



# 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://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.

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### ***Upcoming Programs***

- **Southwestern IL orchard twilight meeting. May 20, 2010, 6:00 p.m.** At Tom Ringhausen's Orchard, located just east of Batchtown on Batchtown Road/CR 1125N. The program includes grower updates and discussions led by Elizabeth Wahle and Rick Weinzierl. Take the Illinois River Road (1800 East) south from Hardin or north from Brussels and turn west on Batchtown Road (1125 N). Turn right (north) at the second driveway after the Batchtown water tower (mobile home directly across from drive). Follow the left fork in the drive up the steep incline, following the curve to the right. The orchard facility is at the far end of the lane. For further information or if you need disability accommodations, contact Elizabeth Wahle at (618) 692-9434 or by email at [wahle@uiuc.edu](mailto:wahle@uiuc.edu).
- **Illinois State Horticulture Society Summer Field Day. June 10, 2010.** Broom Orchard, which is located just south of Carlinville on Shipman Road ... mark your calendars now, and as details become available, they will be posted in future newsletters.
- **Northern Region Grape Growers Meeting. June 12, 2010, 9:00 a.m.** St. Charles Research Center, at the corner of IL Rt 38 and Peck Road, 1 mile west of Randall Road in St Charles, IL and 5.5 miles east of IL Rt 47. At the light at 38 & Peck Rd., turn north, and the Research Center is the first driveway on the left. Program includes a guided tour of the research that Bill Shoemaker and team are conducting, updates on the 2010 season, and opportunities for questions and discussions. Contact Bill Shoemaker at 630-584-7254; [wshoemak@illinois.edu](mailto:wshoemak@illinois.edu).
- **Mississippi Valley Peach Orchard Tour. June 25, 2010.** This year's tour will be a joint effort between Cates Orchard in Dudley, Missouri and Bader Farms in Campbell, Missouri. Check-in is at 9:00 a.m., and the tour begins with coffee and donuts at Cates Orchard at 9:30am. This is a smaller orchard with a U-pick atmosphere and a wide range of cultivars. The group will then move to Bader's, a larger operation that also produces vegetables and works with alternative marketing enterprises. We will have lunch and then tour the farm operation. **Please preregister** for lunch by e-mailing [denklers@missouri.edu](mailto:denklers@missouri.edu) or calling Chris Waite at 573-686-8064 between 8 a.m. and 4 p.m. by Wednesday, June 23. If you have questions, contact Sarah Denkler at 573-686-8064 or [denklers@missouri.edu](mailto:denklers@missouri.edu). For the complete program, check:

<http://web.extension.illinois.edu/edwardsvillecenter/downloads/23093.pdf>. Cates Orchard is at 13423 State Highway WW, Dudley, Missouri (573-421-6102 or 573-421-6103). Bader Farms is located at 38601 State Highway WW, Campbell, MO (573-246-2528).

- **International Herb Association Annual Meeting. July 11-15, 2010.** Collinsville, IL. (More details in future issues of this newsletter.)
- **North American Fruit Explorers. August 19-21, 2010.** Best Western Motel/Conference Center, Lafayette, IN. To view the program and registration form, check: <http://web.extension.illinois.edu/edwardsvillecenter/foodcrophort3031.html>. For additional details or questions: contact Ed Fackler at [cefackler@gmail.com](mailto:cefackler@gmail.com) or 812-366-3181.
- **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](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; [cvnghgrn@illinois.edu](mailto:cvnghgrn@illinois.edu)).

## ***Regional Updates***

**In the southern region**, a line of hail passed through Calhoun County and areas east on May 3, resulting in noticeable injury to exposed plant material. On the positive side, the hail came prior to completion of thinning, so selective hand thinning may remove much of the damaged fruit. A cold snap passed through the state on May 9, with reports of frost on the ground and rooftops in the northern portion of the region, increasing in intensity moving north. Frost irrigation for strawberry protection was warranted for much of the growing area north of I-70. Grape growers in the southern region came through the cold weather fairly well, but reports are starting to come in from regions to the north of damage, particularly to shoot tips and clusters.

