# **I**ILLINOIS

## Extension college of agricultural, consumer & environmental sciences

## Illinois Fruit and Vegetable News

Vol. 26, No. 7, July 16, 2020 Editors: Nathan Johanning & 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 Johanning, 618-939-3434, <u>njohann@illinois.edu</u> or Bronwyn Aly 618-695-6060, <u>baly@illinois.edu</u>. The *Illinois Fruit and Vegetable News* is available on the web at: <u>http://ipm.illinois.edu/ifvn/</u>. To receive email notification of new postings of this newsletter, contact Nathan Johanning at the phone number or email address above.

### In this issue...

- Upcoming programs (listings for beginning and established growers)
- News & Announcements (FSMA Grower Training Information, Apply Today to the Illinois Farmer Resilience Fund, Coronavirus Food Assistance Program, Recycling Program for Agrochemical Containers)
- **Regional Reports** (east central Illinois, central Illinois (Decatur), St. Louis metro east, southwestern Illinois (Waterloo), southern Illinois (Murphysboro), Dixon Springs)
- Fruit & Vegetable Production & Pest Management (Pumpkin Disease & Insect Management, Successful Design and Components of a No-till Transplanter: Tips & Video, Harvest Ripe Blueberries Before Insect Pests Get to Them)
- Less Seriously
- University of Illinois Extension Educators and Specialists in Fruit and Vegetable Production and Pest Management

## **Upcoming Programs**

See the University of Illinois Extension Local Food Systems and Small Farms Team's website at: <u>http://web.extension.illinois.edu/smallfarm/</u> and the calendar of events at <u>http://web.extension.illinois.edu/units/calendar.cfm?UnitID=629</u>.

- Great Lakes Vegetable Producers Network Roundtable Discussions. Every Wednesday 12:30 ET/11:30 CT from the first week of May through the first week of September. <u>Great Lakes Vegetable</u> <u>Producer's Network</u>, a live weekly roundtable discussion during the growing-season for commercial vegetable producers in the Great Lakes and Midwest region. Join us! We broadcast live via Zoom at every Wednesday. Check out the website for the next upcoming topics. If you have a pressing vegetable production issue that you would like discussed, simply email it, along with your phone number, to greatlakesvegwg@gmail.com.
- Pumpkin Field Day. Thursday September 3, 2020 10:00 a.m. SIU Belleville Research Center, 2036 Charles Ln. Belleville, IL 62221. Variety and Pest Management trials and much more! Save the Date! More information to come. Contact Nathan Johanning at <u>njohann@illinois.edu</u> or 618-939-3434.

### News & Announcements

#### **FSMA** Grower Training Information

Food Safety Modernization Act (FSMA)Produce Rule Grower Trainings are being offered through the Produce Safety Alliance website. Growers needing/wanting to complete the 8-hour FSMA training course have two options at this time:

• <u>Online delivery course</u> is a three-week course that can be completed at your own pace. The online course is expected to take 15-30 hours for successful completion.

• <u>Remote delivery course</u> is a course led in real time by instructors delivered with video conferencing software, such as Zoom or Webex. This is a temporary option that is being supported during the COVID-19 outbreak.

Face-to-face trainings in Illinois are not an option due to COVID-19 restrictions.

Laurie George (618-548-1446; ljgeorge@illinois.edu)

#### Apply Today to the Illinois Farmer Resilience Fund!

The COVID-19 pandemic dramatically increased demand for locally-produced food. Thanks to support from the Chicago Region Food System Fund, the Illinois Stewardship Alliance is announcing a new Resilience Fund that will provide 25 local food producers throughout Illinois with \$5,000 to \$20,000 grants to scale up and adapt their business to meet skyrocketing demand for local food. With the right investments, farmers can leverage this moment to expand the supply and diversity of local food - and make our communities more resilient! Farmers can apply individually or in collaboration with other farmers and organizations. Applicants must integrate goals of environmental stewardship, economic profitability, and social and economic equity into your farming operation. The fund has \$195,000 to distribute to grantees selected by a Review Committee composed of agriculture and food specialists. The deadline to apply is July 28, 2020, at 5 PM CST Applications can be submitted online at http://www.ilstewards.org/resilience.

