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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. 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>

- **Training and testing for a Private Pesticide Applicator license** is offered at multiple locations in the next few months. A Private Applicator's License is required for the purchase and use of Restricted-Use pesticides. These training programs are very strongly oriented to field crop agriculture (corn, soybeans, wheat, and alfalfa) because most of the state's private applicators (farmers) grow these crops, but there is only one test for private applicators, regardless of the crops you grow. Use <http://web.extension.illinois.edu/psep/> to learn the dates and locations for programs for Private Applicators (not Commercial Applicators).
- **2013 Small Farm Webinar Series ...**
 - January 24, 2013-Water Sanitation for Small Farms
 - January 31, 2013-Wildlife Damage Control
 - February 7, 2013-Basics of Fruit Insect Management
 - February 14, 2013-Farm Financial Management
 - February 21, 2013-Seed Saving
 - February 28, 2013-Crop Rotations in High Tunnels
 - March 7, 2013-Farm to School Series
 - March 14, 2013-Beneficial Insects
 - March 21, 2013-Weed Control in Pastures
 - March 28, 2013-Crop Budgeting Resources
 - February 5, 2013-Growing Unique Vegetables (Note: 6-7pm)

Register at <https://webs.extension.uiuc.edu/registration/default.cfm?RegistrationID=7543> .

- **Kankakee-area Vegetable Growers School, February 26, 2013.** For information, contact James Theuri at 815-933-8337 or jtheu50@illinois.edu

Other webinars and events listed on the SARE calendar: <http://illinoissare.org/calendar.php>

- February 26, Normal, IL, 9:00 a.m. – 5:00 p.m., Meet the Buyers.
- March 6, Sycamore, IL, 9:00 a.m. – 5:00 p.m., Meet the Buyers.
- March 8, Carbondale, IL, Women Changing the Face of Agriculture
- March 12, Springfield, IL, 8:30 a.m. – 4:00 p.m., Food Safety on the Farm (GAPs).
- April 8, 15, 22, and 29, webinar series, 6:00 – 8:00 p.m., Good Agricultural Practices (GAPs).

Notes from Chris Doll

So far, not a bad winter in SW Illinois ... Temperatures have not gone below 9 degrees F and snow totals have reached only four inches. Precipitation for 2013 has been 4.2 inches, about normal. Since September 1, 2012, it has been 16.5 inches, again about normal, but not sufficient to recharge the soil water table and lakes to levels expected for this time of the year. However, this varies as one travels around the area and state. Plants remain dormant, although chilling temperatures have been adequate to break the rest period for everything. Excluding some windy and chilly days, lots of field work has been done. And the "old" Fruit Calendar says that it is time for pruning apples and collecting wood for propagation.

The Illinois Specialty Crops, Agritourism, and Organics Conference (including the Illinois State Horticulture Society annual meeting) in early January was well attended by both Illinois and surrounding state's growers. They heard our editor, Dr. Rick Weinzierl, open the session with a look toward 2020 for current and new generations of growers. I heard several facts of life about our industry, as well as cautions about changes that are or might be coming, like labor problems, more mechanization, cropping systems, institutional and extension funding and staffing declines, and global warming mentioned as some of the challenges.

It seemed that "challenge" was the theme of the meeting, as Dr. Greg Reighard of Clemson University included them in his talks on apple rootstocks and peach culture. According to him, the apple rootstock situation continues in a state of flux, with lots of research and testing of new stocks and the combinations of varieties that are becoming available. Availability of the new Geneva stocks and other promising stocks depends on the nurseries being able to source and propagate all that the growers are demanding. So the search goes on for stocks with the desired amount of size control, combined with precocity, compatibility with the scion, disease resistance, and being nursery friendly.

