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Crop Conditions: Gala harvest is pretty much over and Honeycrisp season is progressing well. Good crops of McIntosh are reported. The season appears to be about normal (whatever that is!!). Grape harvest is progressing well, but slowing down a little now. Fall-bearing red raspberry harvest continues.

Ashworth Leaves Purdue: After 19 years in the Department of Horticulture and Landscape Architecture at Purdue, the last 8 as department head, Ed Ashworth is leaving. Ed and Sharon are moving to Maine where Ed will be the Dean of Natural Sciences, Forestry and Agriculture, at the University of Maine. Ed has been a very effective leader of the Horticulture Department for 8 years, and we are sad to see him leave, although we recognize this is a wonderful opportunity for him in Maine. He leaves with our very best wishes for the future. Dean Randy Woodson has named Dr. Bob Joly as interim department head. We will begin a national search for a new department head in the near future. (Hirst)

Early August Heat Affects Honeycrisp Fruit: In eastern New York and parts of New England, high temperatures (mid-90's F) and high humidity created uncomfortable conditions during the first few days of August. Within

a week, some of the Honeycrisp apples in our planting at the Hudson Valley Lab began showing signs of severe sunburn and heat injury. Several growers in Massachusetts and southern Vermont brought Honeycrisp fruit with similar symptoms to the field day hosted by Northeast Fruit Consultants on August 17.

Most growers recognize sunburn when it shows up as browning or bleaching of the skin on the sunward faces of apple fruits growing in exposed positions within the tree canopy. However, internal fruit damage caused by high temperatures is less common. High ambient temperatures combined with solar heating of exposed fruit can cause breakdown of cells in the fruit flesh. The injury first appears as water-soaked areas on the fruit surface. Water-soaking is also evident in the fruit flesh if fruit are inspected soon after the injury has occurred. Because the damaged cells die and collapse, whereas non-killed

cells in the fruit continue to grow, fruit soon become misshapen. Sections through the damaged fruit then reveal necrotic and collapsed tissues.

Honeycrisp fruit damaged by sunburn or heat injury are especially susceptible to invasion by the species of *Botryosphaeria* and *Colletotrichum* that cause black rot, white rot, and bitter rot. The heat-damaged skin can no longer maintain the natural defense mechanisms that normally help to protect apple fruit from infection by these pathogens, so summer fruit rots may appear even where reasonable fungicide protection has been maintained through summer. In some cases, pathogens initially cause lenticel spots on sunburned areas of the fruit, and those spots later enlarge into summer fruit rots. Damaged fruit may be more prone to premature fruit drop, although such natural "pre-sorting" is never perfect and the falling fruit may cause bruises on fruit lower in the trees.

Nothing can be done at this point to mitigate losses from sunburn and heat injury that occurred in early August. In regions like the Hudson Valley where high temperatures during August are not uncommon, Honeycrisp growers may need to experiment with overhead cooling to protect the crop during August heat waves. Otherwise, the apparent susceptibility of Honeycrisp to heat injury is just one more justification for maintaining a high sales price for this difficult-to-grow cultivar. (Dave Rosenberger, Scaffolds Fruit Journal, Cornell University)

New Nutrition Labels Approved: The FDA has published its final rule on new voluntary nutrition labels for fruits and vegetables. The new rule, published on July 25, covers the 20 most frequently consumed raw fruits, vegetables, and fish in the United States. The 20 most frequently consumed raw fruits are: apple, avocado (California), banana, cantaloupe, grapefruit, grapes, honeydew melon, kiwifruit, lemon, lime, nectarine, orange, peach, pear, pineapple, plums, strawberries, sweet cherries, tanger-

ine, and watermelon. The 20 most frequently consumed raw vegetables are: asparagus, bell pepper, broccoli, carrot, cauliflower, celery, cucumber, green (snap) beans, green cabbage, green onion, iceberg lettuce, leaf lettuce, mushrooms, onion, potato, radishes, summer squash, sweet corn, sweet potato, and tomato." If you are using a nutrition label for one of these products, you can use the new labels now, but you must switch to the new label by January 1, 2008. The new labels and regulations are posted on the fruit and vegetable connection website: <http://www.hort.purdue.edu/fruitveg/> (Hirst)

