



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, weinzierl@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.

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Upcoming Programs

Check the Illinois SARE calendar for a full list of programs and links for registration.

<http://illinoissare.org/> and <http://illinoissare.org/calendar.php>

- **Get Started with Treatment-Free Beekeeping, May 18, 2013;** 12:30 – 4:00 pm. [AcBees Apiaries](#) near Waverly (Sangamon County) Register at <https://webs.extension.uiuc.edu/registration/?RegistrationID=8308>
- **Southwestern Illinois Twilight Orchard Meeting, rescheduled for May 21, 2013.** Weigel Orchards, Brussels, IL (Calhoun Co.). For more information, contact Michelle Berg Vogel, ANR Program Coordinator, University of Illinois Extension Calhoun County Office, P O Box 366, Hardin, IL 62047 (<http://extension.illinois.edu>; email: mbergv@illinois.edu or call (618) 653-4687.
- **Economic Analysis of Local and Regional Food Systems, May 20, 2013;** 2:00 – 3:30 p.m. Central Time webinar. For access, see <https://connect.msu.edu/richpirog>. If you have never attended an Adobe Connect webinar meeting before, please test your connection in advance by going to the link below. You may need to download a small, harmless plug-in and update your version of flash player. https://connect.msu.edu/common/help/en/support/meeting_test.htm
- **On-Farm Composting Workshops / Field Days; May 21** at Western IL University, School of Agriculture Livestock Center & Compost Facility, Macomb (McDonough County) and **May 28** at Tempel Farms Organics, Old Mill Creek (Lake County); Both days, 8:30 am -2:00 pm. For more information, http://agriculture.illinoisstate.edu/downloads/WIU-TempelBrochure_May2013.pdf
- **High Tunnel Build Workshop, May 29-30, 2013;** 8:00 am-5:00 pm. Workforce Careers Center on the LLCC-Springfield campus, 5250 Shepherd Road, Springfield (Sangamon County). For more information or to register, contact Marnie Record at (217) 786-4993 or Marnie.Record@llcc.edu. Partial day participation is welcome.

- **HerbFest, June 8, 2013;** 8:30 a.m. – 3:00 p.m. Washington Park Botanical Garden, Springfield, IL. Registration is \$40 for Illinois Herb Association members and \$45 for non-members. Pre-registration is due by May 31 and includes lunch; on-site registration will take place from 8:30 to 9:00 the day of the event but does not guarantee lunch. See <http://www.specialtygrowers.org/illinois-herb-association.html>, or contact Charlene Blary, Illinois Herb Association, at 309-557-2107 or cblary@ilfb.org.
- **Taking Your Farm to the Next Level: Equipment for Scaling Up Production, June 8, 2013;** 1:45- 4:30 p.m. PrairiErth Farm, 2047 County Road 2100 N, Atlanta (Logan County). Register at <https://webs.extension.uiuc.edu/registration/?RegistrationID=7794>
- **Illinois Summer Horticulture Day, June 13, 2013** ... the morning program will be at Curtis Orchard in Champaign, IL, followed by an afternoon tour of the University of Illinois Fruit Research Farm in Urbana and Vegetable Crops Research Farm in Champaign. **More details to come!**

Regional Observations

In western Illinois, 80-degree high's the first few days of May really pushed growth on many plants. The accompanying winds and sunshine helped dry some fields enough to allow for limited field work. The well drained, wind-blown loess soils found from just north of Quincy and south into Pike county allowed field work and planting to occur before the rains arrived on May 3. We received nearly 3" of precipitation, with several nights' lows in the 30's, and that abruptly halted crop progress.

Sweet corn, warm and cool season transplants, some green beans, etc. were all planted in the first few days of May on our loess soils. Only those fortunate few who have these well drained soils have anything planted outdoors. Most producers have little if anything planted. Transplants still in the greenhouse are beginning to look extremely leggy. Some growers are beginning to start new transplants, as the ½ inch of rain we received on May 9 left water standing in many fields, and they are very slow to dry.

High tunnel tomatoes have (or should have very soon) first flowers appearing, and that signals the time to begin pruning and trellising. Most determinate tomatoes are pruned from the first flower down (removing suckers from each leaf axil) and are trellised using the Florida weave (or similar) technique. Indeterminate high tunnel tomatoes are usually trained to a single leader and clipped to a string.

