

AMIF Study Shows Pathogen Interventions in Beef Plants Are Effective Against *E.coli* O157:H7

New data collected by a consortium of 12 processing plants and analyzed by Colorado State University show that pathogen intervention strategies in beef packing plants are effective in reducing *E. coli* O157:H7 on beef carcasses. The survey was coordinated by the American Meat Institute Foundation (AMIF).

The survey was done by collecting samples in 12 beef slaughter plants and testing the samples for *E. coli* O157:H7. Samples were taken from beef carcasses prior to hide removal, prior to carcass wash and following final microbial intervention strategies in all 12 plants. Trimming samples were also tested from product produced in six plants. All samples were taken between September 7, 1999 and October 7, 1999. Samples were taken at a rate of 1 per 300 carcasses. Conceptually, this sampling plan would yield 19 times more samples per year than the current USDA *E. coli*

O157:H7 testing protocol.

E. coli O157:H7 was present on the surface of beef hides in 3.56 percent of samples, while it was detected on .44 percent of carcasses prior to carcass wash, but before anti-microbial interventions like thermal pasteurization or organic acid rinses. The pathogen was not detected on carcasses following application of anti-microbial treatments, such as hot water, organic acid rinse or steam. In addition, no beef trimmings destined for ground beef production tested positive for *E. coli* O157:H7.

The data support the efficacy of sanitary hide removal and carcass microbial treatments as effective means of reducing pathogens. In addition, testing for process control verification would be more effective if the testing were done before carcass

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AMIF Survey Shows Foods Often Kept Too Warm to Ensure Food Safety

A new American Meat Institute Foundation survey shows that refrigerated foods often rise eight to 10 degrees F. during the typical summer trip home from the grocery store. These temperature increases may jeopardize food safety and increase the risk of foodborne illness.

The survey by Audits International shows significant temperature variation of processed meat products and other food products when they reached homes and when stored in home refrigerators and freezers. These findings are critical because high holding temperatures can contribute to the growth of bacteria on food.

As part of the survey, "U.S. Cold

Temperature Evaluation," trained consumers collected temperatures of products just prior to leaving retail stores and just after arriving in a consumer's home. Products included pre-packaged lunch meat, ground beef, sliced meat from the deli, ice cream, milk, whipped topping, potato salad and fresh fish. Data were collected from more than 1,000 households geographically dispersed across the country.

The survey shows that product temperatures rise approximately eight to 10 degrees F. during the typical summer shopping excursion. The worst five percent of shopping conditions, which involved long transportation times

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New Government Brochure on Food Irradiation Released

AMIF Experts Help Reach Out to Media on Irradiation Safety

The Food and Drug Administration (FDA) last month unveiled its new consumer brochure, "Food Irradiation: A Safe Measure."

The brochure emphasizes irradiation's benefits in destroying pathogens and extending shelf life and details how consumers can easily identify irradiated products in the retail case through labeling. The brochure also urges consumers to continue exercising safe food handling practices, even when they purchase irradiated products.

AMIF and a number of other associations assisted in the development of the brochure, which can be downloaded from the FDA web site at <http://www.fda.gov/opacom/catalog/irradbro.html>. Consumers also can call 1-888-SAFEFOOD for more information on irradiation.

Unfortunately, the government has minimal funds to print and distribute the brochures. As a result, AMIF and other associations have purchased limited quantities to distribute to consumers who inquire about them.

AMIF also will help promote the availability of the on-line version of the brochure through a special "mat" release, which is a predrafted story that is published in its entirety in newspapers throughout

the country.

AMIF President Addresses Media, Capitol Hill

As part of AMIF's outreach efforts, AMIF President James H. Hodges participated in on-camera interviews with ABC affiliate WLS-TV Chicago and with Discovery Channel News.

During his interviews, Hodges emphasized that irradiation will be an important food safety tool, in addition to the many other tools the industry already uses to destroy pathogens on meat products.

AMIF also hosted a breakfast for Washington media this month where irradiated beef and chicken products were served. Two members of AMIF's Food Safety Advisory Committee also joined in the breakfast: Christine Bruhn, Ph.D., director of the Center for Consumer Research at the University of California Davis and Rick Hunter, Ph.D., deputy health officer for the State of Florida Health Department. *(For information on the Food Safety Advisory Committee, see story, below).*

In addition, AMIF sent letters to key media encouraging them to cover the impending availability of irradiated products. In the letter, AMIF offer background interviews, plant tours and outlined how to reach key members of AMIF's Food Safety Advisory Committee.