Allen Hammer Retires: Highly respected floriculture Professor Allen Hammer has retired from Purdue after 33 years of service. Dr. Hammer is known internationally as a floriculturist and has consulted widely on the culture of greenhouse crops. He was also instrumental in the design of our new, state-of-the-art greenhouse facility within the Department of Horticulture and Landscape Architecture. The search for a new floriculture extension specialist is underway. (Hirst)

Grape Harvest: Grape harvest is underway across much of the state. Fruit quality is good, with the recent cooler weather helping improve flavors and aroma, but delaying the ripening process somewhat. Bees, wasps and fruit flies have been problems in some areas where rain has caused some cluster breakdown. Downy mildew is beginning to show up in the Lafayette area. Growers may want to consider applications of phosphorous acid products (Phostrol, ProPhyt, or Agri-Fos) either now, or immediately after harvest if downy mildew is a problem. Mancozeb is an option if harvest is complete. Leaf uncontrolled, downy can lead to significant defoliation and subsequent reduced winter hardiness. Also in the Lafayette area, soybeans leaves are beginning to turn yellow, signaling the start of the multicolored Asian lady beetle migration. Late ripening grapes are most likely to be infested as the beetles search for new food sources. Dam-

aged berries are particularly attractive to the foraging beetles. Growers will want to scout carefully and consider applying an appropriate insecticide (Provado) if infestation occurs. The threshold for wine taint from this pest is very low, about 1 per 10 clusters, so it is important to stay on top of this situation and act quickly. (Bordelon)

Postharvest Physiological Disorders: Numerous physiological disorders are associated with mineral deficiencies. It's too late this season for supplementing sprays, so you may be noticing bitter pit or cork spot.

During summer fruit development, calcium uptake may preferentially go to the shoots for growth and be directed away from developing fruit. This problem is more common during hot, dry weather in July or August. Irregular irrigation, heavy pruning during the dormant season, overthinning, and excessive nitrogen, all which promote excessive shoot growth, and also promote the disorders bitter pit and cork spot. In addition to 'Honeycrisp,' other susceptible varieties include 'Baldwin,' 'Gravenstein,' 'Grimes Golden,' and 'Northern Spy.' 'Golden Delicious' is considered moderately susceptible, while 'Delicious' and 'Winesap' are fairly resistant. During the growing season, be sure to supplement fruit calcium with foliar application of calcium sprays, especially with 'Honeycrisp,' a cultivar with known calcium disorders, and other susceptible varieties. Another nutrient issue on postharvest rots is excessive nitrogen use. Not only is judicious N use prudent to minimizing the risk of fireblight, but excessive N results in fruit that are predisposed to postharvest problems, compared to the lower N counterparts.

Bitter pit is one such physiological disorder that results from calcium deficiency in the fruit. Symptoms of bitter pit include circular or even irregular sunken spots on the fruit surface, beneath brownish or streaked dead regions. Symptoms may be mistaken for hail.

A key diagnostic feature is that hail usually affects only one side of the fruit, whereas bitter pit is more severe on blossom end of the fruit. Cork spot is another physiological disorder affecting outer portion of the fruit. Symptoms begin on the fruit flesh as small dimples or depressions. This disorder begins developing in June, and continues throughout the growth and enlargement of the apple. Lesions enlarge and develop 1/4 to 1/2 inch corky, discolored areas into the flesh of the apple. Unlike bitter pit, the corky spots may occur anywhere on the fruit flesh.

