VEGETABLE CROPS HOTLINE

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

Issue 622 - October 14, 2016

In This Issue

Time to Renew

(Wenjing Guan, guan40@purdue.edu, (812) 886-0198)

This is the final issue of the *Vegetable Crops Hotline* (*VCH*) for 2016. Now is the time for subscribers who receive a paper copy in the mail to renew. A renewal form is included with this issue. You can also sign-up for Veggie Texts with the same form. More information about Veggie Texts can be found in ISSUE 615. Email subscribers will remain on the subscription list for VCH as long as the email address works. Email subscribers will need to send us an email or call us to sign-up for Veggie Texts. IVGA members will have their *VCH* subscription renewed when they renew IVGA memberships and do not have to send in a separate renewal form for the newsletter. An IVGA membership form is included here too.

Thank you very much for your support of *VCH*. If you have any suggestions, ideas, comments, please do not hesitate to send me a note (guan40@purdue.edu or Southwest Purdue Agricultural Center, 4369 North Purdue Road, Vincennes, IN 47591). Thank you for helping us improve the newsletter!

Welcome Dr. Ariana Torres and Dr. Krishna Nemali

(Wenjing Guan, guan40@purdue.edu, (812) 886-0198)

We have two new extension faculties join the Department of Horticulture and Landscape Architecture at the Purdue University. Please join me welcome Dr. Ariana Torres and Dr. Krishna Nemali.

Dr. Ariana Torres

Dr. Torres' background combines field experience in agriculture with theoretical and applied research on agricultural economics. After earning her B.Sc. in Agricultural Engineering at Zamorano University, she came to Purdue to pursue her graduate studies. She completed her M.Sc. in Horticulture and her Ph.D. in Agricultural Economics, both at Purdue University. She has worked on projects such as the impact of market channel choices on the certification and decertification process of organic farmers; the economic implications of social capital on entrepreneurship; and the resilience of small businesses after disasters. Her research focuses on the intersection between the horticulture industry and marketing decisions. Her goal is to conduct innovative outreach and applied research in Specialty Crops Marketing, with the end of promoting economic sustainability for the Horticulture Industry. Specifically, she is interested on supporting business development of new products, production strategies, and market options. Contact information of Dr. Ariana Torres: (765) 496-3425 (Hort), (765) 494-8248 (AgEco), torres2@purdue.edu

Dr. Nemali has responsibility for extension and research activities related to controlled environment agriculture which includes ornamentals and vegetables grown under protected culture. He also teaches courses related to

Dr. Krishna Nemali

controlled environment agriculture production and technology. He has a B.S. in Agriculture from the Andhra Pradesh Agriculture University, India. His M.S. and Ph.D. programs at the University of Georgia focused on development of plant-uptake based automated irrigation technique using sensors and understanding the physiological responses of greenhouse crops to varying input (light, water and nutrients) levels during production. As a postdoctoral fellow at the University of California, Davis he studied physiological mechanisms that render tolerance to drought in Arabidopsis ecotypes. Prior to joining Purdue, he worked at Monsanto company, USA for nearly 9 years as a controlled environment crop physiologist. His research at Monsanto significantly contributed to the commercialization of the first biotechnology-derived drought tolerant maize. A primary goal of his program at Purdue is to develop new and affordable technologies that improve sustainability (i.e., reduce input waste, minimize environmental impact, and increase profits) in controlled environment agriculture and make them easily available to growers. He aims to train students with sustainable production practices that are complemented with state-of-the-art technologies in controlled environments to become next generation growers and researchers. He plans to actively engage and contribute to the existing diversity programs at Purdue. Contact information of Dr. Krishna Nemali: (765) 494-8179, knemali@purdue.edu

Aphid Management in Winter Green Production in High Tunnels

(Laura Ingwell, lingwell@purdue.edu)

Aphids can be one of the most damaging and hard to control pests during the winter months in high tunnels. The first step to managing aphids is to develop a scouting plan. Aphids reproduce clonally and develop quickly leading to very large population build-up in a short period of time. Therefore scouting is recommended at least three times a week. When examining plants be sure to look at the growing point and underside of leaves, where aphids prefer to colonize (Figure 1). Outbreaks commonly begin on the outer rows or the start of the row so these are places to be sure to include when scouting.

