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COLLEGE OF AGRICULTURAL, CONSUMER
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Illinois Fruit and Vegetable News

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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, 618-687-1727, 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 Johanning 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>.

- **2019 Southern Illinois Summer Twilight Series Double Star Farms, Monday, May 20, 2019 at 6 p.m.**
The first Southern Illinois Summer Twilight Meeting will be held at Double Star Farms 16182 Mt. Zion Rd, Benton, IL. Mike Gehman and family will be hosting this meeting, highlighting their aggregation center, marketing, and production of vegetables. The meeting will start at their Benton location and will then move to the farm itself, which is located near Ewing, IL. For more information or to register, please contact Bronwyn Aly, baly@illinois.edu ; 618-252-8391.
- **State Horticulture Field Day, Thursday, June 13, 2019, 8 a.m. Tanners Orchard, 740 State Rt. 40 Speer, IL 61479.** Sponsored by the Illinois State Horticulture Society. For more details and tickets visit www.buytickets.at/ishs or Contact Charlene Blary at CBlary@ilfb.org or 309-557-2107

Regional Reports

From St. Louis metro-east...



Gumming as a result of cold injury on 'Messina' peach.

Photo: E Wahle

on the ground as feasible. Target spray applications for summer fruit rots starting at petal fall. Effective fungicides include Mancozeb, Captan, Merivon, Ziram, and Aprovia. Always tank mix a systemic with a contact. Since Mancozeb has a 77 day PHI, he recommends its use early in a tank mix rotation with Fontelis and Inspire Super. After the 77 PHI



1st asparagus spears of the 2019 season taken April 8th. Photo: E. Wahle

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

Much of the southern region was under a frost/freeze alert Sunday evening into Monday morning, following another ground soaking rain. In the St Louis Metro East, temperatures hovered right at freezing with a few occasional dips as low as 29°F. Peaches are in all stages of bloom, for the most part from pink to petal fall. Keep in mind that from pink bud until petal fall is your target control window for blossom blight and shoot blight (brown rot pathogen) in peaches. Growers in the northern Metro East region are reporting a reduced crop on a number of peach cultivars, including: Cresthaven, Messina, Desiree, Coralstar, Parade, Sugar Giant (white) and White Lady (white). On the positive side, the same growers are reporting full crops on their other cultivars. We are all just waiting to see if this most recent cold spell had any additional effect. Apples are at tight cluster to almost bloom. Mohammad Babadoost discussed bitter rot management at the recent twilight meeting in Calhoun County. In addition to his fungicide recommendations, he suggests growers reduce their inoculum load by removing/destroying pruning and cull piles within and around orchards, including removal of as many mummies in the trees and



'Sweet Charlie' Strawberry taken April 8 by E. Wahle

off to something like Merivon tank mixed with Captan. PLEASE NOTE that the 2019-20 Midwest Fruit Pest Management Guide **inaccurately** states to avoid mixing Merivon with Captan. According to Mohammad, "Please mix Merivon with Captan!" Though we don't have many, cherries and apricots are in the early to full stage of petal-fall. Covers are coming off strawberries yet again, but we should have the first plasticulture strawberries in the next 2.5-3 weeks. Grapes are at bud swell to wool stage, so delayed dormant applications should be high on growers' priority. Brad Taylor and I just recorded two videos on the subject and both can be found on YouTube. Part 1 (<https://youtu.be/FPnxm6eBK6E>) focuses more on scouting and phenology, while part 2 (<https://youtu.be/huBLfcAAkpg>) focuses on the actual application of a delayed dormant oil.

Asparagus is in the early stages of harvest and should pick up into high gear now that warm weather is predicted in the forecast. Just prior to the cold snap, field activities were visible everywhere. It should pick up again with a bit of warmth and a bit less rain.

From southern Illinois... We are in a rather typical spring weather pattern with rain chances about every 2-4 days and around average temperatures. Most days lately have had highs in the 60s and 70s. Monday morning (4/15) we did have some frost. At my house I saw 34°F as the morning low and the only frost was on roof tops and elevated surfaces. Prior to that Saturday night into Sunday we had around 1.6" of rain here at Murphysboro which has things rather wet again. Early April we did actually have some conditions that dried the soil out and most places the soil worked fairly well for a few days. More rain is supposed to be coming Thursday with a brief cool down and then back to highs in the 60s and 70s.

Out in the field peach bloom is coming to an end with apple bloom next. Pears are blooming and early blueberry varieties like Duke and Earliblue will be blooming soon. I did not hear of any reports of the weekend frost causing any significant damage to tree fruit. Fortunately, many things were past bloom or not yet blooming so the potential for damage was not as great as if it had been earlier or later. We have been harvesting asparagus from our variety trial for about a week now. Some minor cold injury could be found in our Monday morning harvest on random spears, but nothing widespread.

Cover crops are really taking off. Below are some pictures of the cereal rye I surface broadcast mid-November and had discussed in previous issues. The stand is pretty good and it is now about a foot tall and that will change a lot in the next few weeks. I plan to use a part of this area for a trial looking at tillage vs no-till tomato with two different tomato varieties.



