



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, 217-333-6651, 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 email address above.

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

Upcoming Programs

- **Illinois Nut Grower Association Fall Meeting.** October 21 at the Madison County Farm Bureau Building, 900 Hillsboro Avenue, Edwardsville, IL. For details contact Elizabeth Wahle at wahle@uiuc.edu or 618-692-9434 and see Elizabeth's comments on this program in her regional update below..
- **Consider Farming Organically: Tools for Success. November 15, 2007, 1:30 p.m. to 4:30 p.m., in the McDonough County 4-H Auditorium** at the University of Illinois Extension Office, 3022 West Jackson, Macomb, Illinois. Registration fee: \$5.00. Pre-registration is required by Monday, November 12th. Contact the University of Illinois Extension Office in McDonough County at (309) 837-3939 or Loretta Ortiz-Ribbing at ortizrib@uiuc.edu.
- **More to come on these programs, but mark the dates on your calendar ...**
 - November 29, 2007: Illinois-Iowa Fruit and Vegetable Conference, Quad Cities
 - December 4-6, 2007: Great Lakes Fruit, Vegetable, and Farm Market EXPO, Grand Rapids, MI
 - January 3, 2008: Illiana Vegetable School, Schererville, IN
 - January 8, 2008: Community Supported Agriculture & Collaborative CSAs Workshop, Macomb, IL
 - January 9-11: 2008, Illinois Specialty Crops and Agritourism Conference, Springfield, IL
 - January 12, 2008: Buy Local, Eat Healthy, Springfield, IL
 - January 17-18, 2008: Midwest Organics Conference, Urbana, IL
 - January 19, 2008: Herb Day, Champaign-Urbana, IL
 - January 24, 2008: Illinois Horseradish School, Collinsville, IL
 - January 25, 2008: Alternative Crop Production Workshop, Macomb, IL
 - February 5, 2008: Southwestern Illinois Tree Fruit School, Hardin, IL
 - February 6, 2008: Southern Illinois Tree Fruit School, Mt. Vernon, IL
 - February 13, 2008: Southern Illinois Vegetable School, Mt. Vernon, IL
 - February 15, 2008: Illinois-Wisconsin Fruit and Vegetable Conference, location to be announced
 - February 19, 2008: Western Illinois Fruit and Vegetable School, Quincy, IL
 - February 20, 2008: Kankakee Area Vegetable School, Kankakee, IL
 - February 21-23, 2008: Illinois Grape Growers and Vintners Association Annual Meeting, location to be announced
 - March 4-5, 2008: Illinois Small Fruit and Strawberry School, Mt. Vernon, IL

Regional Updates

At the Dixon Springs Ag Center, drier and warmer than normal conditions continue to exist in much of southeastern Illinois. This is good news for plasticulture strawberry growers who were late getting plants set. That past two weeks have allowed for good growth and the short term forecast makes it appear we will continue to enjoy conditions favorable for catching plantings up to where we would like them to be developmentally. Based on what we experienced last year, I would have to say it is never too early to be developing vole control strategies for these plasticulture strawberry plantings.

We have been doing some field work such as plastic mulch removal and seeding plots to winter cover crops. Pumpkin harvest also continues. In addition, a new 3 acre plot has been plowed, ripped, amended, disked and seeded to rye. This spot will be the home to a new apple and peach planting at DSAC in spring, 2008.

Jeff Kindhart (618-695-2444; jkindhar@uiuc.edu)



Strawberry plants in plasticulture at the Dixon Springs Ag Center

In the south and southwest ... Almost the entire southern region received rain very early Wednesday morning. Although ponds are still low and the drought is still on, that small amount of rain sure lifted spirits. Most growers reported receiving between three quarters to an inch in rainfall. Temperatures are still warm and record high temps are expected later this week.

