

The Food Safety Consortium Newsletter



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FSC Panelists See Opportunities, Problems for Risk Assessment

There is mixed reaction to food safety risk assessment these days. The process has its assets, and it has its problems, as a panel of experts found in their discussion at the Food Safety Consortium annual meeting.

At the FSC's Symposium on Risk Assessment, hosted in October in Manhattan, Kan., by Kansas State University, five researchers with different perspectives shared their ideas on the topic.

Risk assessment should expand from its role in evaluating specific pathogens in food and play a greater part in making government policies, said Catherine Woteki, dean of the Iowa State University College of Agriculture.

"We need to start working on a broader framework for risk assessment as a means for informing policy development," said Woteki, a former U.S. Department of Agriculture undersecretary for food safety. "This broader



Jim Marsden, a Food Safety Consortium researcher at Kansas State University, peers out from among the poster displays at the FSC annual meeting at KSU.

type of risk framework would rank the public health impact of significant foodborne threats."

Woteki said such rankings would prioritize opportunities to reduce the risks and help develop tools that govern-

ment regulators and industry could use. A risk assessment-driven framework would also be helpful in setting a research agenda, she said.

"If we could devise such an overall risk framework, it would also be helpful for policymakers at the state and federal level in making decisions on how they allocate their resources," Woteki said. "By that I don't mean just dollars, but how people spend their time within the regulatory agencies, how you would construct inspection protocols."

Woteki cited risk assessment work in university settings as models for government and industry. She mentioned the partnership of the three Food Safety Consortium universities and their research as well as Iowa State's new Institute for Food Safety and Security and Iowa State's partnership with the University of Maryland called Resources for the Future to explore risk assessment issues.

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One More Time: All FSC Schools in the Top 5

For the second consecutive year, the three universities of the Food Safety Consortium are among the top five meat and poultry academic programs listed in the November edition of *Meat and Poultry* magazine. The rankings, which for the FSC universities are unchanged from last year, are Iowa State University, second; Kansas State University, third, and University of Arkansas, fifth.

Meat and Poultry surveyed 30 schools and solicited information about their programs' numbers of students and

faculty, types of facilities and the names of their better-known researchers. Each university was asked to provide its own ranking of the top schools. The magazine described its survey as "an attempt to more accurately portray which institutions are doing the most to provide the industry with savvy graduates and useful research information."

Iowa State was recognized for its extension and food safety research programs as "the crown jewels" of the meat and poultry programs. "ISU's work in food safety includes extensive,

ongoing research with irradiation technology as part of its biosafety level 2 pathogen laboratory," the magazine said. "ISU maintains over 5,100 head of beef cattle, nearly 6,100 hogs and more than 1,500 chickens, giving students ample hands-on experience with the meat and poultry industry at every stage of the food chain."

Kansas State won praise for placing graduates throughout the industry, for its faculty involvement in industry associations and for its facilities. "The

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Industry's Concerns and Reasonable Risk

Risk assessment, however, does have its drawbacks for industry, said Jenny Scott of the National Food Processors Association. Scott, senior director of NFPA's Office of Food Safety Programs, said risk assessments can take too much time and raise liability issues.

Scott raised the hypothetical scenario of someone becoming sick from a food product for which a company had conducted a risk assessment. "They have in their files a risk assessment that says this product poses some risk to the consumer. It may be a low risk, it may be what we consider to be a negligible risk. However, that risk will never be zero because there is no such thing as zero risk."

Decisions on risk management involve setting a tolerable level of risk, Scott said. Tolerable levels of risk are "those adopted after consideration of the public health impact, technological feasibility, economic implications and what society regards as reasonable in the context of comparison with other risks in everyday life."

But industry doesn't need to know the tolerable level of risk to develop a safe product, Scott continued. "Safety has been established without using risk assessment, without knowing the tolerable level of risk, without knowing the risk estimate or food safety objective. We did this in regard to milk pasteurization and with fermented sausages."