On peaches, he expressed concern about lack of chilling hours for many varieties in the SE states, but that's not a problem here. He described some of the problems with peach tree short life, but that too is not too much of a problem here because we have much less replanted acres to worry about. But the situation can be improved in both areas by good soil preparation, including green manure crops that have some fumigation properties, chemical fumigation, Guardian rootstocks, and in some instances the use of ridging of the tree row. A brief description of training systems like the V, quad V, hex V, perpendicular V and open center was given, with some of the problems of each. For all but the open center, more tree height is usually needed to get the additional production needed to make them economical. Emphasis was placed on thinning, including blossom thinning. One of his large growers adapted the use of hand held power brushes for this practice last year with good success, knowing that the expected increase in fruit size should offset any concern about a late freeze. He also reiterated the fact that high temperatures for about 30 days post bloom can have a negative effect on fruit size, but this cannot be controlled. And finally, his studies show that since most of the roots of peach trees are in the upper 8-12 inches of the soil, summer irrigations need to supply only that area.

Some of the grower reports of the 2012 season were:

- Southern Illinois growers, peach and primarily apple growers, escaped the April and May frosts/freezes and had fruit to "luck out at the expense of growers in many other areas."
- Size of peach fruits was down 25-30% because of drought conditions and no irrigation water.
- Sunburn was a problem on apples, but Raynox helped fruit quality where used.

- Fruit ripening began early and continued throughout the season, with harvests as early as April 9 for strawberries, May 30 for peaches, and July 31 for Jonathan apples (all in southern Illinois south of highway 50).
- Retain usage for delaying maturity gave some positive returns where used.
- Central and northern apple crop yields ranged near 0 to 30 percent.
- Media exploitation of news events like the crop freeze losses and the high summer temperatures created marketing concerns for direct marketers.

In a session for new fruit growers, the facts of life and challenges were presented to a full house of attendees. Of course, this included site and variety selection, nursery stock availability, pruning and training, management of weeds, pests and mammals, and needs like equipment, labor, markets, and concerns about management, marketing and government. Jeff Broom from Carlinville, a second generation grower and marketer, summarized the session with comments about the management and mental challenges needed for production and marketing. My thoughts during the session were of how many of the audience were optimistic enough to be future orchardists. And upon returning to my thesaurus, I found that there were three synonyms for an optimist but 17 for challenge.

The newest member to the Illinois State Horticulture Hall of Fame was inducted at the January conference. He is Tom Schwartz, of Schwartz Farms, Centralia, Illinois. Tom was awarded this recognition for his achievements as a grower of strawberries, apples, and peaches, a cider maker, a direct marketer, an industry representative, and a career member of the association as well as a past president. Tom is and has been a good representative throughout the Midwest and continues to do so.

Chris Doll

Fruit Production and Pest Management

Biology and Management of Grape Phylloxera ... plan in advance



Grape phylloxera galls on leaves (University of Minnesota).

Grape phylloxera is a widespread and damaging pest of grapes. Overwintered eggs on grape trunks hatch in the spring (in early to mid-April in far southern Illinois and a few weeks later in northern Illinois), and crawlers infest the first to third expanding terminal leaves. Leaves form a gall around each crawler. These crawlers mature to become egg-laying adults that produce 100 to 300 eggs each. Crawlers that hatch from these eggs crawl up to new terminal leaves and infest them (usually the 5th through 8th leaves on the shoot), often resulting in 50 or more galls per leaf. These crawlers are the targets of early season insecticide applications intended to reduce phylloxera damage. Timely scouting and timely application of effective insecticides are key to controlling grape phylloxera. A detailed guide to understanding and controlling grape phylloxera, *Biology and Management of Grape Phylloxera*, written by Dr. Donn Johnson, Sandra

Sleezer, and Barbara Lewis of the University of Arkansas, is available online at http://www.uaex.edu/Other_Areas/publications/PDF/FSA-7074.pdf. Now would be a great time for grape growers to consult this publication, study its contents, and plan ahead to develop an effective management program.