Asparagus harvest kicked into high gear with the 80-degree temperatures earlier this week. Sweet corn planted May 1 has both radicle (root) and shoot emerged. Plasticulture Chandler strawberries are at full bloom, with some very small green fruit visible. Matted-row Earliglow strawberries are beginning to bloom. Apples are at full bloom, peaches at fruit set to petal fall. Brambles have the beginnings of fruit buds visible. Grapes are beginning to show some early clusters, and blueberry buds are beginning to show color. Harvest of high tunnel greens has begun, and some early outdoor planting of radish, lettuce, spinach, and similar crops has begun.

A comparison of base-50 growing degree days shows the differences between years can be extreme. In March and April of 2012 we recorded 611 GDD while the same time period this year resulted in 219 GDD, about 1/3 the number this year compared to last. I would imagine neither year can be considered normal. I've had a tensiometer ready to set into the plasticulture berries for two weeks now, setting in a gallon jug full of water to precondition the tip, but every time I get ready to place it, rains have kept me out. So I guess it's reading correctly as it's sitting in the gallon jug full of water (which isn't differing much from the ground outdoors).

Mike Roegge (217-223-8380; roeggem@illinois.edu)

In northern Illinois, some warm, dry weather gave a needed break for field work. Producers are finishing field preparation and putting down plastic or installing low tunnels. Cucumbers and squash are being transplanted. Due to possible cold temperatures this coming week, some are hesitating on planting tomatoes quite yet unless they have covers. Many farms report that asparagus harvest is going well, even though it is a bit behind normal.

Ellen Phillips (815-732-2191 ext. 21; ephillps@illinois.edu)

Notes from Chris Doll

The SW Illinois scene continues to be wet or wetter, and late or later, depending on local sites. April-May rainfall has totaled 11.7 inches, and more is on the radar. There is not much growers can do about it except to take care of the preventative spray programs and try to work in the chemical thinning sprays, as apples from here south now measure 5-9 mm, and smaller to the north into bloom in the upper part of the state. The research about factors favorable for more predictable and good thinning are warm temperatures above 70 degrees and away from heavy cloud cover. Sunshine has been a rare item in the past week, and the temperatures have not been above the preferred range for long. So, the stress and strain and decision-making about the thinning task will continue for a while longer for those of us in this area.

Since apples are approaching the 6-9 mm size, it means that petal fall sprays are past, but there are enough late flowers open that strep for fireblight *might* be included in any forthcoming spray. Southern growers have caught a few codling moths, oriental fruit moths were present in high numbers the past week, some rosy apple aphids and fruit worm feeding was seen, and a low level of apple scab infection found. Other problems hopefully have been controlled. Shucks are off the peach fruits in the St. Louis latitude, and disease control has been a major program for this fruit. Blackberries are showing flower buds, but have not yet reached the white bud stage. The first plasticulture strawberries are nearing harvest.

Thinning is a topic with all apple growers, which means that fruit set appears good, and help will be needed. The peach set is more variable, with lighter set than expected from the show of flowers. My observation is their will be a nice crop of peaches unless the blossom thinning activities were overdone or some adverse nutritional or growth problems exist.

For a historical study of the ongoing weather conditions, all I have to do is check the 2011 growing season when the rainfall was as great and resulted in some poor tree growth due to asphyxiation around the roots and also some tree loss. Under these conditions, some soluble fertilizers can be added to the pesticide sprays for some nutritional help.

Jerry Mills, of Marine, IL, reported to me that while he was hanging OFM traps last week, there were insects flying around, and when I inspected the trap a few hours later, the count of trapped males was 67. Maybe the entomologists have more stories like this.

And maybe some good news tied to the weather. Last winter, we in Illinois heard Dr. Greg Rhiégard discuss the potential for increase in peach fruit size if temperatures remain cool for a few weeks after bloom. Locally, we have had below-average temperatures for that time, and it is hoped that the size increase will be there.

Chris Doll

Fruit Production and Pest Management

Increase next year's bloom with application of NAA or Ethrel in early summer

The heavy bloom and the expected full crop this year will likely result in considerable strain on the carbohydrate reserve of apples trees, potentially pushing some varieties into biennial bearing. Studies have shown that a carefully timed application of ethrel or NAA can enhance bud initiation and return bloom of most apple varieties in the following season. The general recommendation, from Michigan, New Jersey, and New York, is to apply 4-5 ppm NAA after June drop or when fruit diameter is between 30 to 35 mm. The first NAA application is recommended to be applied at about five to six weeks after bloom, depending on weather conditions, followed by one or two more weekly applications, at the same concentration. Three weekly applications of 5 ppm NAA are recommended for hard to thin cultivars like 'Cameo', 'Jonagold', and 'Golden Delicious', while two applications of 4 ppm NAA are more effective on easier to thin varieties such as 'Empire' and 'Jonathan.'