Current growth on cereal rye surface seeded after corn in mid-November. Photos: N. Johanning.

In the high tunnel, we are getting the last of some overwintering greens and carrots out and preparing for cucumbers, tomatoes, peppers, and cut flowers. Our overwintered carrots did very well again. Our planting date was in early October and the first harvest was late March which coincides with the timing for planting many of our warm season spring crops. Bronwyn and Julie are going to be looking more at planting dates in some trials this fall, but I will say that every day counts especially in October. We had two plantings about two weeks apart last fall and the later planting never looked as good and came off about two weeks later. I feel that late September to very early October is the best planting time to get them out in time for spring crops.

As an aside I have found that a little olive oil and a grill can make short work of some fresh carrots and asparagus!

Thanks to all for the kind words and well wishes after the birth of our twin daughters Lilah and Jessa. Mom, big brother Ethan and the girls are all doing well!

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



Photo: N. Johanning.

From Dixon Springs Ag Center... Like the other areas in southern Illinois, the southeastern side of the state has been experiencing typical spring weather, wet periods with moderate to slightly above normal temperatures. We did experience a frost last Monday morning, but the high tunnel protected the cucumber (already clipped to trellis string and about 1.5 ft tall) and tomato plants without the use of additional row cover. We planted our replicated bell pepper variety trial in the raised beds this week and our determinate tomatos are growing very well.



Determinate tomato and bell pepper variety trial plots at DSAC. Photos by B. Aly.

We are utilizing two rows of drip tape with emitters at 4” spacing. We are really pleased with how spread out the tomato leaves are growing, ‘Carolina Gold’ is only 8” tall but covering 75% of the bed face.



Because the grafted cucumber plants had to be covered with row cover a few nights over the past several weeks, aphid populations had already built up to the point that a spray application was needed this past week. This is a good reminder that while row covers are a much needed tool in early season production of many crops, they also create an environment that aphids love. Remember to scout when using row covers. Photos by B. Aly.

The grafted cucumbers growing in the hydroponic tunnel are off to a great start, with most of the plants already setting multiple fruits. The NFT system is up and running, with a couple of different lettuce varieties and some pak choi starting this week.

In my backyard at home, my ‘Golden Delicious’ was in full bloom, with ‘Pixie Crunch’ following at about 50% full bloom, and ‘Gold Rush’ was about 25% full bloom. I also noticed that a blueberry bush (variety unknown) planted near the office at DSAC was in full bloom.



Photos by B. Aly. Clockwise starting at top left: Determinate tomato variety trial, lettuce transplants in NFT system, grafted cucumber trial in hydroponic system, & close-up of cucumber fruit that will be ready to harvest in another couple of days.

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

Fruit and Vegetable Pest Management

Modified Growing Degree Days (Base 50° F, January 1 through April 15)

| Station Location | Actual Total | Historical Average (11 year) | One- Week Projection | Two-Week Projection |
|------------------|--------------|------------------------------|----------------------|---------------------|
| Freeport | 48 | 79 | 79 | 116 |
| St. Charles | 53 | 83 | 83 | 117 |
| DeKalb | 48 | 94 | 83 | 117 |
| Stelle | 73 | 119 | 113 | 157 |
| Peoria | 95 | 140 | 140 | 189 |
| Monmouth | 75 | 123 | 114 | 158 |
| Champaign | 142 | 143 | 186 | 235 |
| Springfield | 144 | 165 | 195 | 249 |
| Perry | 143 | 176 | 192 | 243 |
| Brownstown | 176 | 212 | 233 | 293 |
| Olney | 183 | 204 | 238 | 295 |
| Belleville | 214 | 237 | 274 | 336 |
| Rend Lake | 224 | 258 | 290 | 358 |
| Carbondale | 241 | 258 | 303 | 367 |
| Dixon Springs | 282 | 291 | 350 | 421 |

Insect development is temperature dependent. We can use [degree days](#) to help predict insect emergence and activity. Degree day accumulations calculated using the [Pest Degree-Day Calculator](#)

Kelly Estes (217-333-1005; kcook8@illinois.)

Weed Management Strategies: Start Clean. Stay Clean.

Weed management is crucial to the success of almost all of our crops and starting with a field free of weeds is a good starting place. As the season gets started I have a few thoughts and strategies to help you make the most of your efforts to combat weeds.

“Start Clean. Stay Clean.” This mantra of sorts is a very valuable statement to keep in mind. For example, if you disk a field and some larger weeds are still exposed and not completely killed make sure you follow up and manage any weeds that re-root and take hold. How could you avoid this scenario? Have a winter-killed cover crop planted that suppresses winter weed growth; Use burndown herbicide a few weeks ahead of soil preparation to prevent trying to till large weeds; Incorporate other forms of tillage like moldboard plow or rotary tiller that will bury those weeds. The same goes if you spray a herbicide that leaves some weeds to escape. In this case, you need to have a good understanding of what weeds you have and what you can expect to be controlled from your actions. Herbicide resistance and just the selective nature of some herbicides can cause these situations to occur.