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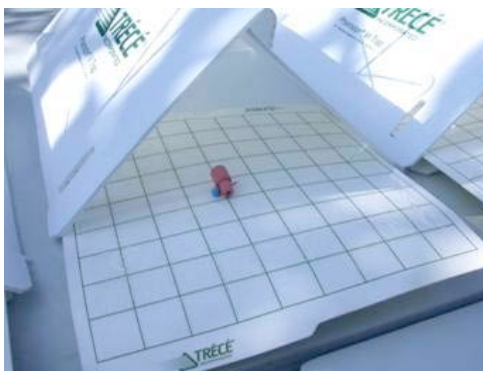
Traps for Monitoring Fruit Insects

I always stress the use of pheromone traps to monitor several key insect pests of fruits, especially apples and peaches, and it's time for my annual primer (with updates) on the who, what, when, where, and how of insect trapping. Keep in mind that traps for fruit insects, with the exception of apple maggot traps for growers with just a few trees, do not catch enough insects to reduce infestations, they simply provide indications of the timing of their presence and a very rough measure of their abundance.

For fruit growers who have not already done so, NOW is the time to order pheromone traps for key insects. Traps are available and useful for monitoring many insects of fruit crops, and the ones listed in the table that follows are probably the most important for most Illinois fruit growers. Other pests that may be worth monitoring with traps include dogwood borer, spotted tentiform leafminer, redbanded leafroller, and obliquebanded leafroller in apples. Contact me if you want more information on these insects. Notice that the list this year includes spotted wing *Drosophila*, a new invasive pest of fruits.

What kind of traps work best?

A few companies manufacture traps, and all have a similar range of designs. Trecé is still the best known, but Scentry, Suterra, Alpha Scents, and others are also reliable providers. Over the last few years, the trap design that has become most widely used for fruit insects in general is the large plastic delta trap; Trecé sells it as the Pherocon VI trap, and Suterra, Scentry, and a few other suppliers simply call it a large plastic delta trap (LPD). This trap is quick to set up and easy to maintain, because unlike earlier "wing traps," the sticky trapping surface is provided by an exchangeable card that slides in and out quickly and easily. It is MUCH faster to change sticky liners on this trap than it is to change the bottoms of the wing traps we used several years ago. If you bring the trap "shell" indoors at the end of the season, you can expect to get 2 to 3 years use from each trap (while replacing lures and liners as needed).



A Pherocon VI trap (an example of a large plastic delta trap), with the sticky liner partially removed, showing a pheromone lure.

How do traps work?

Most (not all) of the insects listed in the table below are moths in their adult stage. For all the moths typically monitored using sticky pheromone traps, the trap must be baited with a pheromone lure – usually a small piece of rubber or plastic containing a synthetic blend of chemicals that is very similar to compounds used by female moths to attract males. When traps capture male moths, that serves as an indication that females are also present, and mating and egg-laying are occurring. When you order pheromone traps, you also must order lures for the specific insect(s) you wish to monitor. (Sometimes you may order "kits" that come with a combination of traps and enough extra sticky liners and lures to last the season.) Remember that although you may use the same type of trap to monitor different pests, you must use only a single lure per trap ... it does not work to put lures for codling moth and tufted apple bud

moth in the same trap. Depending on the pest species, lures usually last 2 to 8 weeks (suppliers can tell you the effective life of the lures they sell), so you have to order enough lures to last through the whole season.

For apple growers in the northern half of Illinois, monitoring the flight of apple maggot flies also is necessary. Traps for apple maggot flies rely on appearance (especially the color and shape of a bright red apple) and the use of a food odor (“apple volatiles”) instead of a pheromone, and they are designed to capture female apple maggot flies ready to lay eggs on fruit. All the major suppliers of insect traps carry these kinds of traps. Growers should order the red spheres, tubes or tubs of stick-um or tanglefoot, and the food lures recommended by the supplier. Apple maggot traps may be used without any food lures; counts are interpreted accordingly.



An apple maggot trap.

How many traps are needed for each pest species?


There are no precise answers, but in general, for the moths that are pests in Midwest fruit crops, I consider it adequate to use 3 pheromone traps per pest species per each individual block of trees or vineyard up to 5-10 acres in size. Guidelines often recommend at least 3 traps per pest species for any orchard up to 10 acres in size and 1 more trap for every 3 to 5 acres above 10. To monitor 50 acres of trees in 3 or 4 separate blocks, use at least 3 traps per block and at least 9-12 traps total ... for each pest species. Always use at least 3 apple maggot traps (red spheres) per block of trees. See the table below regarding placement of traps. Remember that you should check these traps and record counts in each at least twice per week.

