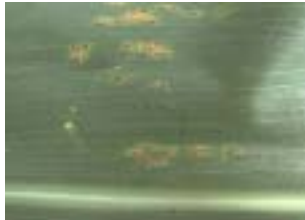


College of Agricultural, Consumer, and Environmental Sciences

Illinois Fruit and Vegetable News

Vol. 11, No. 10, June 24, 2005

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 ... the jokes ... are at the end of newsletter. Check the last page.

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Fruit Production and Pest Management (Japanese beetle, orange rust of brambles)

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

Crop and Regional Reports

In the south and southwest, strawberry harvest, both plasticulture and matted row, is finished. Early peach varieties are in final fruit swell and harvest should start sometime within the next two weeks depending on location in the southern region. There is a full apple crop with little if any cold injury compared to the peach crop. The peach crop, though not as heavy as in the last two years, looks overall very good in terms of quality.

Some areas were lucky to get rainfall on June 8 or 13, but none has fallen since. Temperatures are well into the 90's throughout the southern region, and drought stress is very evident in the corn crop as well as many other crops.

There was a good crowd at Edwards Orchard West for the Summer Horticulture Day ... see the summary and pictures later in this issue. My thanks to the Hall family and staff for their hospitality throughout the day, and for all their efforts in preparation. For many growers it was an opportunity to see an orchard planting system different from the central leader widely used in Illinois. The vertical axis system uses tree densities from 405 to 1,012 trees/acre spaced at 3 to 6.5 feet in the row and 13 to 16 feet between the rows. For more information on orchard planting systems, the International Dwarf Fruit Tree Association has a very good publication entitled 'Apple Orchard Systems,' and can be ordered through the IDFTA website at <http://www.idfta.org/publications/> for \$30.95 including shipping and handling.

Japanese beetles have made their presence known in the southern region. I have received several reports of feeding on

grapes, and I have seen them at work on several other food crops. Growers need to scout regularly because Japanese beetles can do a large amount of leaf damage in a short period of time if not controlled. Sevin is very effective but has a label limitation on number of sprays, depending on crop. In the case of grape, there is a limit of 5 applications per season with a seven day spray interval. Growers can fill in with malathion or a pyrethrin such as Pyganic to stretch the use of Sevin sprays in many cases for Japanese beetle control. (See the article on Japanese beetles later in this issue.)

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

In northern Illinois, the last couple of weeks have been characterized by mostly clear, sunny days with average day temperatures in the 70s to upper 80s and night temperatures in the upper 40s to low 60s. Precipitation in northern Illinois during the first three weeks of June is well below average, and soil moisture is extremely low, particularly in the 0-6 inch layer. As a result, most growers are irrigating their vegetable fields and orchards. Since it has been a dry year, water levels in some of the wells/ponds that are used by growers for irrigation are low as well. As a result, some growers may resort to turning on their irrigation equipment for a much shorter time in order to conserve water in wells. For optimal plant growth, growers need to apply adequate moisture by soaking the plant root zone up to 6-inch depth whenever the irrigation equipment is turned on.

Grapes are sizing well and some will soon need to be thinned. Apple and peach fruits are about 1½ inches in diameter and fruit thinning is going on in many orchards. Tart cherries are ripe, and picking is underway, while harvesting of June-bearing strawberry types is over on most farms.

Orchardists are continuing with summer cover spray programs. Codling moth flight continues, and aphids have been numerous in some blocks. (Editor's note: These are now mostly green apple aphids, though some rosy apple aphids are only now leaving apples for narrow-leaf plantain, their summer host.)

In the Kankakee area, harvesting of cabbage is ongoing, and summer squash will be ready very soon. In the same area, mites have been observed on peppers, rhizoctonia has been reported on peppers; and Dacthal injury has occurred on melons. Watermelon and muskmelon fruits are sizing well, with most of the fruits about the size of a baseball. Drought is a major problem not only in this area but the whole of northern Illinois.

In other parts of northern Illinois, some earlier planted sweet corn is tasseling; pumpkin, squash, and melon plants are vining well. Cucumber beetle control is going on, and diamondback moth, cabbage looper, and imported cabbage worm adults were observed flying in cabbage and broccoli fields. Flea beetles have been common on eggplant leaves.