Have questions about the fund?

Contact Ana Fochesatto at ana@ilstewards.org or 847-920-6062.

#### **Coronavirus Food Assistance Program**

Are you a farmer or rancher whose operation has been directly impacted by the coronavirus pandemic? The Coronavirus Food Assistance Program provides direct relief to producers who faced price declines and additional marketing costs due to COVID-19. Applications are being taken through August 28, 2020. Additional information can be found at <a href="https://www.farmers.gov/cfap">https://www.farmers.gov/cfap</a>.

#### **Recycling Program for Agrochemical Containers**

SPRINGFIELD, Ill. — The Illinois Department of Agriculture (IDOA) is encouraging farmers and agrichemical facilities to save their empty agrichemical containers as they will once again be hosting free container recycling days throughout the State.

Beginning the middle of July and continuing into August, sites throughout the State will collect the empty containers which will be recycled and made into shipping pallets, plastic lumber, and other useful products. In 2019, 30 single-

day collection events were held throughout the state. IDOA personnel inspected and collected approximately 95,000 pounds of #2 HDPE plastic pesticide containers from pesticide users.

"This program offers farmers and agrichemical facilities a convenient opportunity to dispose of empty pesticide containers while also helping to protect the environment," said Jerry Costello II, Director, IDOA. "I encourage farmers to gather any containers they may have been planning to throw out and take them to the nearest collection site to be repurposed."

Metal and household pesticide containers are not eligible for the recycling program. Collection sites will accept only high-density polyethylene, #2 plastic agrichemical containers that are clean and dry. Participants are responsible for rinsing them and removing all caps, labels, booklets, and foil seals.

The program is a cooperative venture between the Illinois Department of Agriculture, Agriculture Container Recycling Council, GROWMARK, Inc., Illinois Fertilizer and Chemical Association, G. Phillips and Sons, L.L.C., Illinois Farm Bureau, and the University of Illinois Extension.

Additional information can be found on the IDOA website at <u>agriculture.illinois.gov</u>, click on the "Environment" tab and then "Agrichemicals".

- Illinois Department of Agriculture

## **Regional Reports**

<u>From east central Illinois (Champaign)</u>... Here in east central IL, like many places around the state, it has been a hot few weeks. We have had very sporadic thunderstorms, so some areas have had too much rain and some not enough. In Urbana, and some other spots to the west and south, this past weekend (7/11) we had a hail storm. Hail ranged in size from marble to golf ball and the hail causing the most damage in town was not smooth, as hail usually is, but very spiky.

The Sustainable Student Farm (SSF) had very little damage. Sola Gratia, 2 miles to the east, lost produce but did not fully lose many plants. Lierman Community Garden, 2 miles to the north, had about 85% loss of plants. The farming and gardening community came together and helped Sola harvest the damaged produce on Sunday. A farm which also has a catering/food truck side to the business took the produce which was too damaged to go to the food bank and processed it. Many farms and gardens offered plant starts and seeds to Lierman Garden. The garden managers there cleaned everything up and students from the SSF helped replant everything. Local farms have also offered to donate produce for the free food distribution which happens weekly at the garden. The hail was just another hurdle to this crazy year but the community coming together so quickly and without question was beautiful.



Spiky, not the traditional smooth shape, hail (left) that fell in the Urbana area during a thunderstorm on 7/11/2020 that caused plant and crop damage at multiple locations within the area. Tomato plant with top broken out due to hail damage (right). Photos by E. Harper.



Hail damage on pepper fruit (left) and sweet corn plants (right) near the Urbana area in central Illinois. Photos by *E. Harper.* 

#### Erin Harper (217-300-2876; harper7@illinois.edu)

<u>From central Illinois (Decatur)</u>...Vegetable crops are progressing well after a slow start. Harvest of tomatoes has been delayed about two weeks on crops in the field. Large sweet corn grower that typically has corn available for July 4 holiday is expecting first harvest to be July 18. Some dicamba injury was evident in grower fields, but the level is lower than last year. Recent rainfall over the past 2 weeks has reduced the need for irrigation as compared to the dryness of mid to late June. CSA sales were off the chart for my farmers that still have them and on-line sales have been doing quite well.

