



Illinois Extension

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

Illinois Fruit and Vegetable News

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Editors: Nathan Johannig & 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 Johannig, 618-939-3434, njohann@illinois.edu or Bronwyn Aly 618-695-2441, baly@illinois.edu. The ***Illinois Fruit and Vegetable News*** is available on the web at: <https://extension.illinois.edu/specialty-crops/ifvn>. To receive or be removed from email notification of new postings of this newsletter, contact Nathan Johannig or Bronwyn Aly at the phone numbers or email addresses above.

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Upcoming Programs

See the **University of Illinois Extension Local Food Systems and Small Farms Team's website** at: <https://extension.illinois.edu/lfssf>

- **Southern Illinois Summer Twilight Series** | 3rd Monday Evening in May-August across southern Illinois. To register for any or all of these meetings, go to go.illinois.edu/2023twilightseries or contact Bronwyn Aly baly@illinois.edu or 618-695-2441 for more information.
 - **The Patch** in August 21, Marion, IL cover cropped pumpkin patch & fall agritourism
- **Legal Training for Illinois Small Farms Webinar Series** | This is a quarterly webinar series for Illinois small farmers including new, beginning, and urban farmers brought to you by Illinois Extension's Local Food Systems and Small Farms team and presented by [Farm Commons](#).

Sessions will be held quarterly on Mondays from 7 – 8 pm CST, via Zoom. Please register at the links below for each session of the series:

- [5 Steps to Protect Your Farm](#), September 18, 2023
- [Land Leasing Basics](#) December 18, 2023
- [Forming an LLC](#), March 18, 2024
- **From Food To Flowers: Everything Local** | Save the date! January 17-19, 2024 Crowne Plaza, Springfield, IL. Look for more details in future issues.

News & Announcements

From Food To Flowers: Everything Local Call For Speakers



Help be a part of the largest food, farmers market, and specialty crop conference in Illinois. Share your knowledge, lessons learned, or research with industry leaders and growers across the state. We want you to consider being a **SPEAKER** at the From Food to Flowers: Everything Local Conference hosted by the Illinois Specialty Growers Association, Illinois Farm Bureau, and Illinois Farmers Market Association on January 17-19 at the Crowne Plaza Hotel in Springfield, Illinois.

This unique event gathers specialty crop farmers, niche and value-added producers, agritourism businesses, farmers market managers, distributors, buyers, and other members of the Illinois agribusiness sector to partner in further developing the robust Illinois local food supply chain. The conference planning committee is seeking 50-minute educational sessions, research presentations, panel discussions, grower presentations, lessons-learned and more in the following topic areas:

- Tree Fruit Production
- Vegetable Production
- Flower and Herb Production

- Pumpkin Production
- Bramble Production
- Beekeeping
- Composting
- Agritourism
- Urban Agriculture
- Farmers Market Management
- Community Food Systems
- Food & Farm Policy and Regulation
- Business Development
- Farmers Market Marketing
- Food Safety
- Liability & Risk Management
- Market Promotion & Outreach

We want to hear from all of you. If you have an idea or topic you would like to discuss at this upcoming conference, please consider completing the From Food to Flowers: Everything Local Speaker Application. We ask that you fill this application for each individual presentation topic you would like to submit. The form can be found [HERE](#).

As a speaker you will receive FREE admission to the conference and conference video library. Speakers are also eligible for travel reimbursement & one night of lodging. From multi-person speaking sessions lodging and travel reimbursement are not guaranteed. Please note an application does not guarantee the application will be accepted. You will be contacted by the conference planning committee for further review and confirmation.

Legal Training for Illinois Small Farms Webinar Series

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Date and Time: Sessions will be held quarterly on Mondays from 7 – 8 pm CST, via Zoom. Here are the links to live individual registration pages for each session of the series:

- [5 Steps to Protect Your Farm](#), September 18, 2023
- [Land Leasing Basics](#) December 18, 2023
- [Forming an LLC](#), March 18, 2024

Session Descriptions

Sept 18, 2023: 5 Steps to Protect Your Farm, Legally Speaking presented by Eva Moss Education Program Director, Farm Commons. Are there a few, key steps that provide a big impact when it comes to the farm or ranch's protection from legal risks? We're so glad you asked! Yes, there are and every

farm or ranch no matter its size, location, or longevity is in a great position to build resilience. Join Farm Commons for a webinar that will build knowledge and confidence around essential farm law issues.