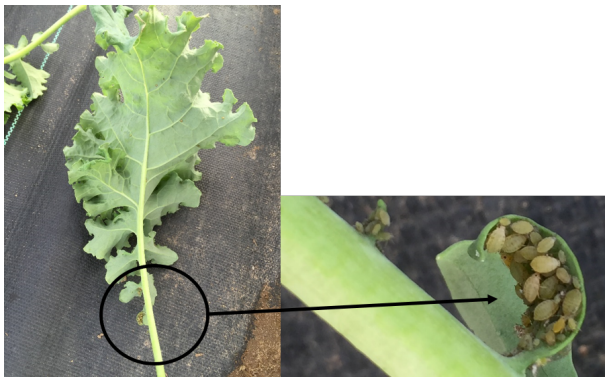


Figure 1. Aphids on kale crop. Photos courtesy Liz Maynard.

In the summer months, successful control has been achieved using a soap/mineral oil spray consisting of 1.5% castile soap and 0.25% mineral oil. Cornell University also reports grower success using the biopesticides Mycotrol O and BotaniGard. These are commercially available formulations of the aphid-attacking fungus *Beauveria bassiana*l. All three of these methods require that applications directly contact the aphids. Plant spacing and anatomy can affect the rate of application and efficacy.

Biological control is another approach that can have lasting control. During production times in high tunnels when the sides are open, it has been difficult to retain predators. These problem will be alleviated by having the sides closed and with the addition of row covers which will trap the predators closer to the crop. Lady beetles have been reported as effective, offering control throughout the colder months, according to Cornell University. Control was achieved using a release rate of 9 adult lady beetles per square foot. In early fall green lacewing larvae (*Chrysoperla carnea*) may be an additional option for controlling populations. Releasing eggs is not recommended at this time because the cooler temperatures increase the time to hatch, delaying control. Larvae will begin eating aphids when they are released. The cold tolerance of green lacewings has not been examined but we have conducted experiments showing that adults are active and still lay eggs at 11C (51.8˚F). Parasitoid effectiveness declines under cooler temperatures and growers have expressed concerns regarding removing aphid mummies from the vegetables and therefore are not recommended.

Some important cultural considerations to keep in mind is starting with clean plants, whether that be transplants or removing infested crops from summer production before seeding winter greens. It is also very easy for aphids to hitch hike on workers so knowing where infestations are happening and working in those areas last can prevent movement among crops or tunnels. Adhering to suggested plant spacing can make application of oils and biopesticides more effective. Lastly, controlling weeds, which can serve as alternative hosts to the aphid pests will lessen problems with re-infestation.

A combination of the practices described above can lead to the successful control of aphids in winter green production in high tunnels in Indiana. Frequent scouting and quick responses may be key to preventing large infestations. Combining predators and biopesticides in an integrated program can offer natural controls for aphid management.

See this link for the information from Cornell: http://rvpadmin.cce.cornell.edu/uploads/doc_197.pdf.

Fall Clean and Sanitize

(Dan Egel, egel@purdue.edu, (812) 886-0198)

As Indiana growers finish up the 2017 season, it is important to remember to clean and sanitize equipment and tools. In this article, I would like to discuss the importance of and how to sanitize.

Bacteria and fungi that cause plant disease may survive on some types of equipment. Examples include: stakes, transplant trays, shovels, greenhouse benches etc.

Equipment can be contaminated by diseased plants in close contact with the surfaces. For example, a tomato with bacterial canker may rub up against a wooden stake, transferring some of the bacteria to the stake. Such bacteria may cause disease problems next year. A transplant tray of cantaloupe with a damping-off problem may have the same disease next year if the tray is not properly cleaned and sanitized.

It is important to clean the equipment of crop debris or soil prior to the use of one of the sanitizers described below. Equipment free of crop debris and soil is less likely to harbor disease. However, the use of a sanitizer helps to kill any pathogens that remains after cleaning.

This article will discuss 3 types of sanitizers: sodium hypochlorite, hydrogen dioxide, and quaternary ammonium.