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

A Re-cap of Summer Hort Day and a Listing of Upcoming Meetings and Programs

The 2005 Illinois Summer Horticulture Day, organized by Ken Hall, Don Naylor, Mohammad Babadoost, and Maurice Ogutu, was held at Edwards Orchard near Poplar Grove on Thursday June 16, 2005. In addition to providing a tour of this beautiful and well-managed orchard and farm market, the day included presentations on orchard management, pumpkin production, bramble production, on-farm retailing, equipment, and crafts and games for kids. Attendance was approximately 120, with several growers from Wisconsin and one from Maryland. There were 8 exhibitors, and we thank them for their attendance and support.

During the farm tour Ken Hall, co-owner and manager of Edwards Orchard, made an in-depth presentation on planting and maintaining semi-dwarf/dwarf apple trees. Along with his crews, he demonstrated training techniques used in planting and branch spreading in semi-dwarf/dwarf trees. Other presentations covered new rootstocks and matching rootstocks with varieties (Brad Taylor), fruit thinning and calcium spray programs for honey crisp apples (Mosbah Kushad), management of fire blight and summer diseases of apples (Mohammad Babadoost), and management of insect pests of apples (Rick Weinzierl). Alan Walters talked about pumpkin varieties and the importance of pollination in pumpkin production; Bill Shoemaker covered varieties grown in northern Illinois and how spacing varies with fruit size; Bill Whiteside and Elizabeth Wahle talked about weed control in pumpkin fields and herbicides that are registered for pumpkin production; Rick Weinzierl explained major insect pests and their management in pumpkin fields; and Mohammad Babadoost talked about important diseases of pumpkins and their management. Ken Hall and Maurice Ogutu made brief presentations on raspberries, covering site selection, water management, pruning, and pest management.

Two concurrent sessions were going on at the same time of the field tours. Barb Hall talked about on-farm retailing, and the kids in attendance were involved in crafts and games. During the lunch break, exhibitors made presentations about their

products and services; Dr. Steve Pueppke, Associate Dean, College of Agricultural, Consumer, and Environmental Sciences at the University of Illinois, talked about the importance of agricultural industries in Illinois and the relationship of stakeholders with the University of Illinois; and other presentations included uninsured information on crop insurance, crop disaster, and farm loan programs available to specialty crop growers; a newly available grant program for special crops marketing, and research on specialty crops; and comments by Dan Jennings from the University of Illinois Rockford Extension Center on the Market Maker web site.

Maurice Ogutu (708-352-0109; ogutu@uiuc.edu) and Elizabeth Wahle (618-692-9434; wahle@uiuc.edu)

And a few pictures provided by Elizabeth Wahle ...



Above left: Ken Hall discussing planting and training systems. Above right: Apples on a vertical axis system.



Above left: The field tour and Edwards Orchard. Above right: Chris Doll and Bob Edwards.

Upcoming ...

Here are dates for upcoming programs. Additional details for programs in the southern region will be posted as they become available at <http://web.extension.uiuc.edu/regions/hort/>.

July 13, 2005. Organics from the Ground Up

Growing Home Farm, Marseilles, Illinois. See <http://www.aces.uiuc.edu/asap/topics/tours.html>; contact Deborah Cavanaugh-Grant at (217) 968-5512 or cvnghgrn@uiuc.edu.

July 21, 2005. Illinois Vegetable Growers Association annual Twilight Meeting, St. Charles Research Center

St. Charles, IL. Contact Bill Shoemaker at 630-584-7254 or wshoemak@inil.com.