Knowing food safety objectives can be useful because they define regulatory agencies' expectations of industry, she said. "But we do have HACCP, and HACCP has worked very well for us."

Risk assessment concerns manufacturing at multiple locations by multiple

companies, Scott explained, calling it "a broad brush approach." But HACCP deals with specific products manufactured by one company.

"I think for the industry to fully accept the use of risk assessment, the government is going to need to demonstrate that they are willing to act on the results," Scott said. "Until the government starts allowing risk assessment to drive policy discussion, there are going to be many in industry who view that the process is simply another way for the government to manipulate the data in order to justify a policy that they want to pursue."

Consumers' Advocate Seeks Improvements

Lisa Lefferts, a consultant with Consumers Union, sees risk assessment as a mixed bag.

"Risk assessment can most certainly be used in the public interest to promote public health. That's the good news," Lefferts said. "The bad news is that it can also be used as a delaying tactic to take action and to put off needed food safety changes. Sometimes risk assessment asks the wrong questions and gets the wrong answers. Sometimes it's used to lend a false aura of scientific authority to decisions. These are some reasons why people have been critical of risk assessment."

Lefferts offered her own list of suggestions for improving the use of risk assessment, among them the assurance that risk assessment asks and answers the right questions. Different

stakeholders will have different views on that issue.

For example, consumers want to know how much of a hazard is possible and if there are alternatives to avoid the hazard. "That's different from asking how much risk is acceptable or tolerable," Lefferts said. "A risk manager might want to know the potential changes in risk resulting from possible risk management controls or options and not just the risk at a particular level of exposure."

Also, risk assessments require data and commitment by industry to generate the necessary data, Lefferts said. She explained that methods to assess some risks have not been developed. "So even though the data may not be complete, risk managers still have to make a decision. Not making a decision could have important public health consequences in the long term. It's a matter of judgement about how and when to act and what level of risk society is willing to tolerate."

The concept of risk assessment involves several questions, said Anna Lammerding, a scientist with Health Canada's food safety risk assessment office. Those questions include: Is there a problem? What is the evidence? What is the agent? What is the nature and likelihood of risk? Who is likely to become ill?

The equivalence of food safety systems across the world must also be measured, Lammerding said, to determine if they provide the same degree of food safety.

Communicating Risk Makes a Difference

Risk communication is an important component, said Doug Powell of the University of Guelph in Ontario, who urged professionals to speak out when they observe

problems. Powell, who is scientific director of Canada's Food Safety



Dean Catherine Woteki of the Iowa State University College of Agriculture says risk assessment should play a greater role in formulating government policies.



Doug Powell of the University of Guelph addresses FSC Symposium on risk communication in Manhattan, Kan.

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Fung's Pulsifier Shakes Up Research Efforts

The name is Fung. Daniel Y.C. Fung. He may not possess the lethal aggression or magnetism of the fictitious secret agent James Bond, but like Agent 007, Daniel Y.C. Fung of Kansas State University is always on a mission of deadly proportions. While Bond's assignments usually involve international intrigue and saving the world from evil villains, Fung's life's work is devoted to saving the world's food supply from deadly pathogens and bacteria. And where Ian Fleming's cool, hard hero has an arsenal of high-tech gadgets to help in his pursuit, Fung chooses to take the less spectacular route, using low-tech items such as cinnamon, garlic and plum extract to accomplish his mission.

Not the stuff Bond movies are made of. But even 007 may be interested in Fung's latest research project, especially for his vodka martinis — "shaken, not stirred."

Fung is evaluating a new instrument for processing food samples for microbiological analysis. The instrument, the Pulsifier, allows researchers to obtain bacteria and pathogens from food without breaking up the food extensively.

According to Fung, there is no lack of high-power technology available today for use by microbiologists to detect organisms. But with technology comes problems, such as getting the organisms to

interact with the advanced systems. He cites as an example current requirements that call for food microbiologists to be able to detect *Salmonella* in 25 grams of meat.