Bitter pit and cork spot management: These two physiological disorders, both of which are a result of nutrient and cultural management problems, can be remedied with calcium chloride at 2 pounds per 100 gallons of water (or 1.5 tablespoons per 1 gal. water) applied in four sprays beginning two weeks after full bloom and continuing at 10 to 14 day intervals thereafter to reduce cork spot. At this rate, calcium chloride may be added to pesticide sprays normally used in controlling post-bloom diseases (or insects) affecting fruit. Do NOT apply calcium chloride sprays when temperatures are above 85 degrees F. Calcium chloride is highly corrosive—be sure to rinse sprayer thoroughly after use. As nitrogen management is also implicated in this disease, reduce excessive shoot growth by not applying (or greatly minimizing) nitrogen to the soil of apple trees for at least one year. Evaluate results at the end of that season; in the second year, use 1/2 the recommended amount of N, and evaluate harvest again.

You can perform preharvest sampling for bitter pit: Two weeks prior to harvest select large fruit and dip the fruit in a solution of 2,000 ppm ethephon in water (about 1 1/2 teaspoons of ethephon to one gallon of water) to hasten the ripening. Hold the fruit for two weeks at room temperature. Should bitter pit develop, delay harvest for as long as possible, being sure to cool harvested fruit immediately, and delay packing for as long as possible (preferably

four weeks). During the delay, bitter pit will develop in the affected fruit, which can then be removed during the packing process.

Bitter pit and cork spot are serious problems, however, most postharvest problems are due to pathogens, and most of these are fungal. In the next two Facts for Fancy Fruit, we'll discuss the fungal post harvest rots—you wouldn't want to have all your fun at once now, would you? (Beckerman)

USDA Fresh Fruit and Vegetable Program:

The USDA's Fresh Fruit and Vegetable Program (FFVP) provides all children in the 25 participating schools in Indiana a variety of free fresh fruits and vegetables throughout the school day. It is an effective and creative way of introducing fresh fruits and vegetables as healthy snack options. The FFVP also encourages community partnerships to support schools in offering the fresh fruits and vegetables.

Indiana has participated in the program since the pilot in 2002. The FFVP is now a permanent program with \$9 million each fiscal year in funding for the FFVP. There are currently 375 schools in 14 states and 3 Indian Tribal Organizations participating in the program.

Indiana will be hosting a *Fruit and Veggie Success Training* on Friday, October 6 at Warren Township Education and Community Center in Indianapolis for the FFVP Managers of the 25 selected Indiana schools (see list below for participating schools). As part of this training we would like to invite local growers in or around the counties of the participating schools for this year. The local growers would have the opportunity to share information about what products and services they have to offer that might benefit the schools in their area. Also, nutrition education and promotion is critical to the success of the FFVP. If you know of local growers that can provide a nutrition education opportunity, please invite them (ex. orchard

field trip, visit classrooms and discuss how fruits and vegetables are grown, the importance of eating fruits and vegetables, etc.). This training would be a great networking opportunity for local growers and for schools. It would be a way for schools to utilize local growers and for local growers to give back to the community.

Fruit and Veggie Success Training:

Date: Friday, October 6, 2006

Time: 9 am – 2 pm CT/ 10 am – 3 pm ET

(Local growers are invited to stay for the entire training or just for the local growers segment of the training)

Location: Warren Township Education and Community Center
975 N. Post Road
Indianapolis, IN 46219

Local grower's role in the training: participate in a panel discussion (depending on number of growers~30 minutes to 1 hour) to:

- 1) share nutrition education opportunities they are willing to offer (site visit to school, orchard tour, demonstration, etc.)
- 2) share information about products and services they offer
- 3) network with schools

Please contact me by Friday, September 8th if you know of local growers that may be interested in participating in the training and if they prefer to be on the panel in the morning or afternoon. Contact Lisa Graves, Team Nutrition Consultant, School and Community Nutrition Programs, Indiana Department of Education, Room 229, State House, Indianapolis, IN 46204. Phone: 317-232-0850. Fax: 317-232-0855. Email: lgraves@doe.state.in.us

