

# VEGETABLE CROPS HOTLINE

A newsletter for commercial vegetable growers prepared by the Purdue University Cooperative Extension Service



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## In This Issue

- [Tomato Viruses in Greenhouse](#)
- [Powdery Mildew of Cucurbits Update](#)
- [Corn Earworm](#)
- [Pheromones and Pheromone Traps](#)
- [Aphids in High Tunnels](#)
- [Check Soil Temperatures before Planting Cucumbers in a High Tunnel](#)
- [Strawberry Winter Protection: Straw Mulch vs. Row Covers](#)
- [5 Social Media Best Practices to Help You Increase Sales](#)
- [Entomologists Looking for Cucumber Beetles](#)
- [Upcoming Events](#)

## Tomato Viruses in Greenhouse

(Dan Egel, [egel@purdue.edu](mailto:egel@purdue.edu), (812) 886-0198) & (Laura Ingwell, [lingwell@purdue.edu](mailto:lingwell@purdue.edu))

While many virus diseases affect pepper and tomato plants, in the Midwest, the most common virus diseases of these two crops are tomato spotted wilt virus (TSWV) and Impatiens necrotic spot virus (INSV). These diseases are usually observed in greenhouse or high tunnel situations. The two viruses, TSWV and INSV are closely related. In fact, at one time, they were both considered TSWV. Therefore, the symptoms, biology and management of these two diseases are similar. This article discusses the symptoms, biology and management of these two diseases.

Both TSWV and INSV affect many hosts, including vegetables and flowering ornamentals. Symptoms vary according to host, stage of plant affected and environmental conditions. Both diseases can cause stunting, yellowing, necrotic rings, leaf mottle and more.

Figure 1 shows a tomato leaf with necrotic rings caused by TSWV. Figure 2 shows a pepper transplant with ring spots caused by INSV. Additional symptoms may be

viewed [here](https://vegcropshotline.org/article/photos-of-tomato-spotted-wilt-and-impatiens-necrotic-spot-virus/) (<https://vegcropshotline.org/article/photos-of-tomato-spotted-wilt-and-impatiens-necrotic-spot-virus/>). Since the symptoms of these two viruses vary, plants with suspicious symptoms should be submitted to the Purdue Plant and Pest Diagnostic Laboratory for confirmation of virus symptoms.



Figure 1. A tomato leaf with necrotic rings caused by tomato spotted wilt virus.



Figure 2. Ring spots caused by impatiens necrotic spot virus on pepper.

TSWV and INSV cannot spread without thrips. Thrips are small insects less than 1/20<sup>th</sup> of an inch long (Figure 3). To detect thrips, tap a flower over a white sheet of paper. Look for the small insects to move quickly around the sheet of paper. A 10X hand lens may help to detect thrips. Yellow or blue sticky cards placed at crop height will help to detect these small insects. Thrips feed by scraping the leaf or flower petal surfaces with their mouthparts. Thrips may acquire and transmit either of these viruses by feeding.



Figure 3. These thrips, which are about 1/20" of an inch long, are shown in relation to a penny.

Preventing TSWV is easier than halting the spread of this important disease. Avoid growing vegetables and ornamentals in the same greenhouse. Even vegetable transplants and ornamentals grown together may risk the occurrence of these virus diseases. TSWV may be introduced on ornamentals that are propagated by cuttings or plugs. The disease can then spread to vegetables.

- Use transplants known to be free of both INSV, TSWV and thrips.
- Plant resistant varieties if possible. For example, there are a few tomato cultivars with resistance to these virus diseases.
- Use yellow or blue sticky traps to monitor thrips populations or by direct observations of the flowers.
- Thrips should be managed with insecticides when populations reach an average of 5 thrips per flower. However, if plants show symptoms of INSV or TSWV and thrips are present, control measures should be implemented regardless of number of thrips per flower. Effective insecticides that can be used in the greenhouse include Entrust®. When using insecticides to control thrips, coverage is critical. Thrips are very small and often will hide in seams and crevices, so make sure you have sufficient water and pressure to get the insecticide where it is needed. If INSV or TSWV symptoms are suspected, send samples to the Purdue University Plant Pest and Diagnostic Laboratory. See below for information about biological controls for thrips.
- Remove symptomatic plants from a greenhouse with INSV or TSWV. Do not compost such plants; instead destroy them. Avoid crop debris in the greenhouse such as older leaves that have fallen or pruned leaves.
- Keep the area clear of weeds that may serve as hosts for INSV or TSWV