"There is no way on Earth right now that you can take a biosensor or probe, stick it into the meat, stir it around and say 'I have *Salmonella*,'" Fung said. "There's no way. So the problem right now is to find better ways to make samples better for food microbiologists."

Fung said previously microbiologists used a device called a stomacher to "beat up" and "homogenize" the food samples. However, the problem with the stomacher is it does its job a bit too well.

"When you beat the sample up, there are many other things that come into the liquid," Fung said. "Those inhibitors can really hamper new technologies and interfere with polymerase chain reactions. So the less inhibitors in the food, the better your sample."

Fung said scientists can do filtration on the samples to filter, but with that process you still have the inhibitors in the liquid, which may in turn lead to false reads because the inhibitors will alter the PCR reaction.

"The less inhibitor the better," Fung said.

Where the stomacher pulverizes the

sample, Fung said the Pulsifier literally shakes pathogens into the liquid without breaking up the food extensively. In turn, the pulsified samples are much cleaner in terms of the turbidity and much easier to operate.

"This is the first step of testing in food microbiology — to blend your food first," Fung said. "This method will give you the same number of pathogens but the liquid is much clearer."

Fung said many people study pathogens in relation to meat and poultry contamination, but the study of contamination in vegetables is often neglected.

As opposed to foods that are cooked, Fung said prepared salad mixes are just opened — sometimes washed — and dumped into a bowl and eaten.

"This is an interesting experiment," Fung said "From a scientific standpoint, we're going to find out how and why the organisms are shaken into the liquid. We will be an electron microscope and looking at lettuce leaves to find out the difference between the pulsified and the stomacher samples and see if they are giving the same numbers (of pathogens). Because of our previous data I think it will show that they are."

Article courtesy of KSU Media Relations.

One More Time ... continued

school is also known for its interaction with other universities and research professionals, ranging from livestock scientists to food microbiologists," *Meat and Poultry* said. "Through its faculty development, research efforts and work with the industry, KSU specializes in red meat processing and quality enhancements, case-ready innovations and food safety interventions."

The magazine cited Arkansas for its wide range of poultry and animal science research. "Given the school's proximity to the industry's biggest player (Tyson Foods, Inc.), it is little wonder

that the Poultry Products Technology program is among the best at any university and is home of the Center of Excellence for Poultry Science. ... Poultry programs are designed to maintain a balance between the production side and the product technology/processing sector." *Meat and Poultry* recognized the animal science research areas of meat packaging, shelf-life enhancement, nutrition's impact on beef and pork quality, pre- and post-harvest food safety technologies, ground beef intervention technologies and sensory evaluation of cooked products. ■

The Meat and Poultry Top 10 for 2002

1. Texas A&M University
2. Iowa State University
3. Kansas State University
4. University of Nebraska
5. University of Arkansas
6. Oklahoma State University
7. Colorado State University
8. University of Illinois
9. Texas Tech University
10. Georgia Tech

Report from the Coordinator



Gregory J. Weidemann

Risk assessment remains a significant topic anytime. A few months ago, the Food Safety Consortium presented a symposium on the subject at Kansas State University during its annual meeting. A report on the symposium is published elsewhere in this edition. Meanwhile, the discussion continues wherever food safety is the main topic.

Elsa Murano, the undersecretary of agriculture for food safety, brought up the subject in separate speeches near the end of the year. Dr. Murano spoke about the recent outbreak of listeriosis in the Northeast from ready-to-eat turkey products. She noted that end-product testing was not the answer to preventing contamination by *Listeria monocytogenes* in processing plants.

“To have a rule that would work at preventing contamination of product, it would need to have a testing requirement based on science,” Dr. Murano said. A process control system at critical entry points is necessary, she said, and the federal Food Safety and

Inspection Service is conducting a scientific risk assessment to determine those entry points. The risk assessment would define the risk posed by various practices and various products, “and thus design a testing scheme that would aim to find the organism where it is harbored.”