Sodium hypochlorite – this is common household bleach. The advantage of bleach is that it is easy to obtain and relatively cheap to purchase. The disadvantage of bleach is that sodium hypochlorite is easily deactivated by sun and organic matter. When the solution becomes dirty with organic matter, it needs to be changed. Normally, bleach solutions should be changed after about 2 hours of use. See detail below regarding use rates.

Hydrogen dioxide – products with this active ingredient include Oxidate® and Zerotol®. Hydrogen dioxide is similar to hydrogen peroxide, which is used as a skin disinfectant (do not use hydrogen peroxide for agricultural uses). The labels I have for Oxidate®, Oxidate 2.0® and Zerotol 2.0® discuss the use of these products for sanitizing hard, non-porous surfaces. That would seem to exclude use on wooden stakes. However, the labels for Oxidate 2.0® and Zerotol 2.0® also describe the use of foaming applications for porous surfaces by the use of surfactant foaming agents. Both Oxidate 2.0® and Zerotol 2.0® have 2% peroxyacetic acid in addition to hydrogen peroxide. Do not store mixes of any of these products for use the next day.

Quaternary ammonium – Products with this active ingredient include Green-Shield® and Physan 20®. These products have identical active ingredients. The label for both products states that surfaces should remain wet after application for at least 10 minutes regardless of application method. Solutions should be prepared daily or re-mixed when solution becomes visibly dirty. This is good advice for all three of the sanitizers discussed here. The Physan 20® label clearly states that it should only be used for non-porous surfaces. The Physan 20® label also states, “Not intended for use in domestic greenhouses where food crops are grown”. I think this means not to use Physan 20® in homeowner greenhouses for food crops.

All three of the sanitizer products described here must be diluted before use. That is, don’t use any of these products straight out of the bottle.

Hydrogen dioxide and quaternary ammonium products have clear use directions for dilution and application. These products also have Worker Protection Standards (WPS) for what to wear during applications. Follow these directions carefully.

It may be more difficult to interpret the bleach label for use in agricultural situations. I recommend the rate listed under “Sanitizing work surfaces”, 2 tsp (1/3 fl oz) per gallon of water. This works out to 200 ppm available chlorine. WPS requirements for the use of bleach in an agricultural situation are not listed on the bottle. However, I recommend using similar requirements as are listed for the hydrogen dioxide and quaternary ammonium products: coveralls worn over long-sleeved shirt and long pants; waterproof gloves (the long chemical resistant kind); chemical-resistant footwear and socks; protective eyewear (goggles or face mask); chemical-resistant apron when mixing. Bleach is usually available in gallon jugs of 8.25% sodium hypochlorite. Note that old bottles of bleach may lose activity. Test kits are available to test sodium hypochlorite activity.

For most uses, I recommend the use of either the hydrogen dioxide and quaternary ammonium products. These products should have more activity longer in solution than bleach.

Although it may seem like a lot of trouble now, cleaning and sanitizing equipment will save time and money in the long run.

Cucumber Variety Evaluation in a High Tunnel at Southwest Indiana

(Wenjing Guan, guan40@purdue.edu, (812) 886-0198)

Tomato is considered one of the most profitable crops grown in high tunnels, but continually growing one single crop leads to build-up of diseases. In addition, growers are facing more competition in selling tomatoes in the market. To enhance resilience of high tunnel system and increase access to consumers, crop diversification is important. In this article, instead of discussing tomatoes, we will focus on another high-value crop, seedless cucumber.

Fresh consumed seedless cucumber is a popular crop in local food

markets. It sells at a premium price in early seasons as does tomato. Seedless cucumbers grown under protected cultures are parthenocarpic, which do not require pollination. In addition, the climbing habit allows trellising, which maximizes the use of vertical spaces, making seedless cucumber an ideal crop for high tunnel production.

Parthenocarpic cucumbers are available in different types. The long ones are often referred to as European, Japanese or English cucumbers. They have thin skins with longitudinal ridges. They are often individually wrapped to prevent postharvest fresh weight loss. Beit Alpha cucumbers are smaller, with a wide range of sizes. Large Beit Alpha cucumber is similar to slicing cucumbers. Pickling cucumbers with the parthenocarpic character are also available in the market.