August 4, 2005. Dixon Springs Agricultural Center Field Day

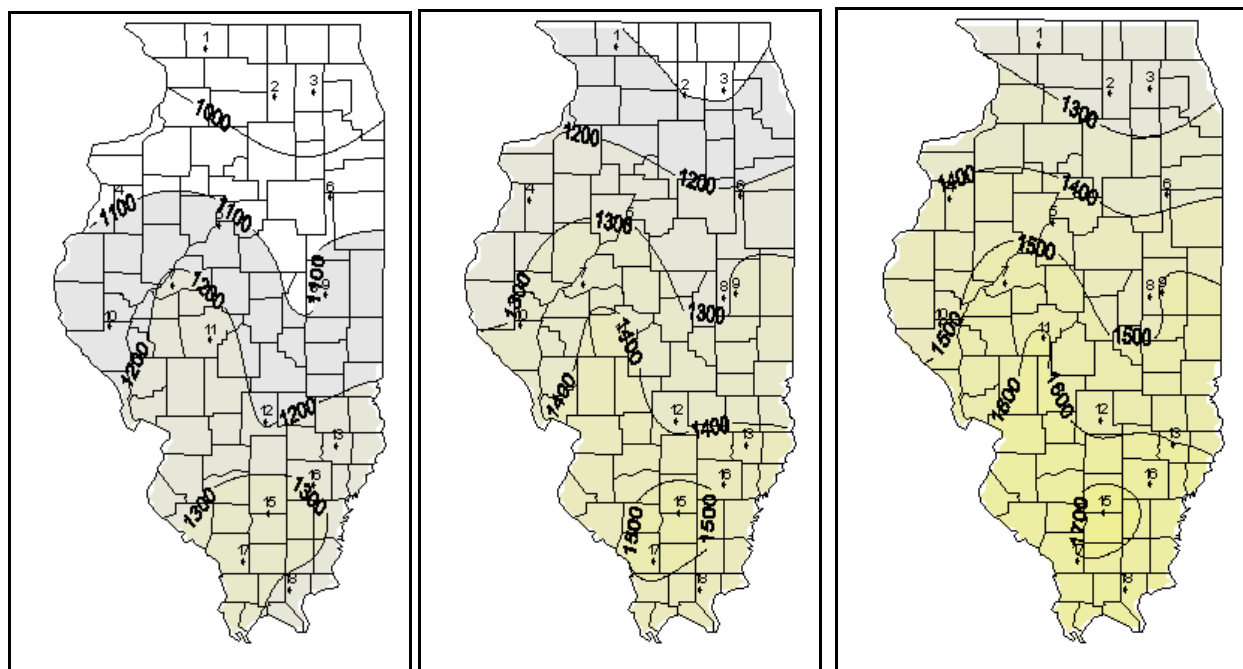
University of Illinois DSAC, Simpson, IL. Contact Bronwyn Aly at 619-695-2444 or baly@uiuc.edu.

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

Degree-Day Accumulations



Degree-day accumulations, base 50 F, from January 1 though June 22 (left) and projected through June 29 (center) and July 6 (right), 2005.

Degree-day accumulations, base 50 F, January 1 through June 5 (historic average and 2005), and projections through June 19, 2005.

Site No.	Station	County	DD, Base 50 Jan 1 - June 22 11-yr historic average	DD, Base 50 Jan 1 - June 22 2005	Projected DD, Base 50 Jan 1 - June 29 2005	Projected DD, Base 50 Jan 1 - July 6 2005
1	Freeport	Stephenson	852	952	1109	1264
2	Dekalb	Dekalb	914	938	1099	1256
3	St. Charles	Kane	805	938	1088	1237
4	Monmouth	Warren	984	1093	1253	1412
5	Peoria	Tazewell	1038	1136	1304	1474
6	Stelle	Ford	995	1043	1211	1379
7	Kilbourne	Mason	1112	1220	1387	1558
8	Bondville	Champaign	1054	1066	1233	1402
9	Champaign	Champaign	1074	1192	1365	1540
10	Perry	Pike	1094	1138	1302	1471
11	Springfield	Sangamon	1167	1247	1425	1610
12	Brownstown	Fayette	1257	1189	1371	1558
13	Olney	Richland	1231	1240	1418	1602
14	Belleville	St. Clair	missing	missing	missing	missing
15	Rend Lake	Jefferson	1392	1374	1562	1756
16	Fairfield	Wayne	1370	1305	1491	1682
17	Carbondale	Jackson	1323	1338	1513	1694
18	Dixon Springs	Pope	1405	1274	1452	1640

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/>.

Kelly Cook (217-333-4424; kcook8@uiuc.edu)

Notes from Chris Doll

Phenology: By harvest records for the Back-40 and grower reports on the first peach picking, the season is very close to 2004. For me, it means the end of the black raspberry season and Montmorency cherry, harvest of Bluecrop blueberry, and first pick of Transparent apple. I have seen PF5 peach ready for picking, and Red Haven at Belleville show signs of the final growth. Heritage raspberry primocanes are showing flower buds, while Autumn Bliss already has flowers for the next crop in late July, which makes for a tender fruit in the summer heat.