But even risk assessment isn’t the full answer. Dr. Murano said that although it is important to base policy decisions on these models, “there are times when a risk assessment is not available or not yet complete. In its absence, we must design strategies using the best available science.”

Dr. Murano’s predecessor at USDA, Dr. Catherine Woteki, spoke at the FSC symposium and also endorsed the use of risk assessment. Dr. Woteki, who is now dean of the Iowa State University College of Agriculture, called for an expansion of risk assessment from its role in evaluating pathogens to a new function of participating in the development of government policies on public health.

As the article in this newsletter

explains, opinion isn’t unanimous on the use of risk assessment. Industry worries about liability issues.

Consumer advocates are concerned about delays in improving food safety.

And that is why the FSC held the symposium. Part of the FSC’s mission is “to develop risk assessment and interdiction actions in hazard reduction and control.” It is clear that the stakeholders in food safety have perspectives that do not entirely coincide on this matter. Academic research entails debate on issues not yet settled. A full airing of viewpoints on risk assessment proved to be a beneficial experience for an audience of researchers and a partial fulfillment of our job as a research group. ■

Sulfur Compounds Become the Target to Combat Irradiation Odors

Irradiation is gaining popularity as more marketers become willing to sell meat products that have been electronically pasteurized. The process also causes off-odors in the meat, a problem that researchers are working to eliminate. A Food Safety Consortium team has found that sulfur compounds are the cause.

“Without those problems being solved by research, the use of irradiation technology is difficult because consumers may not like odors that they are not used to,” said Dong Ahn, an FSC researcher exploring the issue at Iowa

State University. Ahn, an associate professor of animal science, said his team’s recent research is determining how and where the odors originate and how to remove them.

Odors can develop on cooked meats without irradiation through a process called lipid oxidation. Odors from irradiation are different and have a sweet aroma similar to barbecued corn. Many sulfur compounds responsible for off-odors are produced in the irradiation process. However, some sulfur compounds can also be produced by cooking.

“We are developing means to remove all those sulfur compounds,” Ahn said. “We are using packaging procedures to remove sulfur volatiles. We now have figured out how we can eliminate that odor.”

Irradiation produces sulfur compounds via the radiolytic degradation of sulfur-containing amino acids. Although sulfur compounds are the most important volatile compounds in irradiation off-odor, other volatiles are also important because they can interact with the sulfur compounds and intensify off-odor. ■

Poultry Scientists Use Viruses to Fight Bacteria

Faced with the potential loss of traditional antibiotics, scientists at the University of Arkansas Division of Agriculture and the USDA Agricultural Research Service are updating century-old technology to fight illness-causing bacteria in poultry by infecting them with viruses known as bacteriophages.

“There has been growing concern that use of antibiotics has been causing an increase in antibiotic-resistant strains of bacteria that cause diseases,” said ARS researcher Bill Huff, a Food Safety Consortium investigator. “We felt it was important to find alternatives to antibiotics,” he said. “Bacteriophages give us another tool to battle disease-causing bacteria and reduce pressure on bacteria to develop resistance to antibiotics.”

UA poultry scientist and FSC researcher Billy Hargis said two European scientists working independently in England and France discovered bacteriophages almost 100 years ago. The science of the day was inadequate for developing a reliable medicine, but modern advances in science and concerns about antibiotics have sparked a renewed interest in them.

“Bacteriophages are very specific viruses,” Hargis said. “They don’t harm people, animals or plants, only a narrow range of bacteria.”

Hargis is working with bacteriophages that attack *Salmonella* and Huff is working with bacteriophages that attack *E. coli*. In both studies, they are

learning to use them to protect poultry from respiratory infections.



Scott Zornes, ARS biological science technician at the University of Arkansas, lets poults out of a chamber after they inhaled an aerosol mist containing bacteriophages. The mist has proven to be an effective means of administering bacteriophage treatments to protect against respiratory infections.