In spring 2016, we evaluated the yields of four seedless cucumber varieties grown in soil in a high tunnel at the Southwest Purdue Agricultural Center. The varieties are Diva (slicing type), Socrates (large Beit Alpha type), Excelsior (pickling type) and Taurus (Japanese type). Seedlings were transplanted on March 30. They were planted 12 inches apart on plastic covered beds. We encountered a cold period in early April with average soil temperatures less than 60°F. Cucumbers are extremely susceptible to the low soil temperatures, as more than half of the newly planted seedlings were killed. The dead plants were replanted on April 14. We started to harvest 'Excelsior' on May 9, 'Socrates' on May 13, 'Taurus' on May 16 and 'Diva' on May 27. Harvest was conducted three times a week, and lasted till August 8. Table 1 and 2 showed the yield of the four varieties in May, June, July, August and the entire season. 'Socrates' had the highest yield, and produced the most fruit. 'Taurus' had the lowest yield but still produced more than 25 cucumbers per plant. Talking with several people who tasted the cucumbers, most of them think 'Taurus' had the best taste.

Figure 1. Harvested cucumbers.

Table 1. The yield of parthenocarpic cucumbers in May, June, July, and August in the season of 2016.

Variety	May		June		July		August	
	No.	Lbs	No.	Lbs	No.	Lbs	No.	Lbs
Diva	2.28	0.79	17.04	5.44	14.08	10.38	4.5	1.85
Excelsior	7.56	1.96	25.67	6.70	15.89	4.47	6.89	1.98
Socrates	8.56	2.98	25.28	8.62	18.85	8.05	7.92	3.13
Taurus	3.12	1.81	8.67	4.12	8.94	4.69	4.41	2.12

Table 2. The total yield of cucumbers in the season of 2016.

Variety	Fruit number	Weight (lb.)
Diva	37.9	18.45
Excelsior	56	15.12
Socrates	60.6	22.75
Taurus	25.14	12.74

In the trial, all the cucumbers were trellised and pruned, leaving 1-2 fruit per node. Trellising needs to be conducted twice a week, particularly in June, when vines grow more than 20 inches a week. Growth rate of 'Taurus' was slower compared to other varieties in June and July (Table 2).

Table 2. Weekly vine growth (inch)

Variety	April	May	June	July
Diva	2.52	10.03	21.05	13.57
Excelsior	3.99	12.22	20.29	13.53
Socrates	3.37	12.84	21.44	15.66
Taurus	2.89	12.05	15.33	9.43

Seedless cucumber lose fresh weight quickly after harvest. Without cooling, fresh cucumbers lost 9 to 13 grams of fresh weight in the first 24 hours under ambient room temperature and humidity. After 5 days, 23.89 to 49.6 grams of fresh weight were lost. Among the varieties, 'Taurus' is the most susceptible variety to fresh weight loss while 'Excelsior' was the least susceptible variety.

Throughout the season, we continuously pruned older leaves of each plant. This practice did a good job in controlling, or at least slowing down spread of powdery mildew and two-spotted spider mites. However, we did notice 'Excelsior' is more susceptible to two-spotted spider mites compared with other varieties. Cucumber beetles were observed in early June, but wilt did not occur until the end of July. We started to see more plants wilt in early August, which made us decide to terminate the trial on August 8.


Figure 2. Older leaves were pruned on cucumber plants.

This trial showed the great promise of growing cumbers in high tunnel system to achieve high yield and extend the harvest season. Early planted cucumbers take a higher risk of transplant failure under low soil temperatures. However, another of our study demonstrate that this challenge can be overcome by using grafting technology. Seedless cucumbers need to be well packaged to prevent fresh weight loss, this is particularly true for the long-type cucumbers. Growing cucumbers in the early season and using appropriate cultural practices may provide a solution for organic growers to combat pest problems. For more information about the cucumber study please contact Wenjing Guan at guan40@purdue.edu or (812) 886-0198.

The Top Five Things to Consider Before Pricing Your Products

(Ariana Torres, torres2@purdue.edu)

Fall is already here and winter is closer than expected. As business starts to slow take the opportunity to reflect on what was great, good, or not-so-good during this growing season. This time of year also brings the opportunity to start planning next year's strategies. Pricing strategy is one of the key strategies influencing your earnings. This article provides you the top 5 issues you should consider before setting prices for your products.

