

The Food Safety Consortium Newsletter



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And Now the News: Media Coverage Spotlights Irradiation

Irradiation, a technology that is still garnering acceptance among food marketers and consumers, is mostly getting pretty good press, according to a University of Arkansas survey. The procedure, which ensures pathogen-free meat and poultry products through the use of electronic pasteurization, still is not widely applied to products in the grocery stores.

Articles in newspapers and magazines and reports on broadcast news media can help shape public opinion on topical issues. The UA study shows that positive messages about irradiation are being communicated in news reports and that negative comments about the procedure are frequently countered in those same reports.

"I hope we can provide information
Continued on page 2



Mike Thomsen (right) of the UA faculty reviews newspaper clippings for the survey of irradiation news coverage with Winy Haryanto, a graduate student in agricultural economics.

FSC Universities All in the Top 10

All three universities in the Food Safety Consortium are ranked in the top 10 meat and poultry-related programs as compiled by the Nov. 1 edition of *Meat and Poultry* magazine.

Iowa State University was ranked second, Kansas State University was ranked third and the University of Arkansas was fifth. The magazine reached its findings by conducting informal surveys of professionals in all segments of the industry.

"What we found is that a handful of

universities have established reputations within the industry for supplying a steady stream of quality students, while also offering low-cost problem-solving services," the magazine said.

The magazine cited Iowa State, which emphasizes pork, for its programs in animal science, meat science and food science and human nutrition as well as its maintenance of seven swine farms for research projects.

"The college's meat lab is complemented by extensive harvest and processing facilities for both red meat

and poultry," the magazine said. "The lab is equipped with an electron beam irradiation system and features pathogen isolation capabilities, which are unique in university settings."

Kansas State, which emphasizes beef, was noted as a "widely regarded top-notch institution for students pursuing a career in any facet of the meat and poultry processing industry." The magazine recognized KSU's animal science program and the university's "well-documented thrust in the arenas

Continued on page 2

Media Coverage ... continued

to the food industry on how they communicate their message and how effectively it's getting across through the news media," said Mike Thomsen, an assistant professor of agricultural economics who is coordinating the project for the Food Safety Consortium. "We want to provide information on what concerns consumers have through their media consumption habits and whether those concerns are being addressed."

To find out where the message has been going, the researchers found 411 reports from 1991 to 2001 that at least mentioned irradiation from selected newspapers and broadcast networks. The reports include news stories

primarily about irradiation and stories on other subjects in which irradiation was mentioned. Editorial page items such as opinion columns and letters to the editor were not included.

The survey covered nine major newspapers: *The Christian Science Monitor*, *The New York Times*, *USA Today*, *The Washington Post*, *The Wall Street Journal*, the *Los Angeles Times*, the *San Francisco Chronicle*, the *St. Louis Post-Dispatch* and the *St. Petersburg (Fla.) Times*. Broadcast news report transcripts were obtained for ABC News, CBS News, NBC News, CNN, National Public Radio and the PBS News Hour.

In 62 percent of the articles and broadcasts, the reports contained the statement or concept that irradiation helps control harmful pathogens. Forty-five percent of the reports stated that credible authorities have concluded that irradiation is safe. Irradiation's tendency to improve shelf life was mentioned in

19 percent of the reports.

There were negative messages about irradiation that appeared in news reports. Twenty-one percent of the reports said irradiation was harmful and left harmful residuals in food, a statement that was countered with contrary comments in 11 percent of the reports. Fifteen percent of the reports contained contentions that irradiation adversely affects nutritional content, an assertion that was countered in 9 percent of the reports.

Some negative statements also appeared in the reports without rebutting comments. Those include expression of consumer groups' concerns over the safety of irradiated foods in 23 percent of the articles and statements that consumer acceptance remains a major barrier to the marketing of irradiated foods in 17 percent of the reports.

"Both advocates and opponents of the technology will communicate through the media," Thomsen said. "Statements in the reports come across in terms of background information. The reporter has gathered information and asked someone for their position. The reporter is the filter through which the lay reader learns the basics of irradiation."