Bacteriophages are very specific viruses. They don't harm people, animals or plants, only a narrow range of bacteria.

Huff said bacteriophages are much smaller than the bacteria they attack.

When one comes into contact with a target bacterium, the phage attaches to an anchor site on the cell’s surface. It penetrates the cell wall and membrane and injects its DNA into the host. The DNA

rewrites the cell’s reproductive programming to replicate bacterio-

phage. It also produces an enzyme that “lyses” the cell — bursts it open, killing it, to release new virus.

Hargis said this entire life cycle is usually completed in about 30 minutes.

Both scientists found aerosol spray offered the best means of delivering the phages to large numbers of chickens or turkeys. They also found a large dose was needed to provide effective and consistent protection, but they are easy to amplify in a lab to sufficient numbers.

Hargis and Huff have demonstrated that bacteriophages can protect poultry from respiratory infections, but they are still working to see if the viruses can cure birds that are already sick. They are also trying to find a way to get bacteriophages into the birds’ intestinal tracts, where they can fight the bacteria that can contaminate poultry meat during processing and cause a health risk to humans.

Hargis said bacteriophages are safe and environmentally friendly.

“Bacteriophages are ubiquitous — they occur naturally everywhere, even on your hands and face,” he said.

“They’re not something new being grown in the lab that could get out and wreak environmental havoc.

“In the U.S., we use only defined cultures,” Hargis said. “That means we know exactly what organisms are in it, what they’ll do and that nothing unknown is in there.” ■

ISU Establishes Food Safety Institute

Iowa State University says its new Institute for Food Safety and Security is dedicated to protecting Iowa's, and the nation's, investment in agriculture.

"The formation of this institute will enhance Iowa State's leadership role in the critical area of food safety and security. Excellence in education and research associated with food production and delivery is one of our top priorities," said ISU President Gregory Geoffroy.

The state Board of Regents approved the institute in November. Faculty and researchers from the colleges of agriculture, family and consumer sciences, liberal arts and sciences, and veterinary medicine will be affiliated with the institute.

"The institute will serve the needs of farmers, producers, food preparers and consumers to control serious foodborne infectious diseases, to prevent contamination of food and water by toxins and to protect plants and animals from the threat of cataclysmic disease," said Catherine Woteki, dean of the College of Agriculture and interim director of the institute. Woteki formerly served as the U.S. Department of Agriculture undersecretary for food safety.

Woteki said the institute's first task will be to find a nationally recognized

scientist as director.

The institute will oversee seven units to respond to food problems and issues:

- Foodborne Infectious Disease Unit
- Food and Water — Harvest Unit
- Food and Water — Post-Harvest Unit
- Foodservice and Retail Unit
- Society, Communication and Public Policy Unit
- Foodborne Disease Models and Risk Analysis Unit
- International Food Security Unit

The institute's units will develop strategic research and training programs that address

problems of human health risks and issues that arise from globalization, intensification of production

agriculture, food processing, global warming/environmental changes and the threat of agro-terrorism. The director of the institute will manage it through a council composed of representatives from each unit.

Jim Dickson, director of Iowa State's component of the Food Safety Consortium and chair of the microbiology department, expected the

new institute would serve a coordinating function on campus and off. "The institute will help bring together the resources in food safety which are available, including those at the federal research laboratories and at Iowa State University. It will bring a unifying structure to food safety and security research at our university," he said.

Another benefit would be providing a network for those involved with food safety, according to Don Reynolds, associate dean of the College of Veterinary Medicine. "This type of institute will allow us to respond quickly

to emerging needs related to food safety and security. It will help to strengthen our communications with the private sector," he said.

University administrators point to collaborations with USDA animal health agencies in Ames as a strength for the new institute. They say another positive is the \$40 million in support that has been secured by those who will be part of the institute. ■

The institute will serve the needs of farmers, producers, food preparers and consumers.

FSC Panelists... continued

Network, said risk communication though the media requires reactive and proactive strategies.

