



Extension

COLLEGE OF AGRICULTURAL, CONSUMER
& ENVIRONMENTAL SCIENCES

Illinois Fruit and Vegetable News

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Editors: Nathan Johannang & Bronwyn Aly

A newsletter to provide timely, research-based information that commercial fruit & vegetable growers can apply to benefit their farming operations.

Address any questions or comments regarding this newsletter to the individual authors listed after each article or to its editors, Nathan Johannang, 618-687-1727, njohann@illinois.edu or Bronwyn Aly 618-382-2662, baly@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, contact Nathan Johannang at the phone 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>

Also see the **University of Illinois Extension Local Food Systems and Small Farms Team's website** at:

<http://web.extension.illinois.edu/smallfarm/> and the calendar of events at

<http://web.extension.illinois.edu/units/calendar.cfm?UnitID=629>.

- **Fruit Tree Workshops. Friday, April 20, 2018 10:00 a.m. Fruit Tree Basics (Cost \$10); 1:00 p.m. Fruit Tree Grafting – (Cost \$20); 3:00 p.m. Fruit Tree Pruning (Cost \$10); Cape Girardeau Extension Center in Jackson, MO.** Hands on workshops in fruit production. Instructors include Patrick Byers, Katie Kammler and Donna Aufdenberg. Pre-registration is required! For more information and registration contact Donna at 573-238-2420 or aufdenbergd@missouri.edu or the flyer at the following link: [http://extension.missouri.edu/stegenevieve/documents/Fruit%20Tree%20Classes%202018\(1\).pdf](http://extension.missouri.edu/stegenevieve/documents/Fruit%20Tree%20Classes%202018(1).pdf)
- **Blackberry Workshop. Thursday April 26, 2018, 1:00 p.m. Farmington Community Library, 23500 Liberty St. Farmington, MO.** Workshop covers production overview and tour of commercial blackberry production. For more information or to RSVP contact Pat Byers at 417-859-2044 or byerspl@missouri.edu or visit the flyer at the following link: <http://extension.missouri.edu/stegenevieve/documents/2018APRILblackberry.pdf>
- **Direct Food Marketing Workshops.** Illinois Farm Bureau along with several Illinois County Farm Bureaus are delighted to partner with FamilyFarmed to provide 3 different 1-day workshops around the state pertaining to Direct Food Marketing in May. The offerings are May 7th (at SIU), May 10th (at Henry County Farm Bureau), and May 11th (at Champaign County Farm Bureau). Refreshments and Networking start at 8:30 with the workshop beginning at 9:00AM. All attendees will receive lunch, training, and a free workshop manual

that typically retails for \$70. This event is open to anyone. Participants will need to pre-register at www.ilfb.org/livelocal. For more information contact Raghela Scavuzzo (309)557-2155 or rscavuzzo@ilfb.org

- **Southern Illinois Summer Twilight Series: Dixon Springs Ag Center, Monday, May 21, 2018 6 p.m. 354 State Highway 145 N; Simpson, IL 62946.** This first twilight meeting of the summer series will be an open house for the “re-opening” of the horticulture research at the Dixon Springs Ag Center. We will tour the 3 high tunnels and the current research in each, including hydroponic tomatoes, cucumbers, lettuce and in-ground production of a wide range of vegetable crops. Save the date and registration information will be up soon! For further information contact Bronwyn Aly at baly@illinois.edu or 618-382-2662.
- **2018 Illinois Summer Horticulture Field Day, Thursday, June 7, 2018.** Annual Illinois State Horticulture Society annual summer field day will be hosted by Flamm’s Orchard in Alto Pass, IL. Save the date; more details closer to event.
- **2018 Pumpkin Field Day, Thursday, September 6, 2018, 10 a.m.** Ewing Demonstration Center (located about 20 minutes south of Mt. Vernon, IL) 16132 N. Ewing Rd. Ewing, IL 62836. Pumpkin Variety & Pest Management trials, No-till Production and more! Save the date; more details to come! For additional information contact Nathan Johannig at 618-687-1727 or njohann@illinois.edu.

