through October.

Plant Injury. Squash bugs use piercing mouthparts to penetrate stems, leaves, and fruit and suck sap from plants. This direct damage may cause wilting or even kill plants if populations are great enough. Recent research has found that squash bugs transmit squash yellow vine disease; controlling squash bugs limits the spread of this disease within fields.

Management. Early in the season when adults move into fields and feed on young plants, watch for wilting of seedlings and apply an insecticide if wilting is observed. Scout for eggs of the squash bug on upper and lower surfaces of leaves.

If densities exceed one egg mass per plant, use insecticides for control as nymphs begin to hatch. Insecticides labeled for use against squash bug are most effective against young nymphs, and for commercial growers who possess a Pesticide Applicator's License, the pyrethroid insecticides (particularly Brigade, Mustang Max, and Warrior) are most effective against squash bug. Organic growers may choose to use floating row covers to exclude squash bugs from young plants, but when row covers have to come off to allow pollination, none of the insecticides approved for use in Certified Organic production systems are truly effective against squash bugs. See the [2011 Midwest Vegetable Production Guide](#) for listings of registered insecticides.

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

Less seriously ... laws of nature (sort of) ...from Lee Rife

Law of Mechanical Repair: After your hands become coated with grease, your nose will begin to itch & you'll have to pee.

Law of Probability: The probability of being watched is directly proportional to the stupidity of your act.

Law of Random Numbers: If you dial a wrong number, you never get a busy signal & someone always answers.

Law of the Alibi: If you tell the boss you were late for work because you had a flat tire, the very next morning you will have a flat tire.

Law of Close Encounters: The probability of meeting someone you know increases dramatically when you are with someone you don't want to be seen with.

Law of the Theater & Hockey Arena (yes, they have something in common): At any event, the people whose seats are farthest from the aisle always arrive last. They are the ones who will leave their seats several times to go for food, beer, or the toilet and who leave early before the end of the performance or the game is over. The folks in the aisle seats come early, never move once, have long gangly legs or big bellies, and stay to the bitter end of the performance. The aisle people also are very surly folk.

Law of Logical Argument: Anything is possible if you don't know what you are talking about.

Brown's Law of Physical Appearance: If the clothes fit, they're ugly.

University of Illinois Extension Specialists in Fruit Production and Pest Management

Extension Educators – Local Food Systems and Small Farms		
STEPHEN AYERS , Champaign, Ford, Iroquois, and Vermilion counties	217-333-7672	srayers@illinois.edu
DEBORAH CAVANAUGH-GRANT , Logan, Menard and Sangamon counties	217-782-4617	cvnghgrn@illinois.edu
KYLE CECIL , Henderson, Knox, McDonough, and Warren counties	309-342-5108	cecil@illinois.edu
PAUL MARIMAN , DeWitt, Macon, and Piatt counties	217-877-6042	pmariman@illinois.edu
MATT MONTGOMERY , Fulton, Mason, Peoria, and Tazewell counties	309-547-3711	mptomtgo@illinois.edu
MAURICE OGUTU , JoDaviess, Stephenson, and Winnebago counties	815-235-4125	ogutu@illinois.edu
ELLEN PHILLIPS , Boone, DeKalb, and Ogle counties	815-732-2191	ephillps@illinois.edu
JOHN PIKE , Franklin, Jackson, Perry, Randolph, and Williamson counties	618-993-3304	jpike@illinois.edu
MIKE ROEGGE , Adams, Brown, Hancock, Pike and Schuyler counties	217-223-8380	roeggem@illinois.edu
DAVID SHILEY , Coles, Cumberland, Douglas, Moultrie and Shelby counties	217-543-3755	dshiley@illinois.edu
JAMES THEURI , Grundy, Kankakee, and Will counties	815-933-8337	jtheu50@illinois.edu
Extension Educators – Horticulture		
RICHARD HENTSCHEL , DuPage, Kane, and Kendall counties	630-584-6166	hentschel@illinois.edu
ELIZABETH WAHLE , Bond, Clinton, Jefferson, Marion, Madison, Monroe, St Clair, and Washington counties	618-650-7050	wahle@illinois.edu
Horticulture Research-Extension Specialists at our Research Stations		
JEFF KINDHART , Dixon Springs Agricultural Center	618-695-2770 618-638-7799 (cell)	jkindhar@illinois.edu
BILL SHOEMAKER , St. Charles Research Center	630-584-7254	wshoemak@illinois.edu
Campus-based Extension Specialists		
MOHAMMAD BABADOOST , Plant Pathology	217-333-1523	babadoos@illinois.edu
MOSBAH KUSHAD , Fruit & Vegetable Production	217-244-5691	kushad@illinois.edu
JOHN MASIUNAS , Weed Science	217-244-4469	masiunas@illinois.edu
CHUCK VOIGT , Vegetable Production (& herbs)	217-333-1969	cevoigt@illinois.edu
RICK WEINZIERL , Entomology	217-244-2126	weinzier@illinois.edu

Return Address:

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