"If you see things that you think are silly, write a letter," Powell said. "If you, as food safety professionals, don't take time to show leadership to a public audience that is desperate for this information, who's going to do it?"

Powell cited the cases of some chefs on television cooking programs. In

viewing 29 hours of cooking program tapes, Powell's research team observed basic food safety errors throughout the presentations such as cross-contamination, time-temperature violations and the lack of meat thermometers.

When the chefs were confronted with the findings at a convention, some responded that food safety was boring and took too much time. Powell said that celebrity chefs could help spread the

true messages about food safety, among them that food safety isn't always easy.

"It's hard. It's constant and you need eternal vigilance," he said. "These are biological systems and they're going to change. You've got to stay awake. These are messages that can work in a retail environment with clerks, with TV chefs and with journalists." ■

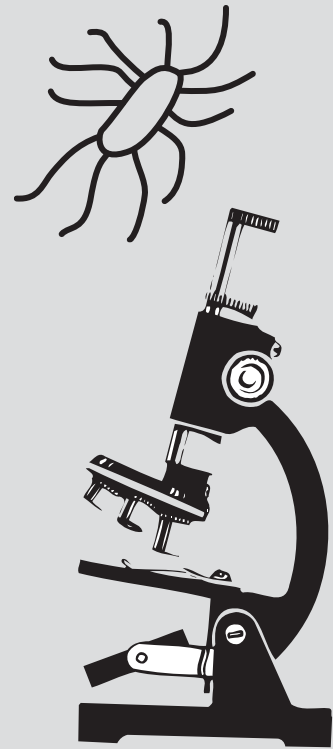
KSU Rapid Methods Workshop Set for June

Kansas State University will host the 23rd annual International Workshop/Symposium on Rapid Methods and Automation in Microbiology. A mini-symposium will be held June 13-14. The full workshop will be held June 13-20. Most sessions will be held at the Holiday Inn of Manhattan, Kan.

Daniel Fung is director of the workshop, and Randall Phebus is assistant director. Both are research faculty in the KSU Department of Animal Sciences and Industry and investigators with the Food Safety Consortium.

Over the past 22 years the workshop has attracted 3,000 participants from 55 countries and 46 states. The sessions feature lectures from prominent scientists and laboratory opportunities for hands-on applied microbiology.

The registration fee for the mini-symposium only is \$515. The registration fee for the full workshop is \$1,855. A detailed description of the program and registration forms are available at the workshop's web site at <http://www.dce.ksu.edu/dce/cl/microbiology>. For additional information on registration, contact Bettie Minshell at 1-800-432-8222 (from outside the U.S. call 785-532-5575) or e-mail minshel@ksu.edu. ■



Papers & Presentations

Daniel Fung, Kansas State, was featured in a KSU news release about his research on a new instrument for processing food samples for microbiological analysis. The instrument, the Pulsifier, allows researchers to obtain bacteria and pathogens from food without breaking up the food extensively.

Mike Johnson, Arkansas, completed his second year as chair of the Hatch Regional Food Safety Research Project annual meeting of S-295, which met in November in Orlando, Fla. Johnson also chaired the Sampling Protocols/ Methodology Session of the annual research meeting of the Food Safety Consortium in October in Manhattan, Kan. He also presented an invited seminar in December at the Arkansas

campus to the faculty and graduate students of the Biological Sciences Department on "An Update on the *Listeria* Hysteria."

Rama Nannapaneni, Arkansas, presented a paper on ciprofloxacin-resistant *Campylobacter* bacteria, and **Mike Johnson**, Arkansas, presented a paper on control of *Listeria* with nisin at the Food Safety Consortium annual research meeting in October in Manhattan, Kan. Four other written reports and five research posters were presented on related projects by co-authors Nannapaneni, Johnson, **Robert Story**, **Andy Heo**, **Keith Wiggins**, **Bwalya Lungu**, **Marlene Janes**, **Mandy Cox** and **Moenzi Osman**.