Regional Reports

From west central Illinois...It was freezing (15 degrees F) then it got hot (79 degrees F), followed by a cold snap over the weekend (24 degrees F). The forecast for the coming week will be brisk yet more stable regarding temperatures with highs in the 50s and lows around the freezing mark.

With the cold weather, came precipitation, and more snow. The cool season crops in the field (arugula, head lettuce, bok choy, kale, and red cabbage) all seem to have held up well to the cold weather of this past weekend without any additional protection.

I was delighted to have had the warm temperatures and a break in the cloud cover the second week of April. Not only did the plants seem to enjoy the sun, it certainly improved my moral. Last week I vented the high tunnel and moved flats of cool season seedlings out in the open air. Meanwhile, flats of warm season veggies were moved into the high tunnel to begin the process of hardening off the plants. This past weekend I did the plant shuffle once again, moving summer crops back indoors to protect them from the freezing temperatures where they will stay until later this week.

Peach buds have finally started their first swell. By the time this article hits your inbox, I’m sure we will have hit the calyx green bud stage. Still, we have had a slow start to spring. I wonder if we’ll set any phenological records this year. At last check, my area was around 106 growing degree-days.

This past Friday the 13, I saw my first garden pest insect, an imported cabbageworm adult butterfly (*Pieris rapae*). These insects are quite hardy, especially considering a few days prior there were three inches of snow on the ground. The destructive nature of this butterfly comes in its larval stage as a plush light green caterpillar with lines running down the length of its body. If you have ever grown a cole crop in Illinois (broccoli, Brussels sprouts, cabbage, collards, turnips, kale, and so on) you have met this pest. Scouting is critical to stay ahead of imported cabbageworm, to avoid excessive damage to leafy cole crops, which would make them unmarketable. Often the best indicator of imported cabbageworm is small-clustered holes in the leaves originating from the underside or near the center of the plant. Two methods of control we use are physical exclusion with row cover, and *Bacillus thuringiensis kurstaki* (*Btk*). When using row cover, make sure to continue to scout in case an imported cabbageworm sneaks by your defenses. Natural enemies will also play a role in controlling this pest, which makes *Btk* all that more valuable since it only targets the larval stage of butterflies and moths. As pest caterpillars grow in size, they become more resilient to *Btk*.

Chris Enroth (309-837-3939; cenroth@illinois.edu)

Also from west central Illinois... We’ve been somewhat lucky in that we haven’t received the large amounts of precipitation that many in IL did over the past weekend. I emptied a little over .3” for the entire weekend. With the winds that we had and the sun on Tuesday, the soil dried out rather quickly. Prior to these rains just a few fields of corn and soybean had been planted in the area, and those fields had soils that worked up very nicely. We had a low of 28 and 27 on Monday and Tuesday morning (quite a change from the high of 80 that we achieved on Thursday of last week). Tomatoes, peppers and cucumbers that were planted in unheated high tunnels made it through in good shape.

It snowed again on Sunday (and Monday) which meant we've had snows 3 consecutive Sundays. Lets hope the old saying won't hold true about precipitation on Easter Sunday.

We mowed off our asparagus on the 7th, and I noticed the first few spear tips showing on the 12th (after the few days of 70 degree temps). Since then however, there hasn't been any new growth. I applied glyphosate to help control emerged weeds (mostly dandelion and some winter annuals) plus a residual. It's important to apply glyphosate prior to emergence of spears or risk of injury can occur

We got our onions planted last week, on white plastic. There are numerous devices that have been utilized to help with onion planting, ours is pretty simple. Just a couple of sections of plywood that I drilled holes into to place bolts. These bolts are 5/8" wide with 2 1/2" of the bolt protruding from the plywood and able to puncture the plastic and form the hole. This size works well when the soil is moist and the hole doesn't fall in. When it's drier we use a slightly larger diameter as the soil doesn't hold up well enough. Using this device punches 4 holes at once and we simply place the set in the hole and firm some soil around it.



Onions planted on white plastic mulch (left). A handy homemade tool to mark and punch holes in plastic for onions (right). Photos: M. Roegge.