If you have only one relatively small block of trees, you may want to order 3-trap "kits" that suppliers package for each of the major pests. Kits with "standard" lures will include 3 lures per trap, but because the lures for most will have to be replaced every 4 weeks, most Illinois growers will need yet another 2 extra lures per pest species per trap to get through the entire season. Suppliers also sell these extra lures and extra "liners" (the sticky trapping surface) for traps. If you operate an orchard larger than 10 to 15 acres, you'll need more traps, so don't "mess with" 3-trap kits; contact a supplier and make plans to order in bulk. "Long-life" lures are available for codling moth and oriental fruit moth (and some other species) ... these lures last 8 weeks between changes and are the best choice for almost all Illinois growers.

For apple growers in southern Illinois, it has been a few years since we saw some problems with tufted apple bud moth in orchards that were treated pretty much exclusively with organophosphates. With greater reliance on alternative chemistries in recent years, this pest has not reached economic levels in many Illinois orchards in the last several years (to my knowledge), but I'm including it in the following table because it still warrants attention in some orchards.

This year I've added a new pest to the list of trapping targets – spotted wing *Drosophila*. This insect has been “star villain” at most of our Extension programs on fruit insects all winter, and it is likely to be a pest of concern for a number of fruit crops – especially strawberries, blueberries, blackberries, peaches, and raspberries – in 2013. For summaries on its life cycle, distribution, and management, see the [Michigan State University Spotted Wing *Drosophila* page](#), and issue [18:14](#) of this newsletter.

Pheromone trapping guidelines for major fruit insects

Crop and pest	When should you use traps?	Where do you hang the traps?
Apples -- all of Illinois Codling moth	Early bloom through harvest	At eye level or higher (<u>upper third of canopy is best</u>), spaced throughout the block, including one somewhere near the upwind edge and one near the downwind edge.
Apples -- south of I-70 Tufted apple bud moth	April 15 through harvest	Same as above for codling moth.
Apples -- north of Springfield Apple maggot	June 15 through harvest	In the outer portion of the canopy of trees on the edge of the block ... VERY visible to adults flying into the block (remove foliage around the sticky red spheres). Hang in border rows or end trees nearest any woods or brush outside the block
Peaches -- Lesser peachtree borer	Bloom or petal fall through harvest	Similar to codling moth, but trap height should not exceed 5 to 6 feet.
Peaches -- “greater” peachtree borer	May 15 through harvest	Similar to codling moth, but trap height should be 3-4 feet above the ground.
Peaches -- Oriental fruit moth <i>(In southern IL, trapping for Oriental fruit moth in apples is also recommended.)</i>	Green tip to pink through harvest	Similar to codling moth, but trap height need not exceed 6-8 feet.
Grapes -- Grape berry moth	Bloom through harvest	Hang traps on the top trellis wire. Place traps in the outside rows and near ends of rows; concentrate traps on edges near wooded areas. <i>(Note that where GBM populations carry over in wild grapes in woods near vineyards, mating may occur there, mated females may lay eggs in the vineyard, and traps may not capture many (or any) males in the vineyard itself.)</i>
Strawberries, blueberries, blackberries, peaches, grapes, and raspberries – Spotted wing Drosophila	From first coloring of fruit through harvest 	Hang traps in shade near ripening fruit. Although a small trap (jar with openings) is available commercially, it is not as sensitive as the trap described at http://www.ipm.msu.edu/invasive_species/spotted_wing_droso_phila/monitoring . Using a yeast-sugar mix (1 Tbsp. active dry yeast: 4 Tbsp. sugar: 12 oz water) as bait in the traps makes them more attractive than using apple cider vinegar. Yellow sticky cards (3”x5”) available from Great Lakes IPM can be cut in half and hung in the cups.