Coverage of irradiation issues is still an occasional occurrence. The survey showed that articles and broadcasts remained at low levels each year during the decade, except for a spike in 1997. That was shortly after the Food and Drug Administration gave final regulatory approval to the use of irradiation on red meat, which prompted more stories than usual about the technology and its possible adoption in the marketplace. ■

Positive messages about irradiation are being communicated in news reports.

The Meat and Poultry Top 10

1. Texas A&M
2. Iowa State
3. Kansas State
4. Colorado State
5. Arkansas
6. Nebraska
7. Virginia Tech
8. Penn State
9. Ohio State
10. Oklahoma State

Top 10... continued

of research and extension."

KSU is home of the Kansas Value-Added Thermal Processing Laboratory for research, teaching extension activities in food science and engineering, which the magazine recognized as "demonstrating its commitment to the industry."

Arkansas, which the magazine pointed out is "located in Tyson Foods' backyard," emphasizes poultry and "has a reputation for producing quality graduates with a solid poultry background," particularly because of its Center of Excellence for Poultry Science. But agricultural administrators at Arkansas also seek to "avoid being lumped into just one segment of the industry."

The magazine listed Arkansas' slaughtering facilities for beef, lamb and pork as well as its poultry processing facilities. The poultry science, animal science and food science departments' programs were recognized for providing diverse opportunities in agricultural studies. ■

Irradiation Favored, but Cautiously

Consumers are largely leaning toward acceptance of irradiation of meat products, but they are still showing caution in their attitudes.

Some of the apprehension boils down to the terminology and knowledge of irradiation, said Michael Boland, a Food Safety Consortium researcher at Kansas State University where he is an associate professor of agricultural economics. Irradiation exposes food to radiant energy to destroy pathogenic bacteria throughout the surface and interior of a food product. A KSU survey showed that 60 percent of the participating consumers were willing to purchase irradiated beef burgers or ground beef if they cost the same as nonirradiated. There is more behind the numbers, Boland explained.

Among those willing to buy irradiated meat are older consumers, families with children under 18 at home and people with at least a college education. “This suggests that education efforts of food irradiation should pay more attention to these subgroups of consumers,” Boland said.

The majority of those surveyed had heard about irradiation but they did not know much about it. Before hearing an explanation of irradiation’s benefits and ability to wipe out pathogens from processed meat, 51 percent of the participants had positive attitudes toward irradiation and 44 percent were negative.

The 44 percent negative figure was probably influenced by the word “irradiation,” Boland said.

“When you start looking at things like pasteurization, people have a

different attitude about pasteurization versus irradiation. I think it’s more of a reaction against the word itself.”

More than half of the respondents said they would be willing to pay a higher price for irradiated meat — 42 percent would pay an additional 3 to 4 cents a pound and 11 percent would pay 5 cents or more a pound. Boland said the results from hypothetical questions of consumers in Manhattan, Kan., matches the results coming in from markets where irradiated beef is available.

“Sales are increasing,” he said. “You can look at Minnesota, California and the East Coast. The volume keeps going up. And the irradiated meat was priced pretty high at 4, 5 or 6 cents more a pound. People are in fact paying more and the volume keeps going up. People are clearly voting with their pocket-books.”

Boland predicted that irradiated meats will become more prevalent on the market because the technology will assure safe meat is on the shelf. “We’re really moving toward a food system

that’s going to have audits,” he said. “One audit is going to determine if a product is safe and what’s the pathogen count. So you’re going to have to use something like irradiation.”

A survey with responses from 136 restaurant owners in Kansas registered sentiments similar to those of

consumers, with 53 percent of them willing to buy irradiated hamburger for use in their establishments. Of those willing to buy the product, 54 percent were

willing to pay more for it while 38 percent were not.

However, Boland noted, “they were willing to buy it but they don’t want to label it. They don’t want the onus of having on their menus something that says this hamburger has been irradiated. They were very clear with us that they didn’t want to deal with labeling because they’re still not sure if people are going to accept this.”