There hasn't been any sweet corn planted yet in the area that I'm aware of. We still have to spread fertilizer, which I'll do the end of this week. The forecast is for highs in the 60's starting on Friday, so most likely we'll get the first planting in soon after fertilizing. Most producers will be planting tomatoes and peppers in high tunnels this week as they didn't want to risk cold weather injury.

Peach buds are just starting to show pink, and cutting into them didn't show any injury from the cold from Monday and Tuesday. Apples are from silver to just a little green tip showing. Blackberries have about an inch of new growth and blueberry buds are swollen and green.

Mike Roegge, Retired Extension Educator & Mill Creek Farms (roeggem@illinois.edu)

From east central Illinois...Most growers have been busy transplanting seedlings and hoping for warmer weather. April has been cooler than normal in this area with the April 11 – 13 warm, dry period being the first time that many farmers were able to direct seed in their fields. This was due to our cool wet soils and cold, cloudy days. Here in central Illinois on April 16, we had snow flurries with a high temperature of 35 deg. F and wind blowing at 30+ mph. Growers with high tunnels are doing better but in some cases plants near tunnel sides have suffered frost damage due to our having 5 days with sub-freezing average daily temperatures so far in April.

Doug Gucker (217-877-6042; dgucker@illinois.edu)

From Dixon Springs Ag Center...We are continuing to make progress on getting all of the systems up and going in the high tunnels. Electrical work has been completed in the greenhouse and all three high tunnels (the only set back was one of the exhaust fan motors was drawing air in instead of pulling air out and couldn't be reversed, so we have a new motor coming soon). There was finally a break in the rain and the ground dried up enough to install the French drain system between the tunnels. Cucumber transplants for a hydroponic variety trial will be set out in the high tunnel this week, with an indeterminate tomato trial soon to follow. Compost is being applied and worked into beds in the middle tunnel. Windy conditions have made it hard to find days to attach the end walls on the middle tunnel or any of the plastic on the last tunnel, but we are being patient and are prepared to tackle those jobs when Mother Nature allows.

French drains being installed between high tunnels at Dixon Springs Ag Center. This should improve drainage not only between tunnels but also within the tunnels themselves. Photos by B. Aly.



Bronwyn Aly (618-382-2662; baly@illinois.edu)

From the St. Louis Metro-east... The pattern of rain and cold temperatures continues to hold. Night temperatures have been hovering near freezing, some morning slightly below and some mornings slightly above. Strawberries have been the most problematic, requiring frost protecting several morning in the past week. Wind was an issue on at least one frost event, making frost irrigation less than ideal. Wind speeds the morning of the 16th were sustained at 17-18 mph with gust upwards of 30 mph. It is increasingly difficult to deliver a uniform irrigation pattern needed as wind speed picks up. Sensitive crops are protected when irrigation is applied sufficiently throughout the freeze event because water freezing is a heat releasing process. During high winds though, the opposite can happen due to evaporative cooling (phase change from liquid to a gas) or sublimation (phase change from solid to a gas). Application rates have to be increased to offset evaporative and subliminal losses.

The entire region is running two to three weeks later compared to 2017. One grower reported plasticulture strawberry (field) harvest started April 21st in 2017 and is estimating a May 10 harvest for 2018. An asparagus grower reported starting harvest on April 11 in 2017 but field are showing no signs of emergence yet for 2018. 2017 was a very early year though. Compared to 2016, we are still running 5-10 days late.

Peaches, depending on location and cultivar, are anywhere from red calyx stage to full bloom. Sufficient live buds are being reported and as of this writing a full peach crop is expected. Apples are at ½" green to tight cluster; crop looks good.

Even around roller coaster temperatures and rainfall, new planting of tree fruit and small fruit are being reported. Some sweet corn growers planted last week during a small window of warm and dry. Hopefully the seed will survive and payoff in early yields.