Weather: Most of the area had rain showers totaling 1-2 inches during the weekend of June 12, which made crops look much better. Since that time, it's been nearly 100 percent sunshine with warm temperatures, and crops with shallow roots or hard-pan soils show moisture stress. With tree fruits, it is more difficult to see the effects of moisture stress, but when at deficiency levels, there is a loss of yield and possibly quality. The figure of a usage of 30 gallons of water per day for a 10-

to 15-ft. apple tree comes from some research done over the years. For calculations, assume that there are 200 trees per acre, so the requirement is 6000 gallons per acre, or 0.218 inches. This compares with the water lost through pan evaporation on many days. In terms of rainfall, it amounts to about 1.75 inches per week. Some Washington State research shows that apple trees will survive with about 25 percent of the optimum requirements, but the crop may suffer. In past years, it has been suggested that mowing the cover crop will save some moisture, and all weed growth that is competing with the tree should be eliminated. Weeds require 300 to 500 parts of water to make 1 part of dry matter.

Apples: The crop is looking pretty good in this area. Fruit size is generally good, and not too many problems have developed. Fire blight infections have abated, and the amount of infection varies by orchard. I believe that Dr. Babadoost had to hunt a long time to find a specimen infection at Edwards Orchard last week. Others are not that fortunate, but some good control has been observed from the use of both streptomycin and Apogee. Apple scab and powdery mildew are very light. Codling moth traps continue to catch fairly significant numbers of moths, without many peaks and valleys, and my DD50 chart says 972 DD from May 8. Lots of tufted apple bud moths have been caught, but no survivors have been found. A flight of potato leaf hopper has hit the area and been controlled. That leaves the Japanese beetle battle to be fought, which is mild so far. Today's observations show that they really like Honeycrisp and Fuji.

Peaches: Early maturing varieties like the PF5 mentioned before have lots of split pits. Fruit size on any thinned tree is very good for the season. Very little catfacing is present in commercial orchards. My kill of stink bugs and tarnished plant bug during the strawberry and raspberry season has been low too. But for growers that have a heavy cover crop in the peach orchard, especially clovers, an insecticide spray just before or after mowing might help prevent feeding injury as the insects move into the trees. Disease control will continue to be easy if it does not rain.

Thinning: Peach thinning is about over, as growers have thinned where necessary and removed some defective and smaller fruits. Apple thinning results varied by variety and orchard, but hardly any overthinning occurred. It is too late for hand thinning to affect flower bud initiation for next year, but some increase in fruit size and reduced limb breakage should result from thinning now. Also, fruit quality should improve as small and defective fruits are removed. I learned today that clusters of Fuji, which they are prone to do when the chemical thinners are shy, are easy to break up at this time at this latitude. Some Jonathan are also clustered.

Edwards Orchard Day: Visitors were treated to a warm welcome and great hospitality and tours of the farm last week. Ken Hall, as past president of the International Dwarf Fruit Tree Association, has applied some of the practices that he has learned on that organization's tours, such as 948 trees per acre in recent plantings. Most impressive to me are some of the 7-foot single-wire trellis plantings with tree spacings of 5 feet in the row, and younger plantings at 3 feet in the row. His crew of young ladies do a nice job of tying and training. And Barb Hall let it all hang out in describing the farm market items that they sell. It was a great presentation of production and marketing in Illinois.

And for growers wanting to see the Dream of Joe Black of Vincennes, IN., they can join the Indiana Horticulture Society Summer Meeting at the Apple Hill Orchard about six miles north of Vincennes, IN, on US 41 on Friday July 1, at 8 a.m. Joe's Dream was to plant an apple orchard so that people will come, and in five years, it has grown rapidly.

Recognitions: Two of my friends and former co-workers were recognized for their dedicated service by the University of Illinois recently. I was happy to see Dr. Rick Weinzierl, editor of this newsletter, receive the "Senior Faculty Award for Excellence in Extension" and Dr. Mohammad Babadoost receive the "Faculty Award for Excellence in Extension." Both are deserving of these awards.

Chris Doll (EDWDOLLX2@aol.com)

Vegetable Production and Pest Management

Vegetable Crops and Water Stress

In a normal season one can expect to encounter conditions in vegetable fields that could lead to moisture shortages to the crop, resulting in stress to the plant. This can be exacerbated by the high temperatures that are normal during the middle of summer. Managing this problem can be a headache, even when the grower has a well-designed, efficient irrigation system. To manage the problem well takes a thorough understanding of the relationship between plants, soils, and the influence of the weather on demand by crops for moisture.