There are a variety of natural enemies that can be used to control thrips, as an alternative to pesticides. It is important to remember that a portion of the thrips lifecycle occurs in the soil. Control methods should target both the leaf-feeding stage and the soil pupation stage of this pest for full control. Above ground, *Orius insidiosus* and the predatory mites *Neoseiulus cucumeris* and *Amblyseius swirskii* are commercially available. If your plants are irrigated using misters or overhead sprinklers, do not use

predatory mites because they will be washed off. For control of the pre-pupal and pupal stages which occur in the soil the predatory rove beetle *Dalotia coriaria* and the predatory nematode *Steinernema feltiae* offer good control. All of these agents are available from a variety of commercial suppliers. If there is a high risk of virus incidence, biological control agents may not be compatible because of increased movement to avoid predation, which has been shown in other systems.

Both INSV and TSWV can be difficult to manage once established in a greenhouse or high tunnel. Pay close attention to the prevention measures discussed above.

## Powdery Mildew of Cucurbits Update

(Dan Egel, [egel@purdue.edu](mailto:egel@purdue.edu), (812) 886-0198)

Powdery mildew is a foliar disease of all plants in the cucurbit family. The talc-like symptoms on leaves are relatively easy to identify (Figure 1). More about powdery mildew of cucurbits can be found at this

link <https://vegcropshotline.org/article/powdery-mildew-of-cucurbits-2/>. The remainder of this article is an update.



Figure 1. Powdery mildew causes talc-like lesions on pumpkin leaves.

There are several systemic fungicides which are recommended for powdery mildew of cucurbits. These include: Aprovia Top®, Fontelis®, Luna Experience®, Merivon®, Procure®, Quintec®, Rally® and Torino®. Recently, fungicide resistance to the product Torino® was discovered in eastern New York. I don't know if the strains of the powdery mildew fungus we have in Indiana are resistant to Torino® or not. Growers should scout their fields for the effectiveness of Torino® and other products. It is always best to alternate systemic fungicides for the management of powdery mildew of cucurbits. If possible, alternate between 3 or 4 products that have different modes of action. Not only does this practice lessen the possibility of the creation of fungicide resistant strains, but my experience is that such a fungicide alternation usually results in the best disease control.

Do not hesitate to contact me with more questions about powdery mildew of cucurbits or the effectiveness of fungicides.



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## Corn Earworm

(Rick Foster, [fosterre@purdue.edu](mailto:fosterre@purdue.edu), (765) 494-9572)

Now is a good time to begin your plans for managing corn earworms (Figure 1) in your sweet corn. Below are several tips that will help you in this process:

1. Make sure you have a corn earworm pheromone trap and earworm pheromones. See the article below for details.

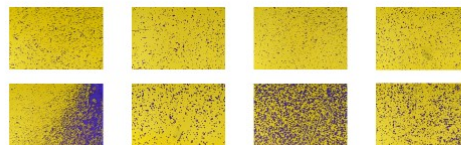


Figure 1. Corn earworms

2. Consider planting Bt sweet corn, especially for your later plantings that will be harvested in late July and August. If you choose to do so, use varieties that contain two sources of the Bt protein, including the Vip3A protein found in the Attribute II series. Varieties that only contain Cry1Ab proteins do not effectively control earworms in most instances.
3. If you use a Bt variety, maintain a normal insecticide spray program. It's not a good idea to think that the Bt genes will provide complete control. The combination of Bt and insecticides will help overcome the high populations of earworms late in the season.
4. Consider the coverage you are getting with your sprayer. We did research last summer that showed that a boom with drop nozzles provided superior coverage and control compared to just a boom sprayer. However, one of the most useful results of our study was that it showed that you can attach water sensitive cards to the silks before you spray and get a good idea of the coverage your sprayer is providing and predict the level of control you

should expect. Below is a picture of water sensitive cards from the plots with the boom sprayer and drop nozzles. This is the type of coverage you should aspire to if you want excellent control. If you are not getting coverage of this type, you should consider reconfiguring your sprayer until you do.