Another thing to consider is when you have plant into a stale seed bed, worked or prepared a few weeks before planting. At first glance the field might appear clean of weeds but make sure to look closely for newly germinating weeds that may even be only a ¼ inch tall. Emergence of new weeds varies greatly on the types of weeds seeds present, moisture and precipitation, but generally you don't have much emergence in the first week, but with some moisture and warm weather after that I would watch close for any new weeds. A herbicide or light tillage pass can easily take care of this, but if you don't see it until after your crop up or transplanted, management can become more challenging.



Photo: N. Johannig.

So now about the “Staying clean.” Consider residual herbicides that prevent weeds from germinating, mulches, whether organic products like straw or black plastic mulch, or timing cultivations later in the season prior to the closer of a competitive crop canopy and even adding a residual herbicide after that cultivation. These are all some strategies that can help you get the most out of that clean field you started with.

The bottom line is if you are preparing to a field and do not completely control that the weeds, they won't get smaller on their own without some management on your part.

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

Protect Early Planted Warm-Season Vegetables from Low Temperatures

Two types of injury on young warm-season vegetable plants are caused by low temperatures: frost/freezing injury and chilling injury.

Frost/freezing injury occurs when temperatures drop below 32°F. Ice formation in plant tissues cut cell membranes. When the tissue thaws, the damage results in fluids leaking from the cell, causing water soaked damage. Frost/freezing injury is detrimental to warm-season vegetables, such as melons, cucumbers, tomatoes, peppers, beans. To avoid damage, the best way is to plant warm-season vegetables later in the spring, after the last frost has passed. However, weather is difficult to predict, and there is a growing trend of planting early to achieve early harvests. For the early planted warm-season vegetables, here are a few suggestions that may protect plants from low temperature damages.

Covering. The idea of covering the seedlings is to create a microclimate around plants. Because the heat accumulated in soil irradiate back at night, covering maintains heat around plants, and creates a few degrees higher temperatures around young seedlings. Prevent covering materials from directly contacting plants. Using wire hoops create low tunnels and cover with thick fabric row cover for effective frost protection. If it is in the open-field, it is important to seal the edges of the cover to avoid wind blow. In large-scale production, low tunnels that are covered with clear plastic are used for early planted cucurbit plants in southern Indiana (Figure 1). On smaller scales, farmers may cover individual plants with styrofoam cups or plastic nursery pots. Styrofoam cups can be secured in position in the hole in plastic mulch. I also saw a field with young tomato plants covered with 1 gallon nursery pots and secured with a stone on top.

Windbreaks. Windbreak play an important role in modifying microclimate. Daytime and nighttime temperatures downwind and near the ground, up to three feet high, tend to be several degrees warmer than unsheltered areas. Soil temperatures also tend to be several degrees warmer in sheltered area as humidity levels in sheltered areas increase that contribute to conservation of soil moisture and attract more heat. Windbreak is used on many vegetable production systems, and it is essential in watermelon production in southern Indiana. Winter rye cover crop or other small grain are used as the windbreaks. The winter rye may be sown in broadcast in the fall as a cover crop. Then tilled in spring for the watermelon crop, and strips of rye covers are left as windbreaks. Alternatively, strips of rye were planted in fall.

The general idea is to space windbreak 12 ft apart for every foot in height of the windbreak. If the rye is 4 ft tall, rye strips are typically spaced around 50 ft apart. For early planted field, windbreaks are spaced closer, success was achieved by using rye strips between every bed of watermelons.



Figure 1. Early planted watermelons covered with low tunnels. Note the rye strips were planted between every bed of watermelons. Photo: W. Guan

Hardening. Hardening is the process of exposing transplants growing in greenhouse environment to outdoor conditions. The process induces plants to accumulate carbohydrates, thicken cell walls, trigger root development. It helps plant withstand low temperatures, have less damage under chilling condition. Hardening typically start 1-2 weeks before transplanting. Move plants outdoors when temperatures are at least 45-50°F, and gradually increase the amount of time plants are exposed to outdoor conditions.

Deep planting. The benefit of planting seedlings deeper in the hole is to prevent plants from having wind damage. This strategy can also help with preventing plants from low temperature damages. We saw this effect on cucurbit plants. Plants have a higher chance to survive when hypocotyls are buried in the soil, leaving leaves and growing points exposed above the soil. In this case, even leaves are damaged by the cold air, as long as growing point survives, plants may still recover. While if hypocotyls are above soil line, plants have little chance to survive if freezing damage occurred on the stems.



Figure 2. The hypocotyl of a cucumber plant was damaged by low temperatures. Photo: W. Guan

Other considerations. For the earliest planted field, choose the field with the lightest soil as they warm up quickly. Avoid areas with frost pockets and shade. Lay beds and black plastic mulch as early as possible. The plastic should have excellent contact with the soil to help warm up soil. Firm beds and tight plastic help.

This article was originally published on Purdue Extension Newsletter Vegetable Crops Hotline <https://vegcropshotline.org>

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Less Seriously... <https://quotesnhumor.com/20-funny-easter-quotes/>



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