INDEX

FFF 07-10

October 19, 2007

Food Safety Survey: USApple is seeking your assistance with the distribution of a survey of apple growers and packers to determine the extent to which good agricultural practices and good handling practices are used in orchards and packing facilities. They plan to use the information to develop policies and respond to inquiries from Congress and the media regarding the apple industry's food safety practices.

As you are aware, several members of Congress have introduced legislation that would require mandatory implementation of good agricultural practices. USApple hopes to evaluate the impact of this legislation using the results of the survey.

The survey is very short and can be accessed on our website: http://www.hort.purdue.edu/fruitveg/ under "What's new" or contact Peter Hirst.
Participants are asked to return the survey via e-mail by Oct. 30, 2007 to Jim Cranney at jcranney@usapple.org or by fax to USApple at (703) 790-0845.

Human Resource Conference coming to Indiana: Mid American Ag and Hort Services (MAAHS) is pleased to offer its human resource conference on January 28 in conjunction with the Indiana Horticultural Congress. Topics will feature orienting and training employees, using employee benefits to attract and retain employees, experienced supervisor training and an update on labor and immigration compliance topics. The luncheon will allow employers and supervisors to network and discuss human resource topics. Registration will be in conjunction with the Hort Congress.

2007 Farm Bill: The US Apple Association and the Specialty Crop Farm Bill Alliance are continuing to urge the Senate Agriculture Committee to support our priorities when it marks up and approves its Farm Bill, expected during the week of Oct. 22. Key priorities are:

- Expansion of the USDA Fruit & Vegetable Snack Program to all 50 states. This program and others involving healthy foods and community projects helps develop lifelong health through consumption of fruits and vegetables,
- Greater investment in research to improve the taste and quality of foods,

- Expansion of the State Specialty Crop Competitiveness Projects (block grants) to all 50 states based on a proven track record of delivering results for specific local needs,

- Enhanced critical trade assistance and market promotion tools, including the Market Access Program, to grow international markets for specialty crops,

- Investment in prevention and mitigation protocols to combat invasive pest and diseases, which cost the economy millions of dollars per year, and

- Expansion and improvement of conservation programs to allow producers of specialty crops increased access to conservation assistance.

Senate Agriculture Committee members Stabenow (D-MI), Casey (D-PA), Crapo (R-ID) and Brown (D-OH) continue urging their Committee colleagues to support these specialty crop provisions. The House met in abbreviated session this week and the Senate was in recess.

***Social Security No-Match Rule on Hold*:** A judge from Northern California's Federal District Court issued a preliminary injunction to prevent the proposed no-match rule from taking effect until the Court fully examines its impact and legality, which could take several months. This is good news for agricultural employers and workers, since the Social Security Administration had been ready to send no-match letters to approximately 140,000 employers regarding 8 million employees. (from US Apple Association)

2007 Apple Crop Forecast: The latest U.S. Department of Agriculture (USDA) apple crop forecast predicts the 2007 crop to be 220.4 million bushels, just 714,000 bushels or less than 1 percent below the department's 221.1 million bushel August forecast. This number is 2 percent below the five-year average and 7 percent less than 2006 production.

The Indiana apple crop is estimated to be 714,000 bushels, over 40% less than the average crop for the state. I guess between the frost and the drought, we should be happy to have that! (Hirst and US Apple Association)

***Naturally-occurring apple compounds reduce risk of pancreatic cancer*:** Eating flavonol-rich foods like apples may help reduce the risk of pancreatic cancer, says a team of international researchers. Quercetin, found naturally in apples and onions, has been identified as one of the most beneficial flavonols in preventing and reducing the risk of pancreatic cancer. Although the overall risk was reduced among the study participants, smokers who consumed foods rich in flavonols had a significantly greater risk reduction.
This study, published in the October 15 issue of the American Journal of Epidemiology, is the first of its kind to evaluate the effect of flavonols – compounds found specifically in plants – on developing pancreatic cancer. According to the research paper, "only a few prospective studies have investigated flavonols as risk factors for cancer, none of which has included pancreatic cancer."