Every farmer becomes well-acquainted with the soils on the farm because they are critical to the farming enterprise. Not only do they serve as a physical medium for growing the crop, they provide essential nutrients to the crop, serve as a heat basin for stimulating and moderating plant growth, and deliver moisture to the root system while holding moisture reserves for future use. Each soil type differs in its capacity for providing these services. In the case of moisture, sandy soils are weak in soil-moisture holding capacity and can be depleted quickly. Often they hold less than 0.75" water per foot of soil. Loamy soils tend to have higher soil-moisture holding capacity, often up to 1.25" per foot of soil. In addition, loamy soils tend to release moisture well, giving the crops a better opportunity to utilize total moisture reserves. Soils with high clay content often hold even higher levels of moisture but cannot release the moisture as freely as loamy soils. So even though they may have higher moisture content, they may have lower levels of moisture that plants can actually use. The fine clay particles hold some moisture too tightly for the roots to retrieve it. Soils that are high in organic matter often have very high moisture reserves and can release most of that moisture to crops. In addition, organic soils tend to develop in moist areas so often have high reserves to begin with.

As soils begin to be depleted of moisture, shallow-rooted crops such as greens, beets, carrots and onions show the first signs of stress. Leafy vegetables will begin wilting during the heat of the day. At first, this may signal stress but not lack of moisture reserves, particularly as temperatures begin to climb into the 90's F. Demand induced by temperature, strong sunlight, and wind may be greater than the plants ability to retrieve moisture, resulting in temporary wilting. But as moisture reserves continue to be depleted without replacement, either by rain or irrigation, the plants recover more slowly and later in the day. Short, temporary stress may not result in any loss to the grower. But as the duration of stress grows, the plant uses its resources for survival, failing to grow and develop the fruit or plant tissue the grower harvests for market.

As dry conditions continue and moisture reserves are further depleted, crops with deeper root systems, such as peppers, tomatoes, cabbage and cucumbers, begin to be affected. In the fruiting vegetables such as cucumbers, peppers and tomatoes, fruit deformities begin to occur. As the situation deteriorates, fruit set fails and the number of fruit that develop properly decreases. This is often when serious problems with blossom-end rot occur, not only in tomatoes but in peppers and other fruiting crops as well. Leafy heading crops such as cabbage may develop tip-burn, with interior leaf-edges drying up. The deepest rooting vegetables such as sweet corn, watermelon, and pumpkins, may be the last to show signs of stress, but the rapidly growing tissue characteristic of such crops can be quick to develop problems, such as blossom-end rot in watermelon.

Some old-timers may remember seasons that were this short of moisture this early in the season, but not many. This is a critical point because at this point in the season, demand for moisture is at its peak and will probably continue to be at its peak. Soil moisture reserves may not be adequate to supply the moisture needed by crops, particularly shallow-rooted crops, very much longer as crops pull out reserves quickly. Unless generous rainfalls occur soon, growers will need to depend on irrigation to maintain optimum moisture availability. And there is plenty of season to go yet. Next issue I'll discuss some of the key points in managing irrigation for optimizing production of vegetable crops.

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

Brief Notes on Vegetable Insects

Be sure to look back at previous issues of this year's newsletters for articles on cucumber beetles, the "Leps" (worms) of cabbage and related crucifers, squash bugs and squash vine borers, and corn earworms and corn borers ... all of these insects are active in one or more portions of the state as June ends.

Twospotted spider mites are favored by hot, dry weather, so it's no surprise that they're increasingly common in soybeans around the state now. They're also potential pests of many vegetable crops, including green beans, tomatoes, peppers, eggplants, cucumbers, and watermelons. Among the insecticides used against other pests of vegetable crops, Capture, Dimethoate, and Danitol provide some degree of mite control as well. Products used specifically as miticides on one or more vegetable crops include Agri-Mek, Acramite, and Kelthane. Check the 2005 [Midwest Vegetable Production Guide](#) or the 2005 Illinois Agricultural Pest Management Handbook, as well as labels for these products, for specific crop and rate information.