Indiana Schools Selected for Fresh Fruit and Vegetable Program, School Year 2006-2007

<i>County</i>	<i>Name of School</i>
Lake	Kahler Middle School
Franklin	Franklin County High School
Morgan	Martinsville West Middle School
Perry	Perry Central Elementary
Cass	Pioneer Jr. High & Sr. High School
Allen	Wayne High School
Allen	Blackhawk Middle School
Allen	Portage Middle School
Allen	Bloomindale Elementary
Washington	Salem High School
Washington	Salem Middle School
Washington	Bradie Shrum Lower Elementary
Washington	Bradie Shrum Upper Elementary
Union	Union County Middle School
Marion	Christian Park Elementary
Marion	Francis W. Parker Elementary
Shelby	Hendricks Elementary
Shelby	William Loper Elementary
St. Joseph	Walkerton Elementary
Lake	Lincoln Elementary
Lake	John Meister Elementary
Lake	River Forest Elementary
Lake	River Forest Jr. High & Sr. High School
Lake	Evans Elementary
Fulton	Riddle Elementary

Midwest Strawberry Production Guide: The “Midwest Strawberry Production Guide” just came off the press. This is the newest addition to our series of regional publications on fruit crops. A group of specialists from 10 Midwestern states meets regularly in Indianapolis to exchange information and ideas. One of the major programs that has come out of these meetings has been to develop and prepare annual revisions of the Midwest Commercial Small Fruit and Grape, and Midwest Commercial Tree Fruit Spray Guides. Those bulletins are widely used across the Midwest. In addition to the Spray Guides, we have developed the Midwest Small Fruit Pest Management Handbook, the Midwest Tree Fruit Pest Management Handbook, and the Midwest Grape Production Guide. The Midwest Strawberry Production Guide is the latest publication to come from our efforts. (all of these publica-

tions are available on the web linked to the Purdue Fruit and Vegetable Connection web site at <http://www.hort.purdue.edu/fruitveg/>

The Midwest Strawberry Production Guide (Ohio State Bulletin 926) is a new publication that has been produced for the Midwest strawberry industry. This 138-page bulletin contains the most comprehensive and regionally relevant information currently available. This book represents the pooled resources and expertise of specialists and experts representing 10 Midwestern states. The guide contains:

- In-depth information on current varieties and production practices
- An entire chapter on plasticulture in the Midwest by Barclay Poling

- Comprehensive Integrated Pest Management recommendations for control of insects, diseases, and weeds with full-color photos of the major diseases and insects.
- An entire chapter on economics of strawberry production by Dick Funt.
- Information on conducting plant tissue nutrient analysis along with tables determining results and fertilizer recommendations.

Copies of the Midwest Strawberry Production Guide can be purchased from Media Distribution, Communications and Technology, The Ohio State University, 216 Kottman Hall, 2021 Coffey Rd., Columbus OH 43210-1044 Phone: 614-292-1607/ Fax: 614-292-1248. Email: pubs@ag.osu.edu Visa and Master Card accepted.

Cost is \$9.75 plus shipping and handling. We are very happy that we were able to keep the cost below \$10 for such a high quality publication.

We will have some copies available at the Indiana Horticulture Congress in January, and eventually copies will be available through Purdue's Media Distribution. (Bordelon)

Winegrape Fall Workshop at Purdue: A quick reminder that we will hold our Fall harvest workshop on Thursday September 14, 2006 at the Meigs Horticulture Research Farm at 9101 S 100 E. Lafayette, and on the Purdue campus. This workshop will focus on analyzing grape harvest parameters in the vineyard and lab. This workshop is designed for the winemaker who wants to broaden their knowledge. See website below for all the details of this fun and educational day at Purdue. Limited to the first 50 paid registrants, so send in your registration to hold your spot. (Registration Form found at the Website below.) Hope to see you

there! Contact Jill Blume 765-494-1749 or blume@purdue.edu if you have any questions. <http://www.foodsci.purdue.edu/research/labs/enology>