On one of my more recent farm visits I made an interesting comparison between everbearing raspberries grown in the field to those grown in a high tunnel. Those grown in the high tunnel suffered much less injury from the Easter freeze than those in the field. That part could be expected. What was interesting was the season extension gained with the high tunnel in a bad year. Harvest is still ongoing in the high tunnel, whereas most field planted raspberries have been finished for at least three weeks. In past years my everbearing raspberries planted in the open were in full harvest throughout October, but this year's harvest was pretty well finished by early September. This is the time to mention there will be a high tunnel/green house workshop preceding the Illinois Specialty Crops and Agritourism Conference on January 9, 2008, at the Springfield Crown Plaza. Details as they become available will be at the following url: <http://www.specialtygrowers.org/>

If you plan to attend the Great Lakes Fruit, Vegetable and Farm Market EXPO that takes place December 4-6 in Grand Rapids, Michigan, I recommend making hotel reservations now. The first announcement for the EXPO just came out in the September Fruit Growers News, so hotels will fill up fast. Online EXPO registration is now available at the following url: <http://www.glexpo.com/index.php>

A Small Acreage Workshop is scheduled for Saturday, November 3, 2007, at Southwestern Illinois College in Belleville. Join educators from the University of Illinois and local producers who will address concerns and questions of typical small farm owners. Cost for the event is \$25, with morning refreshments included. For questions, registration information or reasonable accommodations requests, call 618-236-4172. Preregistration for this workshop is required by October 26. There will be no walk-in registration available. A program brochure and registration form can be found at the following url: <http://web.extension.uiuc.edu/regions/hort/>.

The Illinois Nut Tree Association will have its annual meeting on Sunday, October 21, at 10 a.m. at the Madison County Farm Bureau, 900 Hillsboro Avenue, Edwardsville. Wayne Loveless, president and CEO of Forest Keeling Nursery, will be the featured speaker. He will share the nursery's work in pecan and chestnut production advances. Bring a dish for the pot luck carry-in, plus your own table service (plate, silverware, cup). Lunch is scheduled for noon. A dessert contest will be held as well, and all desserts containing nuts are eligible. The meeting will continue after lunch and will conclude with door prizes. The attendees bring the door prizes, which can be anything you feel another attendee would appreciate winning. At past meetings, prizes have included perennial plant starts, small trees and shrubs, bags of nuts, handmade items, and lots of other odds and ends comparable to those found at a good garage sale. Anyone interested in nut production is invited to attend this informative meeting.

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

In northern Illinois, apple harvest continues, with Rome, Braeburn, Enterprise, and Goldrush ready now in much of the region and soon to be ready along the Wisconsin border. Late-season problems include sooty blotch and flyspeck, apple scab disease, and multicolored Asian ladybird beetles. Harvest of fall-bearing raspberries is still going on in some farms, and ever-popular school tours and hayrides also are keeping growers busy.

Most vegetable production operations are now slowing down ... except for the harvest of pumpkins. There are reports of pumpkin fruit rots in the field and also in storage before sale or shipping as well as oedema, sunscald, and cucumber beetles and western corn rootworm beetles feeding on mature pumpkin fruits. In the Kankakee area, I received reports of corn earworm larvae in late season sweet corn and pumpkin fruit rots particularly on heavier wet grounds. Cabbage is doing great, and there is very little incidence of bacterial spot or speck in tomatoes. Plastic and drip tape removal is going on in fields where vegetables have been harvested, and planting of cover crops, particularly rye, is underway.

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

Notes from Chris Doll

What a difference 300 miles can make. A trip to northern Illinois a week ago gave me the opportunity to see apple trees with a good crop of fruit to go along with green grass. En route, I saw many fields of productive corn that was being piled high on the ground at a few sites. In this area, corn harvest is nearly complete, as is the apple harvest, such as it is. The U.S.D.A. apple crop prediction listed the Illinois crop at 81 percent less than of the 2006 crop. That figure has caused many growers to hunt elsewhere for fruit to put in the fruit markets and cider. I've heard of some good cooperative efforts between marketers in trucking supplies from good friends to the north.. Of course other surrounding states have been in the same predicament, as the same U.S.D.A. crop estimate listed declines for Tennessee at 99 percent, Missouri at 91 percent, Kentucky at 88 percent, Iowa at 73 percent, and Indiana and Ohio at 45 percent.