Elizabeth Wahle (618-344-4230; wahle@illinois.edu)

From southern Illinois... We have slowly been feeling more spring like overall, but still have had some cold days and mornings over the past few weeks. Over the weekend of April 7th & 8th, temperatures dropped down into the upper 20s as predicted. The coldest temperature I had in Murphysboro was 27° one morning, but there were 3 consecutive mornings of lows between 27-30°. This did have some impact on some of the early peach varieties in bloom (when the flower/fruit is most vulnerable), but from grower reports, a "heavy thinning", has been observed. Given these temperatures, there actually was more injury than was expected, especially compared with the upper teens we saw during bloom last year. Sometimes there are some things in Mother Nature we just can't explain, but we are grateful when they work in our favor. Otherwise, last week things did actually dry out enough that we could get some field work done, but we did have wind and rain come through last Friday (4/13). We got about 1.7" of rain in total from this system which slowed field work again. It has been cool since then with lows down to 30-32° over the weekend and the first part of the week. Today (4/18) we are warmer but windy with highs up in the 70s and sun. We are supposed to cool off a little for late this week, still having some lows in the mid to upper 30s, but from there we are supposed to be warmer and the extended forecast does not show low temperatures below the 40s so maybe, just maybe, we are getting closer to being out of the frost/freeze events for the spring.

I did get potatoes planted at home last week while the soils were still dry. Both there (hilled) and at our office (plasticulture) we planted a potato variety trial looking at 10 different specialty colored potatoes. Be looking for results and information from this trial later this year. Peaches, pears and sweet cherries are blooming and apples are at tight cluster. Tart cherries are not blooming yet but with decent weather will probably be blooming in another week or so. The cold did hinder some early low tunnel tomatoes, but grower reports of using heavy row cover over slitted plastic row cover did help minimize any injury to the point that most plants should recover from our 20s about a week and a half ago.

Did I mention it was windy last Friday (4/13...yes Friday the 13th ☺) before that cold front? Just how windy? Well windy enough to blow the cover right off of our small high tunnel at the Jackson County office. I checked the data from the Carbondale weather station and max wind gust recorded was 47.4 mph so I wasn't crazy it really was windy. This was a 6-year rate poly that was put on November of 2013 and having been 4.5 years old and through 5 winters I would say it had a good useful life. It did have some holes and was showing some wear so this was not completely unexpected but never the less, not really planned either. The wind got inside and the plastic actually ripped right down a crease where it had been folded from the manufacturer. About ¾ of the cover came off. I promptly cut off the loose plastic and then used a heavy ratchet strap to hold down the remaining part of the plastic to prevent any further damage. Fortunately, the plastic ripped and did not cause any damage to the structure itself and we still just had cool season

crops in the tunnel so the temperatures were not a problem. We got new plastic ordered that morning and it showed up yesterday (4/17) morning. It was a calm day and we put the new plastic on yesterday afternoon. It was sunny and in the 60s so the plastic stretched well and I think we got it fairly tight. Just a friendly reminder, if you have older plastic on a tunnel it never hurts to have a spare roll of plastic on hand. For us it wasn't a big deal given the crops and weather, but if either of those factors were changed it could have been more problematic. Nothing could have been done on Friday regardless of the wind, but there were a few calm mornings that, if truly needed, we could have gotten the plastic on sooner if we had had it on hand.



Plastic torn off by the wind on the research high tunnel at the Jackson Co. office. (top left). 4 and a half year old plastic failed right along a crease from the manufacturer. (top right). Using a ratchet strap to stabilize remaining plastic until the weather allowed to make further repairs (bottom left). New plastic on, trimmed and we are back in business! Photos: N. Johanning.

Nathan Johanning (618-687-1727; njohann@illinois.edu)

Fruit & Vegetable Production & Pest Management

Omega Fungicide / Miticide

Omega 500F (fluazinam) is a Group 29 fungicide labeled for use on apples and certain vegetables for control of several fungal diseases. It's label also includes a recommended use rate (13.8 fluid ounces per acre) for control of European red mite and twospotted spider mite on apples. None of the Midwest region's apple production guides lists Omega as a miticide (though yes, there are data from as far back as the early 1990s that show some miticidal activity). I'll leave the disease control recommendations regarding Omega's value against scab, bitter rot, and other diseases to Dr. Babadoost

and other plant pathologists, but it seems to me that the mite control provided by Omega should be viewed as a possible side benefit of its use as a fungicide and not the primary reason to use it as a miticide where mite infestations are above threshold levels. The label states, “Omega 500F applied as cover sprays on a 7- to 10-day schedule will provide control/suppression of mites, however if applications of Omega 500F are discontinued then the application of a specific miticide may be required.” Repeated applications are recommended on the label. Bottom line: Use Omega as a fungicide IF it fills that need in your disease management plans, but do not use it as a one-time application for mite control.