Researchers from Germany, the Univ. of Hawaii and Univ. of Southern California tracked food intake and health outcomes of 183,518 participants in the Multiethnic Cohort Study for eight years. The study evaluated the participants' food consumption and calculated the intake of the three flavonols quercetin, kaempferol, and myricetin. The analyses determined that flavonol intake does have an impact on the risk for developing pancreatic cancer.

The most significant finding was among smokers. Smokers with the lowest intake of flavonols presented with the most pancreatic cancer. Smoking is an established risk factor for the often fatal pancreatic cancer, notes the research.
Among the other findings were that women had the highest intake of total flavonols and

seventy percent of the flavonol intake came from quercetin, linked to apple and onion consumption.

It is believed that these compounds may have anticancer effects due to their ability to reduce oxidative stress and alter other cellular functions related to cancer development.
"Unlike many of the dietary components, flavonols are concentrated in specific foods rather than in broader food groups, for example, in apples rather than in all fruit," notes the research study. Previously, the most consistent inverse association was found between flavonols, especially quercetin in apples and lung cancer, as pointed out in this study. No other epidemiological flavonol studies have included evaluation of pancreatic cancer.
While found in many plants, flavonols are found in high concentrations in apples, onions, tea, berries, kale, and broccoli. Quercetin is most plentiful in apples and onions. (US Apple Association)

Current status of streptomycin resistance in the fire blight pathogen in Michigan:
Streptomycin resistance in the fire blight bacterium *Erwinia amylovora* was originally detected in the early 1990s in Michigan, mostly in Van Buren County and in a few isolated orchards in Kent and Newaygo counties. Most of the resistant strains contained an extra sequence of DNA that encoded streptomycin-resistance genes. This distinguished the mechanism of resistance from that found in *E. amylovora* from the Pacific Northwest, in which the strains became resistant to streptomycin due to a chromosomal mutation. In the mid-to late-1990s, the streptomycin resistant strains from Southwest Michigan slowly spread westward towards the lake, and resistance was noted in an isolated orchard in Kent County. In addition, a small number of resistant strains (less than 10 percent) were found from these locations that harbored the chromosomal mutation.

In 2004, we surveyed eight apple blocks in the Fruit Ridge area, most of which were concentrated around 10 Mile Road and Kenowa Avenue. **Streptomycin resistance was detected in seven of the eight blocks sampled.** Genetic analyses of the strains indicated that most of the strains contained the same streptomycin-resistance genes found in strains from Southwest Michigan and a small number harbored the chromosomal mutation.

Our goal during the 2005-2007 growing seasons was to enlarge the regions sampled outside of the known "streptomycin resistance zone." In the Fruit Ridge area, we have detected streptomycin-resistant *E. amylovora* strains in 10 of 15 orchards sampled. Resistant strains were found south of 12 Mile road (10 of 11 orchards). We recovered only streptomycin-sensitive strains from four orchards located just north of 12 Mile road. Streptomycin-resistant strains were also detected in orchards in Ionia County near Belding and Ionia.

In Southwest Michigan, a large-scale sampling effort outside of the known resistance zone was done in 2007. Streptomycin-resistant strains were found in only 5 of 18 orchards demonstrating the slow movement of resistant strains between orchards.

In 2006, we detected streptomycin-resistant *Erwinia amylovora* for the first time in orchards in Oceana county, Michigan. In 2007, we sampled one repeat and eight new orchards. All isolates were sensitive to streptomycin.
Our results indicate that streptomycin resistance is just moving into Oceana county and is not as much of a problem as it is in Southwest Michigan and Fruit Ridge.
What control measures should be adopted in orchards that contain streptomycin-resistant fire blight bacteria? Streptomycin alternatives include antibiotics such as Mycoshield and Agry-Gent. Section 18 emergency exemptions were granted for both of these materials in 2007. We expect similar Section 18s to be

granted in 2008 for alternative antibiotics. Biological control materials such as Serenade Max and Bloomtime Biological also have some activity in controlling blossom blight.

