

FACTS FOR *Fancy Fruit*



May 29, 2015
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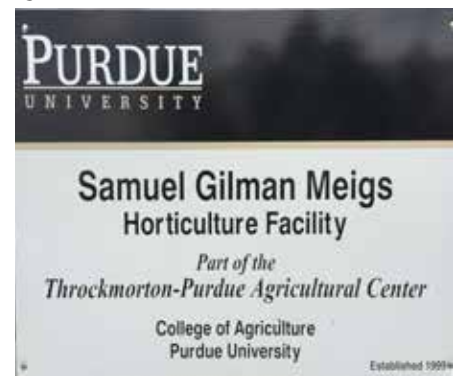
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Crop conditions:

Apples in Lafayette are about 20 mm and chemical thinning applications appear to be having a good effect.
 Grapes and raspberries are in bloom in the Lafayette area. Strawberry harvest will begin soon.

proud of the Meigs farm and look forward to showing growers the farm and the research being conducted.



June 23, 2015
 IHS Summer meeting
 Purdue University Meigs
 Horticultural Research Farm
June 24, 2015
 Campus & facilities tour

**Indiana Horticultural Society
 summer meeting :**

You are warmly invited to join us for the summer meeting of the Indiana Horticultural Society. The meeting will be held June 23 at the Purdue Meigs Horticultural Research Farm, Lafayette, IN with tours of campus facilities the following day for those who wish to stay. All growers and those interested in fruit crops are invited to attend. While we encourage membership in the Indiana Horticultural Society, membership is not required to attend the field day. We are

Samuel Gilman Meigs Horticultural Facility: Purdue has eight regional research centers located around the state. Researchers from diverse agricultural disciplines use the eight regional Purdue Agricultural Centers (PACs) to test ideas that are created and developed on campus. The PACs offer tremendously diverse land and soil types as well as extensive resources for study and testing. These farms enable scientists to advance agricultural research in real-world conditions and to take risks that eventually might benefit producers in each area. Each year, scientists conduct over 340 research projects on more than 40 different crops at the eight centers. Researchers are assisted by 29 PAC staff members spread across 11,000 acres.

The closest PAC to campus is the Throckmorton Purdue Agricultural Center (TPAC) which is comprised of 567 tillable

acres. Dr. George Throckmorton gave the farm to Purdue Agriculture in 1935 in memory of his father Edmund. It was deemed the “Edmund Throckmorton Farm Memorial” as a tribute to this pioneer leader of Tippecanoe County.

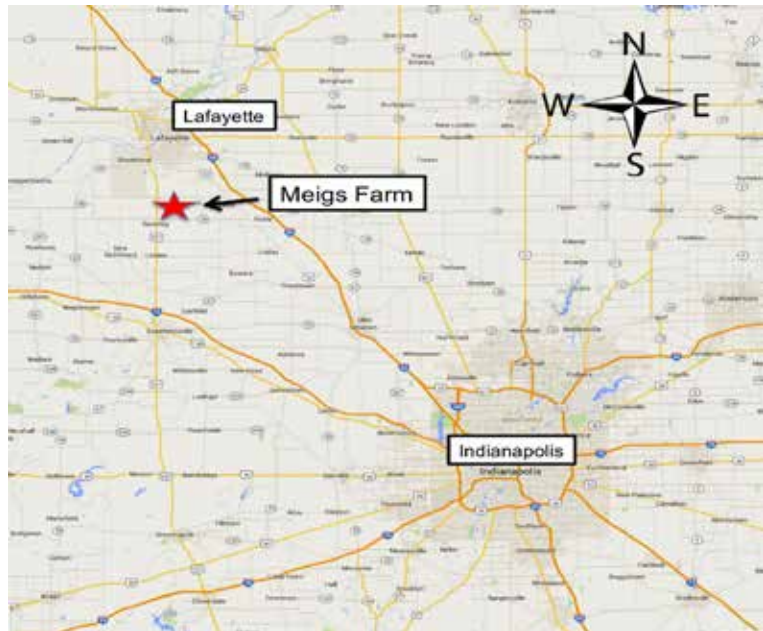
The Samuel Gilman Meigs Horticultural Facility is part of the Throckmorton farm. In the late 1990s, horticultural research was relocated from the old Horticultural and O’Neill Memorial Farms to the Meigs Farm. The first apple trees and grapevines were planted at Meigs in 1999. The Meigs Farm itself is 240 acres, of which 145 acres are set up for drip and overhead irrigation. The Meigs facility has a state-of-the-art pesticide handling facility, a full spectrum of specialty crop equipment, and six high tunnels. After struggling with high deer pressure for a number of years, an 8’ high permanent deer fence was constructed in 2012.