Stink Bugs in Apples and Peaches

Stink bugs, including native species and brown marmorated stink bug (BMSB), feed on apples and peaches and many other fruit crops as well as vegetables. When they insert their stylets (“beaks”) into developing fruits, pods, etc., the cells around the feeding site are killed, and the growth of fruits and seeds is distorted – resulting in “catfacing” and similar maladies. Most of the petal fall sprays and cover sprays applied to fruit crops are not particularly effective against stink bugs. Pyrethroids (including permethrin, Baythroid, Mustang Maxx, and Warrior, as well as generic products with the same active ingredients) and neonicotinoids such as Actara and Belay are generally most effective against stink bugs. All of these, and especially the neonicotinoids, are highly toxic to bees and should be used for stink bug control only after petal fall is complete. Traps are available for monitoring brown marmorated stink bug activity (see the Great Lakes IPM catalog at <http://www.greatlakesipm.com>, but evaluations of trap design and attractants are still ongoing. Testing (trying out) traps for BMSB may be something growers may want to experiment with in 2018. For orchards that I monitor this season, I’ll still use a limb-tap method to scout for stink bugs. This is done by tapping limbs with a mallet of some type while holding a tray underneath the limb so that bugs fall onto the tray before crawling or flying away. The mallet can be a wooden handle or dowel (wrapped with foam to reduce limb damage) or a short section of heavy garden hose; the tray can be any flat, light colored surface – beating trays can purchased Great Lakes IPM or you can use the lid from a large styrofoam cooler. Do limb taps early in the morning when it’s still relatively cool and winds are light so that stink bugs and other insects don’t fly away before landing on the tray.

Lorsban Use in Apples and Peaches

Lorsban’s use in many crops was under review for cancellation by the US EPA in 2016 over food safety and consumer health concerns. The change in administrations in 2017 resulted in the EPA dropping that cancellation plan. There are relatively few labeled uses for Lorsban on fruit and vegetable crops, but early season sprays on apples and peaches remain legal and if applied as recommended should result in no residues on or in fruit. For apples, application of Lorsban just before the pink stage of blossom development is effective for rosy apple aphid and woolly apple aphid control and also supplements San Jose scale control provided by delayed dormant application of a superior oil. Lorsban also may be used in apples as a directed spray to the lower portion of the trunk for dogwood borer control, generally in mid-June. Sprays should not contact fruit or foliage. In peaches, Lorsban can be used a trunk spray for lesser peachtree borer in early May or for both lesser peachtree borer and (greater) peachtree borer postharvest. As with apples, sprays should not contact fruit. The worker re-entry interval for orchards treated with Lorsban is 4 days.

Seed and Root Maggots in Vegetables

Seed and Root Maggots

A repeat version of the reminder I used to always include in this newsletter ...

Early plantings of several vegetable crops are especially susceptible to damage by seedcorn maggot, cabbage maggot, or onion maggot. All these species overwinter in the pupal stage, and adults of the first generation emerge in the spring. Flies prefer to lay eggs in fields where organic matter is high (recently incorporated manure or cover crops), and damage is greatest in cold, wet soils where plant growth is slowed.