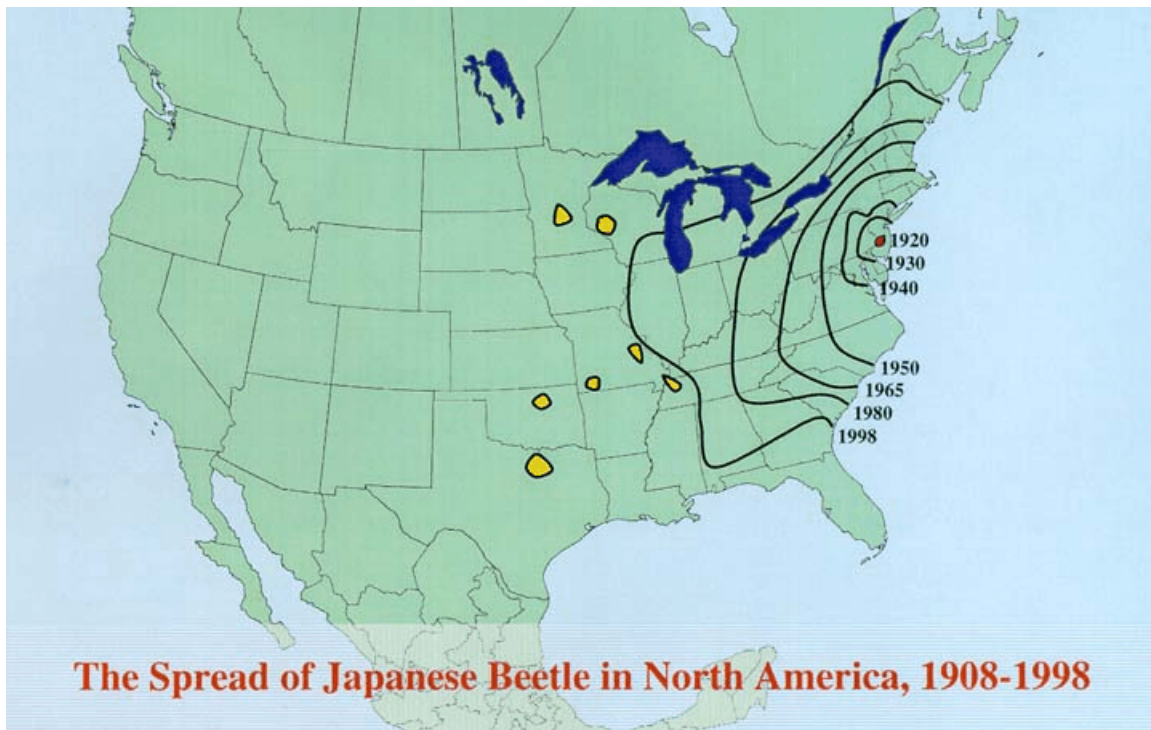
Soybean aphid numbers in northern Illinois remain fairly low despite showing up in soybeans earlier than normal. It's still unclear what level of virus transmission to vegetable crops may have occurred as the aphids moved from their winter host, buckthorn, to soybeans, stopping along the way to make feeding probes in weeds (some of which are hosts to important viruses of cucurbits, peppers, tomatoes, snap beans, etc.) and then vegetable crops.

Horseradish growers in the area east of St. Louis may want to be on the lookout for **false chinch bugs** ... heavy infestations have been reported in soybeans in Monroe County. Populations of this insect build to pest status only in drought conditions.

Fruit Production and Pest Management

Japanese Beetle

Japanese beetles have started to emerge at least as far north as Champaign, and numbers have very high in some southern counties, so it must be time again for my annual piece on this creature's life history and pest status, as well as updates and reminders on its control. The Japanese beetle is an "introduced" pest in North America. It was brought to the United States accidentally in the early 1900s with plant materials from Japan. It has since spread across much of the eastern United States to the Mississippi River, and local populations are established in Texas, Oklahoma, Missouri, and Minnesota. The map below illustrates its spread through 1998.



The spread of the Japanese beetle in North America. (Ohio State University, http://www.oardc.ohio-state.edu/biocontrol/images/jb_map.jpg)

Japanese beetle larvae – grubs – feed on the roots of a wide range of grasses and can be serious pests of turf. In most of Illinois, the common grub that has damaged lawns and golf courses has been the annual white grub or masked chafer, *Cyclocephala* spp. It remains unclear whether or not larvae of the Japanese beetle will become as damaging to turf here as populations build. Adult Japanese beetles feed on the fruits and foliage of over 275 different plant species. Among the host plants that they prefer the most are roses, grapes, American linden, cherry, plum, peach, apple, flowering crab apples, Norway maple, and Japanese maple. In small fruit production in Illinois, adult Japanese beetles feed on the foliage of grapes and the foliage and fruits of blueberries and brambles. They also aggregate in mass to feed on fruits of peaches.

