



# 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](mailto:weinzier@illinois.edu). The *Illinois Fruit and Vegetable News* is available on the web at: <http://ipm.illinois.edu/ifvn/>. 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*** ... (this one is brief because of the holiday and summer schedules)

### **Upcoming Programs**

**Fruit Production and Pest Management** (European red mite in peaches too; PHIs for miticides; updates on oriental fruit moth (PHIs for insecticides) and codling moth)

**Vegetable Production and Pest Management** (squash vine borer and squash bug)

**University of Illinois Extension educators and specialists in fruit and vegetable production and pest management**

### ***Upcoming Programs***

- **Is Entrepreneurial Farming for You? July 26, 2012**, 5:30 – 9:00 p.m. at the University of Illinois Extension Office in Springfield. A workshop to provide assistance to aspiring farmers with new business ideas. For more information and to register, see <https://webs.extension.uiuc.edu/registration/?RegistrationID=6818> or contact Deborah Cavanaugh-Grant at [cvnghgrn@illinois.edu](mailto:cvnghgrn@illinois.edu) or call 217-782-4617.
- **Central Illinois Sustainable Farming Network Twilight Tour, August 7, 2012**, 6:00 -8:00 p.m., with registration from 5:30-6:00 p.m., at Samara Farm, 1150 N., Shelbyville, IL. Zach and Annie Metzger will discuss harvest, storage, handling, pricing, and marketing in a CSA (Community Supported Agriculture). For information and to register, see <https://webs.extension.uiuc.edu/registration/?RegistrationID=6646> or contact Deborah Cavanaugh-Grant at [cvnghgrn@illinois.edu](mailto:cvnghgrn@illinois.edu), 217-782-4617.
- **Illinois Organic Growers Association 2012 Field Days**. The Illinois Organic Growers Association has scheduled six field days in August and September. We'll provide a listing of individual events in the next issue of this newsletter. For now, you check out the details at <http://illinoisorganicgrowers.org/2012/07/03/2012-ioga-field-day-schedule/>.

### ***Fruit Production and Pest Management***

#### ***European Red Mite in Peaches and Apples***

The previous issue of this newsletter noted scattered infestations of European red mites in apples. Hot, dry weather has led to more widespread infestations in apples and also to observations of infestations in peaches as well.

Preharvest intervals for miticides that might be used now for ERM control in apples and peaches are listed below>

Miticide	PHI (days) for Apples	PHI (days) for Peaches
Acramite	7	3
Envidor	7	7
Fujimite / Portal	14	Not labeled
Kanemite	14	Not labeled
Kelthane	7	Not labeled
Nexter	25	7
Zeal	14	7

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### Notes on Oriental Fruit Moth and Codling Moth

**Oriental fruit moth:** Third generation flight is ending in southern Illinois; third generation flight is underway in central Illinois, but traps indicate very low populations at the University of Illinois orchard at Urbana. Southern Illinois growers should continue to protect fruit from infestation by this insect as peach harvest continues. Preharvest intervals for insecticides that might be used to control oriental fruit moth on peaches include Altacor = 10 days; Assail = 7 days; Baythroid = 7 days; Belt = 7 days, Delegate = 14 days; Entrust = 14 days; Imidan = 14 days; Mustang Max = 14 days; Pounce = 14 days; Rimon = 14 days; Voliam Xpress = 14 days; Warrior = 14 days.

#### Oriental Fruit Moth

Location	Biofix Date	Degree-days (base 45 F) from biofix through July 4	Degree-days (base 45 F) estimated through July 11	Degree-days (base 45 F) estimated through July 18
Carbondale	March 18	2538	2758	2981
Belleville	March 18	2474	2697	2921
Urbana	March 24	2156	2367	2581

**Codling moth:** Degree-day accumulations based on a 50-degree F developmental threshold are summarized below, along with estimates of the status of this insect at locations ranging from southern to northern Illinois.

#### Codling Moth

Location	Biofix Date	Degree-days (base 50 F) from biofix through July 4	Degree-days (base 50 F) estimated through July 11	Degree-days (base 50 F) estimated through July 18
Carbondale	March 30	1841	2026	2214
Belleville	March 25	1848	2036	2226
Urbana	April 25	1457	1632	1812
Woodstock	May 10	1088	1242	1398

Some reference points for degree-days and codling moth development ...

- At 1,100 DD, second generation flight is 13 percent complete, and egg hatch is just beginning.
- At 1,400 DD, second generation flight is 60 percent complete, and egg hatch is 21 percent complete.
- At 1,700 DD, second generation flight is ~90 percent complete, and egg hatch is ~70 percent complete.
- At 1,840 DD, second generation flight is ~98 percent complete, and egg hatch is ~85 percent complete.
- At 2,020 DD, third generation flight is 5 percent complete, and second generation egg hatch is ~96 percent complete.

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## ***Vegetable Production and Pest Management***

**Squash vine borer and squash bug** are active in many parts of the state, with most moth activity winding down or finished in the far south. Some background on each (with slight revisions from last year's newsletter from mid-summer) ...

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 in flight they superficially resemble wasps. 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, but their usefulness is questionable) 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 [2012 Midwest Vegetable Production Guide](#) for listings of registered insecticides.

Late June and July usually bring the beginning of squash bug infestations in Illinois, and they're definitely developing throughout the state now. 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 [2012 Midwest Vegetable Production Guide](#) for listings of registered insecticides.

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***Less seriously ...*** some words of wisdom passed along by Pat Curran ...

- A boiled egg is hard to beat.
- To write with a broken pencil is pointless.
- When fish are in schools, they sometimes take debate.
- The police were called to a daycare where a three year old was resisting a rest.
- Did you hear about the guy whose whole left side was cut off? He's all right now.
- We'll never run out of math teachers because they always multiply.
- A dentist and a manicurist fought tooth and nail.
- A plateau is a high form of flattery.
- Acupuncture: a jab well done.
- A chicken crossing the road: poultry in motion.

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