



Illinois Extension

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

Illinois Fruit and Vegetable News

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Editors: Nathan Johannning & 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 Johannning, 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 Johannning 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>

- **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:
 - [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.

- **2024 Southwestern Illinois Commercial Tree Fruit School** | Save the date! February 6, 2024 at Knights of Columbus Hall, Hardin, IL. Look for more information in future issues.
- **2024 Southern Illinois Fruit and Vegetable School** | Save the date! February 7, 2024 at DoubleTree, Mt. Vernon, IL. Look for more information in future issues.
- **2024 Stateline Fruit and Vegetable Growers Conference** | Save the date! Monday, February 19, 2024 at NIU Rockford, IL. More information to come.

News and announcements

Congratulations on the new arrival!

Help me in congratulating [Nathan Johanning](#) and family on the arrival of their beautiful baby girl, Holly. The family welcomed her on October 2, blessing them with 6 lbs 3oz and 19” of pure joy. Both mom and baby are doing great! I hear big brother and big sisters are being quite helpful and showering their little sister with love.

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](#).

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:

- [Land Leasing Basics](#) December 18, 2023
- [Forming an LLC](#), March 18, 2024

Session Descriptions

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.

2024 Annie's Project classes

Annie's Project is a national training program designed to empower women in agriculture through education, networks, and resources. The program brings women together to learn from experts in production, financial management, human resources, marketing, and the legal field. We cover many topics dedicated to strengthening women's roles in modern farm and ranch enterprises, including business plans, crop insurance, diversifying farm operations, estate planning, farm appraisal, and much more.

This year Annie's Project celebrated its 20th anniversary since the first class was held in Illinois. Upcoming classes will be offered in the spring of 2024. Currently, classes are scheduled on Tuesday evenings from January 9 – February 13, at John Wood Community College in Mt. Sterling from 5 – 8 PM and Thursday evenings from February 29 – April 4, at the Edwards County Farm Bureau office in Albion from 5:30 to 8:30 PM. More details along with registration links will be provided in the coming months. Please reach out to Annie's Project State Coordinator, Katie Bell klbell@illinois.edu with further questions.

Regional reports

From the St. Louis Metro East... According to the US drought monitor, the St Louis Metro east is running abnormally dry. There may be a chance of rain at the end of the month as well as the first possibility of light frost, but for now conditions have been very conducive to fall-related agritourism activities, u-picks and farmers markets. Daytime temperatures have cooled significantly, but still quite pleasant during the day with temperatures reaching the upper 60s and low 70s and night temperatures dropping to the upper 30s to low 50s. Apples are in the 'EverCrisp' window, and the pumpkin crop looks great. The corn and soybean harvest has been in full swing since the third full week of September, and most of those days have been rain free.

As a reminder to Illinois cider producers, the From Food to Flowers: Everything Local conference will be hosting the annual Illinois State cider contest again this year. If you intend to enter the contest, make sure to reserve some of your product now by freezing. The 2024 From Food to Flowers: Everything Local is being held at the Crown Plaza Hotel in Springfield January 17 - 19. The cider contest will be held Thursday, January 18 and awards will be presented at the evening banquet that same day. Cider contest details will be coming soon or you can contact ISHS Cider Contest coordinator, Ken Johnson at 217-243-7424 or kjohnso@illinois.edu.

'EverCrisp' apple grown in Southern Illinois may not develop as much red coloration compared to northern growing regions, but the crisp, juicy sweetness makes it a standout none the less. Photo credit: E. Wahle, Illinois Extension



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

From Dixon Springs Ag Center... In preparation for year two of the Illinois Department of Agriculture HR 133 grant, *Strategies for Improving Biological Control of Insect Pests for Vegetable Growers Utilizing High Tunnels*, cover crops were seeded on October 4, 2023. Spring oats at 30 lbs/acre, crimson clover at 10 lbs/acre and a complete fertilizer of 12-12-12 at 30 lbs/acre of nitrogen were broadcast seeded down each row. Entire bed faces were watered daily with a garden hose and the drip irrigation lines seen in the pictures will be used as needed later to provide established cover crops adequate moisture. Seed germination and emergence took about 5-7 days and by October 20 the cover crops had started to fill in the beds. After another week's growth on the cover crops, the cut flowers will be removed and that remaining bed will be seeded using the same rates of cover crop and fertilizer. This additional week of cover crop growth should yield enough green plant material to provide adequate shelter/habit for beneficial insects that will be displaced when the cut flower row is removed. The beneficials will hopefully overwinter in the high tunnel and be established and ready to work next spring to provide insect pest control in the tomato and pepper crops.