Dec 18, 2023: Land Leasing Basics presented by Chloe Forkner Johnson, Staff Attorney, Farm Commons. Leasing farmland is so commonplace that landowners, farmers, and ranchers may not think twice about the lease itself... until things go wrong. Prevent problems with a strong lease while building a path to a resilient future. This online workshop will help you understand what a lease should include and how to put it in writing. Get started with the tools, knowledge, and skills you need to create a strong document that works for your needs, whether you are a landowner, rancher, or farmer.

March 18, 2024: Forming an LLC presented by Rachel Armstrong, Executive Director Farm Commons. If you or your producers are curious about the details of an LLC, you're not alone! Most farmers choose the LLC as their preferred business structure. The good news is that forming one is quite simple. But at the same time, farmers and ranchers need to know a few keys to ensure they get the benefits they're expecting from this entity. We'll do a quick recap of why an LLC is a good risk management tool before going into how to form one, which best practices to implement after it's formed, and regular obligations to keep the LLC in top legal shape. Even farmers who have had an LLC for years will learn some things about how to preserve their resilience.

Local Food Purchasing Assistance Program



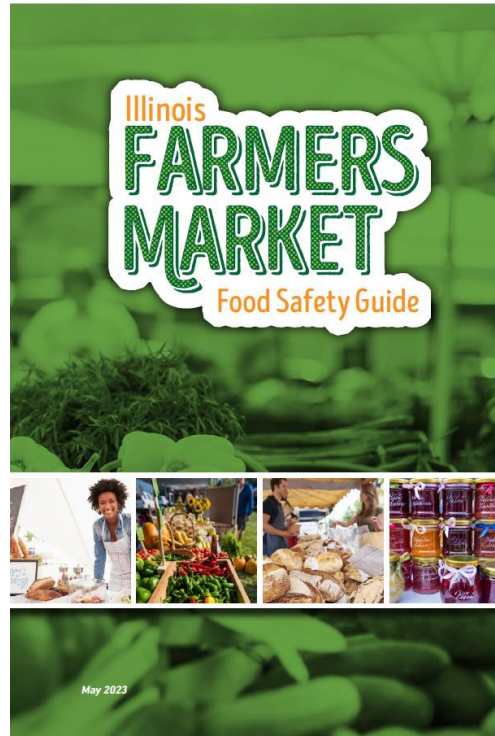
Illinois has \$28M to support local farmers and fight hunger in Illinois through USDA's Local Food Purchasing Assistance (LFPA) program. LFPA aims to strengthen the Illinois food system over the next two years by purchasing food at fair market value from socially disadvantaged growers and producers. The best part? Community members in need will receive the food at no cost. Illinois is committed to sourcing 100% of LFPA products from socially disadvantaged growers and producers and ensuring culturally responsive, locally-grown foods are accessible to food-insecure communities.

Let's create a collaborative network of food system support. Together, we can make a difference! Get involved at: <https://extension.illinois.edu/food/local-food-purchasing-assistance>

Farmers Market Food Safety Guide

The [Farmers Market Food Safety Guide](#) was developed to provide standards, guidelines and consistent information to Illinois vendors and market managers to provide fresh, safe and quality food to the consumer. In an effort to bolster local food entrepreneurship while ensuring food safety, the Farmers Market Food Safety Guide offers advice on food items that may be sold, conditions that must be met at the point of sale and helpful tips on food safety. The guide also contains information regarding some of the risks involved with foods often distributed at farmers markets and basic guidance on safe transportation, delivery and display of foods.