### Coverage: Boom Sprayer with Drops



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## Pheromones and Pheromone Traps

(Rick Foster, [fosterre@purdue.edu](mailto:fosterre@purdue.edu), (765) 494-9572)

One way insects communicate with individuals of the same species is with pheromones. Pheromones are volatile chemicals released by an insect that usually can be detected only by individuals of the same species. There are a number of different types of pheromones, but the most common type is the sex pheromone. Usually the females will emit a tiny amount of a chemical that attracts the male to her and increases the likelihood of mating. Because the chemical is volatile, air currents carry it. The male detects the pheromone in the air with receptors on his antennae. He then flies upwind to find the source of the pheromone, a prospective mate. The chemical compositions of pheromones for a number of pest species have been identified and synthetic copies can be produced in the laboratory. Synthetic pheromones can be used in conjunction with traps to catch male insects.

Listed below are some, but certainly not all, of the suppliers of pheromones and traps.

**Alpha Scents, Inc.** 1089 Williamette Falls Drive, West Linn, OR 97068. (503) 342-8611; [www.alphascents.com](http://www.alphascents.com)

**Gempler's**; P. O. Box 270; 100 Countryside Dr.; Belleville, WI 53508; (800) 382-8473; [www.gemplers.com](http://www.gemplers.com)

**Great Lakes IPM**; 10220 Church Rd., NE; Vestaburg, MI 48891; (517) 268-5693; [www.greatlakesipm.com](http://www.greatlakesipm.com)

**Insects Limited Inc.**; 16950 Westfield Park Rd.; Westfield IN 46074-9374; (317) 896-9300; [www.insectslimited.com](http://www.insectslimited.com)

**Pacific Biocontrol Corporation**; 620 E. Bird Lane, Litchfield Park, AZ 85340; (623) 935-0512 or (800) 999-8805; [www.pacificbiocontrol.com](http://www.pacificbiocontrol.com)

**Scentry Biologicals Inc.**; 610 Central Ave.; Billings MT 59102; (800) 735-5323; [www.scentry.com](http://www.scentry.com)

**Trece Incorporated**; P. O. Box 129. Adair, OK 74330; (866) 785-1313; [www.trece.com](http://www.trece.com)

You can buy most pheromone traps from these suppliers, but for corn earworm/tomato fruitworm, I recommend that you use the wire mesh trap which is available from:

Kevin Poppe's Service  
25738 N. 3200 East  
Lexington, IL 61753  
(309) 365-3651  
[kdpoppe99@hotmail.com](mailto:kdpoppe99@hotmail.com)

The wire traps catch more moths and last longer than the nylon traps (Figure 1).



Figure 1. A pheromone trap in the field.

To get the most from your pheromone traps, they must be used properly:

- Place the traps and the pheromones out before you would normally expect the insect pest to be active. That way you can monitor the adult activity, which will warn you that damage from the larvae may be coming soon. Corn earworm pheromone traps should go out about June 1.
- Be careful how you store pheromones. Ideally, they should be frozen until ready for use. At the very least, they should be refrigerated. If you keep them on the dashboard of your truck, they won't work well when you place them in the trap.
- When handling pheromone lures, do not touch them with your hands. Use a pair of forceps or wear latex gloves. This is especially important when you are using pheromones for more than one pest. Contamination of a lure with another pheromone will likely reduce the effectiveness.
- Lures usually should be changed every 3-4 weeks, although this will vary for individual lures.

Check traps regularly, at least weekly. Daily would be better.

## Aphids in High Tunnels

(Laura Ingwell, [lingwell@purdue.edu](mailto:lingwell@purdue.edu))

It's that time of year, where we are prepping high tunnels and getting back into the full swing of production, slowly, here in the Midwest. Many of you have already begun to transplant and may have encountered your first pests on these new crops. Aphids are one that remain a problem in high tunnels, and may even have plagued your winter production (Figure 1,2,3).

Some keys to preventing or controlling these pests rely first on sanitation and then careful scouting. Try to remove any green bridge material that may already be infested before transplanting into the space. This includes weeds, lingering winter crops or residues. Having a week without vegetative hosts should get rid of any overwintering residents. After transplanting scout diligently, at least weekly, or more often on susceptible young transplants. Aphid infestations tend to begin on the growing points or younger tissues of the plant. Be sure to look at the underside of leaves and in the growing point or leaf whorls. Mark infestations and watch to see if they are increasing between scouting events. On things like lettuces or other greens, the tolerance is low for this pest so having a plan in action when they are first detected is key. For things like cucumbers, you can typically tolerate higher levels of this pest.