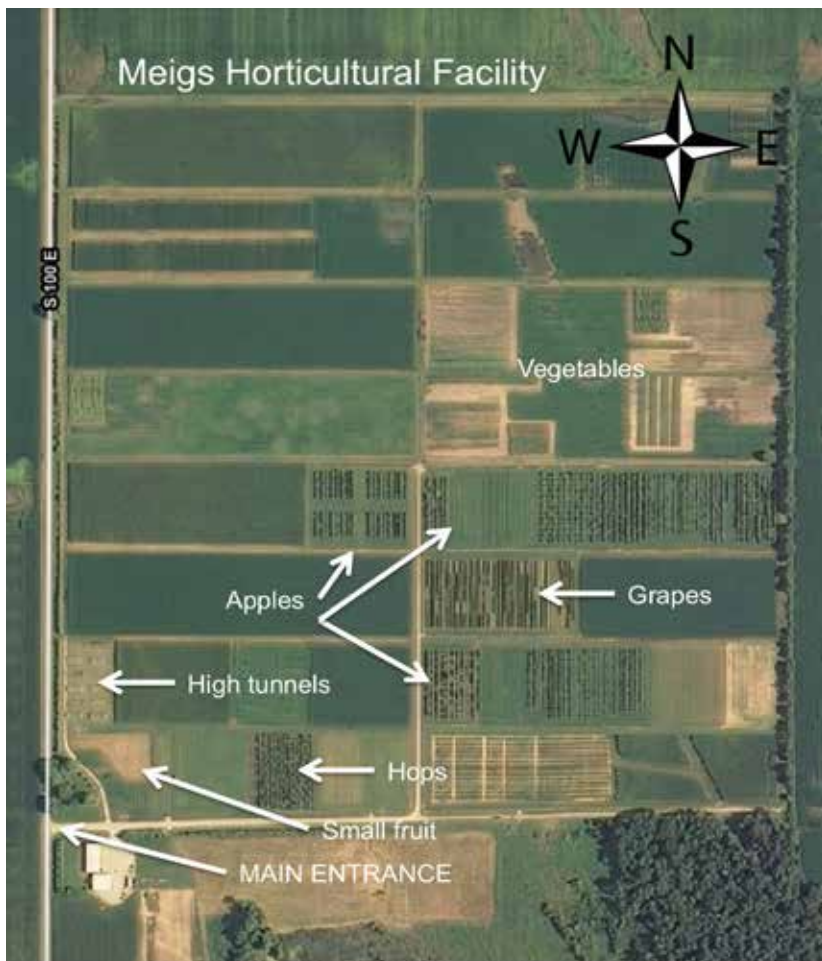
Current work at TPAC and Meigs involves more than 30 different crops. Research focuses on weed management, insect management, soil fertility, agronomic crop production, ornamentals, fruit and vegetable production, biological controls, systems engineering, hardwood production, woodland and habitat management, and resistance management of weeds and insects. New areas of interest include organic and high tunnel vegetable production. Researchers from the departments of Agricultural and Biological Engineering, Agricultural Economics, Agronomy, Botany and Plant Pathology, Entomology, Forestry and Natural Resources, and Horticulture

and Landscape Architecture are currently working at TPAC and the Meigs Farm.

The Meigs Farm is located about 8 miles south of Lafayette, one mile east of US 231.

<http://mapq.st/1Km9ivZ>





Satellite view of the Meigs Farm showing some of the crops being grown

for networking among growers and exhibitors.

Registration and costs

Registration is \$10 per person, lunch is \$10 per person and the evening dinner is \$15 per person. Both registration and meal costs will be collected on site. However we ask that those planning to attend RSVP to assist with our planning for meals and other arrangements. To register, visit

<http://tinyurl.com/o55wph2>



or contact Lori Jolly-Brown
ljollybr@purdue.edu, 765-494-1296.

Accommodations

We are not planning a room block, but the following is some hotel information for those who are interested.