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

<u>From the St. Louis Metro east</u>... Definitely a time of the "haves' and 'have nots' in terms of rain accumulation the past few weeks, but by now just about everyone is looking for some rain relief from ongoing hot temperatures. Growers are noticing a slowdown in the ripening of tomatoes due to high temperatures. Mature green tomatoes ripen most rapidly with an optimal temperature range of 68-77°F, but noticeably slow down as temperature climb into 80-90+° F temperatures. The area has definitely been running well above the optimum. In general, temperatures above 90° F during the day and above 70°F at night also result in poor flower development and a reduced fruit set. When temperatures come down, normal flowering and fruiting resumes, resulting in gaps in indeterminate tomato harvest. Heat also affects color development. Pigments like lycopene (bright red) and carotene (yellow-orange) tend not to be produced in tomatoes when temperatures are above 85°F, resulting in fruit not achieving their full color potential when ripened in the field. Red apples, like tomatoes, fail to fully develop their color potential under hot temperatures. Other crops, like sweet corn, thrive in our Illinois summers and are able to put on rapid growth. So much so that some growers are reporting later succession plantings catching up with earlier plantings, in effect bunching up some of the harvest dates.

Blueberries are in their final week of harvest, except for those growing very late cultivars. Overall the crop is being reported as above average. 'Lodi' apple has been harvested, but for most, the first apple of the season will be 'Gala' later in August, so we are still a few weeks out from the start of apple season. For now, it is peach and blackberry season. Peaches are in the 'Redhaven' and 'Flamin'Fury'® (PF 15) harvest window and blackberries include cultivars like 'Quachita,' 'Chester,' and 'Natchez.' 'Triple Crown' is just coming on.

Sweet corn quality is excellent, and harvest of local fields began in time for the targeted July 4th holiday. Garlic has been harvested and is available on local markets. Green bean harvest has started as well.

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

<u>From southwestern Illinois (Waterloo)</u>... Locally things have been dry. In the last few weeks most of the Monroe County area had gotten an inch or less of rain. Areas to the north and south have gotten more with reports from Belleville of 5" of rain the end of June/July 1. Soil moisture has been decent, however the heat we have had lately

with most days in the 90s and full sun has really put a heavy demand on our crops especially young plantings. We just got some relief late Wednesday (7/15) with 1.31" of rain here at Waterloo with a storm system that passed across the state.

Out in the field most summer vegetables are in harvest with most early plantings of crops like sweet corn and tomatoes in the field well underway. Potatoes are starting to mature for harvest. Most pumpkins are in the ground now and hopefully with this last rain that should get them off and growing. See my notes later in this issue about pumpkin crop management.

Our trials are doing well. We have pumpkin variety trials, and a nitrogen trial planted out at the Belleville Research Center. The variety trial as 82 varieties of "pumpkins" from gourds & piesize up to large Jack O'Lanterns and specialty pumpkins along with a smaller trial with 4 naked seed coat "hulless" varieties. These are for our Pumpkin Field Day, however, due to the restrictions due to the coronavirus the "field day" will be organized a little different from in the past. Watch the August newsletter for more details!

The cover crop and no-till systems trials on peppers and tomatoes are doing well at both Urbana and Waterloo. The Urbana site was hit with some hail last weekend, however, the trial is still usable and plants should recover. The Waterloo site



Pumpkin transplants at the Belleville Research Center about 2 weeks after transplant. Photo: N. Johanning

## is looking good. For a current tour take a look at this video walk through we did last week.

https://www.youtube.com/watch?v=lteOazckZow&t=68s Just as a comparison of treatments we had not done anything to remove weeds at the time of the pictures or video. Since we have sprayed a grass herbicide (all but the "organic" weed management treatment) and hand weeded to clean up stray weeds. Plasticulture is one of the treatments so since irrigation is needed there, all treatments have drip irrigation. We have fertigated as well. This has really boosted growth in the heat of the last few weeks. Hopefully first harvest will be by late July/early August. The no-till treatments are holding their own compared with the tillage and plasticulture treatments. Plasticulture have more foliage growth, however, I don't know that there is much difference is



fruit development. This trial was a mid to late season planting where there was plenty of heat for growth. This might be different in an early season planting. We have seen some hornworm and armyworm activity on the tomato and peppers so make sure to scout and spray accordingly for those pests.