However, at this point in the growing season there may not be the natural enemy pressures around to keep them at bay. If you intend to use biological control options, order them at the first detection of aphids in your crop. Less mobile predators, such as larval or egg forms, are less likely to escape the area you release them in. *Orius insidiosus*, the minute pirate bug, lacewings, or *Adalia bipunctata* lady beetles available as eggs, larvae or pupae may work well at this point in the season. Another, more mobile option, are any of the parasitoids. We have not evaluated this natural enemy in high tunnels but they do find their way into the systems on their own. Remember that parasitoids will leave behind the mummy carcass of the aphid and therefore may not be compatible with your crop.

For chemical options refer to the *2018 Midwest Vegetable Production Guide*. If left unchecked aphids can kill young seedlings.





Figure 1. Aphid damage on cucumber fruit (photo credit John Obermeyer).

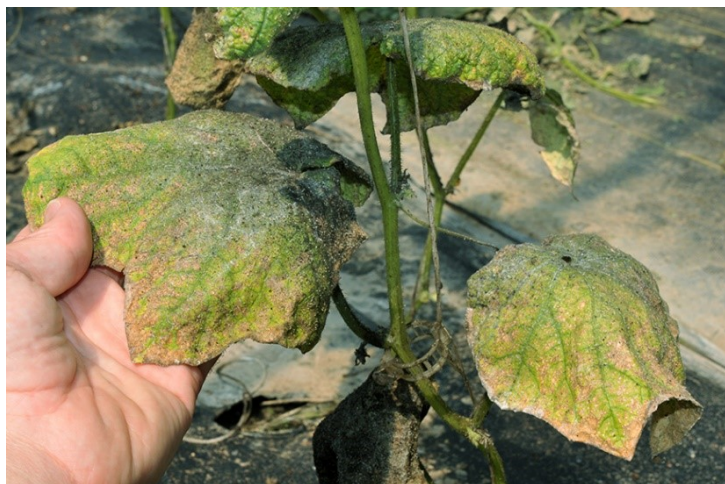


Figure 2. Sooty mold on cucumber leaves (photo credit: John Obermeyer).



Figure 3. Aphids on lettuce (Photo credit: John Obermeyer).

## Check Soil Temperatures before Planting Cucumbers in a High Tunnel

(Wenjing Guan, [guan40@purdue.edu](mailto:guan40@purdue.edu), (812) 886-0198)

Growers start to plant tomatoes in unheated high tunnels around the end of March in southern Indiana. Around that time, there may still be a few light frosts, or even heavier ones, like the one we just experienced in the past week. With additional help from row covers inside of high tunnels, temperatures normally can be maintained above 32°F. Tomatoes typically do not have problems with the short-term low temperatures. However, this may not be the case for cucumbers. Although they are both warm season crops, Cucurbits (cucumbers, cantaloupes, and watermelons) are much more cold sensitive than Solanaceous crops (tomato, pepper). From a temperature perspective, this article discusses important considerations for deciding the time for planting cucumbers in a high tunnel.

The best condition to grow cucumbers is when soil temperatures are above 70°F. This situation may not happen until the middle of May inside of the high tunnels, according to our recorded soil temperatures in high tunnels located in Vincennes, IN. After the middle of May, there is no doubt that cucumbers can grow very well, but growers may lose the opportunity to sell cucumbers with early-season premium prices.

Planting cucumbers before the middle of May in an unheated high tunnel is reasonable in southern Indiana. But it is important to be aware of a few important threshold temperatures. Studies have found that the growth of cucumbers increases steadily as temperatures increase from 63 to 70°F. Below 63°F, cucumbers do not grow. In such conditions, plants sit in the soil and become susceptible to damages caused by pests in the soil. With that said, check soil temperatures and be sure they are above 63°F before planting cucumbers.

What would happen if cucumbers were planted with soil temperatures below 60°F? The answer is that you may lose cucumber seedlings even without pests in the soil. This is because roots of the young cucumber seedlings lose the function to uptake water under low temperatures. Without water uptake, plants wilt and eventually die.