<http://www.union.purdue.edu/hotel/>

<http://hiltongardeninn3.hilton.com/en/hotels/indiana/hilton-garden-inn-west-lafayette-wabash-landing-LAFWLGI/index.html>

<http://www.fourpointswestlafayette.com/>

<http://www.ihg.com/holidayinn/hotels/us/en/lafayette/lafin/hoteldetail>

Program

9:00 am Registration

9:30 am Welcome and program overview

9:45 am Sprayer calibration and determining the quality of spray water.

11:45 am Exhibitor introductions

12:00 pm Lunch at the farm

12:45 pm Begin field tours

- Dwarf apple tree management

- Avoiding biennial bearing on Honeycrisp

- Grape variety performance after the 2014 Polar Vortex: The good, the bad, and the ugly!

- High tunnel growing Pest control on sweetcorn

- Spotted wing Drosophila in berries

- Less is more: Utilizing adjuvants to manage common apple diseases

5:00 pm Social Hour

Optional wagon tour of the farm highlighting other research plots and crops, precision agriculture applications, hops, berries, vegetables, paw paws, etc.







6:00 pm Dinner at the farm

8:00 pm Adjourn

Meals

A boxed lunch (\$10) and evening dinner (\$15) will be offered to provide time

Current bud stages West Lafayette, IN

<i>Apple</i>	<i>Grape</i>	<i>Raspberry</i>
		
<i>20 mm thinned fruit begin to drop</i>	<i>Early bloom</i>	<i>Late bloom/petal fall</i>
<i>Cherry</i>	<i>Blackberry</i>	<i>Strawberry</i>
		
<i>fruit about 12 mm</i>	<i>Full bloom</i>	<i>Start of harvest</i>

Timing Codling Moth Sprays:

In the last edition of FFF, I discussed biofix and the accumulation of degree days to improve timing of spray for codling moth control. This article will continue the same story. My pheromone trap catches are as follows:

Date	Trap Catch
May 6	2
May 7	7 – Biofix
May 8	2
May 11	22
May 12	1
May 13	1
May 15	10
May 18	21
May 19	4
May 22	3
May 26	0

So, when I reached biofix on May 7, I started accumulating degree days. When I list (50), it means the low temperature was below 50 but I adjusted it upwards to 50.

If you look on page 23 of the Midwest Tree Fruit Spray Guide, there is a table that shows the optimal timing for different insecticides. So, if spraying Dimilin or Rimon, May 9 would have been the best day to spray. If using Intrepid or Confirm, sometime between May 12 and May 17 would be good. Those products are insect growth regulators and that is the reason for the early application. For the next

Date	Low	High	Mean	DD	Total DD
May 7	57	85	71	21	21
May 8	65	84	74.5	24.5	45.5
May 9	63	77	70	20	65.5
May 10	61	79	70	20	85.5
May 11	59.2	71.5	65.4	15.4	99.9
May 12 (50)	59.1	54.4	4.5	104.4	
May 13 (50)	63.2	56.6	6.6	111.0	
May 14 (50)	71.5	60.7	10.7	121.7	
May 15	58	83.2	70.6	20.6	142.3
May 16	65.7	77.3	71.5	21.5	163.8
May 17	66	79.8	72.9	22.9	186.7
May 18	61.8	84.9	73.3	23.3	210.0
May 19 (50)	60.1	55.5	5.5	215.5	
May 20 (50)	53.2	51.6	1.6	217.1	
May 21 (50)	66.2	58.1	8.1	225.2	
May 22 (50)	75.3	62.6	12.6	237.8	
May 23	56.7	85.3	71.0	21	258.8

group, May 16 to May 23 or so would be optimal. For the last group, May 23 would have been the best time to spray. These last two groups mostly kill the larvae.

The reason that we put so much emphasis on timing for codling moth control has to do with the biology of the insect. When the egg hatches, the young larva will usually begin immediately to bore into the fruit. Once the larva is inside the fruit, it is no longer susceptible to insecticides. As a result, you have a very narrow window in which to kill the larva. When you apply an insecticide, the amount of residue, and therefore the killing power, of the insecticide starts to diminish. So, you want to apply that insecticide shortly before eggs start to hatch so that the larvae are exposed to the maximum possible residue levels for maximum kill.
(Foster)

Peachtree Borers:

Borers are a perennial problem for peach growers. There are two major species of concern. The peachtree borer attack the trunk near the soil line and is primarily a pest of young trees. The lesser peachtree borer attacks the upper trunk and scaffold branches and tends to attack older trees. The proper timing of insecticide applications and the insecticides recommended for control are listed on page 45 in the Midwest Tree Fruit Spray Guide.
(Foster)

Eastern Flower Thrips:

I have received one report of eastern flower thrips infestations in strawberries. Thrips are very tiny, slender insects that are attracted to and feed on blossoms. The result can be misshapen or leathery fruit, which is unmarketable. Treatment is justified if you find 2-10 thrips per blossom. Entrust and Radiant are effective controls that are labeled for eastern flower thrips, but Lorsban, Danitol, Brigade, and Endosulfan will also provide good control.
(Foster)

Spotted Wing Drosophila:

Small fruit growers, probably not including strawberry growers, should be monitoring for spotted wing drosophila. Now would be a good time to put your traps in place. Given the severity of the damage and our general lack of knowledge, we are still recommending that growers initiate a spray program when they first start catching SWD in the traps if they have fruit that is approaching maturity.
(Foster)

Brown Marmorated Stink Bug:

It would also be prudent for peach growers especially but fruit growers in general to begin trapping for BMSB now. They are active and will soon start entering orchards and begin feeding. This insect has still not built to economically damaging numbers in most areas of the state, so growers are encouraged to use traps to determine if BMSB is present before they begin

spraying for this pest. Currently, I am using a commercial trap and lure available from Great Lakes IPM to monitor for this pest.
(Foster)

Fungicide Use Midseason and On:

After second cover, the most serious apple pathogens are generally less active, as terminal buds have set, leaves have hardened off (and are now less susceptible) and weather is usually getting hotter and drier. This is the time when we can often (but not always!) dial it back a notch in the fungicide department. Assuming adequate disease pressure was achieved in the early season sprays, growers can use the lowest suggested fungicides rates, extending the periods between spray intervals if the weather stays dry, or even eliminating one or more sprays. The reason for this is two-fold: Drier weather doesn't wash away the fungicide, and only the fruit is actively growing. Assuming adequate coverage, and drier weather conditions, the risk of infection is minimal. Of course, all of this depends upon how good (or lucky!) you were in the early season in controlling disease. If scab had been successfully managed, there is little risk of fruit infection during midseason because inoculum levels were controlled; Powdery mildew and rust are no longer a threat, and fruit is less susceptible to the summer rots as long as weather stays dry. Ideally, that last application of mancozeb also really helped in knocking the summer

rot fungi back. At this point, captan and ziram are the fungicides of choice at their lowest rates (2.5 lb captan or 6 lb ziram per acre) with minimal risk unless rainfall is frequent and conditions turn cooler.

In Indiana, wetter and cooler summers can happen. During those wet years, the judicious addition of Pristine, Merivon, Luna Sensation, Flint, or Sovran provide excellent control of summer disease. These are all good to excellent on the summer rots and sooty blotch/flyspeck. In hot, wet years, bitter rot is an especially bad problem on HoneyCrisp and Golden Delicious. Think of what your crop could look like in August, when it is too late to do anything and protect fruit now! Let me remind you (Fig. 1). Remember, all of these have strobilurins (FRAC code 11) so your decision to use these fungicides during the summer should be balanced against the need for control of early season diseases, the potential for damage by the summer rots, and the limited number of applications recommended on the label. Omega may provide another option (in the fair to very good category) for summer rot disease control, and is a completely different mode of action (FRAC 29).

Lastly, the sooty blotch/flyspeck fungal complex begins the infection process around third cover when rainfall is frequent (and when forest trees are nearby), but they are generally not observed as a problem until later in the season. The incubation period for the sooty blotch/flyspeck pathogens is about 30 days. Keep in mind that

captan and ziram provide effective protection for 10 to 14 days at the most (and a bit longer for Topsin M). Topsin M is effective for most species of sooty blotch/flyspeck, but much less effective on the summer rots.

Again, early prevention is better than later regret!
(Beckerman)



Bitter rot

Summer tipping brambles:

Tipping of primocanes (new vegetative canes from the ground) is an important management practice for summer bearing blackberries and black raspberries. Tipping the new primocanes causes lateral branching and most of the fruit production next year will be from buds on those lateral branches rather than buds off the main cane. Tipping also helps increase the diameter and strengthen the main cane. Tipping height is relative to vigor. Vigorous thornless blackberries can be tipped at 40-48 inches for best results. Black raspberries should be tipped no higher than 30-36 inches to help develop a stout cane capable of supporting itself. Ideally primocanes should be tipped as they reach the appropriate height with minimal tissue removed. Just pinch or break the tip off.