In traveling around the region, I have noticed a higher than normal mortality of peach trees, particularly middle-aged trees, roughly in the 5<sup>th</sup> through 8<sup>th</sup> leaf. It appears to be a combination of two back-to-back wet years and winter injury (wet frozen soil). At this time, weakened trees are very noticeable compared to healthy trees because of the light green leaves and reduced leaf area.

Grapes are in varying stages of bloom – still in the critical control period for fruit infections – pre-bloom to 2-4 weeks after bloom. Bloom (when the caps begin to fall) is the time to apply control measures for leaf phase of grape phylloxera, with a follow-up 10-14 days later.

Plasticulture and matted row strawberries are in harvest. In addition to good yields, mild temperatures have helped to extend the season; since blackberries are in bloom, this might qualify as a blackberry winter. Thrips have been reported in both strawberries and brambles, so continued scouting is recommended.

At least six succession plantings of sweet corn have been planted, and high tunnel tomatoes are in the ripening process in the more southern portion of the region.

Be sure to note the schedule of upcoming programs at the beginning of this issue. Events in the southern region include a May 20 twilight orchard meeting, Summer Horticulture Day on June 10, and the Mid-Mississippi Valley Orchard Tour on Friday, **June 25** (note this corrected date; our earlier listing of June 29 was incorrect).

*Elizabeth Wahle (618-692-9434; [wahle@illinois.edu](mailto:wahle@illinois.edu))*

**In the northern region**, the first two weeks of May saw high temperatures in the upper 40s to upper 70s and lows in the low 30s to mid 50s. The freezing temperatures that occurred on April 28 hurt tree fruit blossoms particularly at full bloom stage, and there were reports of sweet corn seedlings damaged by freezing temperatures at the same time. The region received 2-3 inches of rain in early May, with much of it falling on May 11 and 12.

The season for tree fruits seems to be about ten days ahead of last year. Peaches are in shuck-split, and apples are in fruit set stage. Pears, plums, and sour cherries are in fruit set stage as well. Codling moth and apple maggot traps are up in many orchards, and orchardists are applying first cover sprays. Grape shoots are more than 9 inches long. Peach leaf curl has been observed on peach leaves, and I have received reports of leaf rollers on apple leaves.

Cool-season vegetables such as cabbage, potatoes, carrots, onions, and broccoli have been planted. Many growers have their first planting of sweet corn in. Other warm-season vegetables such as tomatoes, cucumbers, eggplants, peppers, and melons are still inside greenhouses and will soon be hardened in readiness for field planting by the end of May.

Be sure to note the workshop for grape growers listed at the beginning of this newsletter. It's set for June 12 at the University of Illinois St. Charles Horticulture Research Center.

*Maurice Ogutu (708-352-0109; [Ogutu@illinois.edu](mailto:Ogutu@illinois.edu))*

### ***Notes from Chris Doll***

It's mid-May ... which it has been phenologically for almost two weeks. Most crops remain ahead of "normal" development. In Back-40 comparisons with 2009, full bloom of black raspberries was 13 days earlier, Concord grape bloom began 11 days earlier, and shucks came off peaches 9 days earlier. The first pick of Earliglo strawberries was on May 14, which also was ahead of the normal season for matted row culture.

Rainfall for the area has been about four inches below normal for the first four months of 2010, but carry-over saturated soils from 2009 has kept things growing pretty well. This week's rainfall has totaled almost two inches, with more to come, so growth of newly planted trees as well as established plantings are looking good. Growers with droughty soils should consider watering new plantings. Weak growth is visible in some plantings with wet soil problems carried over from last fall and excess fruit set on some unthinned peach trees. Luckily, this area did not have the episodes of freezing temperatures through May 9 that stressed some of the northern areas. The minimum temperature here was 37 degrees, but the light frost that developed did not freeze strawberry blooms. Our chemical thinning of apples is done for the year. The cold has to complicate thinning decisions further north. The apple set and thinning in this area was complicated by the early bloom, with great thinning weather when the fruits were a little small and the extended cool and windy weather thereafter. So, some over-thinning was done, but that should be better than a crop of undersized fruit this fall and no return crop in 2011.

Peach thinning is going on ahead of fruit loosening because of labor availability. Apparently, no variety has reached that stage as yet in Union county. Anyone with Saturn's or other flat peaches should be thinning these now because bumping them is impractical and the earlier the thinning is done, the better. It also allows for eliminating fruits that will be poorly positioned when harvesting. Plums that pollinated well can also be thinned at this time.