1. Define your price floor.

The price floor is the minimum price you can afford to receive from customers and *still* cover the total costs involved in bringing your products to life. A tomato farm that sells tomatoes by pounds can calculate the price floor, or total costs per pound of tomato, by adding all costs and dividing them by the total pounds produced. Costs can be further categorized as **variable costs** if they vary with the level of production (seed, water, fertilizer) or **fixed costs** if they do not vary with production (rents, administrative labor). Good record keeping facilitates price floor calculations. Calculating your costs per unit of product, or price floor, will help you determine the minimum price for your product. Of course you would want to make a profit, so any additional dollars that you receive after covering your price floor will be a profit margin. This is a good way to feel comfortable on setting a price that will earn you some profits. Computing your costs can also help you determine how well your business doing with respect to previous performance.

2. Define your price ceiling.

The price ceiling depends on the maximum price consumers are willing to pay for your product. Figure 1 is an illustration of how costs, profit margin, and prices are related. The set of prices between the price floor and the price ceiling is the range of potential prices that you can set for your product.

How can you estimate your price ceiling? First, you need to assess what is the value that customers perceive from your product. Keep in mind that while you sell product or services, customers perceive benefits and values. One way to estimate the value of your product is by asking customers what are the things they like about your product, does it have a better taste, does it save them time, is it convenient?

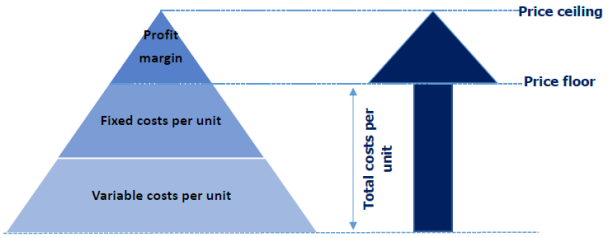


Figure 1. The relationship between costs, prices, and profit margin

Profit margin is calculated by the selling price minus the price floor (*see formula below*). The product profit margin is ultimately what will keep your business succeeding. You can use that profit margin to grow your business, reinvest, or replace equipment or inventory. Some businesses find it useful to compare profit margins of different products, so they can assess how each product contributes to total farm profitability. Keep in mind that you are unlikely to achieve the same profit margin across all products.

3.Your selling price has a lot to say about the image of your company.

The price that you set for your products reflects their quality. I mentioned above how important it is to understand your customers. Talk to them and find out why they buy from you and what they buy. The point is to assess the image of your company from your customers' point of view and how can you use that image (or correct it) to set your selling prices. Pricing your products too cheap may get customers wondering what if there is something wrong with your product. On the other hand, if the price is too high they may perceive a better quality or wonder if you are taking advantage.

Sometimes small businesses tend to slash prices so they can increase sales. Avoid falling into the pattern of discount offering, especially if your prices are below your price floor and you are not covering costs. Sometimes it is useful to offer lower introductory prices so you can attract customers to buy a new product. Just keep in mind that introductory prices can help to create a niche market but it may not be a sustainable strategy if you do not increase prices in the future.

4. Identify your competitor's strategies.

This is a key aspect impacting your pricing strategy. You need to know who your direct competitors are and the range of products they offer. Investigate how are your competitors' products compare to yours, their prices, and their market strategies. Your goal is to offer products and services that provide more benefits to your customers than the competition. However, you want to avoid getting into a price war as much as possible. Price wars are created when you and your competitors cut down prices to gain market share. This strategy can be dangerous for small businesses as it can undermine your sense of worth and the value of your business. A better alternative is to win the non-price competition battle by differentiating your product.

5. Provide value-based pricing strategy

Price is the monetary value of a product or service. Value-based pricing uses a customer-centric approach to pricing. The higher the value perceived by customers, the higher the price that customers will be willing to pay for it. Thus, it is important to understand the attributes that your customers value, and offer them exactly that. A high value product offers several benefits to customers such as convenience, taste, and freshness. The goal is to build long-term relationships with customers by offering more value than your competitors. Adopting a differentiation strategy can help small businesses gain customer loyalty. Differentiation means offering products and services that are important to *customers*.