We are in the late blueberries and now on to blackberries and peaches. I had some 'Flamin' Fury' peaches from an orchard last week. Overall, I have heard good reports about the peach crop as a whole. Hopefully freestone peaches will be coming in here in the next few weeks.

While it feels like summer just is getting underway, now is the time to get fall transplants started for cole crops. Although caterpillars are always a challenge fall is still my favorite time to grow these crops. I seeded two plantings of broccoli transplants, July 1 and July 12. I have had challenges getting good summer germination in the past. Broccoli does not germinate well if soil temperatures get too high. This year I seeded plug trays and put them on a covered patio on the north side of the house (complete shade) just for 2-3 days until they emerge and then bringing them out to partial sun throughout the day after that. So far, they are all looking good. Now I just have to keep the caterpillars off of them.

#### Nathan Johanning (618-939-3434; njohann@illinois.edu)

<u>From southern Illinois (Murphysboro)</u>... The beginning of July brought us some much-needed rain here in southern Illinois. Now however, temperatures are regularly in the 90's. July 6 was the first day that the heirloom tomato showcase was harvested. Many of the fruit were well over half a pound, however cracking is always an issue. To limit cracking due to water fluctuation, the trial is regularly watered, and fruit is harvested anytime after breaker stage.

July 13 was the first time the tomato fertigation trial was harvested. This first harvest's fruit did not show any physical differences from the feedings yet, but differences are expected as the season goes on. Some foliage differences are seen in the plots that are receiving a higher nitrogen rate. All the tomatoes were sprayed for tomato

fruit worms, and also sprayed with Quintec and copper for disease management. Peppers and cucumbers are really starting to grow in the high tunnel, and we have had several harvests.





Fruit harvested from the heirloom tomato showcase (left) planted on site at the Jackson County Extension office. Photo on right shows some of the different plots included in the tomato fertigation trial being conducted at the Jackson County Extension office.

Photos by K. Bell. Katie Bell (618-687-1727; <u>klbell@illinois.edu</u>)

<u>From Dixon Springs Ag Center</u>...As I am writing this update and listening to the rain and thunder, I have already started to forget about how uncomfortably hot and humid the past several days have been and how our fields really needed this July drink.

Harvest continues on tomatoes, cucumbers, peppers and strawberries in the hydroponic tunnel. The rapid growth of the cucumber vines creates an almost constant process of pruning and lowering the vines to maintain an optimal production and harvest area. Fruit production on the strawberry plants has slowed down, which is to be expected with daily temps hitting 90+ degrees. The mixture of heirloom and greenhouse type tomatoes in the hydroponic tunnel makes water management challenging. The heirlooms don't seem to require as much water as the greenhouse type and are suffering from cracking and blossom end rot issues, whereas the greenhouse type tomatoes show little to no signs of cracking or blossom end rot. As both types are in the same row, being fed from the same irrigation line, adjustments made to rectify a problem for one causes problems for the other. The take away lesson from this experience would be to keep like feeders and drinkers together in the same irrigation zone. While we have seen aphids and spider mites in the hydroponic tunnel, we have managed to keep their populations pretty low. Thrips are a much different story. The thrips pressure is through the roof on all of the crops within the tunnel, and we have just about exhausted all of the possible chemical control products available and effective in a high tunnel production system. This is a good point in my update to remind growers of the importance of scouting in your IPM program. Scouting should begin at seedling emergence and be diligently continued through the harvest season, and beyond, depending on your crop. Insects can be present on transplants, and if left unnoticed and not controlled, can build in numbers and become a major pest quickly.

A new crop that we have added in the hydroponic tunnel is raspberries, more specifically, two black raspberry varieties ('Bristol' and 'Niwot'), a red raspberry ('Joan J'), and a golden blush raspberry ('Double Gold'). Black raspberries are my favorite small fruit and I was curious about trying some different training systems within a high

tunnel system. I was also curious how black raspberries would perform in southern Illinois within a high tunnel, knowing how easy they tend to crumble.