The plusses that I have seen or failed to see in orchards this spring are few to none rosy apple aphids, leafhoppers, curculio, catfacing insects, and red mites. The latter were enough only to serve as a warning for future scouting. Codling moth and Oriental fruit moth have been scarce in my traps, but numbers elsewhere depend on previous history of the orchards. Disease control in apples looks good, with no fire blight strikes seen. Hopefully, peach sprays have controlled scab and bacterial spot. The one pest that concerns me is San Jose scale. Some have survived the delayed dormant oil sprays, and Esteem is being applied for follow-up control.

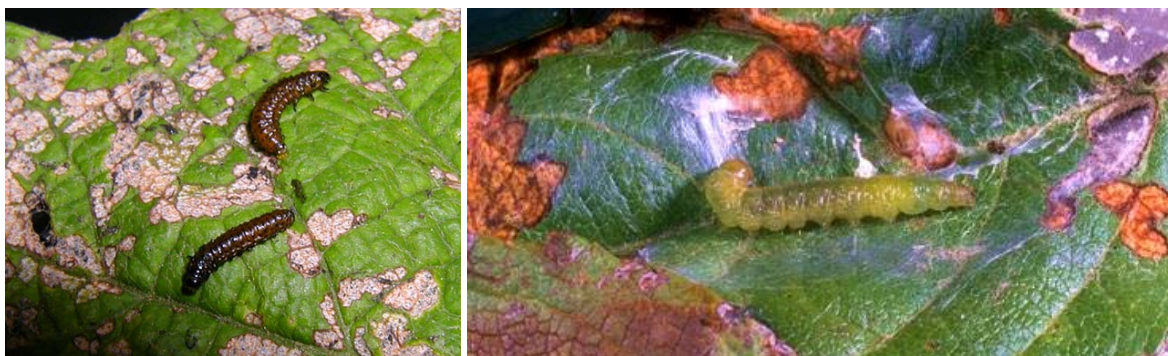
The calendar indicates that it is time to add calcium in cover sprays for apples. This will be delayed a little longer by those making another application of Apogee for growth control. Otherwise, calcium is a good preventative for cork spot and related problems and also for better quality of fruit at harvest. And research in Michigan and North Carolina has shown that adding 5 ppm of NAA to alternating cover sprays beginning about four weeks after petal fall will improve repeat bloom next year.

*Chris Doll*

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

### ***Notes on fruit insects***

- In apples, this is the time to base codling moth sprays on counts from pheromone traps ... note that page 22 of the **2010 Midwest Tree Fruit Spray Guide** (<http://www.extension.iastate.edu/publications/pm1282.pdf>) lists the recommended timing for the first application of insecticides that target codling moth based on the number of degree-days since biofix (first consistent capture of codling moths in pheromone traps). Growers also should be scouting for stink bugs, plant bugs, and white apple leafhopper, and potato leafhopper.
- In peaches, in most of southern Illinois the first generation flight of Oriental fruit moth is winding down, and second-generation flight will begin in around a week in far southern Illinois and around 2 weeks in Calhoun County. In addition to checking pheromone traps to keep a record of Oriental fruit moth flight, insect pests to watch for include stink bugs and plant bugs. In general this is the time to get trunk sprays onto lower portions of trunks for lesser peachtree borer control. For a list of insecticides registered for lesser peachtree borer control, see page 41 of the **2010 Midwest Tree Fruit Spray Guide** (<http://www.extension.iastate.edu/publications/pm1282.pdf>).
- Last week scouts, extension personnel, and growers reported grape flea beetle larvae and redbanded leafroller larvae feeding on leaves and in flower clusters in vineyards in southern Illinois. Flea beetle larvae rarely cause economic damage and are often most numerous near wooded edges of vineyards. Where either of these insects is causing excessive damage in clusters, consult the **2010 Midwest Small Fruit and Grape Spray Guide** (<http://www.ag.purdue.edu/hla/Hort/Documents/ID-169-2010.pdf>) for control recommendations.



Left: Grape flea beetle larvae (Virginia Tech University). Right: Redbanded leafroller larva (Ohio State University).