Starting a Specialty Food Business Workshop: The bi-annual workshop, "Introduction to Starting a Specialty Food Business in Indiana" will be held on Tuesday, October 24, 2006 in Fort Wayne, Indiana at the Allen County Extension Office. Topics discussed in the workshop range from business planning and marketing food products to packaging and food safety. The registration deadline is October 18. For more information and a registration form visit <http://www.foodsci.purdue.edu/Outreach/feep/> or contact Marsha Pritchard (mpritchard@purdue.edu) or De Bush (djbush@purdue.edu).

Calypso Not Cancelled: In case you hear rumors of Calypso's registration being cancelled -- There has been a mistake in the Federal registry that states Calypso uses on Pome fruit (and cotton) will be voluntarily cancelled by BayerCrop Science by Feb '07. This is an Agency error. They have been notified and have been asked to render a retraction in the next available Federal Register (unfortunately around two weeks from now). (Jim Chevalier, Bayer CropScience Tech Service North Atlantic District).

Grant Funds Available For New Ideas: Any farmer or rancher will tell you that there is always room to implement a new idea to improve their operation. The problem is that those ideas usually require money. Now there is a solution to help match funds with the most innovative ideas. The North Central Region Sustainable Agriculture Research and Education (NCR-SARE) Program is currently accepting applications for their 2006 Farmer Rancher grant program.

NCR-SARE awards grants to farmers and ranchers for on-farm research, demonstrations,

and education projects. By providing funds ranging from \$6,000 per individual grant to up to \$18,000 for grants awarded to groups of three or more, NCR-SARE helps facilitate essential agricultural research and development.

Funded topics include pest and disease management, soil conservation, local marketing, public education, waste management, agri-tourism, crop diversity, aqua-culture, and many others.

NCR-SARE grants are awarded based on the applicants ability to describe how their project will be sustainable in terms of having long-term profitability, being good for the environment, producing healthy foods, being socially responsible and supporting their community.

Last year NCR-SARE funded 47 grants totaling \$414,489. This year farmers and ranchers throughout the North Central Region will once again have the opportunity to apply for roughly \$400,000 in grant assistance. The 12 states that comprise the North Central Region are Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. The NCR-SARE program receives its funding through the United States Department of Agriculture.

Grant proposals are due in the NCR-SARE office by December 1, 2006. Interested applicants may contact NCR-SARE at 1-800-529-1342 or ncrsare@unl.edu. The current Farmer Rancher Grant Call for Proposals application can be found on the NCR-SARE web site at <http://www.sare.org/ncrsare/prod.htm>. Previous project reports are made available through the national SARE web site at www.sare.org.

Coming Meetings:

Sept. 14 Fall Grape and Wine Workshop. Purdue West Lafayette campus. Contact Jill Blume 765-494-1749 or blume@purdue.edu Registration required. Information available at <http://www.foodsci.purdue.edu/research/labs/enology/>

Oct. 24. Introduction to Starting a Specialty Food Business in Indiana – workshop. See article above for details.

Oct. 24-26. Development and implementation of HACCP and prerequisite programs. University Inn, West Lafayette. Registration deadline Oct 1. For more information contact Kiya Smith, kiya@purdue.edu, Phone 765-496-3827

Dec. 5-7. Great Lakes Fruit and Vegetable Expo, Grand Rapids, MI.

Jan. 29. Beginning Commercial Apple Production workshop. Indianapolis. For more info contact Peter Hirst

Jan. 29-31. Indiana Horticultural Congress and Trade Show, Indianapolis. <http://www.hort.purdue.edu/hort/ext/hortcongress/ihc2007.html>

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