Seedcorn maggots most commonly feed on the seeds and seedlings of corn, beans, peas, and cucurbits; they also may be found along with onion maggot or cabbage maggot infesting onions and plants in the cabbage family. Flies typically emerge in April and May, and females prefer to lay eggs in fields with abundant decaying organic matter. Peek emergence of flies occurs at 200 degree-days above a base of 39F (with accumulations beginning when ground has thawed); damage to seeds or seedlings is greatest over the 10 days after this peak. Larvae feed on decaying plant material in soils but also tunnel into seeds (and sometimes transplants) and reduce successful germination and stand

establishment. Losses to seedcorn maggot can be reduced by incorporating manure or cover crops at least 3 weeks before planting or transplanting, preparing a well-tilled seedbed, and waiting until soil temperatures have warmed so that germination and early plant growth are rapid. Seeds or seed furrows can be treated to kill seedcorn maggot, and effective insecticides include diazinon, Lorsban, Capture LFR, and other products. Registrations differ by crop ... see the [2018 Midwest Vegetable Production Guide for Commercial Growers](#) and product labels for specific products and rates. Neonicotinoids used in seed treatments on cucurbits (Farmore DI-400) or in-furrow applications to soil (Admire Pro or Platinum) when cucurbits are planted or transplanted are not completely effective for seedcorn maggot control. Where damage results in reduced stands, replanting or resetting transplants can be done 4-5 days later without likelihood of damage to the new seeds or transplants.

First generation cabbage maggot flies also emerge in April or May, and they too prefer to lay eggs in soils with high amounts of organic matter. Peak flight of first generation flies occurs at 300 degree-days (base 43F) after March 1. Larvae tunnel into the roots and stems of cabbage, broccoli, Brussels sprouts, cauliflower, radishes, turnips, and rutabagas. Early cabbage and turnips are especially susceptible to injury. Damage is reduced by delaying planting and by avoiding fields with high amounts of fresh organic matter. Soil application of Capture LFR, Lorsban, or Diazinon provides effective control of first generation maggots for cabbage, broccoli, Brussels sprouts, and cauliflower, but these insecticides are not labeled for short-season crops such as radishes and turnips. Again, see the [2018 Midwest Vegetable Production Guide for Commercial Growers](#) and product labels for specifics.

The first generation of onion maggot flies emerges in May and lays eggs at the base of plants, where larvae tunnel into underground portions of plants. Subsequent generations in July and August-September also damage onions. Cultural control of onion maggot centers on removing and destroying cull onions and rotating this year's plantings as far as possible from last year's. As onions mature, they are less susceptible to onion maggot infestation unless they are damaged by cultivation equipment. Soil applications of Lorsban can be used to control onion maggot in dry bulb onions, and soil applications of Diazinon may be used to protect green onions or dry bulb onions.

Contributions from Weinzierl Fruit and Consulting, LLC are provided through support by the Illinois Specialty Growers Association. Visit www.specialtygrowers.org for more information or to join the association.

Rick Weinzierl (Weinzierl Fruit and Consulting, LLC, raweinzierl@gmail.com)

Less seriously...

One of our newsletter subscribers forwarded these to share. I learned a new word and got a chuckle, thanks!!!

Paraprosdokians

For those who are wondering, “paraprosdokians” are figures of speech in which the latter part of a sentence or phrase is surprising or unexpected and are frequently humorous. (Winston Churchill loved them).

1. Where there's a will, I want to be in it.
2. The last thing I want to do is hurt you...but it's still on my list.
3. Since light travels faster than sound, some people appear bright until you hear them speak.
4. If I agreed with you, we'd both be wrong.
5. We never really grow up—we only learn how to act in public.
6. War does not determine who is right, only who is left.
7. Knowledge is knowing a tomato is a fruit. Wisdom is not putting in a fruit salad.
8. To steal ideas from one person is plagiarism. To steal from many is research.
9. I didn't say it was your fault, I said I was blaming you.
10. In filling out an application, where it says, “In case of emergency, notify...” I answered "a doctor".
11. You do not need a parachute to skydive. You only need parachute to skydive twice.

12. I used to be indecisive, but now I'm not so sure.
13. To be sure of hitting the target, shoot first and call whatever you hit the target.
14. Going to church doesn't make you a Christian, any more than standing in a garage makes you a car.
15. You're never too old to learn something stupid.
16. I was always taught to respect my elders, but with the passing of years, it's getting harder and harder for me to find those folks.

Spread the Laughter
Share the Cheer
Happy while we're here!

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