This year, we challenged the cucumbers by planting them in end of March. Wilt was observed following a night with average soil temperature about 55°F. Soil temperatures continued to drop to 48°F on the following day that eventually killed all of the cucumber plants. In another situation, we lost 90% plants following two nights with average soil temperatures at 58 and 54°F (Figure 1 and 2)



Figure 1. Cucumbers start to wilt following a night average soil temperature was 58 °F



Figure 2. Plants died on the second day after average soil temperature was 54 °F

Checking soil temperatures is not difficult. Soil thermometers are easy to find at local horticultural supply shops, and they are not expensive at all. When measuring the soil temperatures, insert the probe to about 4-6" depth and record the temperatures in the morning (Figure 3).



Figure 3. Use a soil thermometer to check soil temperatures.

One approach that can effectively increase cucumbers' tolerance to low temperatures is through grafting. We will discuss this topic in the future articles.

## Strawberry Winter Protection: Straw Mulch vs. Row Covers

(Wenjing Guan, [guan40@purdue.edu](mailto:guan40@purdue.edu), (812) 886-0198) & (Bruce Bordelon, [bordelon@purdue.edu](mailto:bordelon@purdue.edu))

Although strawberry plants can be quite cold hardy, they need protection to survive the winter. In North Carolina, growers use floating row covers to protect strawberries in the winter. In Indiana, straw mulch is a more traditional way of winter protection for strawberries grown in a matted row system.

After two relatively mild winters in 2015 and 2016, I heard successful stories about growing strawberries with the plasticulture system and using row covers for winter protection in Southern Indiana. Can the system also be successful in a colder winter, like the one that just passed? Our ongoing strawberry study will provide the answer. This article provides an update from this project comparing strawberries covered with straw mulch (about 4-inch thick) and row covers (two layers of 1.5-oz/yard<sup>2</sup> row cover laid on wire hoops) this past winter (Figure 1).





Figure 1. Strawberries were covered with straw mulch and row cover. Picture were taken on Jan. 9 2018.

### Temperature

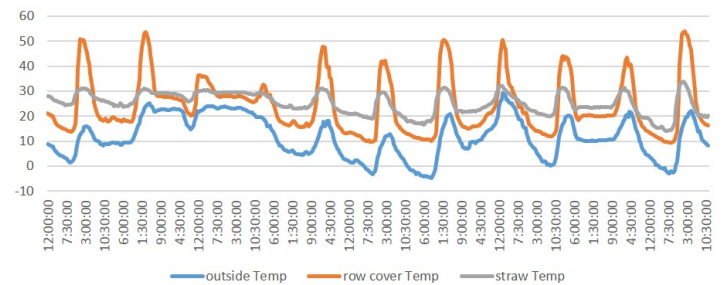
Between Dec. 27 to Jan. 6, we had the coldest nights of the season in Vincennes, IN. The recorded lowest temperature was around -5°F. The lowest temperatures under row covers were 10°F, while under straw mulch, it was about 15°F. At the dormant stage, strawberries are hardy to 10°F. The plants under row covers encountered the threshold temperature thus we lost 3 out of 192 plants and a few plants were injured. Note the difference of plant growth of the same variety under row covers (Figure 2).



Figure 2. Different size of Chandler plants under row covers. Picture was taken on Mar. 27 2018.

Temperature fluctuations were the greatest under row covers. Temperatures under the row covers reached 50°F on sunny days, even when the outside air temperature was quite cold. Temperature fluctuations were the smallest under straw mulch, and ranged from 15°F to 32°F. The accumulated heat under row covers suggests the plants could potentially come out of dormancy early and be subject to cold damage.

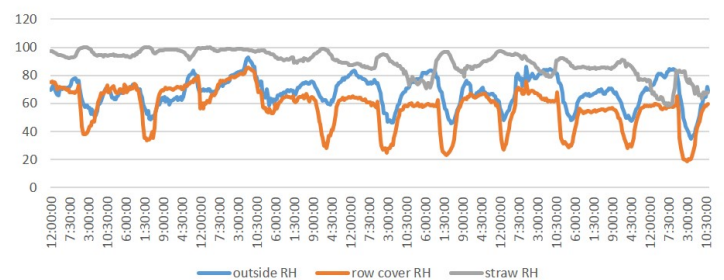
Temperatures (°F), Dec 2, 2017 to Jan 6, 2018 in Vincennes, IN



### Relative Humidity

Relative humidity was the highest under straw mulch, while lowest under row covers. The high relative humidity explained why the majority of the leaves were rotted when we removed the straw in the spring. The rotted leaves and the remaining straw provide the perfect condition for the development of Botrytis fruit rot. Compared with the strawberry plants covered with straw, the plants under row covers were much cleaner. We removed the dead leaves on these plants, which is a strategy effective in controlling Botrytis.