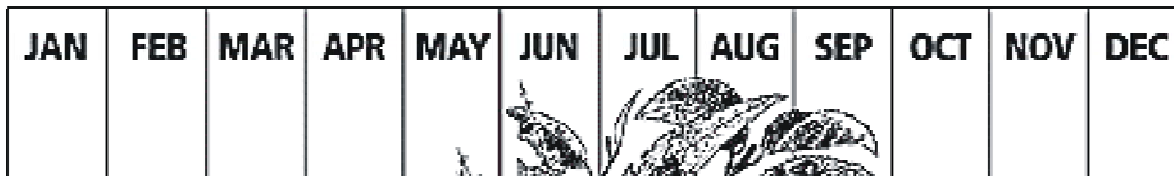
Adult Japanese beetles are about 3/8-inch long, with metallic green bodies and coppery-brown front wings ("wing covers"). Five tufts of white hairs (white spots) are visible along each side of the abdomen, and a sixth pair of white tufts are visible at the tip of the abdomen. Larvae are typical C-shaped grubs, with three pairs of legs on the thorax and no legs or prolegs on the abdomen. Newly hatched larvae are about 1/16 inch long; mature larvae are about 1 1/4 inch long. Larvae of the Japanese beetle can be distinguished from larvae of other grub species by the V-shaped pattern of spines (the raster) at the tip of the abdomen.



Adult Japanese beetle (University of Minnesota);

<http://www.extension.umn.edu/projects/yardandgarden/ygbriefs/images/entomology/colorslide/japanesebeetle-jdh.jpg>

Mature larvae of the Japanese beetle pupate in the soil in late spring, and adults emerge from June through August; adult emergence begins earlier in the southern portion of the region, and Ron Hines at the University of Illinois Dixon Springs Agricultural Center in the far southern portion of the state has been catching them in traps for 2 to 3 weeks now. Females emit a sex pheromone to attract males, and mating occurs in the turf or other grasses where the female emerges; additional matings occur later on the plants on which adults feed. Adults find a suitable host plant, begin feeding, and both sexes emit an aggregation pheromone to attract other beetles to the same plant. Females, feed, lay eggs in grassy areas, and return to host plants to mate and feed again, completing several cycles of this behavior. Each female lays 40 to 60 eggs. Because adult beetles can live for several weeks and emergence from pupae spans a period of several weeks as well, Japanese beetle adults may be present from June through October in at least some areas. Larvae hatch from eggs in July, August, and September, and they feed on the roots of grasses until cold temperatures trigger their movement downward in the soil to depths of 4 to 8 inches; they survive prolonged exposure to temperatures of 25 degrees F at that depth with little or no mortality. In the spring, partially grown larvae move upwards in the soil and resume feeding on roots. They pupate in May and June.



Japanese beetle life cycle. (Ohio State University; <http://ohioline.osu.edu/hyg-fact/2000/2504.html>)

Management: Biological control agents are available for reducing numbers of Japanese beetle larvae in soil. They include the “milky disease” bacteria *Bacillus lentimorbis* and *Bacillus popilliae* and the insect-parasitic nematodes *Steinernema carpocapsae* and *Heterorhabditis* spp. However, if the goal is to reduce adult damage to fruit or vegetable crops or ornamental plants, the great mobility of adult beetles limits or negates the value of larval control unless it is practiced on an area-wide basis. Most fruit and vegetable growers must focus on adult control to limit crop losses. Although traps that attract and kill great numbers of Japanese beetles are marketed widely, studies have shown repeatedly that these traps do not reduce beetle populations enough to protect nearby plants, and in some instances damage is greater on plants near traps than on those in areas where traps are not used at all. Exclusion (by use of plant covers) and the use of insecticides are the only effective

options for protecting small fruit crops from Japanese beetle adults. Plant covers (with textures similar to floating row covers) can be practical for protecting small numbers of blueberry plants or a very few small peach or apple trees when fruit is ripening, but covers rarely are feasible for protecting grapes (because sprays for fungal diseases are needed at the same time as protection from Japanese beetles) or brambles (bees are still visiting and pollinating some flowers while ripening fruit is vulnerable to Japanese beetles).