Back home, it was still dry with above normal temperatures. The home site has recorded 1.5 inches of rain since the 29th of June and 18.8 inches for the year. Temperatures for September included 24 days with above normal highs, and included a record low of 41 degrees on the 15th. These make tough conditions for planting strawberries, prepping ground for cover crops or new plantings, and growing cover crops without irrigation.

Drought stress on trees is prevalent, and on peach trees in particular. Some leaf drop is occurring, and growers planning sprays for bloom delay may have a difficult time in determining spray dates. It is very unusual for mature peach and apple trees to die from drought, but according to "Fundamentals of Fruit Production" by Garner, Bradford and Hooker, it can cause stress problems or maybe growth irregularities. The following are quotes from this text:

"It is a common observation that trees suffering from drought in late summer and early fall shed their foliage early. The function of the foliage during late summer and fall is to manufacture food materials which for the most part are stored through the winter for use in tissue building in the spring. Premature defoliation, from drought or any other cause, therefore is likely to result in a check to growth the following spring through cutting down the available reserves."

"Excessively dry summer weather, also if followed by fair precipitation in early autumn, may result in immature wood at the entrance into winter. It may also cause a premature dormancy, followed by second growth. This could cause some fall blossoming of fruit trees."

So far, I have not seen any of the latter problems because there hasn't been any rain, and it is getting late in the year for it to happen.

Hope to see you all at the fall and winter meetings.

Chris Doll

Fruit Production and Pest Management

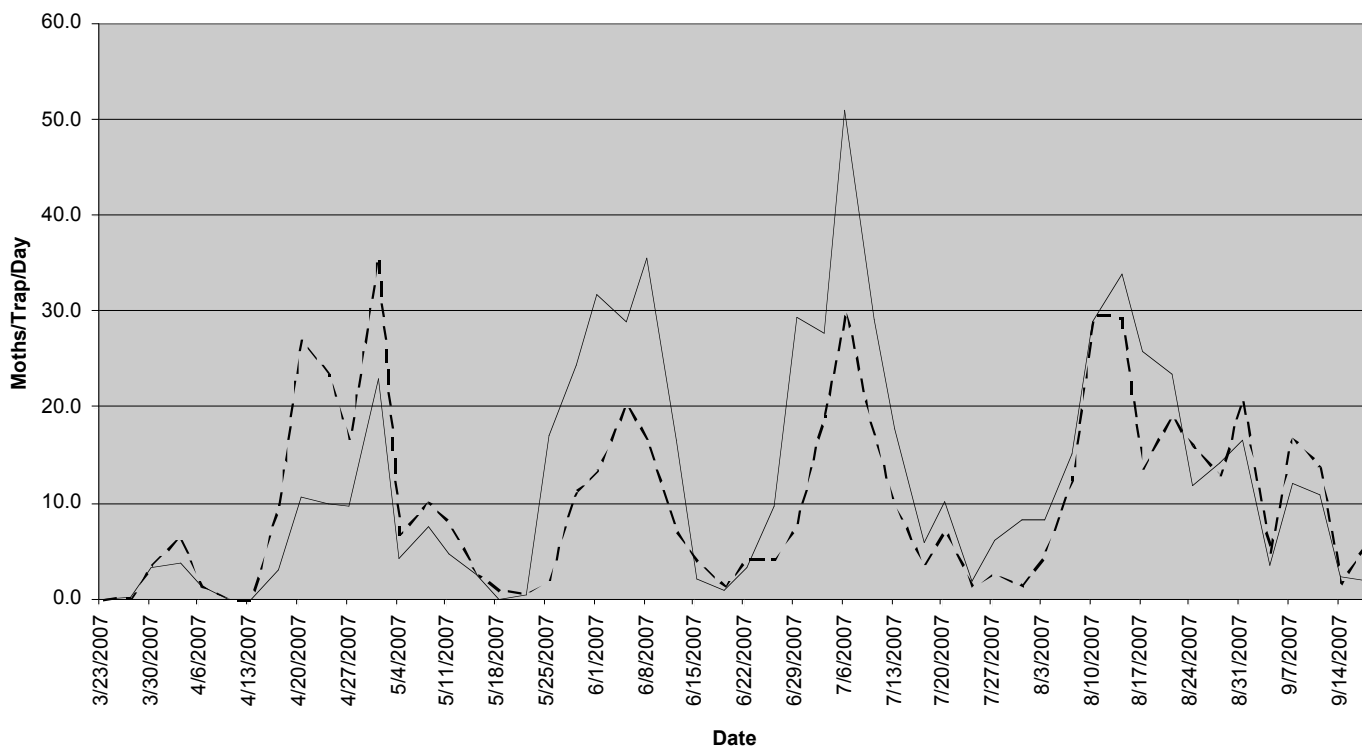
Codling Moth and Oriental Fruit Moth Flights, Calhoun County and Urbana, 2007