- **“Managing Alternative Pollinators”** is the title of a new resource available from SARE. During the past 50 years, there has been an almost a 50 percent decline in the number of managed honey bee colonies. With two-thirds of the world's crops requiring pollination, beekeepers and growers are seeking pollination alternatives and ways to bring honey bees back from the brink. [\*Managing Alternative Pollinators: A Handbook for Beekeepers, Growers and Conservationists\*](#) is a full-color guide for rearing and managing bumble bees, mason bees, leafcutter bees and other bee species that provide pollination alternatives to the rapidly declining honey bee. This resource is authored by Eric Mader, Marla Spivak, and Elaine Evans, and it presents key information on the business and biology of pollination and how-to guidance on raising the alternative bee species. The book can be downloaded from SARE’s web site for free at [www.sare.org/publications/pollinators.htm](http://www.sare.org/publications/pollinators.htm). To order printed copies (\$23.50 plus \$5.95 s/h) visit [www.sare.org/WebStore](http://www.sare.org/WebStore), call 301/374-9696, or write to SARE Outreach, PO Box 753, Waldorf, Maryland 20604-0753. (Please specify title requested when ordering by mail.) Allow 3-4 weeks for delivery. Call 301/374-9696 for more information on bulk, rush, or international shipments. (Deborah Cavanaugh-Grant; 217-968-5512, [cvnghgrn@illinois.edu](mailto:cvnghgrn@illinois.edu))

Rick Weinzierl (217-244-2126; [weinzier@uiuc.edu](mailto:weinzier@uiuc.edu))

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

### ***Pigweed and Waterhemp Problems in Pumpkins***

Pigweed and waterhemp (*Amaranthus* spp.) have become the most problematic weeds in Midwest pumpkins. Common species in *Amaranthus* include: redroot pigweed, smooth pigweed, and common and tall waterhemp. Also present in some fields are prostrate pigweed, Palmer Amaranth, and Powell Amaranth. A particular concern with the *Amaranthus* is development of resistance to ALS-inhibitor herbicides (such as Sandea). Sandea is the primary herbicide used for pigweed and waterhemp control in pumpkin. Also waterhemp can emerge throughout the summer. Pigweed and waterhemp start emerging in early to mid- may.



Redroot pigweed has coarse leaves and has been considered to be the most common *Amaranthus* species in vegetable crops.

Redroot pigweed is an erect plant that may reach six feet in height. The cotyledons are narrow and green reddish in color. The true leaves are alternate, ovate shape with a slight notch at the leaf apex. The leaves generally have hairs, especially along veins and on the lower surfaces. The plant gets its name from the reddish taproot. Redroot pigweed has dense, compact, stiff terminal panicles, is relatively tall, and alternately arranged leaves. Redroot pigweed can be mistaken with smooth pigweed or Palmer amaranth. Smooth pigweed has smooth leaves and stems, along with terminal panicles that are less dense, compact, and bristly than redroot pigweed. Palmer amaranth has longer and narrower terminal panicles than redroot or smooth pigweeds.



Panicles of redroot pigweed (left), smooth pigweed (center), and Palmer amaranth (right).

Smooth pigweed is less common in Illinois pumpkin fields compared to redroot pigweed. It is easily distinguished from redroot pigweed only in the mature flowering stage. Smooth pigweed plants generally have highly branched flowering

panicles. Palmer amaranth is less common in Illinois. It has long petioles (stalk of leaf blade), waxy leaves, and wider leaves than waterhemp.



Smooth pigweed generally has smooth stems and leaves with few hairs. It is hard to differentiate from redroot pigweed except at flowering. Often it is not necessary to identify to the species, because herbicide susceptibility and management practices are similar.

Tall and common waterhemp are sometimes grouped together in the same species. The leaves and stems are completely hairless, smooth, and waxy in appearance. The leaves are long and typically narrow. The waterhemp are highly diverse and are becoming the most troublesome *Amaranthus* species in Midwest pumpkins, replacing redroot pigweed. Waterhemp have developed resistance to many commonly used herbicides including ALS-inhibitors. Also waterhemp in pumpkins can emerge late in the season after Dual Magnum has degraded and tillage operations are completed.