However, if some canes have escaped notice and are taller than desired, it's still preferable to tip at the appropriate height, even if that means removing a foot or more of cane. Tipping red raspberries and all primocane fruiting types is not recommended.
(Bordelon)



Strawberry Renovation:

Matted row strawberry plantings must be renovated after harvest to establish new crowns for next year's crop. Renovation is one of the most important cultural practices for strawberries. It's a bit early to discuss renovation now during the middle of the strawberry harvest season, but for best results, renovation should be started immediately after the harvest is completed to promote early runner formation. The earlier a runner gets set, the higher its yield potential. Growers should begin renovation as soon as the last marketable berries are harvested. Delaying renovation is one of the most common mistakes growers make. Renovation should be completed by the end of July in normal years. The following steps describe renovation of commercial strawberry fields.

1. Weed control: Post emergent application: Annual broadleaf weeds can be controlled with 2,4-D amine formulations. Check the label as only a few products are labeled for use on strawberries. e.g. Amine 4 [Dimethylamine salt of 2,4-D (3.74 lb./gal.)] at 2 to 3 pts/acre in 25-50 gallons of water applied immediately after final harvest. Be extremely careful to avoid drift when applying 2,4-D. Even though the amine formulation is not highly volatile, it can vaporize under hot, humid conditions and cause damage to sensitive plants a considerable distance from the site of application. Some damage to strawberries is also possible. Read and understand the label completely before applying 2,4-D amine. Spur (clopyralid) is labeled for strawberries for control of certain difficult weeds such as thistle, dandelion, curly dock, marestalk, common groundsel, clover, etc. If grasses are a problem, sethoxydim (Poast 1.5 EC) or clethodim (Select 2 EC) will control annual and some perennial grasses. However, do not tank mix these materials and 2,4-D. See the Midwest Small Fruit and Grape Spray Guide and the product label for rates and especially for precautions.

2. Mow the old leaves off just above the crowns 3-5 days after herbicide application. Do not mow so low as to damage the crowns.

3. Fertilize the planting. Generally, nitrogen should be applied at 25-60 lbs/acre, depending on vigor. It is more

efficient to split nitrogen applications into two or three applications at regular intervals, rather than apply it all at once. A good plan is to apply about half at renovation and half again in late August when flower bud development is occurring. A soil test will help determine phosphorus and potassium needs, but foliar analysis is a more reliable measure of plant nutrition. For foliar analysis, sample the first fully expanded leaves following renovation.

4. Subsoil: Where picker traffic has been heavy on wet soils, compaction may be severe. Subsoiling between rows will help break up compacted layers and provide better infiltration of water. Subsoiling may be done later in the sequence if crop residue is a problem or if soils are too wet at this time.

5. Narrow rows: Reduce the width of rows to a manageable width based on your row spacing, the aisle width desired, and the earliness of renovation. A desirable final row width to attain at the end of the season is 12-18 inches. Wider rows lead to low productivity and increased disease pressure. This means that rows can be narrowed to as little as 6 inches during renovation. Use a tiller or cultivator to achieve the reduction. Since more berries are produced at row edges than in the middle, narrow rows are superior to wide rows. Narrow rows will give better sunlight penetration, better disease control, and better fruit quality.

6. Cultivate: Incorporate the straw and other plant material between rows and throw a small amount of soil over the row by cultivation. Strawberry crowns continue development at the top, and new roots are initiated above old roots on the crown, so 1/2 - 1 inch of soil on the crowns will facilitate rooting. This also helps cover straw in the row and provides a good rooting medium for the new runner plants.

7. Weed control: Pre-emergence weed control should begin immediately. There are more options today than in past years. Chateau, Dacthal, Devrinol, Prowl H2O,, Spartan, and Sinbar are labeled materials. See the Midwest Small Fruit and Grape Spray Guide and check the product labels carefully. Devrinol must be incorporated by irrigation, rainfall, or cultivation to be effective. Rate and timing of Sinbar or Prowl H2O application is critical. If regrowth has started at all, significant damage may result. Some varieties are more sensitive to Sinbar than others.