Both consumers and restaurant owners were also positive toward steam pasteurization of meat once the process was explained to them. Steam

pasteurization in meat processing plants involves the use of high-temperature steam to kill pathogens on the surface of the meats. As with irradiation, restaurant owners did not wish to label their meats on their menus as steam pasteurized. ■

“Education efforts of food irradiation should pay more attention to subgroups of consumers.”

— Michael Boland



Shoppers are generally willing to buy irradiated meat products, but their willingness may depend on what they have heard about irradiation.

Report from the Coordinator



Gregory J. Weidemann

Researchers are known for being a methodical and deliberate group. They are not likely to run with a project that hasn't been thoroughly analyzed for its worth and relevance. They generally steer clear of anything that looks like a passing fad.

Although the prospect of bioterrorism endangering our food supply is definitely a current hot topic, it is not a whim of the moment. The subject has been receiving thoughtful and determined reviews during recent months. It is a noteworthy component of food safety concerns.

Government officials are warning us to beware of the introduction of infectious disease into animals. Charles Beard, vice president of research and technology for the U.S. Poultry and Egg Association, validated that cautionary advice with this comment: "Without outlining how it can be done, just trust me when I say that a bioterrorist animal disease attack can be accomplished cheaply, quickly and efficiently."

The point of biosecurity measures,

Beard explained, is not necessarily to prevent an attack but to help confine the disease to the location where it was introduced before it has a chance to spread. He called on the poultry industry to fix any laxness at the front end. "Only we can fix these biosecurity problems; not the USDA and not the Department of Defense."

Agriculture Secretary Ann Veneman assured us that USDA is doing its part by placing inspectors on high alert at ports of entry and food processing plants and by cooperating with other federal agencies such as the Food and Drug Administration and the Centers for Disease Control and Prevention.

University researchers are doing their part across the country. The National Biosecurity Resource Center for Animal Health Emergencies recently set up operations at Purdue University to provide resources for government, producers, veterinarians and others to learn about science-based biosecurity procedures.

Food Safety Consortium researchers

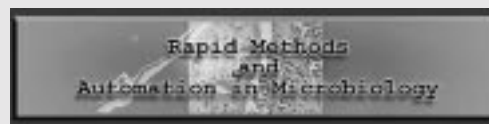
will have biosecurity on their agendas over the coming years. Our research projects tend toward the long term, but they are based on contemporary problems. Any aspect of food safety being considered in research problems will need to address the issues of biosecurity to be complete. Consumers, industry and government regulators will insist on that much.

Protection of public health has long been the bottom line of the Food Safety Consortium's work. We have emphasized repeatedly the need for collaboration of parties with different areas of expertise. Quickly conceived measures will safeguard us for the short run, but new research efforts will bolster our safety for the long term. There is never any better time to begin than the present. ■

KSU Sets 22nd Rapid Methods Symposium

Registrations are being accepted for Kansas State University's 22nd International Workshop and Symposium on Rapid Methods and Automation in Microbiology, which will be held July 12 to 19 in Manhattan, Kan. Daniel Fung, a Food Safety Consortium researcher at KSU, is director of the symposium.

Registration fees for the workshop and symposium are \$1,795. Fees for the symposium only (July 12-13) are \$450. A detailed description of the program is on line at <http://www.dce.ksu.edu/dce/cl/microbiology/index.html>.



For registration information, contact Bettie Minshell at 1-800-432-8222 (from outside the U.S., call 785-532-5575) or at minshel@ksu.edu. For scientific information, contact Fung at 785-532-5654 or dfung@oznet.ksu.edu. ■