Marlene Janes, Arkansas (now an assistant professor of food science at

Louisiana State University), and co-authors **Bwalya Lungu**, **Moenzi Osman**, **Robert Story**, **Keith Wiggins**, **Rama Nannapaneni** and **Mike Johnson**, all of Arkansas, presented three research posters on food safety at the International Association for Food Protection meeting June 30-July 3 in San Diego.

Marlene Janes, **S. Kooshesh** and **Mike Johnson**, all of Arkansas, published the article "Control of *Listeria monocytogenes* on the Surface of Refrigerated, Ready-to-Eat Chicken Coated With Edible Zein Film Coatings Containing Nisin and/or Calcium Propionate" in the *Journal of Food Science*, 67 (No. 7): 2754-2757. ■

Food Safety Digest

by Dave Edmark

The First World Congress on Food Irradiation will be held May 5-7 at McCormick Place in Chicago. The meeting is being held in conjunction with the Food Marketing Institute exhibition being held May 4-6 at the same location. The irradiation meeting is being organized by the National Food Safety and Toxicology Center (NFSTC) at Michigan State University.

The congress will include four information sessions, a dinner reception with irradiated food and a tour of SureBeam's food irradiation facility.

For registration information, see the NFSTC web site at <http://www.foodsafe.msu.edu>.



A new online publication provides consumer-friendly information about irradiation. "Food Irradiation: A Global Food Safety Tool" is available on the International Food Information Council Foundation web site at <http://ific.org/publications/brochures.vtml> and clicking on the link to the publication's title.

The publication, which runs seven pages when printed, explains how the procedure works, discusses its benefits,

the safety of the process and consumer reaction.

"Starting from mid-2000, commercial scale irradiation of meat and meat products was launched in the USA with great success," the article says.

"Consumers learned to accept quickly the safety benefits which irradiated food brought to them. The number of supermarkets which put irradiated food on sale increased exponentially from 84 supermarkets in May 2000 to some 2,000 a year later."

The article concludes that irradiation is not a substitute for safe food handling by processors, retailers and consumers. "Although food irradiation may kill many organisms in food that is already spoiled, it cannot suppress odors or other signs of spoilage, and thus cannot be used as a means to 'hide' or 'cover up' spoiled food. ... In addition, food irradiation goes hand-in-hand with modern Hazard Analysis and Critical Control Points (HACCP), a preventative food safety management system that is mandated in meat, poultry and seafood processing plants in many countries."



The 2002 Farm Bill that Congress passed mandates that the U.S. Department of Agriculture not prohibit the use of any department-approved food safety technology for use in its commodity purchase programs. Those technologies include antimicrobial chemical rinses, irradiation and ultra violet light.

USDA is asking for public comment as it draws up specifications for implementing the policy. Comments may be addressed to Livestock and Seed Programs, Agricultural Marketing Service, U.S. Department of Agriculture, Stop 0249, Room 2092-S, Washington, D.C. 20250-0249. The fax number is 202-720-3499 and the e-mail address is foodsafetytechnology@usda.gov.



USDA is stepping up efforts to control *Listeria monocytogenes* in ready-to-eat meat and poultry products. The agency has directed plants producing high and medium risk ready-to-eat products, such as deli meats and hot dogs) to be placed under an intensified testing program if they do not already have an evaluated testing regime in place for the pathogen. This will include increased testing of the final product and testing of food contact surfaces and the plant environment. Intensified testing will also be conducted at plants that have environmental testing programs but that do not choose to share their results with the USDA Food Safety and Inspection Service.

"There is a vast amount of data generated through environmental testing by processing facilities," said Elsa Murano, undersecretary of agriculture for food safety. "Making it available to USDA will help our inspectors anticipate problems through proactive analysis of contamination trends at these establishments." ■

The Food Safety Consortium Newsletter

is a production of the three member schools of the consortium: University of Arkansas, Iowa State University and Kansas State University. Your comments are welcome.

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