Ethrel also can be used successfully to enhance return bloom. Two weekly applications of 150 to 200 ppm (8 to 12 oz) beginning five to six weeks after bloom or when fruit diameter is about 35 mm are recommended for most varieties. A third and fourth applications may be needed for hard to thin varieties such as 'Cameo', 'Golden Delicious', 'Honeycrisp', 'Suncrisp', and 'Fuji'. Both NAA and ethrel should be applied as dilute sprays using at least 100 to 150

gallons of water per acre. Ethrel must be applied with a degree of caution and precision, because higher concentrations and earlier application can cause excessive thinning, while delayed application can advance maturity and causes preharvest fruit drop. Also, NAA may reduce fruit size of some varieties such as ‘Fuji’, ‘Delicious’, and ‘Gala’, but the risk from using NAA is much less than ethrel.

Summer application of NAA and ethrel improve return bloom, but the ultimate success of return bloom depends highly on the effectiveness of the regular thinning program, especially for varieties that are prone to alternate bearing such as ‘Cameo’, ‘Fuji’, ‘Honeycrisp’, ‘Jonagold’, and ‘Suncrisp’.

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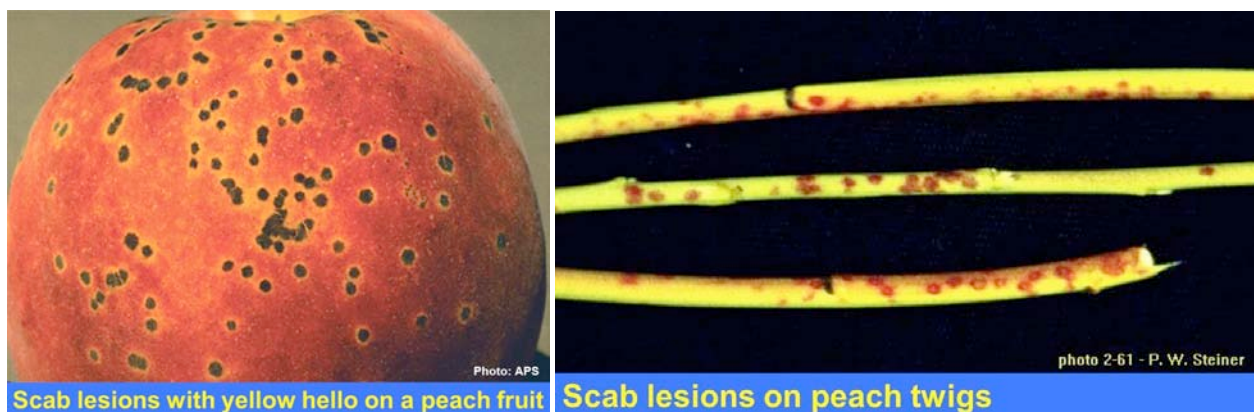
Peach scab

At the twilight meeting for fruit growers last month in Carlinville, Illinois, several comments were made about control of peach scab. Here is some information on plant infection, disease cycle, and management of this disease.

Peach scab, caused by the fungus *Cladosporium carpophilum*, is an important disease of peaches and nectarines in Illinois. Leaves, fruit, and twigs are infected, but the most notable symptoms occur on the fruit, where small, greenish, circular spots develop. The spots gradually enlarge and deepen in color to black as spore production begins. Fruit lesions are most common on the shoulders of the fruit but can occur anywhere on the surface. Where spots are numerous, they often coalesce and may lead to cracking of the skin as the fruit enlarges, allowing rot organisms to enter. Twig infection occurs on tender, green twigs of new growth. The lesions are circular to oval and grayish. With time, twig lesions become dark brown. Leaves are infected on the lower surface and develop olive green lesions.

The pathogen overwinters in twig lesions. In the spring, spores (conidia) are produced on the lesion surface and are washed or splashed primarily by wind-blown rain onto fruit and new growing twigs. Conidial production occurs at 60-86°F. Infection of new shoots can occur any time during the growing season. Although the fruit are susceptible through harvest, infections that occur during the shuck split to pit hardening stage of development are most important. A long period of infection of 40 to 70 days is needed for symptom development on fruit. So, late infections (within 6 weeks of harvest) are generally unimportant.

There are no scab-resistant peach varieties available, so scab control relies on good pruning and timely applications of fungicides. Proper and regular pruning facilitates air movement, reduces length of wet periods, and improves spray penetration into trees. Fungicide sprays, applied at 10- to 14-day intervals, should be made beginning at petal fall and continuing until 40 days before harvest. An application of fungicide at petal fall is useful in suppressing conidial production on overwintered twig lesions. This spray is particularly important for orchards that were not sprayed the previous season. Fungicides registered for control of peach scab are listed on page 45 of the [2013 Midwest Tree Fruit Spray Guide](#).