The following graphs summarize the results of codling moth and oriental fruit moth monitoring by means of pheromone traps in Calhoun County near Brussels and at the University of Illinois orchard at the edge of Urbana. In Calhoun County, three oriental fruit moth traps were hung in apple orchards, and three were hung in peaches; two codling moth traps were hung in apple orchards, and two were hung in peaches. Portions of the apple and peach orchards in this area received only minimal applications of insecticides because of crop loss as a result of the Easter freeze. All traps at Urbana (5 for oriental fruit moth and 4 for codling moth) were hung in apples. In general, counts were made twice weekly at both locations. Counts presented in these graphs were averaged over the number of traps used and over the number of days between counts, so graphs show the number of moths **per trap per day**. I'll present these data according to degree-day accumulations at winter conferences and discuss the use and interpretation of pheromone trap data then, but for now, here's a look at flights of these pests at a couple of locations. Thanks go to Keith Hagen of Brussels and to U of I students Moneen Jones and Steven Koeller for maintaining and monitoring traps throughout the 2007 season.

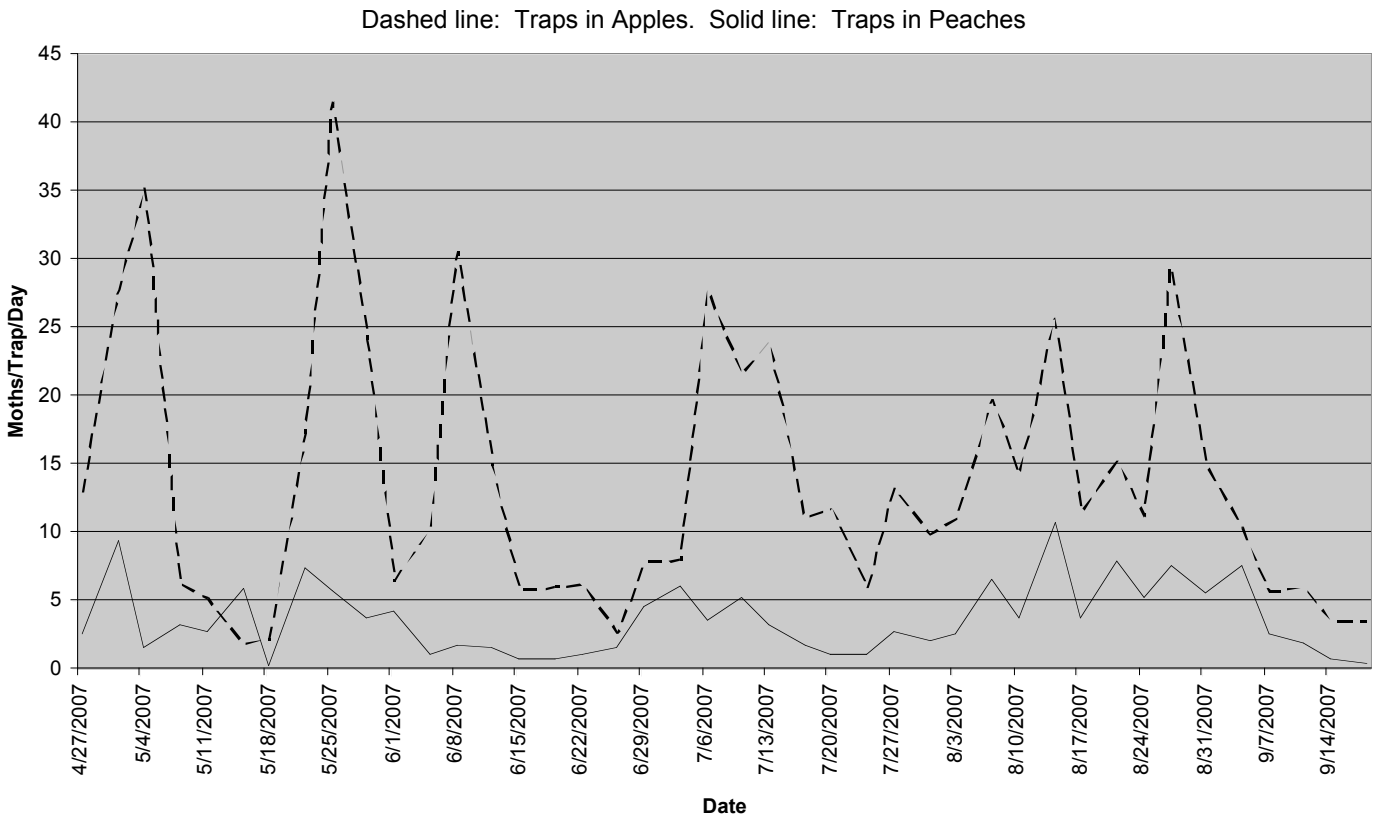
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Oriental Fruit Moth Flight, Calhoun County, 2007

Dashed line: Traps in Apples. Solid line: Traps in Peaches.