Relative Humidity (%) Dec. 2, 2017 to Jan 6, 2018 in Vincennes, IN



We will have more updates on the project as the season progresses. Watch for opportunities to see our research at upcoming SWPAC field day on June 13, 2018.

This article was also published on Facts for Fancy Fruit <https://fff.hort.purdue.edu/>

## 5 Social Media Best Practices to Help You Increase Sales

(Ariana Torres, [torres2@purdue.edu](mailto:torres2@purdue.edu))

Today, seven out of 10 Americans use social media to share information, find entertainment, and engage with businesses (Pew Research Center, 2017). Social media have become an important information source for Millennials; yet, Baby Boomers and Generation Xers are significantly increasing their use of Facebook and other social media platforms. Among social media platforms, Facebook remains the most popular with almost 80 percent of online adults, followed by Instagram (32 percent), Pinterest (31 percent), LinkedIn (29 percent), and Twitter (24 percent).

If you are selling directly to consumers, this article can assist your business social media marketing. Social media influences how Americans purchase products and services, so it is proving to be a

powerful — and inexpensive — marketing tool. Businesses can use social media to increase their online exposure, attract new customers, highlight new products or services, hear what customers and potential customers say, and most importantly, ***build relationships***.

Given the popularity and convenience of social media, we would expect that green industry business are actively engaging customers through Facebook and other platforms. However, the [2016 Small Business Marketing Trends Report](#) found that many U.S. businesses are not using social media for their marketing activities. Reasons may include that business owners perceive that social media is time consuming and confusing, or they simply do not understand how to use it effectively.

### Using social media to sell

Social media can help a business attract followers and convert them to customers. However, just using social media is not the same as using social media *effectively*. Effective social media marketing requires businesses to connect with the right people, construct a detailed marketing strategy, treat followers as if they were face-to-face customers, and offer contests, giveaways, and events to convert followers into customers.

Below we offer five social media practices to make sure you are taking advantage of these powerful marketing tools.

1. **Align your priorities.** Use the SMART (1) framework to define the goals you want to achieve with social media.

For example, you may want to gain 25 new followers on Facebook in the next two months or create at least three Facebook events that generate at least \$1,000 in sales in the next two months. Alternatively, you may decide to incorporate Twitter in your strategy to provide excellent customer service or increase brand or product awareness in your community. Your goals will guide you to track and evaluate your marketing activities.

2. **Create a brand for your social media platforms.** The content (particularly the visual elements) that you post are key to building your brand in social media. Create a logo that represents your company and use it across all platforms. Use the same color palette or filter for your photos consistently so your followers recognize your business across all networks. Use your bio, profile, and cover photos to communicate who you are and what your company does better than anyone else. Use *#hashtags* for keywords that highlight your business values, products, events, campaigns, and industry. Hashtags can help you increase engagement, raise awareness, and categorize content.
3. **Choose your network.** You may feel the urge to jump into every social media platform, but we recommend that you instead find the network that aligns with your customers' profiles. Your business has unique customer segments with unique demographics, psychographics, and behavioral characteristics. Understand what social media your current and potential customers use to align your ads, events, and content. Each platform has its own

strengths and provides a way to reach a unique clientele. For example, Instagram is helpful to reach younger generations via photos while Twitter is great to provide exceptional customer service. One of the best ways to start social media marketing is (the oldie-but-goodie) Facebook. Make sure you fill your business page entirely, make your photos look good, and use their analytics and ad tools. Once you feel comfortable with Facebook, you can diversify and expand to other platforms by testing the waters in Instagram and Twitter.