Mohammad Babadoost (217-333-1523; babadoos@illinois.edu)

Honey bee kills in apple orchards

Earlier this week I received a call from northern Illinois from an apple orchard where honey bees had been rented for pollination. That morning the grower had observed large numbers of dead bees in front of the hives. He had not applied any pesticides in his orchard that should have resulted in bee poisoning. Bees had been foraging actively the day before, the wind was light from the south, and on that day the farmer just south of the orchard had been planting corn – using seed treated with a neonicotinoid insecticide. A number of articles have discussed the potential for exhaust from vacuum planters to release dusts laced with the neonicotinoid seed treatments. Although it is unclear whether or not the honey bee deaths in the orchard were related to seed treatment insecticides, growers are urged to observe hives during pollination and also to record the activities on their farms and adjacent land. If bee kills are thought to result from insecticide drift, growers should contact the Illinois Department of Agriculture's Apiary Inspection Program at 217/782-6297. Where pesticide drift injures crops or bees, growers should file a pesticide misuse report (see <http://www.agr.state.il.us/Environment/Pesticide/FORMS/Pesticide%20Misuse%20Complaint%20Form.pdf>). Fruit and vegetable growers are also encouraged to register on Driftwatch at <http://il.driftwatch.org/index.html>.

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

Organic Production Guides for Fruits and Vegetables

Cornell University has published a series of excellent guides for organic production of selected fruit and vegetable crops. Guides for organic fruit production cover apples, grapes, blueberries, and strawberries. Organic guides for vegetables cover beans, carrots, cole crops, cucumbers and squash, lettuce, peas, potatoes, and spinach. The guides are available online from links at http://nysipm.cornell.edu/organic_guide/. For more information, contact NYS Integrated Pest Management Program, 630 W. North St., Geneva, NY 14456. Email: nysipm@cornell.edu.

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

Local Foods Issues

Local Food Systems/Small Farms Team – New Educators

In the next few weeks, four new Extension Educators will join the Local Food systems and Small Farms team. As each starts work, I'll add their contact information to the list at the end of each issue. Here's a quick summary ...

Grant McCarty will be located in Jo Daviess, Stephenson, and Winnebago counties in northwestern Illinois. Grant recently completed his M.S. degree in plant sciences and organic production at the University of Tennessee. Grant was a Graduate Research Assistant under Dr. David Butler in UT's Plant Sciences department where his graduate research project was a sustainable alternative to methyl bromide in bell pepper and tomato production. His current interests include GAP/GHP certification, organic and other sustainable agricultural methods, local food initiatives, Farm to School, and farmers' markets/CSAs.

Connie Echaiz will be located in Lake and McHenry counties in northeastern Illinois. Connie recently completed her M.S. degree at Ohio State University, where she worked with Dr. Doug Doohan and focused on weed management in brambles. Connie has worked with a seed production company in Talagante, Chile, where she focused on the hybridization of vegetables. She also was employed with Chiquita Chile as a quality control inspector of exported fruits.

Doug Gucker will be located in Dewitt, Macon, and Piatt counties in central Illinois. Doug has worked as a technical service representative for Bayer, and from 1992 to 2011, he worked as an academic hourly for University of Illinois Extension (Piatt County) and provided assistance and programming information to vegetable, turf, field crop, and livestock producers. His current professional areas of interest are soil quality, cover crops, remote crop sensing (aerial and handheld) and crop diversification.

Nathan Johanning will be located in Randolph, Perry, Franklin, Jackson, and Williamson counties in southern Illinois. He completed his M.S. degree in Plant and Soil Sciences at Southern Illinois University in 2010, where his research focused on control of volunteer horseradish in rotational crops. Nathan has worked on various research projects such as

managing a long-term weed control program involving 26 Illinois grower field locations. For many years, he has produced (Johanning Farms) and developed local markets for pumpkins, gourds, melons, and potatoes. From January 2012 until recently, he served as an instructor for introductory and senior level courses in plant and soil science at Southern Illinois University.

GAPs and Flooding

We don't always control water, therefore growers need to be ready when flooding does occur. Flood waters are a concern because they may contain sewage, chemicals, heavy metals, and pathogens. Therefore when our production fields are flooded we need to evaluate the situation for potential risks.