Left: Thrips damage on cucumber, pepper, and tomato fruit from hydroponic tunnel at DSAC. While the feeding damage is basically cosmetic, the appearance of the fruit is definitely unappealing and potentially not marketable (especially the cucumber). Right: Raspberry plants in the hydroponic tunnel prior to set up of trellising/training systems. Photos by B. Aly.

Harvest of determinate tomatoes and peppers being grown in the in ground, raised bed high tunnel at DSAC began about two weeks ago. The first cluster on many of the tomatoes did not set well but the second and third clusters are full and fruit size is exceptional. Of the 12-14 plants left in the tunnel that were suffering from Tomato Pith Necrosis symptoms, 8-9 have continued to grow and set a decent amount of fruit. While these plants don't appear to have the ability to set the same fruit load as healthy plants, they are able to produce some quality fruit, which is better than empty space. As expected with the bell pepper spacing study, plants spaced at 24" are too far apart from each other and tend to want to fall over, even with 2 rows of string around them for support. Yield data from the growing season will give a good comparison of production between the 12", 18", or 24" spacings.

One other quick reminder, if you are planning on growing plasticulture strawberries this year, your plug or tip order is past due. Generally, those plant orders need to be in by mid to late June. As soon as you get done reading this issue of the newsletter, look up the number, pick up the phone, and place your order.



determinate tomato varieties being grown in the high tunnel at DSAC. Photos by B. Aly.

Two of



Left: Determinate tomato plots in high tunnel at DSAC. Plants are growing above the stakes and in need of a sixth string. Right: Bell pepper spacing plots and demonstration plots of a few different types of peppers, including snacking pepper, banana, poblano, and jalapeno. Photos by B. Aly.

I will continue to put in a plug for our Illinois Extension Local Foods & Small Farms YouTube channel, <u>Illinois</u> <u>LocalFoods</u> Video content is continuing to be added to the channel weekly, with content being organized into playlists based on subject matter or specific vlog locations, including <u>Local Food Happenings at DSAC</u>, <u>The Urban</u> <u>Ag Connect Vlog Series</u> and the <u>Beginning Food Production Resources</u>. The most recent additions include videos updating the progress on an Illinois Specialty Crop Block Grant that is comparing different cropping systems for tomato and bell pepper production, including no-till, bare ground, and plasticulture all with and without cover crops. Check it out and subscribe today!

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

## Fruit & Vegetable Production & Pest Management

#### **Pumpkin Disease & Insect Management**

As we get into the later part of July, now is the time to start scouting more closely for diseases and insects in pumpkins. Powdery mildew is by far the most prevalent and common pumpkin disease, but also bacterial spot and also in some years downy mildew can also blow into the area. However, I have not heard of any reports yet of downy mildew in any cucurbits in the region as of now. Cucumber beetles and squash bugs are the most prevalent insect issues, along with aphids occasionally.

For insects I would refer to the <u>Midwest Vegetable Production Guide</u> for products and thresholds. We can tolerate some insect presence and still no have enough damage to warrant spraying an insecticide. ALWAYS scouts for insects versus just throwing in the insecticide with every fungicide spray. Often you do not need an insecticide that frequently, so you are wasting money on the product. Additionally, if you over spray you can often eliminate natural predators of aphids and then end up with aphid issues. This then means you must add yet another product (\$\$) to manage them in addition to the extra insecticide you applied which got you to this point in the first place. On my own farm usually, I can get away easily with using an insecticide every other fungicide spray and sometimes less than that.

When applying insecticides in pumpkins always spray them in the late afternoon, evening, or after dark to help preserve our pollinators. Most pumpkins flowers are closed by this time and also bee activity decreases. Early in the morning is probably the worst time. That day's flowers are opened and bees are very active with the first light of the day, even before sunrise.

To catch powdery mildew early, we want to be scouting the vines and also undersides of leaves which is where it often shows up first. For best control, start a preventative fungicide program, before or as soon as any infection is noted in the field. Often late July or early August is when we would expect to see infections start.