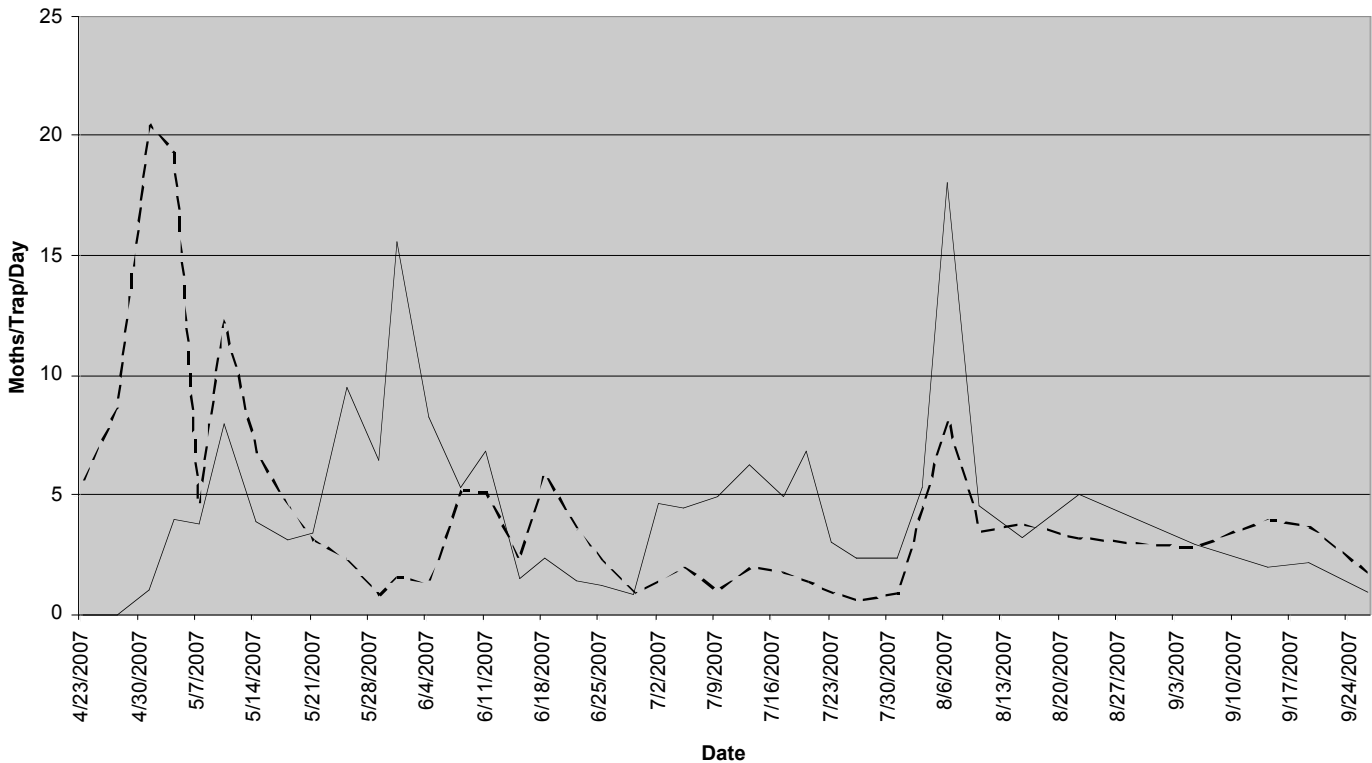


Codling Moth Flight, Calhoun County, 2007



Oriental Fruit Moth and Codling Moth Flights, Urbana, 2007

Dashed line: Oriental Fruit Moth. Solid line: Codling Moth.



Orchard Preparation for Winter

Dry weather this year may have reduced populations of mice, but those that survived are likely to be strong and hungry. With corn and bean harvest at its peak, mice will likely be looking for other places to hide and build their nests. October and November are the most active months for nesting. Areas with tall grasses, especially between rows of trees, are the best places for mice nests. Killing grass between rows with herbicide is not sufficient to keep the mice away. They will nest even in dead grass if it is tall enough to provide good cover from predators and if it is close to a food source such as live tree roots. For this reason, it is recommended that you keep the grass mowed, especially between trees within the row. If you plan to use chemicals to kill mice, then place the bait stations between the rows soon after you mow. There are several types of bait stations that you can use, including 1- to 1.5-inch T-shaped PVC pipe, roofing shingles, metal trays, slit tires along the center of the tread, or any object that provides a dark and dry environment. Do not bait the stations until the critters start to use them as a nesting site, which usually takes about two weeks. Check the stations frequently for any signs of mice activity. Usually you see a small pile of straw or a hole in the ground under the station.

There are two types of chemical baits for mice, zinc phosphide, which forms toxic phosphine gas in the intestine of the animal, and chlorphacinone (Rozol), an anticoagulant. Place the bait on a piece of plastic under the station, but don't spread it on the ground, as the animals will shy away from rotted bait. Also, change the bait every two weeks and alternate between the two types of chemicals. Mice will shy away from both chemicals, especially zinc phosphide, after a few feedings. Never spread the bait on the ground outside the bait station, as birds and other non target animals will be injured or killed. Some growers use trail baiting, which works only when the ground is dry, but there is a danger in that the trail will serve as a tunnel when the bait is gone. Trail baiting is more effective on pine vole, but not as effective on prairie or meadow voles since they tend to spend most of their time outdoors, not in tunnels. You can also reduce populations of mice by encouraging predatory birds to roost in the orchard. To do that you need to build a 20 to 30 foot high post with a 24 x 24 platform that owls and hawks can use either as a nest or a stand.



Left: Mice damage to an apple tree. Feeding occurred while the trunk was covered with snow. Right: A row of trees killed by pine vole. Notice grass was mowed between rows but not between the trees within the row.