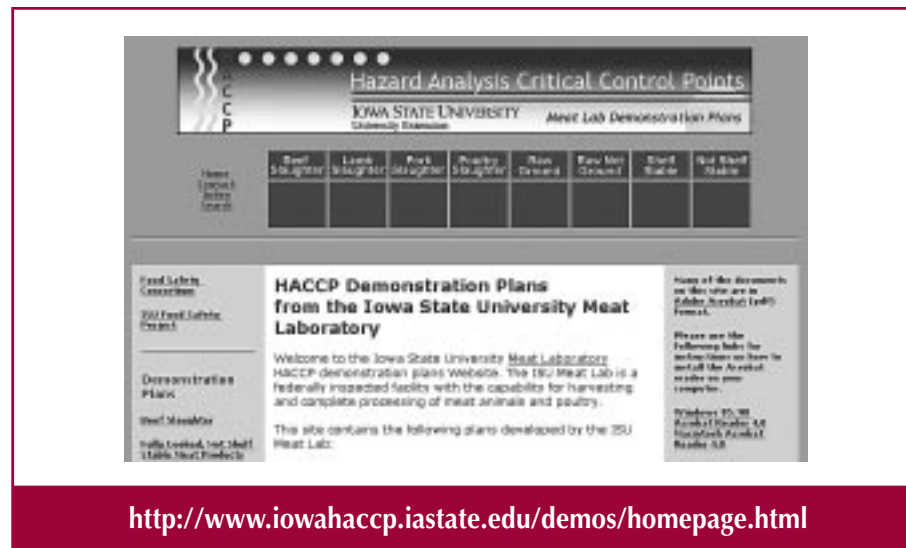
ISU Web Site Offers HACCP Aid to Plants

Small meat-processing plants are expected to devise and implement systems for inspecting their products for contaminants, just as the largest companies do. Federal law requires them to write Hazard Analysis and Critical Control Point (HACCP) plans that document how their personnel will intervene at key points in processing to reduce pathogenic bacteria. Then the U.S. Department of Agriculture has final say on accepting the plan that essentially allows the plant to operate.

It's a more daunting task for the small plants to perform as they often lack the substantial in-house resources that much larger competitors have to develop these detailed plans. So now help is on the Web.

Processors wondering where to start can begin with the Iowa State University HACCP demonstration site on line at <http://www.iowahaccp.iastate.edu>. Developed as a Food Safety Consortium project, the site contains plans developed at ISU's meat lab that small businesses can use as models for writing similar plans tailored to their own plants.

"It has a lot of transferability to any place in the U.S. The regulations are very



similar," said Jim Huss, the project director and an FSC researcher at ISU. "We are using this as a model because eventually the work we are doing could help school food service managers who are struggling with how to put HACCP into their operations. They could go to a site very much like this and get the resources and tools that they need."

That's a project for the future, but for now the plant processors can log on to sample plans developed by Joe Cordray and Gustavo Gonzalez of the ISU animal science department. The plans cover beef, lamb, pork, poultry, raw ground meat, fully cooked meat products and heat-treated meat products. Each plan contains a product description, a process flow diagram, hazard assessments, identification of critical limits, recordkeeping and verification procedures, a slaughter training and observation log and HACCP forms.

Huss noted that on-line lessons for training food service operators in HACCP procedures are under development for the site. These materials would complement the existing HACCP resources that small processors have available.

To establish a similar resource for school food service operations, ISU seeks to produce a site similar in detail and in volume of information. Dan Henroid, a co-researcher with Huss in the web

"The work we are doing could help school food service managers who are struggling with how to put HACCP into their operations."

— Jim Huss

project, said the goal is to produce a generic plan that any school district in Iowa could adapt to the local circumstances, no matter how large or small the school system is.

"We're meeting with people from the Department of Education and the Department of Inspections and Appeals in Iowa to get their feedback on the feasibility of these projects," Henroid said. "At the very least we'll have HACCP

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Dan Henroid (left) and Jim Huss

Weidemann Named Dean at U of A

Gregory J. Weidemann, the coordinator of the Food Safety Consortium and chair of the FSC Steering Committee, has been named dean of the Dale Bumpers College of Agricultural, Food and Life Sciences at the University of Arkansas and the associate vice president for agriculture–research.

The appointment was announced Dec. 21 by U of A Chancellor John White and U of A System Vice President for Agriculture Milo Shult. The appointment became effective Jan. 1.

Weidemann had served as interim dean since January 2001. He had been associate director of the Arkansas Agricultural Experiment Station and associate dean of Bumpers College since 1995.