Please see the link below for the current, 2020 pumpkin fungicide recommendations from the research our plant pathologist Dr. Mohammad Babadoost for all of these common pumpkin diseases

https://extension.illinois.edu/sites/default/files/pumpkin\_spray\_2020.pdf

For more information or questions about pumpkin disease management contact Dr. Babadoost at 217-333-1523 or babadoos@illinois.edu

Nathan Johanning (618-939-3434; njohann@illinois.edu)

#### Successful Design and Components of a No-till Transplanter: Tips & Video

I have worked with no-till transplanting for many years (...over 15) and want to share a few highlights of the components I use to make a no-till ready transplanter. I have a short video that discusses and shows these features: <u>https://www.youtube.com/watch?v=3T2COr33xdE&t=181s</u>



Here would be a summary of the components I would include:

- **No-till coulter.** Wavy coulter (8 wave) has been the best. A 12-13 wave would work or a bubble style, however, I think the wavy coulters loosen the soil more than the bubble coulter. Note: in high residue conditions you need to have space between the coulter and the next component (ex. subsoiler tooth) if they are only an inch or so apart, you will tend to pack residue between them and cause frustration. Leave at **minimum** 3-4" between.
- **Subsoiler tooth.** Depending on your soil this can be optional especially with good soil moisture, however if the soil is dry this can improve the consistency of planting.
- **Double Disk Openers on Transplanter Shoe.** This is one of the most important features. It prevents any residue from dragging and catching on the shoe of the transplanter.
- **Flat Closing Wheels.** Compared with the traditional closing wheels that are curved on the outside to help pull together soil in tilled conditions, the flat closing wheels better apply down pressure to close the transplanter slot in no-till soils. Note: the closing wheels still run at an angle as usual, just do not have the curved edge.
- Weight to support even and consistent pressure on closing wheels. Weight is important in any no-till planter/tranplanter. A no-till soil has more natural structure so it takes more weight to have even consistent performance. In this case the weight, helps crumble and press the soil evenly around the transplants.



No-till equipped transplanter. Photo: N. Johanning

In the end, when you start off with a new or newly modified machine, allow extra time to make adjustments. For 3 pt hitch models also note that the leveling of your top link is very important to the depth of the no-till coulter and tooth, drive wheel traction, and planting performance. I have tinkered with my transplanter a little every year it seems, but hopefully some of this information can help you get off to a successful start.

Nathan Johanning (618-939-3434; njohann@illinois.edu)

#### Harvest Ripe Blueberries Before Insect Pests Get To Them

In northern Illinois, blueberries are ripening, and this is a critical time for harvest. Be on the lookout for insect pests that want to lay eggs in ripe fruits of any berries. This causes berries to be unmarketable and unacceptable, and to collapse. Two major blueberry fruit pests are *Drosophila suzukii* (Spotted Wing Drosophila, SWD or fruit fly) and *Rhagoletis mendax* (Blueberry Fruit Fly - BFF). Japanese beetles also infest blueberries, but their population and damage is usually much less than of the other two, and only few have been observed this year. **Spotted Wing Drosophila (SWD)** 

When female SWD flies find ripe fruit, they make slits in them with the saw-like structure in their abdomen and proceed to lay eggs inside the fruit. Hatched larvae feed on healthy, intact, ripening fruits, resulting in fruit with brown sunken areas, or collapsing and/or becoming mushy.

SWD is thought to primarily overwinter as an adult with its activity beginning in May through June & July.





SWD larvae on fruit. Image: McEvey

SWD - image: Jerry Payne

#### **Blueberry fruit fly (BFF)**

Blueberry maggots overwinter as pupae in the soil. Adult flies emerge June/July and into early August. In general, emergence tends to coincide with berry color change. Females require approximately 7 to 10 days to become sexually mature and begin to lay eggs. Eggs are inserted under the skin of ripening blueberries. About 5-day-old eggs and the maggots (larvae) begin feeding. Mature maggots drop to the ground and burrow into the soil to pupate and remain there until the following spring.