Insecticides labeled for use on blueberries, grapes, and brambles for Japanese beetle control are listed in the [2005 Midwest Small Fruit and Grape Spray Guide](#). Danitol and Sevin are effective choices for use on grapes until harvest approaches; preharvest intervals are 21 days and 7 days for Danitol and Sevin, respectively. Closer to harvest, malathion is moderately effective and has a 3-day preharvest interval (PHI). Pyrethrins or pyrethrins plus rotenone provide moderately effective control and can be used in organic production. In blueberries, if control is needed it is usually during harvest or very shortly before harvest. Although Asana is effective and labeled for application to blueberries, its 14-day preharvest interval prevents its use when infestations usually occur. Sevin (7-day PHI), malathion (1-day PHI), and pyrethrins or pyrethrins plus rotenone (0- or 1-day PHI) are moderately effective. In brambles, Capture (3-day PHI), malathion (1-day PHI), and pyrethrins or pyrethrins plus rotenone (0- or 1-day PHI) provide adequate control. Several insecticides are labeled for application to apples and peaches for Japanese beetle control. In general, the organophosphates (Imidan and Guthion), carbamates (primarily Sevin), and pyrethroids (several) used in cover sprays aimed at codling moth and other fruit-damaging pests are effective against Japanese beetles as well. See the [2005 Midwest Commercial Tree Fruit Spray Guide](#) and specific insecticide labels for rates and restrictions. In peaches, pre-harvest intervals for effective insecticides are: Asana – 14 days, Imidan – 14 days, Guthion – 21 days, malathion – 7 days, Neemix – 0 days, Pounce – 14 days, Sevin – 3 days, and Warrior – 14 days. Sevin is often the best alternative for peach growers as the crop nears harvest. For all these insecticides, the key to adequate control is to scout regularly (once or twice weekly) and treat when damaging numbers of beetles occur on foliage or fruit. Just as important is to scout again beginning a couple of days after treatment to detect reinfestation – something that usually happens with Japanese beetles – and treat again if necessary.

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

Orange Rust in Brambles



Black raspberry leaves with orange rust

Babadoost



Black raspberry plants affected by orange rust

Babadoost

Orange rust is the most important of several rust diseases that attack brambles. All varieties of black and purple raspberries and most varieties of erect blackberries and trailing blackberries are susceptible to orange rust. In the past two year severe infection of orange rust has been observed in commercial orchards in Illinois.

Orange rust is easily identified shortly after new growth appears in the spring. Newly forming shoots are weak and spindly. Leaves on such canes are stunted and misshapen and pale green to yellowish. Within a few weeks, the lower surface of infected leaves are covered with blister-like pustules that are initially waxy but turn powdery and bright orange. These "rusted" leaves wither and drop by early summer.

Young, apparently healthy canes, with normal leaves can be found toward the end of June. Unfortunately, diseased plants are systemically infected, and the fungus is present in the roots, canes, and leaves. Infected canes will be bushy and spindly, and will bear little or no fruit in the following season.

To control orange rust: plant only certified, disease-free planting stock from a reputable nursery; before setting out new plants, remove and burn all wild brambles and any cultivated plants that are rust infected, including the roots; when the disease first appears in early spring, dig up and burn infected plants before the pustules break open and discharge spores; improve air circulation by thinning out healthy canes in the rows and keeping the planting free of weeds; plant resistant cultivars, if available; and follow the raspberry and blackberry spray schedule outlined in the “Midwest Commercial Small Fruit and Grape Spray Guide.” (<http://www.hort.purdue.edu/hort/ext/sfg/>).

For more information on orange rust of brambles, refer to the “Midwest Small Fruit Pest Management Handbook” (<http://www.ag.ohio-state.edu/~ohioline/b861/index.html>) and “Compendium of Raspberry and Blackberry Diseases and Insects,” published by the American Phytopathological Society, St. Paul, Minnesota.

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This issue's words of wisdom (well, not always wisdom) ...

Things to do at a Wal-Mart store: Ever feel unnoticed in the big box stores? Here just one thing to do to draw attention the next time you visit a Wal-Mart (and yes, the list included lots of others that I didn't choose include) ...

- In the clothing section, spend a lot of time selecting three pairs of jeans, enough time to warrant the suspicion of the clerks and the security guard. Take them to the fitting room, relax a few minutes, and then in a distressed but very loud voice say, “There's no toilet paper in here.”

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