Crimson clover and spring oat cover crops germinated in the high tunnel at DSAC by mid-October. Photo credit: B. Aly, Illinois Extension 2023.



Temperatures in the past couple of weeks continue to be very pleasant with highs in the mid-70s and lows mostly in the mid to lower 50s. Our portion of southern Illinois is extremely dry which has kept row crop farmers busy harvesting, but rain would definitely be welcomed for those trying to get wheat or other cover crops seeded and established. The numerous fall festivals across the region have benefited from this beautiful weather. It appears that late season tomatoes are still available to accompany typical fall crops as summer farmers markets transition to winter markets.

Spring oat and crimson clover well-established and actively growing on October 20 in high tunnel at DSAC. Drip irrigation will be used to keep adequate moisture in the soil as these crops grow throughout the winter. Photo credit: B. Aly, Illinois Extension 2023.

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Fruit and vegetable production and pest management

Hydroponic day-neutral strawberry production observations

Hydroponic production allows for different configurations or growing systems that can include gutters, rails, troughs, buckets, slabs, bags, etc as well as different substrates or growing media including perlite, coconut coir, rockwool, and more. Couple production system versatility with controlled environmental conditions, it becomes easy to see how a hydroponic system could be a fit for off-season production, providing more fresh produce into the local food systems year-round.

With no external heat source or additional lights, our designated hydroponic high tunnel is in production just through three seasons, beginning in mid-March and ending sometime in October (depending on the first major frost/freeze event of the fall). This tunnel serves as a demonstration of multiple growing systems and provides observational information only on the different crops. For this reason, most of the crops are not being grown under their ideal parameters, especially regarding nutrient solution and temperature, as all the crops are fed from the same fertigation system.

One of the consistent crops grown in the hydroponic tunnel at the Dixon Springs Agricultural Center (DSAC) in southern Illinois has been strawberries. By planting strawberry plants into the vertical stack growing system, square footage within the high tunnel is maximized while also efficiently utilizing more of the controlled environment conditions created within the structure. Dormant bare root plants are

received in February, grown out 2-3 weeks in the greenhouse and transplanted into the perlite filled styrofoam cubes of the stack system. The fertigation system is set to deliver about a minute of nutrient solution per hour, which can be adjusted as needed based on plant growth, fruit set and environmental conditions (temperature, sunlight). Electrical conductivity or EC is generally held to around 1.8 millisiemens/cm and a pH of 6.6. The general nutrient solution composed of 3-15-28 at 1 lb/gallon and calcium nitrate 15.5-0-0 at 0.5 lb/gal is used across of the crops in the tunnel. A shade cloth is stretched over the tunnel the first of June to help lower temperatures. This tunnel has fixed side walls and relies on exhaust fans to pull outside air through the tunnel to help with cooling and humidity.

In previous years, only one variety has been grown in the 15 vertical stacks but during the 2023 season 3 day-neutral strawberry varieties were planted: 'Monterey', 'San Andreas' and 'Albion'. 'Albion' is a common variety used in hydroponic production as it is known to produce consistently large, flavorful fruit, although yields tend to be lower than other varieties. In past years, 'Monterey' had better flavor than 'San Andreas' in our production setup. It should be noted that these plants are being grown in the hottest time of the year in southern Illinois inside a high tunnel, and production is expected to be lower than the potential each of these varieties could reach if grown in more ideal conditions.