4. **Be consistent.** As with any business project, social media requires you to commit time and resources. Post messages daily and at the time when your followers are around to see them. Discover the best time to post by understanding the demographics and locations of your followers, then track the engagement of your posts at different times of the day. As soon as you start using other platforms, you can save time by scheduling your posts in Facebook or by using social media management tools such as [Hootsuite](#) and [Buffer](#). Your posts should help you build relationships with your customers by providing relevant information, by replying to comments or questions immediately, and by using events and promotions to engage.
5. **Keep it real.** Consumers want to buy products that have a direct impact on their communities. Tell followers your family business story, share your values, and highlight the impact of buying from your business. Post behind-the-scenes photos to communicate the passion you put in your business. Pose questions to your followers and inspire them to talk. A great way to tell your story is to post videos of your activities, events, and campaigns. Fill in your posts with words and photos that express the DNA of your business — your reason for existing. Convey what it is that you do better than anyone else, and be visible and loud as if you were next to your customers.

### Literature Cited

- Pew Research Center. 2017. Social Media Fact Sheet. Available at <http://www.pewinternet.org/fact-sheet/social-media/>

(1) SMART is an acronym that can guide the goal setting process. SMART stands for **S**pecific, **M**easurable, **A**chievable, **R**elevant, and **T**ime bound. In other words, your social media goals should be focused, quantitative, realistic, worthwhile, and have a target day.

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## Entomologists Looking for Cucumber Beetles

(Laura Ingwell, [lingwell@purdue.edu](mailto:lingwell@purdue.edu))

Entomologists are looking for growers willing to participate in research examining the detection and distribution of striped



cucumber beetles. We would like to visit your fields on multiple occasions this year to count the number of cucumber beetles we encounter in your crop. If you grow slicing cucumbers in the field, and are interested in helping to improve our sampling recommendations for this pest, please contact Dr. Laura Ingwell at (765) 494-6167 or [lingwell@purdue.edu](mailto:lingwell@purdue.edu)

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## Upcoming Events

(Wenjing Guan, [guan40@purdue.edu](mailto:guan40@purdue.edu), (812) 886-0198)

### Southwest Purdue Ag Center High Tunnel Tour

**Date:** June 13, 2018 7:00-9:00 pm Eastern Time

**Location:** Southwest Purdue Agricultural Center, 4369 North Purdue Road, Vincennes, IN, 47591

The SWPAC high tunnel tour will be held on the evening of June 13, 2018. Attendees will have the opportunity to see a wide range of research projects being conducted in high tunnels at SWPAC.

Topics that will be discussed include: Grafting cucumbers for season extension; Seedless cucumber and summer squash variety evaluations in a high tunnel; Different pruning and trellising systems for growing cucumber, tomato and pepper in a high tunnel; Grafting tomatoes for improved yield; Cucumber beetle management; Annual plasticultural strawberry production with an innovative low tunnel system.

Registration will begin at 6:30 pm. The tour is free, to register please call (812) 886-0198, for more information please contact Wenjing Guan ([guan40@purdue.edu](mailto:guan40@purdue.edu)). This event is sponsored by North-Central Sustainable Agriculture Research and Education.

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## Asparagus Production Twilight Meeting

**Date:** April 16, 2018 6:00 pm Central Time

**Location:** Jackson County Extension Office, 402 Ava Road, Murphysboro, IL 62966.

This event is organized by University of Illinois Extension. Topics include site selection/preparation, variety selection, nutrient management, pest management, harvesting and marketing. This is a great chance to see all 12 of the varieties during the peak of the harvest season. If you are interested please register by Friday, April 13, 2018, either online:

<http://go.illinois.edu/asparagusproduction>, or by calling the Extension office in Murphysboro (618) 687-1727.

## Upcoming Webinar

### Indiana High Tunnel Production: A Handbook for Growers and Tips on Winter Production

**Date:** April 17 2018 9:30 am Eastern Time

Join us to learn important information about common challenges and considerations growers wish they had known before installing their high tunnel. We will present findings from a recent study conducted jointly by IU and Purdue University on farmers' experience with high tunnels. Hear recommendations for environmental management, soil health, pest and disease management, planting schedules and spacing in the high tunnel. Key points about winter production from a SARE partnership project will wrap up the session.

Register here <https://purdue.webex.com/purdue/onstage/g.php?MTID=efb00a11038df4e9a6b5464fba830c367> Those registered will receive reminders about the webinar and a link to join. For more information please contact Analena Bruce at [anabruce@indiana.edu](mailto:anabruce@indiana.edu)

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