According to the FDA, "Pooled water that is not reasonably likely to cause contamination of the edible portions of fresh produce is not considered flooding. Flooding is the flowing or overflowing of a field with water outside a grower's control" (FDA Guidance Evaluating the Safety of Flood-affected Food Crops for Human Consumption). Therefore, knowing the source of flood water and extent of flood water is important. Document the area of flooding with photos and field markers.

The FDA considers produce where the edible portion was contacted by flood water to be "Adulterated". Therefore, it is considered not fit for human consumption and should be discarded with effort to not contaminate the remaining crop. If the edible portion did not contact flood water, then it is more difficult to assess. Each case should be evaluated for possible contamination, and you should consider testing the flood water and soil for contaminants.

Other risk management strategies are to avoid traveling through flooded areas, wearing boots while working in those areas, and cleaning equipment after use in a flooded area. Working the soil several times to allow it to thoroughly dry out may lower microbial contamination. It is recommended to not harvest within 30 ft. of a flooded area since you cannot be certain of the extent of flood waters during the storm. If the field has been flooded, the Leafy Greens Marketing Agreement (LGMA) recommends waiting 60 days before planting crops that will grow close to the soils.

Ellen Phillips (815-732-2191 ext. 21; ephillips@illinois.edu)

New version of Driftwatch helps more farmers discourage pesticide drift

Purdue University has transitioned its Driftwatch™ crop registry to [FieldWatch](#) Inc., a commercial enterprise that can handle further expansion. Certified organic growers in nine states have been using the original registry, and information about those fields will automatically shift to FieldWatch. The registry allows crop producers to identify and map the location of their sensitive crops such as tomatoes, fruit trees, grapes, vegetables and organic crops, providing a resource for applicators to consult before spraying. The more producers who register fields in the program, the more useful the map is to applicators.

Deborah Cavanaugh-Grant (217-782-4617; cvnghgrn@illinois.edu)

Online tool helps organic growers select transplant system

Organic farming consultant Chris Blanchard ([Flying Rutabaga Works](#)) has created an online tool to help vegetable growers in the Upper Midwest select the best system for transplant production for their farm. The [Transplant Production Decision Tool](#) includes profiles of six vegetable farms in Minnesota, Wisconsin and Iowa, as well as photo galleries of infrastructure, equipment and crops. A one-page matrix summarizes the costs, skill level, benefits and drawbacks of various options for transplant equipment. The online tool was a project of the Iowa Organic Association with funding from the Leopold Center for Sustainable Agriculture.

Deborah Cavanaugh-Grant (217-782-4617; cvnghgrn@illinois.edu)

Less seriously ...

A husband and wife came for counseling after 25 years of marriage. When asked what the problem was, the wife went into an angry tirade listing each and every problem they had ever had in the 25 years they had been married. She went on and on: neglect, lack of intimacy, emptiness, loneliness, feeling unloved and unlovable, a long list of unmet needs she had endured over the course of their quarter century of marriage. Finally, after allowing this to go on for a sufficient length of time, the therapist stood up, walked around his desk and, asking the wife to stand, embraced her and kissed her passionately on the mouth. The woman shut up and, in a daze, quietly sat down. The therapist turned to the husband and said, "This is what your wife needs at least seven times a week. Do you think you can do this?" The husband thought for a moment and replied, "Well, Doc, I can drop her off here on Mondays and Wednesdays, but on the other days I play golf."

University of Illinois Extension Educators and Specialists in Fruit and Vegetable Production and Pest Management

Extension Educators – Local Food Systems and Small Farms		
STEPHEN AYERS, Champaign, Ford, Iroquois, & Vermilion counties	217-333-7672	srayers@illinois.edu
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JAMES THEURI, Grundy, Kankakee, & Will counties	815-933-8337	jtheu50@illinois.edu
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SONJA LALLEMAND, Franklin, Jackson, Perry, Randolph, & Williamson counties	618-687-1727	lalleman@illinois.edu
ELIZABETH WAHLE, Bond, Clinton, Jefferson, Marion, Madison, Monroe, St Clair, & Washington counties	618-344-4230	wahle@illinois.edu
Extension Programs for Farm to School		
JULIA GOVIS, Statewide Extension Program Coordinator, Farm to School	630-955-1150	jgovis@illinois.edu
Horticulture Research-Extension Specialists at our Research Stations		
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MOSBAH KUSHAD, Fruit & Vegetable Production	217-244-5691	kushad@illinois.edu
JOHN MASIUNAS, Weed Science	217-244-4469	masiunas@illinois.edu
CHUCK VOIGT, Vegetable Production (& herbs)	217-333-1969	cevoigt@illinois.edu
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