Left: A slit tire is an effective bait station, but getting them cut along the tread can be difficult. Right: Dead mice from a nest next to chlorphacinone bait that was placed under a metal tray.

Rabbits can also cause extensive damage to fruit trees. Make sure you place rabbit guards around young trees less than 6 years old and spray repellent if available. Avoid using plastic tubes around young trees because they reduce winter acclimation of the trunk, which may lead to winter damage and trunk splitting. A wire mesh works better as a rabbit guard. The mesh has to be at least 1.5 foot high.

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Bloom Delay of Peaches and Nectarines using Fall Application of Ethrel and Pro-Gibb

A study by Kim Williams found that fall application of Pro-Gibb (gibberellin A₃) and Ethrel (ethephon (2-chloroethyl) phosphonic acid) delayed spring bloom of both peaches and nectarines. The data showed that mid-October application of Pro-Gibb at 50 to 400 ppm delayed bloom by 2 to 5 days, while a combination of 50 ppm ethrel and 100 ppm Pro-Gibb applied at the same time delayed bloom by 7 to 13 days, depending on the weather in early spring. However, application of the same combination in November did not give good results. She also found that mid October application of 100 ppm ethrel increased bud mortality, while application of Pro-Gibb at the same time increased bud retention.

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Vegetable Production and Pest Management

Harlequin Bug on Horseradish and Other Crucifers

A few days ago I observed heavy infestations of harlequin bug in horseradish in the Collinsville area. How heavy? ... often 6-8 nymphs per leaf (that's right, per leaf, not per plant). This insect is a common pest of plants in the cabbage family, including horseradish, cabbage, cauliflower, collards, mustard, Brussels sprouts, turnip, kohlrabi and radish. In the absence of these favorite hosts, tomato, potato, eggplant, okra, bean, asparagus, beet, weeds, fruit trees and field crops may be eaten. Harlequin bugs using a piercing/sucking beak to penetrate leaf tissue and suck plant sap from leaves. When numerous, they cause wilting and browning of foliage, and they can kill seedlings if infestations are heavy enough. Precise thresholds are not available for this insect on horseradish or other crucifers in Illinois, but where nymphs are numerous on fall vegetables, control may be necessary. On horseradish, Sevin or permethrin (Pounce and other formulations) should provide control.

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



Left to right: Harlequin bug eggs. Nymph, and adult (photos by James Castner, University of Florida).

Soil Testing Time is Almost Here

When making fertilization plans for the upcoming season you should get started by testing the soil to see what the status is of its fertility. Particularly when fertilizer prices are predicted to go up, why not spend just a little money on testing to avoid spending a lot of money on fertilizer you may not need?

Soil samples are usually taken in the fall. This is because certain elements, particularly potassium, give less stable readings when samples are taken when soils are warm. Let the soil temps fall down into the low 50's or cooler before taking samples. When deciding where to take samples, think about obvious differences in soil types. Usually different soil types have distinctly different fertility characteristics so they should be tested separately. Samples should be collected in a pattern that canvases each field. So develop a pattern of samples that represents each soil type within each field. Each sample can represent up to 2-5 acres, depending on the uniformity of the soil. Using a soil coring tool, drive the core into the soil to a depth of 6-8" and extract the column of soil, placing it in a paper bag. For each sample, collect about 5 cores from an area around each point in the field, bulking them together. This is a more representative sample of that area than a single core would be, creating more accurate results. Repeat for each of the sample points in the field, keeping a record by writing it's location on the sample bag and mapping the process as you go. Let the samples dry down before delivering them to the testing agency. Never put your samples in plastic bags. They need to dry down quickly.

Where do you take your samples for testing? Many growers are Farm Bureau members and have their local Farm Bureau handle the testing. The Farm Bureau sends it out to a soil testing lab and delivers the results back to the farmer. Non-members can have this service done for a fee as well. But soil testing labs are found all over the Midwest, so a grower can choose from among them. An organization that can help locate a nearby soil testing lab is the Illinois Soil Testing Association (www.soiltesting.org). They also provide recommendations for sampling soils at their website, as well as other useful information.