#### Management

Monitoring both insect pests using sticky traps is recommended, and upon observation of the first one, management strategies should be implemented. For SWD, vinegar trap in a small container can be used. For both pests, the following management strategies will reduce pest numbers.

#### Cultural Control

Practices include scheduling timely harvests and removing over-ripe fruit from fields as soon as possible to minimize blueberry maggot egg lay and larval development. SWD prefers dense shade and cooler areas in the canopy. Pruning crops in ways that open up the crop canopy can deter insects from colonizing the crop. *Organic pesticide* 

Brand names like Delegate, Entrust and SpinTor should be applied immediately after the first fly has been observed, and thereafter at 7 to 10-day intervals.

#### **Chemical** control

Acetamiprid (Ortho Flower, Fruit & Vegetable Insect Killer, and others) have proven to be effective, but need to protect beneficial insects.



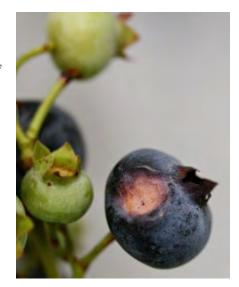


BFF larvae. MSU image



Left: Blueberry maggot worm exiting a berry fruit. Photo by J. Theuri.

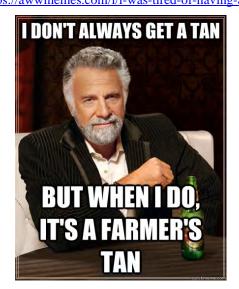
Right: Sunken fruit damage. Photo by J. Theuri.



Left: Japanese beetle feeding damage. Photo by J. Theuri.



*Less Seriously...* Remember your sunscreen! Left: <u>http://www.quickmeme.com/meme/3pxjh2</u> Right: <u>https://awwmemes.com/i/i-was-tired-of-having-a-farmers-tan-1-1 f8c38cfd597e4da188953eddb24e53fe</u>





Funny farmers Jokes

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

Extension Educators – Local Food Systems and Small Farms		
BRONWYN ALY, Gallatin, Hamilton, Hardin, Pope, Saline, & White counties	618-382-2662	baly@illinois.edu
KATIE BELL, Franklin, Jackson, Perry, Randolph, & Williamson counties	618-687-1727	klbell@illinois.edu
LAURIE GEORGE, Bond, Clinton, Jefferson, Marion, & Washington counties	618-548-1446	ljgeorge@illinois.edu
ZACHARY GRANT, Cook County	708-679-6889	zgrant2@illinois.edu
DOUG GUCKER, DeWitt, Macon, and Piatt counties	217-877-6042	dgucker@illinois.edu
ERIN HARPER, Champaign, Ford, Iroquois, and Vermillion counties	217-333-7672	harper7@illinois.edu
GRACE MARGHERIO, Jackie Joyner-Kersee Center, St. Clair County	217-244-3547	gracem@illinois.edu
GRANT MCCARTY, Jo Daviess, Stephenson, and Winnebago counties	815-235-4125	gmccarty@illinois.edu
KATIE PARKER, Adams, Brown, Hancock, Pike and Schuyler counties	217-223-8380	keparkr2@illinois.edu
KATHRYN PEREIRA, Cook County	773-233-2900	kpereira@illinois.edu
JAMES THEURI, Grundy, Kankakee & Will counties	815-933-8337	jtheu50@illinois.edu
Extension Educators – Horticulture		
CHRIS ENROTH, Henderson, Knox, McDonough, & Warren counties	309-837-3939	cenroth@illinois.edu
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
Extension Educators – Commercial Agriculture		
ELIZABETH WAHLE, Fruit & Vegetable Production	618-344-4230	wahle@illinois.edu
NATHAN JOHANNING, Madison, Monroe, St. Clair counties	618-939-3434	njohann@illinois.edu
Campus-based Extension Specialists		
MOHAMMAD BABADOOST, Plant Pathology	217-333-1523	babadoos@illinois.edu

Return Address:

Nathan Johanning University of Illinois Extension 901 Illinois Avenue; PO Box 117 Waterloo, IL 62298



Illinois Fruit and Vegetable News