Midwestern suppliers of pheromone traps include:

Supplier	Address	Phone & Fax
Great Lakes IPM	10220 Church Road Vestaburg, MI 48891-9746 email: glipm@greatlakesipm.com On the web at: http://www.greatlakesipm.com	989-268-5693 989-268-5911 800-235-0285 FAX: 989-268-5311
Gempler's	P.O. Box 44993 Madison, WI 53744-4993 On the web at: http://www.gemplers.com/pheromone-lures	1-800-382-8473 (U.S.A.) FAX 1-800-551-1128

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MyTraps Software

No endorsement intended, this is just FYI ... I understand that at least a few growers in Kentucky used this service last year, so I'm passing along the information.

MyTraps is designed to simplify and improve the process of data collection in insect trapping. Using their mobile applications you can enter data right from the field in your mobile device as you collect it or choose to enter the data into your PC. The data is collected and displayed in easy-to-use maps and graphs.

In *MyTraps*, you can:

- View multiple insect species and/or traps
- See daily, weekly, or monthly or views of your insect trapping data and visualize trends
- Collect and store your pesticide use
- Visualize your data in field, blocks or other geographic parameters that you choose
- Set your own thresholds for insect pressure
- Set reminders when it is time to change out lures
- Easily share and send data to clients or other interested parties on the trapping activities on their farm, vineyard or orchard

For more information, see mytraps.com; you can sign up for a free account to give it a try.

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Vegetable Production and Pest Management

Preseason Reminders for Corn Earworm Management in Sweet Corn

With a purpose similar to that of the notes above on fruit insect trapping, here's my usual spring update about earworm biology and the use of pheromone traps to monitor flights and plan control programs. *For those who have read previous renditions of this, please read again anyway ... there are some important updates on Bt varieties and insecticides.*

Corn earworms are often the most damaging insect in Illinois sweet corn. They overwinter in the pupal stage in the soil, but their survival rate is very low in most of the state. It manages to be a severe pest every year anyway because it migrates in from southern states on weather fronts every summer. Moths are almost always active in the Collinsville area (where overwintering success is greater) by late May and early June, but in much of the state the period of first activity (and the first need to control them) can vary from June through August, depending on the time of their migration. Although control may be necessary in one portion of the state at a particular time, it may be unnecessary in many other locations. Consequently, it really is essential to establish a monitoring program to determine spray needs. Unfortunately, scouting for foliar damage or larvae on the surface of plants is not an option. Corn earworm moths lay their eggs singly on silks, and larvae move down the silk channel immediately after they hatch from the eggs (and hatching can occur in as little as 2 ½ days during hot weather). On corn, larvae do not feed on any exposed parts of the plant (leaves, husks, etc.), so the only practical way to kill them (short of having planted BT sweet corn, which does not provide 100 percent control) is with a contact insecticide applied to the silks. Larvae crawl across the residues on the silks, and the insecticide is taken up through the cuticle.

Effective monitoring programs depend on the use of pheromone-baited traps that catch male corn earworm moths and are used as indicators that adults of both genders are present and eggs are being laid. Previously we have recommended using either a wire Hartstack trap (pictured below) or a nylon version of the same general design marketed by Scentry and several regional distributors. We've long known that paper sticky traps are ineffective at monitoring corn earworm moths, and in recent years evidence indicates that the Scentry nylon cone traps may not work well enough. Results from monitoring work done in 2006 show that the nylon traps also may fail to detect light but still significant flights

when the wire Hartstack traps do catch moths. Consequently, I now recommend that all sweet corn and seed corn producers use the wire Hartstack trap. (Data to support this recommendation came from a regional monitoring effort coordinated by Bill Hutchison of the University of Minnesota and conducted by several entomologists and horticulturists who participate in the Great Lakes Vegetable Workers Group.) Traps should be baited with Hercon "zealures," and the lures need to be replaced every 2 weeks. Earworm control is necessary when moth flight is ongoing and fresh silks are present. If traps are catching more than a few moths (3 to 5 per trap per night) when silking begins, sprays should be applied within 2 days after first silk -- insecticide residues must be on the silks to kill larvae immediately after they hatch from eggs and before they enter the silk channel. If the only silking corn in your area is your field, the threshold for treating should be revised down to 1 moth per trap per night.