AMIF Food Safety Advisory Committee Established to Assist in Public Policy, Media Issues

In an effort to help provide a scientific perspective to media and public policy issues, AMIF has assembled a Food Safety Advisory Committee, comprised of eight key experts on microbiology, meat science, irradiation and consumer behavior.

The committee met in Washington in November to be briefed on AMIF's Food Safety Initiative and offered extensive feedback on scientific and communications strategies. Some members of the Committee also were interviewed on camera delivering key food safety messages for use with media.

The experts include:

- Doug Archer, Jr., Ph.D., of the Science and Human Nutrition Department, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL, an expert on microbiology.

- Christine Bruhn, Ph.D., Director, Center for Consumer Research, University of California, Davis, Davis, CA, an expert in consumer attitudes and behavior with unique expertise on irradiation.

- Catherine Donnelly, Ph.D., University of Vermont, Department of Nutrition and Food Science, Burlington, VT, a food scientist with an extensive background in *Listeria monocytogenes*. Donnelly is a member of the National Advisory

Committee on Microbiological Criteria for Foods (NACMCF).

- Michael Doyle, Ph.D., Regents Professor of Food Microbiology, Director, Center for Food Safety and Quality Enhancement and Head of the Department of Food Department of Food Science and Technology, University of Georgia, Griffin, GA. Doyle is an expert in food microbiology and a member of the NACMCF.

- Richard Hunter, Ph.D., Deputy State Health Officer, Florida Department of Health. Hunter is a public health expert and an outspoken advocate of the promise of irradiation in improving food safety.

- Larry Katzenstein, independent medical and health journalist. Katzenstein has worked at *Consumer Reports* and *American Health Magazine* and is committed to debunking the myths surrounding food irradiation.

- Laurie Sims, Ph.D., MPH, RD, Professor of Human Nutrition at the University of Maryland at College Park, Dept. of Nutrition & Food Science, an expert on nutrition.

- John Sofos, Ph.D., Colorado State University, Department of Animal Science, Fort Collins, CO, a meat microbiologist.

AMIF Refrigerated Foods Survey

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and high transportation temperatures, resulted in product temperatures that rose 15 to 20 degrees F.

Twenty-seven percent of home refrigerators were found to be above 41 degrees F. - the maximum temperature recommended by the Food and Drug Administration's Food Code. Eight percent were above 45 degrees F. and two percent were above 50 degrees F.

The survey also tested actual product temperatures in backrooms, retail refrigeration and freezer cases and home refrigerators and freezers. Nearly 1,000 products and more than 500 backroom refrigerators were tested.

Overall, about one in two refrigerated products was held above 41 degrees F. One in four products was held over 45 degrees F., and one in seventeen was over 50 degrees F.

Twenty-seven percent of fresh meat products in the retail case were found to be above 41 degrees F.; nine percent were above 45 degrees F., and one percent were above 50 degrees F. At the deli counter, 71 percent of deli meats were above 41 degrees F., 42 percent were above 45 degrees F., and 14 percent were above 50 degrees F. Among pre-packaged lunch meats, 60 percent were above 41 degrees F., 34 percent were above 45 degrees F. and 11 percent were above 50 degrees F.

The survey also found that although there is some difference in various types of retail refrigeration units, all types had product above 41 degrees F. The frequency of cases holding product above 41 degrees F. ranged from 27 percent for fresh meat to 71 percent in the deli counter.

Audits International compared the data to a similar survey

conducted in 1989. The 1999 data show only slight improvements in product and storage temperatures.

In response, the Foundation offers consumers the following tips for keeping foods cold:

- Ask grocery store staff to pack cold foods together in paper bags, which keep foods colder than plastic bags. This is especially important on warm days.

- Take foods home from the grocery store promptly. "Quick errands" run after grocery shopping can cause product temperatures to rise and jeopardize food safety.

- During summer months, travel with a cooler and ice packs in your trunk to store perishable products and keep them cold.

- If a cooler is impractical, place perishable foods in the car near the air conditioning vents - not in the trunk.

- Purchase thermometers to monitor refrigerator and freezer temperatures. Refrigerators should be kept at 41 degrees F. or lower. Freezers should be kept at zero degrees F. or lower.