MW Vegetable Guide for 2017

(Dan Egel, egel@purdue.edu, (812) 886-0198)

Usually I wait until January before releasing information about the *Midwest Vegetable Production Guide for Commercial Growers* (*ID-56*). For two reasons, however, I would like to talk about the 2017 *ID-56* now.

1. This year, we welcome Michigan growers and Michigan State University to the *Midwest Vegetable Production Guide* The Guide is now an 8-state publication.
2. We expect the *ID-56* to be available in mid-December this year, instead of the beginning of January.

Read below to find many new changes to the 2017 *ID-56*.

New and Revised Sections

- We added a chapter for Celery with the help of MSU.
- We added a section called Selected University Diagnostic Laboratory Services, which includes contact information for each state.
- We revised the organic section to list certifiers on a regional basis.
- The Soils and Fertility section has been modified and updated.

Disease Management

- We updated the Disease Management section.
- We updated the Orondis® products (Ultra®, Opti®, and Gold®) in the Cucurbit Crops and Fruiting Vegetable chapters.
- The Luna® products Experience® and Sensation® have had label expansions to include all cucurbits.
- We updated product rating tables in the Cucurbit Crops and Fruiting Vegetables chapters.
- The powdery mildew on tomato section contains updates with several new products.

Weed Management

- We added Spartan 4F® and Spur 3L® to the Asparagus chapter.
- The Cole Crops and Fruiting Vegetables chapters now include Prowl H2O® and Stinger®.
- For pumpkins, we added Reflex® for Illinois and Michigan growers only
- The Fruiting Vegetables chapter now includes Devrinol 50DF-XT®.

Insect Management

- The Asparagus chapter includes several new insect pests.
- We added thresholds for thrips control and insecticide use to the Dry Bulb and Green Bunching Onion, Garlic, and Leek chapter.
- The Cucurbit Crops, Legumes, and Potato chapters include new uses for Sivanto®.
- We added Venom 70SG® to the Cucurbit Crops chapter.
- The Cole Crops and Potato chapters now include Belay 2.13 SC®.
- We removed Synapse® from the guide.
- The Legumes chapter no longer includes Di-Syston SE®.

I hope you will purchase a hard copy of the *ID-56* from the Purdue University Education Store (888-398-4636) or at one of the winter technical meetings such as the Horticultural Congress in January. Alternatively, visit mwveguide.org to get a free on-line version. Call Dan Egel to get more information.

Cover Crop Decision Tool for Vegetable Growers – Discussion on November 7th

(Anna Morrow, annamorrow@purdue.edu, (317) 392-6417)

The Midwest Cover Crops Council (MCCC) strives to facilitate widespread adoption of cover crops throughout the Midwest, to improve ecological, economic, and social sustainability. The Cover Crop Decision Tool is an initiative by the MCCC to consolidate cover crop information by state to help farmers make cover crop selections at the county level. The tool makes seeding date recommendations based on county specific weather information, and sorts cover crop species by desirable attributes of the farmer's choosing. Indiana was the first state in the Midwest to implement a decision tool for field crops and Michigan is currently the only state with a decision tool for vegetable crops. Indiana SARE (Sustainable Agriculture Research and Education) is funding the creation of a decision tool for vegetable crops in Indiana this fall. Both the IN field crops tool and MI vegetable tool can be found on the MCCC website (mccc.msu.edu).

We are seeking farmers who use cover crops in vegetable production to assist in crafting the Indiana Vegetable Decision Tool. We will have an in person discussion about seeding dates, seeding rates, and species attributes at the Shelby County Purdue Extension Office (1600 East State Road 44, Suite C, Shelbyville) on Monday November 7 from 10am to 1pm. Lunch will be provided by IN SARE. Please RSVP to Anna Morrow (annamorrow@purdue.edu or (317) 392-6417) by November 2 if you plan to attend. If you cannot participate, we would appreciate if you could send us your suggestions and expectations on the upcoming tool. If you have questions about this process or would like to know more, please contact Midwest Cover Crops Council

Program Manager Anna Morrow at annamorrow@purdue.edu or (317) 392-6417.