There are not many options to control waterhemp in pumpkin. Using the maximum labeled rates of Dual Magnum and Sandea will help. Rapid pumpkin canopy closure helps slow waterhemp emergence. Rotary hoeing and shallow cultivation as the pumpkins start vining also helps some. The cultivation can be replaced by a directed application of Aim as long as the herbicide does not contact the pumpkins. Another option is rope wick applications over the top of the pumpkin onto the taller waterhemp plants. Pay attention to your rotations and if possible plant pumpkins after several years of crops that allow you to control waterhemp

John Masiunas ([masiunas@illinois.edu](mailto:masiunas@illinois.edu))

### **Colorado Potato Beetle in Potatoes, Peppers, Tomatoes, and Eggplants**

The Colorado potato beetle, *Leptinotarsa decemlineata* (Say), is a destructive pest of eggplant, peppers, potatoes, and tomatoes. Adults and larvae eat the leaves of plants, causing reductions in yield and quality.



Left to right: Colorado potato beetle adult (University of Georgia), eggs (Purdue University), and larva (University of Minnesota).

Adults are oval-shaped and approximately  $\frac{1}{2}$  inch long. Their forewings – yellowish to tan with 10 black stripes – form a hard shell over their bodies. Females lay clusters of yellow to orange eggs on the undersides of leaves. Larvae have 3 pairs of legs and a rounded abdomen with 2 rows of black spots on each side. Young larvae are brick-red; older larvae are orange to tan.

Adults of the Colorado potato beetle overwinter in the soil and emerge at about the time early plantings of potatoes emerge in May. They feed on foliage, mate, and lay eggs over a period of 2-3 weeks. Eggs hatch in 4 days to 2 weeks (depending on temperature), and larvae feed and grow over a period of 2 to 3 weeks. They drop to the ground and burrow into the soil to pupate, and the next generation of adults emerges 2 to 3 weeks later. These adults feed on foliage (more heavily than the overwintered adults) and lay eggs that give rise to a second generation of larvae. When these larvae are fully grown, they pupate in the soil, and in much of the Midwestern United States, the resulting adults overwinter in the soil and emerge the following season. In the South, an additional generation may develop each year.

Larvae and adults eat leaves and stems, and heavy populations can completely defoliate plants. Yield reductions depend on the amount of leaf tissue removed by feeding and the stage of plant growth at which damage occurs.

Scout for Colorado potato beetles by examining plants for eggs, larvae, and adults. In potatoes, the need for insecticidal control is based on the amount of defoliation that larvae and adults are causing. Control is recommended if the amount of leaf tissue lost reaches 20 to 30 percent before flowering, 5 to 10 percent during bloom, and 30 percent after bloom when tubers are sizing. In tomatoes, peppers, and eggplants, treatment is usually warranted if infestations exceed 1-2 adults, larvae, or egg masses per plant. Overwintered adults do not disperse well over long distances, so crop rotations are most effective if they result in planting these crops at least  $\frac{1}{2}$  mile away from fields infested by Colorado potato beetles the previous year. Trenching around fields and mulching border rows with straw also slows movement into fields. Propane burners can be used early in the season to kill beetles on small plants without severely stunting the crop.

Many populations of Colorado potato beetles are resistant to multiple groups of insecticides, so selection of insecticides should always include plans for resistance management. See the current Midwest Vegetable Production Guide ([http://www.btny.purdue.edu/pubs/ID/ID-56/ID-56\\_Production\\_Guide.pdf](http://www.btny.purdue.edu/pubs/ID/ID-56/ID-56_Production_Guide.pdf)) for more information.

*Less seriously ... No endorsement implied ...just a chuckle ...*

A minister decided that a visual demonstration would add emphasis to his Sunday sermon.

Four worms were placed into four separate jars. The first worm was put into a container of alcohol. The second worm was put into a container of cigarette smoke. The third worm was put into a container of chocolate syrup. The fourth worm was put into a container of good clean soil.

At the conclusion of the sermon, the minister reported the following results: The first worm in alcohol – Dead. The second worm in cigarette smoke – Dead. The third worm in chocolate syrup – Dead. The fourth worm in good clean soil – Alive.

So the minister asked the congregation, 'What did you learn from this demonstration???'

Maxine, who was sitting in the back, quickly raised her hand and said, 'As long as you drink, smoke and eat chocolate, you won't have worms!'

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