The Farmers Market Food Safety Guide represents a collaborative effort between the Illinois Department of Public Health's (IDPH) Food, Dairies and Devices Section and a joint membership of representatives from county farmers markets, agricultural production associations and local health departments. A special thanks to local health departments, IDPH, Illinois Department of Agriculture, Illinois Farmers Market Association, Illinois Farm Bureau, Illinois Specialty Growers Association, University of Illinois Extension, The Land Connection and all other organizations that made updating this document possible.



Regional Reports

From central Illinois... The biggest news this past month – just like everybody else – is that the regional drought streak was finally broken. Between June 15 and July 1, we finally got rain – about 2.1 inches over several events. The Bloomington Regional Airport data reports a total of 2.1 inches of rain in the month of July so far, for a total of more than 4 inches since the publication of the last newsletter. We are still behind our historical rainfall totals for this point in the year, but specialty and field crops in the region have responded well to the precipitation.

Tomatoes and peppers at the Unity Community Center Food Production and Demonstration Garden are finally experiencing more rapid growth. Warm weather crops such as these are about 10 days behind,

on-average. Typical date for first Central Illinois-grown high-tunnel tomatoes to reach market tables and store shelves is the end of the first week of July. By July 15, most local farmers only had cherry tomatoes.

Black currants – the most prolific berry species at the Refuge Food Forest in Normal, IL – put on a just-below-normal crop load, even after an incredibly dry spring. However, they are two full weeks early to maturity. So even though the crop load was relatively unaffected, the timing was, likely due to drought.

First harvests of eggplant, tomatillo, and bell pepper occurred at the end of last week. Just like everyone else, we were plagued by heavy wildfire haze in the middle and end of June, and now Central Illinois is getting another round. Because the eggplant, tomatillo, bell pepper, and tomato have all been on drip irrigation since planting on May 25 (and therefore not subject to drought stress), these crops are likely delayed due to the haze interacting with the crops' ability to receive sunlight.

The ginger trial is going well – ginger crop appears to be growing slowly but surely, possibly due to lack of consistently sunny and clear skies. Nobody can argue that it has been a strange weather year so far.

Pictured here is another small trial going on at our Unity site, where we are testing soil solarization as an effective management strategy for bindweed – a nasty perennial weed. We know soil solarization can work for control of annual broadleaf and grass weeds, but I have never attempted to control a perennial weed with it. A bindweed-infested bed was tilled, irrigated until saturated, clear polyethylene plastic was installed, and edges of plastic were sealed with soil. Plastic will come off August 6th, after one month of solarization, and it will be planted with pelletized carrot seed for a fall crop.



Soil solarization at Unity Garden. N. Frillman 2023

Nick Frillman (309-663-8306; frillma2@illinois.edu)

From the St. Louis Metro East... High temperatures and very high humidity are the current conditions in the St Louis Metro East. The entire region has received rain recently, just not all at the same time or the same amount. In general, soil conditions worsen as you move south, but are improved from the last reporting.

Harvest is ongoing in peaches. Early varieties like Desiree, PF5 and Glenglo are harvested and the Bounty window has just started. Blackberries have been in harvest for a few weeks, bringing us to the beginning of 'Chester' harvest. 'Sweet Maia' apple is still a few weeks out. Main season sweet corn is in harvest as well as field tomatoes.

Blossom end rot has been more problematic this season in tomato, especially where foliar calcium has not been supplemented. It's been so dry, the normal secondary fungus that causes the normal blackening of the fruit has been lacking, leaving just the water soaking. For our soils, calcium deficiency is usually not the main culprit, but rather the limited ability of the plant to take up enough soil calcium quickly enough to meet growth needs, especially now when plants have a high growth rate. Calcium on the best day is not readily moved within a plant, so anything that interferes with uptake only exacerbates the issue. Rapid growth also demands more calcium, and when needs aren't met, cell walls start breaking down at the furthest point of demand...the blossom end of fruit. Dry soil, wet soils, and fluctuations between the two interfere with calcium uptake. Any methods to normalize or maintain soil moisture, like irrigation, can help reduce blossom end rot. Foliar applied calcium is another option. Although leaves are not as efficient at taking up nutrients compared to roots, foliar application is a way to get some calcium closer to the point of need. There are several products on the market, usually a calcium chloride derivative or a chelated calcium form. The chelated calcium form has the benefit of greatly reduced foliar burn in dry conditions and less wear on equipment but is usually more expensive. Calcium chloride is usually cheaper but can cause foliar burn if a wash off event (rain or overhead irrigation) doesn't occur between applications. For known problematic cultivars, start sprays on a weekly basis when fruit becomes visible. At the latest, start foliar sprays at the first sign of water soaking on the blossom end.