Left: Corn earworm larva. Right: Hartstack trap.



Corn earworm moth (Kansas Department of Agriculture).

A Midwest supplier of the Hartstack trap for earworms is Bob Poppe, Route 1, Box 33, Lexington, IL, 61753 (309-723-3201). I suggest that you buy an extra top cylinder for each trap to make handling more efficient. Lures are available from Great Lakes IPM (10220 Church Road NE, Vestaburg, MI 48891; 989-268-5693; 989-268-5911; 800-235-0285; FAX: 989-268-5311) and Gemplers (1-800-382-8473). As I have pointed out in previous seasons, the wire Hartstack trap is not cheap ... think in the \$300 range plus shipping, and think higher numbers if the traps must be shipped a long way. But before you let the price tag make you balk, consider ...

- These traps will last for many years (I have a couple that are over 30 years old) ... as long as you don't run over them with tractors or other vehicles.
- Along with a few dollars for lures every year and daily monitoring of moth counts, they provide you with guidance that can keep you from spending thousands of dollars unnecessarily or losing thousands of dollars' worth of sweet corn sales. If you spray 10 acres of sweet corn even twice a week for 3 weeks before earworms are actually present and require control, that's 6 applications at (conservatively) \$18.00 per acre for each application ... multiplied by 10 acres, that's \$1,080 (plus the loss of time not spent doing something more

necessary). Multiply that by a 20-year life span for the trap, and the total exceeds \$21,000. I think that pays for the trap and the lures. Viewed in a different way, if high trap counts lead you to spray more often in order to get the control you really need, you market more corn. For a fresh-market producer who sells sweet corn at \$4.00 per dozen, a yield of 1,200 dozen per acre is worth \$4,800. Preventing a 5 percent loss by spraying extra when needed saves \$240 per acre in sales. Multiply that by 10 acres and 20 years, and the total reaches \$48,000 ... that, plus keeping your customers from complaining about wormy corn, certainly pays for the cost of a trap and a package of lures every year.

Insecticide and “trait” choices for corn earworm control in 2013

First, insecticides ...

- The goal of insecticide applications in sweet corn is to put a residue on fresh silks that kills larvae before they can move from the egg on the silk to the tip of the ear. (If sprays kill some adults, that’s a benefit, but that’s NOT what makes an effective spray program.) This means that sprays must be applied repeatedly as the silks elongate. Although the residual activity of many insecticides is several days, newly emerged portions of silks near the ear tip were not exposed to the sprays applied a couple of days earlier. This is why sprays are recommended on 2- to 3-day intervals as long as silk growth continues. If traps are catching just few moths and temperatures are moderate, a 3-day spray interval can be adequate. If traps are catching 30 or more moths per night and temperatures are in the 90s, spraying every 2 days will be necessary to produce corn with very few damaged ears. Sprays should begin within 2 days after silk have begun to emerge if moths were flying when silks appeared.
- At least some of the corn earworm populations that migrate into the region (or overwinter here as may have in the mild winter of 2011-2012) are resistant to pyrethroids (Baythroid, Brigade, Hero, Mustang Max, Warrior, and their generic versions). Alternatives to pyrethroids – such as Belt, Coragen, Entrust (for organic growers), and Radiant – are not quite as effective as the pyrethroids used to be before resistance development. Where markets demand corn that is nearly worm-free, relying on a pyrethroid or an alternative alone is not likely to give adequate control when moth flights are high. Combinations of a pyrethroid plus one of these alternatives or a pyrethroid plus Lannate are likely to give the best results. If you take this approach and tank-mix two different kinds of insecticides, use each at their label rates (often the middle of range listed on each product’s label). Making timely applications on the right interval (2 or 3 days) is FAR more valuable than raising rates. A pre-mix of the active ingredients in Warrior (lambda-cyhalothrin) and Coragen (chlorantraniliprole) will be sold in 2013 under the trade name Besiege. It provides an alternative to tank-mixing two different chemicals.