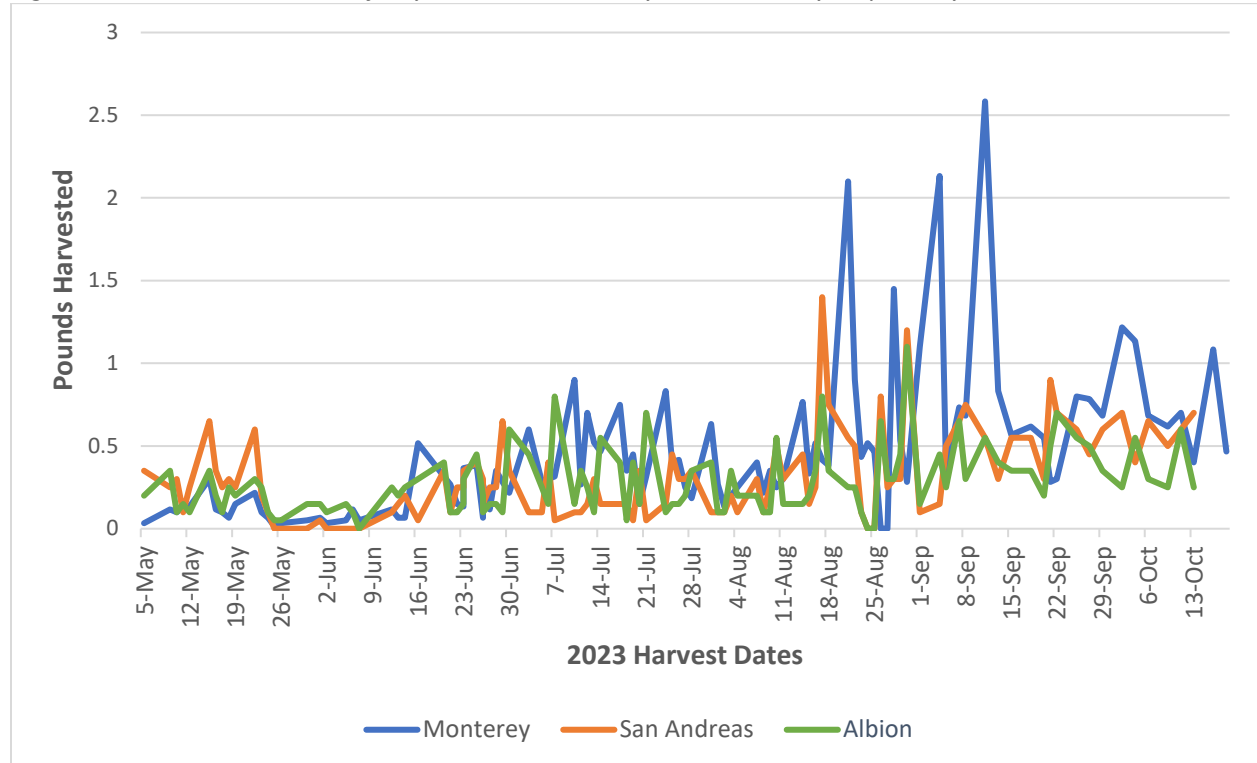
Day-neutral strawberries varieties grown in vertical stack system at the Dixon Springs Agricultural Center during first week of May at the first harvest of the 2023 season. Photo credit: B. Aly Illinois Extension 2023.

Observational yield data collected from the three day-neutral strawberry varieties evaluated during the 2023 growing season includes the following:

- ‘Monterey’ was the highest yielding with 0.76 lbs/plant of marketable fruit
- ‘San Andreas’ had the largest average fruit size at 28.7 fruit/lb and the second highest yielding at 0.54 lbs/plant
- ‘Albion’ was the lowest yielding with 0.48 lbs/plant, which was expected, but it also produced on average the smallest fruit at 42.8 fruit/lb, which is surprising as this variety is known for producing large fruit
- ‘Monterey’ had the best flavor, followed closely by ‘San Andreas’ and ‘Albion’ tended to be a bit on the sour side
- ‘San Andreas’ is ripening to a deeper red with the onset of cooler temperatures when compared to fruit quality during the summer

Yield data was collected from 100 harvests that started on May 5 and concluded on October 18. Starting the middle of August, an increase in yield was observed in all three varieties with ‘Monterey’ producing more fruit and for a longer duration than the other two varieties, displaying a yield spike for about 4 weeks. ‘San Andreas’ showed a bit higher spike in yield than the other two varieties very early in the season from around May 15 to May 25. Yield really fell off for all three varieties from the end of May to around the middle of June when a slight uptick was observed. Figure 1 provides a good visual of the yield trends or spikes across the 2023 harvest season. While data collection ended on October 18, all varieties are still producing and fruit quality has improved with the onset of cooler weather.

Figure 1. 2023 harvest dates of day-neutral strawberry varieties in hydroponic system.



Special thanks to [Indiana Berry & Plant Co.](#) for donating the strawberry plants in support of our continued demonstration and research trials at the University of Illinois Dixon Springs Agricultural Center.

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Less Seriously



Vs.



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