8. Irrigate: Water is needed for both activation of herbicides and for plant growth. Don't let the plants go into stress. Ideally the planting should receive 1 to 1-1/2 inches of water per week from either rain or irrigation.

9. Cultivate to sweep runners into the row until plant stand is sufficient. Thereafter, or in any case after early September, any runner plant not yet rooted is not likely to produce fruit next year and can be removed. Coulter wheels and/or cultivators will help remove these excess plants in the aisle

10. Adequate moisture and fertility during August and September will increase fruit bud formation and improve fruit yield for the coming year. Continue irrigation through this time period and fertilize if necessary. An additional 20-30 pounds of N per acre is suggested, depending on the vigor. (Bordelon)



65

Years at Purdue



We would like to cordially invite you to join us for a celebration in honor of Dr. Jules Janick, who has inspired Purdue University for 65 years and is still going strong!

Celebration dinner and program

Friday, June 12, 2015

6:00 PM

Purdue University

Purdue Memorial Union

101 North Grant Street

Second Floor, East & West Faculty Lounges

West Lafayette, IN 47906

Proceeds beyond event costs will support Dr. Janick's initiative of the Purdue Horticulture Gardens
RSVP for reservations and tickets, \$40 per person, by contacting Jen Deiser: jdeiser@purdue.edu, 765-494-1301

Upcoming events:

June 2, 2015:

Eastern Indiana Horticulture Society: James Heasley's "Slice of Paradise" at 6:00 PM. Jim has an extensive variety of plantings of all kinds of small fruit and tree fruit. Located at 3912 S. Felton St., Marion IN. This is close to the intersection of S.R. 15 and 38th. St. 765-674-3791 There will only be street parking.

June 11, 2015:

Blueberry Growers of Indiana Spring Meeting and potluck. 4:00 pm at Country Heritage Winery, LaOtto, IN. Blueberry Acres Farm of Jeremy and Jennifer Lutter. Country Heritage Winery & Vineyard 0185 CR 68 LaOtto, IN 46763
Phone: 260-637-2980
Directions: 10 minutest north of Fort Wayne on St Rd 3.
For directions go to www.countryheritagewinery.com
4:00pm - (Eastern Daylight Time) - Gather for farm tour led by Jeremy
5:00pm - Potluck dinner (Meat and drink provided, please bring a side dish and/or dessert to share)
5:45pm - BGIN Business Meeting
Election of president/sec/treasurer
Minutes of 6/13/2014 meeting
Financial Report (pass the hat time to reimburse host)
Steering Committee.

Topics of Discussion:
Rolly Groenink of MBG will talk about SWD issue and chemicals.
Comments from Bruce Bordelon of Purdue University.
Crop estimate and location of next year's meeting. Please consider hosting BGIN in 2016.

June 23-24:

Indiana Horticultural Society summer meeting and field tour, Purdue Meigs farm, Lafayette, IN.
All tree fruit, grape and berry crop growers are invited to attend. We have a program planned that should be of interest to all, especially the sprayer calibration demonstration and discussion of water quality issues. A campus tour including visits to the Hort greenhouse, Turf research center, horticulture labs, enology labs and vine library will be offered on June 24 for those who wish to stay.

IHS program:

See beginning of this issue of FFF.

Meals

A boxed lunch (\$10) and evening dinner (\$15) will be offered to provide time for networking among growers and exhibitors.

Registration and costs

Registration is \$10 per person, lunch is \$10 per person and the evening dinner is \$15 per person. Both registration and meal costs will be collected on site. However we ask that those planning to attend RSVP to assist with our planning

for meals and other arrangements. If you would like to join us, please register [here](#)
<http://tinyurl.com/o55wph2>

July 21, 2015:

Indiana Winery and Vineyard Association Summer meeting. Country Heritage Winery, LaOtto, IN. More information will follow.

July 26-29, 2015 :

The Second International Workshop on Vineyard Mechanization and Grape and Wine Quality, Fredonia, New York.
<http://www.ishs.org/symposium/428>

Jan. 19-21, 2016:

Indiana Horticultural Congress, Wyndham Hotel, Indianapolis, IN
<http://www.inhortcongress.org/>

Please visit our Purdue HLA Extension website under the Events tab for further event details.
<https://ag.purdue.edu/hla/extension>



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