Weidemann joined the U of A department of plant pathology in 1983. As a faculty member, he was internationally recognized for research on plant-pathogenic fungi and received several teaching awards, including the National Association of Colleges and Teachers of



Interim Dean Gregory J. Weidemann congratulates Hazel Fromm at Commencement in May 2001

Agriculture 1990 award of merit.

As an administrator, Weidemann provided leadership for the faculty to plan and implement initiatives to restructure curricula and programs and improve classrooms and research facilities statewide.

He has a bachelor's degree in zoology and a doctorate in plant pathology from the University of Wisconsin.

Weidemann said, "Having served as the interim dean as well as associate director over the past year, I am thrilled to have the opportunity to continue to serve the faculty, staff and students and our stakeholders throughout Arkansas.

"The partnership of Bumpers College and the Division of Agriculture keeps us focused on the three-part land-grant university mission of

teaching, research and extension. Our students benefit from having teachers who are deeply involved in research to solve problems for agriculture, the environment, the food industry and Arkansas communities and families." ■

ISU Web Site... continued

plans up that will be generic enough so that food service workers in schools, hospitals and restaurants can use it. There will be some kind of an interactive lesson that we would build on to it."

Food safety lessons for the general public continue to be offered on line at another site maintained by ISU at <http://www.extension.iastate.edu/foodsafety>. This site has attracted 750,000 page views over the past year from 120 nations. The lessons available through the site recorded 35,000 scores from

participants during the year, bringing the total to 85,000 consumers who have completed one or more of the four interactive food safety lessons.

The web site as well as compact discs produced by ISU provide food safety training materials used by nutrition and health specialists in Iowa.

Huss said the researchers will explore the possibility of using web sites to provide further education for food service employees. Access to the Internet is limited among this group, according to a survey taken by ISU, but the food

service operators remained open to finding ways to use the web for training lessons.

ISU also distributes bookmarks that list Consumer Control Points for consumers to use in preparing food in the kitchen. The bookmarks also list the web site address for additional information.

The food safety web site has garnered a list of awards from around the nation, including recognition from *U.S. News and World Report* On Line as Best of the Web for nutrition and health sites. ■

K-State Establishes Food Science Institute

Kansas State University officials have announced establishment of the Food Science Institute, a move that meshes all of the current food science expertise on the Manhattan campus. Curtis Kastner, the program director of the Food Safety Consortium at KSU, will also serve as director of the Institute.

The Institute will not include new facilities. Its staff will work with existing faculty to accomplish the

goals of the food science program. The university is simply combining its existing resources in education, research and extension, which will enhance the coordination, visibility and capacity of food science programs, Kastner said.

“The Institute will facilitate food science programs across the university,” Kastner said. “These programs will serve students, consumers, clientele in the food industry, the scientific community and government agencies.”

Centralizing many areas of expertise is a model that has worked successfully at K-State in the past. Other examples include the Kansas Center for Agricultural Resources and the Environment, the Plant Biotechnology Center and the Center for Sustainable Agriculture and Alternative Crops.

“[The Food Science Institute] will allow K-State to hang out a ‘shingle’ letting national food science associations, the food industry and governmental agencies know that K-State has a significant investment in food science and food safety,” said Marc Johnson, director of K-State Research and Extension.

The university’s current programs include food chemistry, human nutrition and functional foods, food engineering, food microbiology and food safety (both pre and post harvest), physical chemistry and rheology, product development, sensory analysis, cereal science, fruit and vegetable processing, dairy food

technology, meat science, poultry and egg science, food toxicology and food science.

“The Institute will be able to represent all of

these units as a voice for Kansas State University food science,” a position that also will support grant-writing opportunities, Johnson said.

Kastner said the Institute is already fully established, with an office in Waters Hall (room 148). The temporary

“The Institute will facilitate food science programs across the university.”
— Curtis Kastner



Curtis Kastner

telephone number for the new office is 785-532-1234.