Blossom end rot of tomato, initial water soaking because of calcium deficiency. Blossom end rot on bell pepper, blackening of water-soaked area is caused by a secondary fungus. Photos by E. Wahle 2023.

High temperatures have slowed tomato ripening and bunched up harvest windows for other crops like sweet corn and peaches. The optimum temperature for ripening tomatoes is 70° to 75°F and when temperatures exceed 85° to 90°F, the ripening process slows significantly or even stops. Sunburn is showing up on several crops like tomatoes, peppers, blackberries, peaches, and apples. Transpiration is a process plants use to “cool” themselves, but dry soils combined with high relative humidity can greatly reduce the driving force behind transpiration, resulting in heat injuries not only from increased temperatures but also the direct effect of the sun’s rays. Remember your disease triangle: all you need is the pathogen, a susceptible host, and favorable environmental conditions. The only leg of the stool we have been missing is the rain...we almost always have the susceptible host and the pathogen. Lack of rain for the most part has reduced the need for fungicide sprays, but remember the pathogens are still out there ready and waiting for sufficient leaf wetness to occur. Protectant (contact) type fungicides need to be applied ahead of an infection event (rain, overhead irrigation) to prevent disease spread. If rain is in the forecast, be prepared to treat. Systemics don’t have the washoff risk, but they also have the added benefits of some kickback (curative), usually up to a couple days. In terms of washoff, assume any surface residue (contact pesticide) remaining is completely washed off after a 2” rain event, regardless of when you applied it. Reapply immediately. After a 1” rain event, assume your remaining residue has been reduced by half. So, if you are on day 6 of a 12-day interval, instead of spraying in 6 days, you need to spray in 3.

Powdery mildew has been bad across the board and several crops are at high risk from this disease, especially grapes and pumpkins/vine crops. Powdery mildew is favored by a lack of rainfall and high humidity, exactly what we have right now. In grapes, a powdery mildew infection can not only reduce leaf canopy but result in micro cracking of fruit. These micro cracks can lead to further infection by spoilage organisms. When conditions are conducive to powdery mildew, control needs to be a priority. With pumpkins and other vine crops, the entire leaf canopy can be destroyed by powdery mildew. On pumpkins, start scouting leaf petioles and the underside of leaves. It appears on the upper leaf surfaces last, so it's not a good sign if you have missed your early control window. For powdery mildew, make sure you are using an effective fungicide. Like with rust diseases, not all fungicides are effective against powdery mildew.

Earlier stage powdery mildew infection symptoms progress to late-stage powdery mildew infection on



grape leaf. E. Wahle 2023.

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

From southwestern Illinois (Waterloo)... July has brought a little relief from the drought conditions, but for some that relief has been short-lived. Locally, most, areas have received a cumulative total of an inch or more of rainfall this month. Some areas still have been missed for more soaking rains and the moisture has been a “bandaid” on what otherwise is fairly rough conditions. Irrigation has been very helpful when available. We have hit multiple waves of heat with air temperatures around 100° and now the humidity has picked up back to more typical southern Illinois conditions compared with the dry air of June.

Out in the field, freestone peaches are coming in and while not in excess, peaches can be found at area farm markets. We are past the peak of most blackberries, but some still are in harvest. Most blueberries are done except some of the latest varieties and overall yields were very good. It was one of the longest harvest windows for blueberries I have seen in recent years. We harvested from early June

all the way through mid-July. One benefit of the extended dry period is that some of our common diseases in fruit crops like brown rot in peaches have not been nearly as problematic as most years.