Upcoming Events

(Wenjing Guan, guan40@purdue.edu, (812) 886-0198)

Tomato Grafting Workshop

Date: November 14, 16,17, 2016 2:00 PM to 3:00 PM (EST)

Location: Southwest Purdue Ag Center (SWPAC), 4369 N. Purdue Road, Vincennes, IN

Grafting has the potential to control soilborne diseases and increase yield of high tunnel grown tomatoes. Grafted tomato transplants cost about $2-$4 per plant. High cost prevents growers using this technology. By developing a simple system, grafting tomatoes can be conducted at your own farms. To help tomato growers learn grafting technology, we plan to organize tomato grafting workshops at SWPAC this fall. The workshops will be conducted on Nov. 14, 16, 17, from 2:00 pm to 3:00 pm (EST). The workshop is free, but please call us to register and pick the day that works best for you. To ensure every participant receives adequate hands-on practice opportunity, no more than 10 participants will be accepted on each day. To register, please call (812) 886-0198.

A grafted tomato plant grown in a high tunnel

Southwest Indiana Melon and Vegetable Growers' Technical Meeting

Date: November 28, 2016 5:00 PM to 8:00 PM (EST)

Location: Southwest Purdue Ag Center (SWPAC), 4369 N. Purdue Road, Vincennes, IN

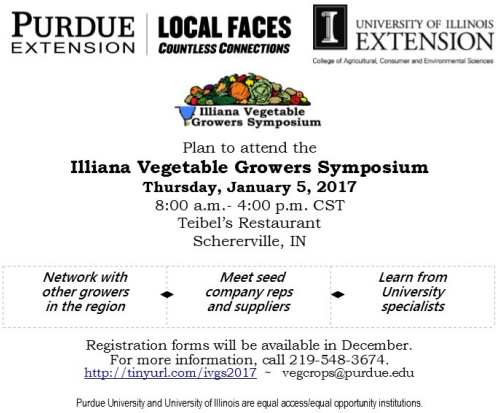
The meeting will start at 5:00 P.M. for board members to discuss topics for the March meeting. Any member who wants to participate in the discussion is welcome. At 6:00 P.M., dinner will be served. Following that, we will showcase variety trials conducted at SWPAC in 2016, which include seedless watermelons, cantaloupes, personal-sized watermelons, and seeded watermelons. Any grower interested in becoming a member is invited to attend. Membership dues are $15 per year and can be paid at the meeting. To register please call (812) 886-0198. Registration is due by Nov. 22. Any questions, please contact Wenjing Guan at guan40@purdue.edu

Illiana Vegetable Growers Symposium

Date: January 5, 2017 8:00 A.M. to 4:00 P.M. CST

Location: Teibel's Family Restaurant, 1775 US 41, US 30 & US 41, Schererville, Indiana

Registration will be available in December. For more information, please contact vegcrops@purdue.edu or (219) 548-3674. Updated information will be available at http://tinyurl.com/ivgs2017



Indiana Horticultural Congress – Note New Date and Venue

Date: January 10-12, 2017

Location: Indianapolis Marriott East Hotel, 7202 East 21st Street, Indianapolis, IN 46219

The Indiana Horticultural Congress is an educational meeting designed to meet the needs of fruit, vegetable, wine, organics, and specialty crop growers and marketers in Indiana and surrounding states. All interested individuals are invited to attend. For hotel reservations: **Book your group rate for Indiana Horticultural Congress & Trade Show** on-line, or call (800) 991-3346 and state you are making a reservation for the Indiana Horticultural Congress, Indianapolis Marriott East.

Aquaponics Conference

Date: October 28-29, 2016

Location: Kokomo Event & Conference Center, 1500 N. Reed Road in Kokomo

Aquaponics is a system that combines fish rearing and vegetable production. Topics include food safety of vegetables, pest control in aquaponics operations, indoor environmental conditions, vegetables for aquaponics, greenhouse structures and fish in aquaponics operations.

Early-bird registration fee through Sept. 18 is $90 for Indiana Aquaculture Association Inc. (IAAI) members and $100 for non-members. After that date, registration is $100 for IAAI members and $125 for non-members. An optional tour of Green River Greenhouse can be added for an additional $20 per person. Registration is available at www.indianaaquaculture.com.

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