What about Bt sweet corn varieties?

- From a grower’s perspective, there are three different categories of Bt sweet corn varieties on the market or soon to come to market. (1) The Attribute series sweet corns produce one kind of Bt toxin. It is very effective against European corn borer and corn earworms. The “problem” is that only 3 of 4 kernels on ears in Attribute series Bt sweet corn fields produce the toxin (a result of the heterozygous nature of the genetics of the variety and random recombination in the offspring – the kernel). Additionally, the Bt toxin in the Attribute series is not very effective against black cutworm or western bean cutworm (or rootworms or sap beetles). (2) The Seminis “Performance” series of Bt sweet corn varieties produces two toxins that kill Lepidopteran larvae; they also have genes for corn rootworm larval resistance and resistance to Roundup. The second Bt toxin in these varieties provides much greater resistance to black cutworm, fall armyworm, and western bean cutworm (as well as European corn borer and corn earworm). However, only 3 of 4 kernels on ears in Performance series Bt sweet corn fields produce the toxin (again, a result of the heterozygous nature of the genetics of the variety and the fact that the genes for the two toxins are linked and so they move together in the random recombination of genes in the offspring – the kernel). (3) A new “Attribute II” series of sweet corn varieties is under development by Syngenta. Only “yellow shipping” varieties will be available for sale in 2013. In the Attribute II series, genes code the production of two very different toxins that kill Lepidopteran larvae (cutworms, armyworms, European corn borer, and corn earworm). These genes are not linked, and as a result, 15 of 16 kernels on ears in Attribute II series Bt sweet corn fields produce one or both toxins.
- Do Bt sweet corn varieties still need to be treated with insecticides? Yes. Although the Attribute II series will suffer less damage when untreated than existing Bt varieties, this technology will not be available in 2013 in varieties that most Illinois producers grow. The original Attribute series and the Performance series varieties must be treated when corn earworm moth flights are heavy or if western bean cutworm is present. The jury is still out on the characteristics of a reduced spray program that would adequately protect these varieties. In

varieties with long silk channels, early sprays might be skipped (because larvae would ingest Bt toxins as they feed on silks while moving toward kernels). Bt concentrations decline in silks after pollination, and as ears elongate and kernels have less cover, sprays may be more necessary. I'll review existing data before sweet corn needs to be sprayed this summer, but the point for now is simple ... do be prepared to use insecticides on Bt sweet corn if it must be worm-free for you markets.

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Local Foods Issues

Reminders on MarketMaker

MarketMaker Helps Connect Farmers' Markets and Producers

Food MarketMaker can facilitate connections among consumers, farmers' market managers, and farmers. It can help market managers find vendors, producers find markets, and consumers find markets and producers.

Market Managers – use MarketMaker to easily find vendors in your area. The “Business Search” tool allows market managers to not only find producers, but also select the specific products needed for the market. By doing a search for farmers and a general product category (i.e. vegetables, fruits, and herbs), a list of producers is at your fingertips. With phone and/or email addresses available on the producer's profile, it is simple to make contact with possible new vendors. Producers – use MarketMaker to find a local market to sell your products. Do a quick search by clicking “Find a” and selecting “Farmers' Market” from the dropdown list. Without putting a zip code in, you will get results statewide. To narrow your search to local markets, click on “Search By” and select the county, city, or zip code area where you would most like to sell. The location of the markets will appear on the map and the names of the markets will appear on the side. Simply click on the market name for market details and contact information. Consumers – use MarketMaker to find local farmers markets in the same way. Farmers' market profiles contain the months the market is open, the days and hours of operation, a list of products sold, and even special events that may happen within the market. Markets are easily located by using MarketMaker's mapping capabilities.

Producers can link their MarketMaker profiles to the farmers' market where they do business. Simply log into your account and select the “My Connections” tab. Type the name of the business with whom you'd like to connect and click to add the business. An email is sent to the business to let them know you've made a connection. Add as many businesses as you'd like. Businesses you connect with appear on your business's detail page.