“We have several programs at Kansas State that are nationally and internationally recognized in the industry; people do

recognize us as a national and international force,” Kastner said. “Plus, students who have been in our program are now out in the work force. They portray Kansas State as a major player, not only in how they represent Kansas State, but also in how they do their jobs all over the world.” ■

Papers & Presentations

Several Kansas State researchers have collaborated to contribute a chapter to the textbook *Meat Science and Applications*, which was published recently by Marcel Dekker Inc. of New York. The chapter, titled “Meat Safety,” was authored by Daniel Fung, Maha Hajmeer, Curtis Kastner, Justin Kastner, James Marsden, Karen Penner, Randall Phebus, J. Scott Smith and Martha Vanier.

The 34-page chapter explores the current status of meat safety and new developments in issues such as meat irradiation, dietary supplements,

genetically modified foods and consumers’ knowledge and practices in meat safety. It also includes a discussion of the history of meat industry safety, microbiological hazards and rapid methods and automation in microbiology testing related to monitoring microbial meat safety.

The chapter also has a detailed discussion of HACCP and current regulatory policies and inspection. The chapter concludes with a look into the future of meat safety and some speculations of its needs and directions. ■

Food Safety Digest

by Dave Edmark

Europe is moving ahead with plans to establish the European Food Authority, which would work with its member nations' respective food agencies and be a source of scientific guidance for policymakers. The European Parliament voted to support creation of the agency, but details remained to be worked out concerning selection of the EFA's headquarters city.

The Chartered Institute of Environmental Health in London reported remarks by David Byrne, European commissioner for health and consumer protection, at a food safety conference in Berlin. Byrne said, "Unprecedented waves of public concern have highlighted the need for all those involved in producing, manufacturing or supplying food, on the one hand, and the official bodies responsible for regulating and controlling food safety standards, on the other, to play their part in ensuring that the highest standards are achieved and maintained."

Byrne said the European food supply is among the world's safest and called for a greater emphasis "on an integrated and comprehensive approach" throughout the production chain.

■ ■ ■

The U.S. and Mexico signed a cooperative food safety agreement in September. The Food and Drug Administration will share with Mexican government agencies information on the sources of fresh produce. The USDA Food Safety and Inspection Service will work with Mexican officials to ensure safety of meat, poultry and eggs. Health and Human Services Secretary Tommy Thompson said the agreement "recognizes the strong bond between Mexico and the United States — a bond that is reflected in the enormous increase in the trade of food commodities across our borders."

■ ■ ■

The U.S. Department of Agriculture Economic Research Service has prepared a report on "Product Liability and Microbial Foodborne Illness" by Jean Buzby, Paul Frenzen and Barbara Rasco. The report reviewed the outcomes of 175 jury trials involving foodborne pathogens and identified factors that influenced those trials.

Some of the key points in the study were:

- Litigation over microbial contamination of foods by firms is limited because of the high costs caused by the complexity and slow pace of the legal system. Some attorneys are unwilling to take such cases.
- Plaintiffs are unlikely to win awards in foodborne illness jury trials.
- Plaintiffs were more likely to win jury trials if they could link their illness

to a specific pathogen.

- The expected monetary compensation from a foodborne illness lawsuit provides only limited incentives to pursue litigation.
- The legal system provides incentives, though limited, for firms to produce safer food.

The study is ERS Agricultural Economic Report No. 799 and can be downloaded from the World Wide Web at <http://www.ers.usda.gov/publications/aer799/aer799.pdf>.

■ ■ ■

Tyson Foods has released its annual food safety survey and reported that 96 percent of consumers are concerned about food safety and 83 percent believe they are knowledgeable on the subject. But the responses also show that many consumers are not using food safety practices in the kitchen.

Many consumers clean with dishcloths instead of safer paper towels. Only one-third use thermometers to determine if meat and poultry have been cooked to proper internal temperatures.

"Our annual survey helps us to realize that many consumers still need to learn to be 'food wise' and follow proper food handling procedures while cooking at home," said Neal Apple, vice president for Tyson's corporate laboratory.

The survey was conducted by Caravan Opinion Research Corp. International. ■

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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