In the vegetable fields, most all summer crops are now in harvest. Among other crops the yield and quality of potatoes has actually surprised me. I was expecting lots of small tubers and limited yield but size and quality has been very good all things considered. With the dry, the soil in the rows is still loose like it has just been ridged up and hasn't had enough rainfall to settle it. The heat and has been great for some pests like spidermites. So far, I have mainly seen them on snap and dry beans. Growth will be stunted and leaves pale or yellowed and will have many tiny brown specks. Sometimes leaves can even curl downward. If you see this look very closely on the underside of the leaf for any webbing or tiny (about the size of the tip of an ink pen) brown creatures moving. They can really put a subtle stunting on growth that can at first just be attributed to drought stress, but then realizing that water doesn't really solve the problem. Check out the [Midwest Vegetable Production Guide](#) for management recommendations for this or other pests. Aside from harvesting, it's also time to start planning for fall crops. I have some fall broccoli and cauliflower plants started for transplanting later in August.



Young broccoli and cauliflower transplants started for a fall crop. Photo: N. Johannig

Pumpkins have benefited from the moisture we have gotten and about the right timing for them. Many are starting to vine. Now is the time to monitor for our common insects and disease pests, especially powdery mildew. See more details later in this issue on recommendations for powdery mildew management. The month of August is critical to the best disease management. If you can keep the plants clean of disease through August often you can carry them through the rest of the season fairly clean. It's also a good time to assess plant growth and consider if any added nitrogen is needed. I have observed that if you can hold out until fruit set has just started to give added nitrogen it does not encourage the excessive vine growth as much as applying N earlier in the season.

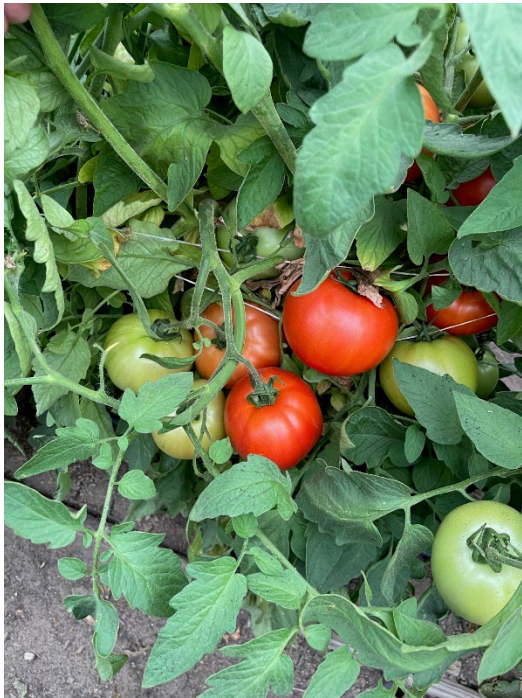
Here's to some continued rain to help keep our plants going. We appreciate what we have gotten but our soils are so dry it will take more consistent rain to break the droughty soil conditions.

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

From Dixon Springs Ag Center... As with other locations across the state, the extremes in weather have been felt in far southern Illinois as well. From dangerously high temperatures and heat indexes and drought conditions of a couple of weeks ago to more tolerable summertime temperatures and significant rainfall events within the last few days, most of the area has seen a drastic, and in most cases, much needed change in soil moisture. Some portions in the very southern tip of the state experienced

flash flooding events due to rainfall totals exceeding 8" in a 24-hour period. Later sweet corn plantings and other perennial crops will definitely benefit from the much needed rain.

We are continuing to harvest tomatoes, peppers and cut flowers from the tunnels included in our ongoing research project, *Strategies for Improving Biological Control of Insect Pests for Vegetable Growers Utilizing High Tunnels*. While the majority of the tomato crop load was harvested during the second and third weeks of July, there is still a lot of fruit remaining to be harvested from the plants. Peppers have been harvested weekly as well, with the two larger harvest weeks being the first and third weeks of July. Cut flowers are also being cut weekly and second plantings of stock and sunflowers have also been made. In order to get a sense of how much insect pest pressure is occurring in the high tunnels, fruit that shows signs of insect feeding is sorted by insect, counted and weighed (in the photo with the tomatoes on the scale, those fruit show symptoms of stink bug/stilt bug damage) This will be compared to the total marketable yields from the plots and should provide a percentage of fruit impacted by the insects.