"This study highlights areas for improvement," said AMIF President James H. Hodges. "Our survey underscores the need to communicate clearly about the importance of holding products at proper temperatures to prevent bacterial growth."

AMIF is a founding member of the Partnership for Food Safety Education, which educates consumers about safe food handling. One of the Partnership's four educational messages is to chill foods properly. For more information, visit www.fightbac.org.

Research Roundup

■ New Treatment for Human *E. coli* Infection —

Canadian researchers say they have made a key step toward developing what could be the first drug to save the lives of those who have been infected with *E. coli* O157:H7 bacteria. Researchers at the University of Alberta in Canada have created a new "inhibitor": a five-limbed molecule armed with 10 grippers that are designed to grab the toxins and escort them out of the body. Its designers call it "Starfish." Currently, there are no vaccines or inhibitors for *E. coli* infections on the market, and doctors say there is not much they can do to treat the related kidney disorder called Hemolytic Uremic Syndrome besides giving patients dialysis and blood transfusions. The researchers say Starfish shows promise, but they are still testing its effectiveness in humans. The study was published in the February 10 issue of the journal *Nature*.

■ DNA Fingerprinting of *E. coli* O157:H7 —

A new genetic fingerprinting method developed by University of Nebraska food scientists shows that there are two genetically distinct *E. coli* O157:H7 populations found in cattle. One population appears to be associated with fatal foodborne illness in people while the other is not commonly isolated from foodborne disease cases. The results suggest that the population most commonly found in cattle is either incapable of causing disease or is not easily transmitted to humans, according to food microbiologist Andy Benson, Ph.D., who led the research effort. The paper was published in the January 2000 *Proceedings of the National Academy of Sciences*.

AMIF Continues Fight BAC! Campaign Support Grassroots Interest Climbs; ADA Gets More Involved

Years of hard work building the Fight BAC! public health education campaign are finally paying off, according to the Partnership for Food Safety Education. AMI helped launch the Partnership in 1997, with support from government agencies, consumer groups and other industry groups. The campaign has now reached tens of millions of consumers in the U.S. and Canada with four basic safe-food-handling messages:



Major 1999 accomplishments included the development and distribution of new food safety teaching materials for grades 4-6. The kits, which include a video, games, fact sheets and quizzes, are in high demand by the nation's teachers. The Partnership had earlier created a kindergarten - 3rd grade teaching kit, which has been widely disseminated and is also in high demand. Both kits are sold at the Fight BAC! store at www.fightbac.org.

The Fight BAC! campaign has been extremely successful at the grassroots level, with public health educators, extension agents, local supermarkets and food companies partnering in many states and communities to spread the campaign's important messages. From coast to coast, the campaign has been used at fairs, public meetings, in mailings to and seminars for consumers. Even politicians have shared the Fight BAC! campaign with voters in an effort to spread the word!

This year, the campaign seeks to expand public usage of its existing materials, and to create new educational materials for patients who would benefit from special food safety attention. For example, many foodborne pathogens pose special problems for certain vulnerable populations, such as older consumers, pregnant women or young children. The Partnership is working with its government agency liaisons to develop these materials.

Finally, the Fight BAC! campaign continues to seek publicity to raise public awareness. The campaign was featured on NBC's *Today Show* February 22nd. The Partnership placed an ad in the *Washington Post* March 1st to coincide with a Capitol Hill briefing about the Fight BAC! campaign and the importance of consumer education about safe food handling.

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fabrication and distribution. If carcass testing were used, carcasses testing positive for pathogens could be removed from the raw beef food supply before reaching the consumer and appropriate process reviews could be taken to ensure that the food safety system is working effectively.

The study results were presented at a February 29 Food Safety and Inspection Service public meeting to discuss new developments regarding E.

coli O157:H7 and its relationship to human health and public policy.

"It is our hope that this data will encourage USDA to reevaluate its ground beef sampling program," said AMIF President James H. Hodges. "A carcass testing program for E. coli O157:H7 is more practical and will help ensure that the safest and most wholesome product possible enters commerce."

AMIF.ORG Now Available to Researchers, Media, Consumers

AMIF's own web site AMIF.ORG is now on-line and available to researchers, media and consumers.

The site includes background information on food safety, how to prevent foodborne illness, ongoing Foundation research and includes numerous links to scientific groups, academic institutions and consumer-friendly sites like the Partnership for Food Safety Education.

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