MarketMaker's *Buy & Sell Forum* is another way to make the producer/farmers market connection. We encourage managers to post ads free of charge under the “Looking to Buy” or “Services and Equipment” listings. Be sure to include days, times, and location along with market contact information.

Find MarketMaker at www.marketmaker.uiuc.edu. For more information, email marketmaker@illinois.edu or call 309-757-9077.

Value-added Local Foods Program at Lincoln Land Community College

Lincoln Land Community College is developing a value-added local food program and has developed a survey to receive input from farmers, chefs, food service managers, grocers, and local food professionals. The survey results will help identify the course focus and topics taught for a value-added local food curriculum. The survey is available at <http://www.surveymonkey.com/s/valueaddedlocalfood> and should take about 10 minutes to complete.

Marnie Record of Lincoln Land Community College is developing this program and would like to receive survey responses by the end of March. If you have questions, contact Marnie at 5250 Shepherd Road, Springfield, IL 62794-9256; phone 217-786-4993; fax 217-786-2463; email marnie.record@llcc.edu.

“Where Fresh Is” Campaign

The Illinois Department of Agriculture has launched a *Where Fresh Is* campaign intended to promote Illinois-grown produce. The campaign includes television, radio, billboard, and in-store promotions. The Department is seeking 200 Illinois grocery stores and 100 farmers' markets from every corner of the State, who would be willing to participate and receive FREE marketing materials to promote their locally grown produce.

The application deadline is February 15th. The application is available at: <http://www.agriculture.illinois.gov/wherefreshis/>. For more information, contact Jennifer Tirey, Illinois Department of Agriculture, (217) 782-8146, Jennifer.Tirey@illinois.gov.

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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KYLE CECIL, Henderson, Knox, McDonough, & Warren counties	309-342-5108	cecil@illinois.edu
LAURIE GEORGE, Bond, Clinton, Jefferson, Marion, & Washington counties	618-548-1446	ljgeorge@illinois.edu
ELLEN PHILLIPS, Boone, DeKalb, & Ogle counties	815-732-2191	ephillps@illinois.edu
MIKE ROEGGE, Adams, Brown, Hancock, Pike & Schuyler counties	217-223-8380	roeggem@illinois.edu
DAVID SHILEY, Coles, Cumberland, Douglas, Moultrie & Shelby counties	217-543-3755	dshiley@illinois.edu
JAMES THEURI, Grundy, Kankakee, & Will counties	815-933-8337	jtheu50@illinois.edu
Extension Educators – Horticulture		
RICHARD HENTSCHEL, DuPage, Kane, & Kendall counties	630-584-6166	hentschel@illinois.edu
ANDREW HOLSINGER, Christian, Jersey, Macoupin, & Montgomery counties	217-532-3941	aholsing@illinois.edu
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		
JEFF KINDHART, Dixon Springs Agricultural Center	618-695-2770 618-638-7799 (cell)	jkindhar@illinois.edu
Campus-based Extension Specialists		
MOHAMMAD BABADOOST, Plant Pathology	217-333-1523	babadoos@illinois.edu
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
RICK WEINZIERL, Entomology	217-244-2126	weinzier@illinois.edu

Less seriously ...

On a recent airing of “*The Midnight Special*,” the rendition of *Arkansas Traveller* included this conversation between a lost traveller and a less than helpful innkeeper ...

To establish whether or not the innkeeper was a credible source for directions, the lost traveller asked, “Have you lived here all your life?” The innkeeper answered, “Not yet.”

The traveller asked, “Does this road go to Fort Smith?” The innkeeper answered, “Nope, it don’t ever go anywhere ... it’s here every night when I go to bed, and it’s here every morning when I get up.”

The traveller tried again ... “All right ... can I take this road to Fort Smith?” The innkeeper answered, “That’d be a lotta work ... besides, they got a road in Fort Smith already.”

The traveller got disgusted and walked away. His final comment to the innkeeper ... “You sure don’t know much.” The innkeeper watched him walk away, then said to himself, “That’d be true ... but I ain’t the one who is lost.”

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