On July 13, we hosted around 30 participants who attended the high tunnel production field day at DSAC. During the evening, local USDA FSA and NRCS staff shared information about programs beneficial to new and beginning farmers, including the [microloan](#) and [high tunnel EQIP](#) programs. General information on high tunnel structures, layout and overall vegetable production information was shared by DSAC extension staff. Dr. Kacie Athey provided an update on her current insect research projects as well as an overview of findings from research conducted the previous two years within high tunnels across the state. Graduate students from University of Illinois working on ways to automate routine high tunnel operations through the use of AI-powered robots also attended the field day. They discussed how they are trying to program robots to harvest fruit and make very targeted sprays on insect pests. They brought two different robots to demonstrate the movements and how this technology could be beneficial to growers in the future. Very interesting concepts for sure.



Bronwyn Aly (618-695-2441; baly@illinois.edu)

Fruit & Vegetable Production & Pest Management

Rainfall Will Effect Severity of Fast Developing Phytophthora Blight Disease

Phytophthora blight, caused by *Phytophthora capsici*, is the most important disease of cucurbits and peppers in Illinois. In wet conditions, the disease may cause 100% crop losses. Following the recent heavy rainfalls, the disease developed in our pumpkin plots near South Pekin (Tazewell County). Processing pumpkin fields in the area are being sprayed to protect plants against the pathogen. In the past, this disease has been observed in most of vegetable growing areas in Illinois. The following practices are recommended for managing the diseases in cucurbit and pepper fields:

- Check your field for development of the disease. Phytophthora blight develops first in the low area (where the soil stays wet longer). Remove the infected plant(s) from the spot and take away from the field.
- Keep the soil as dry as possible.
- Spray plants at the first sign of the disease in your field with the following fungicides: Revus + Reliant alternates with Ranman + Reliant at 7-day intervals. Reliant is a phosphorus acid-based (phosphonate) fungicide. There are other commercial compounds with the same active ingredient of Reliant (i.e., ProPhyt) and you can use any of them in place of Reliant.
- Click on the factsheet links of Phytophthora blight on [cucurbits](#) and [peppers](#) for additional information.



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

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.



Photo: N. Johannig

Disease

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, 2023 pumpkin fungicide recommendations from the research our plant pathologist Dr. Mohammad Babadoost for all of these common pumpkin diseases [2023 Pumpkins Spray Recommendations](#).

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

Insects

For specific insect recommendations would refer to the [Midwest Vegetable Production Guide](#) for products and thresholds or contact our specialty crops entomologist Dr. Kacie Athey (217-244-9916; kathay@illinois.edu). We can tolerate some insect presence and still not have enough damage to warrant spraying an insecticide. ALWAYS scout 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 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.

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

Less Seriously...

Hopefully these food related dad jokes will put a smile on your face and a laugh in your belly!

If a nut on a wall is a walnut, what is a nut in the bathroom?

- *A pee can*

Customer walks into a restaurant and asks, "Do you serve crabs here?". The waiter says, "We serve everyone. Have a seat anywhere you like."

Why did the cucumber need a lawyer?

- *It was in a pickle*

Did you hear about the farmer arrested for selling rotten fruit?

- *He was judged by his pears*

What did the mama melon say to her daughter when the girl wanted to run away and marry her boyfriend?

- *You cantaloupe*

Why does this coffee taste like dirt?

- *Because it was only ground 20 minutes ago*

What did the TV dinner say after it had been packaged?

- *Curses, foiled again*

Why did the insect collector, a.k.a. Kacie Athey, toss the butter dish across the restaurant?

- *She wanted to see the butter fly*

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

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