What can you expect from the results? The information in a properly managed soil test report is critical information for soil fertility management and can guide your decision-making about fertilization of your soils. Probably the most critical information is the pH of your soil. The pH is an indicator of how acidic or basic your soil is. These properties regulate nutrient availability in the soil and if

outside of the satisfactory range (about 5.8 to 7.2) can lead to nutrient deficiency, even when the nutrients are sufficiently present in the soil. Correcting soil pH is the first step toward proper soil fertility management.

You will not learn about nitrogen availability from your soil test. Nitrogen exists in the soil in several states. It also tends to be very mobile in the soil when it's in its usable form. So soil tests of nitrogen are often not very good predictors of nitrogen availability to the crop, though new tests are available which show potential for helping the grower manage nitrogen through the growing season. Phosphorus and potassium are macro-elements which the soil test will read quite well. Most other essential plant nutrients can also be tested for a higher fee, but may not be necessary unless there are indications that deficiencies are a problem. Other testing features, like CEC (cation exchange capacity) can serve as useful information for learning about basic characteristics of your soil that influence plant nutrient availability.

Soil testing is an inexpensive practice that yields powerful information for managing a primary input in crop production. It can help a grower improve productivity and the bottom line.

Bill Shoemaker (630/584-7254; wshoemak@inil.com)

Less seriously ... the true function of all those tools ...

DRILL PRESS: A tall upright machine useful for suddenly snatching flat metal bar stock out of your hands so that it smacks you in the chest and flings your beer across the room, splattering it against that freshly-stained heirloom piece you were drying.

WIRE WHEEL: Cleans paint off bolts and then throws them somewhere under the workbench with the speed of light. Also removes fingerprints and hard-earned guitar calluses from fingers in about the time it takes you to say, "YEOWW.. ."

SKIL SAW: A portable cutting tool used to make studs too short.

PLIERS: Used to round off bolt heads. Sometimes used in the creation of blood-blisters.

BELT SANDER: An electric sanding tool commonly used to convert minor touch-up jobs into major refinishing jobs.

WISE-GRIPS: Generally used after pliers to completely round off bolt heads. If nothing else is available, they can also be used to transfer intense welding heat to the palm of your hand.

TABLE SAW: A large stationary power tool commonly used to launch wood projectiles for testing wall integrity.

RADIAL ARM SAW: A large stationary power saw primarily used by most shops to scare neophytes into choosing another line of work.

TWO-TON ENGINE HOIST: A tool for testing the maximum tensile strength of everything you forgot to disconnect.

CRAFTSMAN 1/2 x 24-INCH SCREWDRIVER: A very large pry bar that inexplicably has an accurately machined screwdriver tip on the end opposite the handle.

PHILLIPS SCREWDRIVER: Normally used to stab the vacuum seals under lids and for opening old-style paper-and-tin oil cans and splashing oil on your shirt; but can also be used, as the name implies, to strip out Phillips screw heads.

STRAIGHT SCREWDRIVER: A tool for opening paint cans. Sometimes used to convert common slotted screws into non-removable screws.

AIR COMPRESSOR: A machine that takes energy produced in a coal-burning power plant 200 miles away and transforms it into compressed air that travels by hose to a Chicago Pneumatic impact wrench that grips rusty bolts which were last over tightened 30 years ago by someone at Ford, and instantly rounds off their heads. Also used to quickly snap off lug nuts.

HOSE CUTTER: A tool used to make hoses too short.

HAMMER: Originally employed as a weapon of war, the hammer nowadays is used as a kind of divining rod to locate the most expensive parts adjacent the object we are trying to hit.

DAMMIT TOOL: Any handy tool that you grab and throw across the garage while yelling "DAMMIT" at the top of your lungs. It is also, most often, the next tool that you will need.

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