The rule of thumb is that growers who have had success using streptomycin, and whose farms are not in zones where resistant strains are prevalent, should continue to use streptomycin as this is the best material for blossom blight control. If resistance is an issue, then streptomycin should not be used as it will only lead to an increased buildup of resistant strains.

Grant funding program seeks innovative ideas for the farm and ranch: The North Central Region Sustainable Agriculture Research and Education (NCR-SARE) Program is seeking innovative farmers or ranchers who want to implement a new, sustainable, idea to improve their operation. NCR-SARE is currently accepting applications for their 2007 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.

Beverly Pender is an urban farmer in Kansas City. Utilizing the lots she owns, and the lots donated to her from neighbors, she has been able to carry on Soul and Soil Rainbow Gardens. Thanks to NCR-SARE grant funding, she will be able to add on to her gardens, and local youth, seniors and the homeless will also reap rewards.

"Our objective is to promote urban farming and to teach the community about healthy food production," Pender explained.

Pender's grant is just one example of the wide range of projects that NCR-SARE has funded over the years. Other 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 52 Farmer Rancher grants totaling $400,037. 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 3, 2007. Interested applicants may contact Joan Benjamin with NCR-SARE at 402-472-0809 or **ncrsare@umn.edu**. The current Farmer Rancher Grant Call for Proposals application can be found on the NCR-SARE web site at **http://ncr.sare.org/prod.htm**. Previous project reports are made available through the national SARE web site at **www.sare.org**.

Contact:
North Central Region - Sustainable Agriculture Research and Education Farmer Rancher Grant Program
402.472.0809 or 1.800.529.1342 (toll free)
402.472.0280
ncrsare@umn.edu
www.sare.org/ncrsare

Coming meetings:

November 3: Midwest Apple Improvement Association Annual Meeting. Dawes Arboretum, Newark, OH. For more information contact Mitch Lynd at (740) 967-5355.

December 4-6: Great Lakes Fruit, Vegetable and Farm Market EXPO, DeVos Place, Grand Rapids, MI. http://www.glexpo.com

Jan. 7-8, 2008: Kentucky Fruit and Vegetable Conference, Embassy Suites, Lexington, KY. Contact John Strang 859-257-5685; e-mail: jstrang@uky.edu

Jan 14-16, 2008: Ohio Produce Growers and Marketers Association Congress, Kalahari Resort & Conference Center, Sandusky Ohio

Jan. 28-30, 2008: Indiana Horticultural Congress, Adam,s Mark Hotel, Indianapolis. For more information: www.inhortcongress.org

Jan. 29-31: Mid-Atlantic Fruit and Vegetable Convention, Hershey Lodge and Convention Center, Hershey, PA. For More information Contact William Troxell 717-694-3596.

Feb. 15-20: Annual meeting of the North American Farmers' Direct Marketing Association (NAFDMA), Wisconsin. More more information: http://www.nafdma.com

Department of Horticulture &
Landscape Architecture
Purdue University
625 Agriculture Mall Drive
West Lafayette, IN 47907-2010

Bruce Bordelon
Dept. of Horticulture &
Landscape Architecture
Purdue University
625 Agriculture Mall Drive
West Lafayette, IN 47907-2010
765/494-8212
e-mail: bordelon@purdue.edu

Janna Beckerman
Dept. of Botany & Plant Path.
Purdue University
915 West State Street
West Lafayette, IN 47907-1155
765/494-4614
e-mail: jbeckerm@purdue.edu

Peter Hirst
Dept. of Horticulture &
Landscape Architecture
Purdue University
625 Agriculture Mall Drive
West Lafayette, IN 47907-2010
765/494-1323
e-mail: hirst@purdue.edu

Jennifer Dennis
Dept. of Horticulture &
Landscape Architecture
Purdue University
625 Agriculture Mall Drive
West Lafayette, IN 47907-2010
765/494-1352
e-mail: jhdennis@purdue.edu

Rick Foster
Dept. of Entomology
Purdue University
901 W. State St.
West Lafayette, IN 47907-1158
765/494-9572
e-mail: rfoster@purdue.edu