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NEWS

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Annual MIRC Featuring Updates on Preharvest *E. coli* O157:H7 Reduction Strategies

Researchers will present updates on three major AMI Foundation studies on preharvest strategies to prevent *E. coli* O157:H7 at the annual Meat Industry Research Conference Oct. 27 – 28, 2003, at the Palmer House Hilton in Chicago.

The annual conference has developed a reputation for presenting cutting-edge science and stressing its practical application to the industry.

Among the research updates to be presented this year is a study by Michael Doyle, Ph.D., on methods to control *E. coli* O157:H7 in drinking water for cattle. Doyle's study was initiated in August 2002 and included

three phases, the first of which is nearly complete. Doyle is the Director of the Center for Food Safety at the University of Georgia-Griffin.

Phase I involved determining the survival of *E. coli* O157:H7 in water containing different amounts of rumen stomach contents and held at different temperatures. Results indicate that drinking water for cattle, once contaminated with rumen content containing *E. coli* O157:H7 from infected animals, may remain contaminated with the pathogen for more than 35 weeks. Thus, drinking water in the trough

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AMI Foundation Presents USDA With Industry Food Safety Research Priorities

The AMI Foundation strongly recommended that USDA research priorities mirror the Foundation's own in *E. coli* O157:H7 and *Listeria monocytogenes* research.

The majority of funding for *E. coli* O157:H7 and *Listeria monocytogenes* projects is dedicated to preharvest and operational controls and additives research, respectively, Vice President of Scientific Affairs Randy Huffman, Ph.D., said at a June 30 listening session in Denver with members of USDA's Cooperative State Research, Education and Extension Service and Agricultural Research Service.

Huffman outlined the AMI Foundation's two primary food safety goals – preventing and ultimately

eliminating *E. coli* O157:H7 in beef and preventing and ultimately eliminating *Listeria monocytogenes* in ready-to-eat meat and poultry products.

"At the core of the AMIF strategy has been a sharp focus on funding

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Science Soundbites

New Research Highlights Progress Toward *E. coli* O157:H7 Vaccine for Live Cattle

Two studies presented at an international research conference in June show promise in preharvest reduction of *E. coli* O157:H7. Results of the two studies were presented at VTEC 2003, the fifth International Symposium on 'Shiga Toxin (Verocytotoxin) - Producing *Escherichia coli*.

The conference took place in Edinburgh, Scotland.

The first study revealed that feedlot cattle vaccinated with a Canadian-developed vaccine showed a significant decline in the incidence of *E. coli* O157:H7 shedding, according to the results of a clinical trial conducted by University of Nebraska researchers during summer 2002.

Rod Moxley, Ph.D., a veterinary pathologist and professor in the department of veterinary and biomedical sciences at the University of Nebraska-Lincoln, presented the trial results.

The *E. coli* vaccine used in the Nebraska trial is being developed by an alliance composed of the University of British Columbia, the Alberta Research Council, Saskatchewan's Vaccine & Infectious Disease Organization, and Bioniche Life Sciences Inc., which is responsible for worldwide commercialization of the vaccine.

Another VTEC 2003 presentation by Brett Finlay, Ph.D., of the University of British Columbia, outlined how *E. coli* O157:H7 achieves a molecular attachment to intestinal cells in cattle by embedding a protein known as Tir into the host cell membrane. The pathogenic cell then joins to the intestinal cells by attaching intimin, an outer membrane protein, to the cell-embedded Tir proteins.

The Canadian *E. coli* vaccine was originally developed by Finlay, a professor in the biotechnology laboratory and the departments of biochemistry and molecular biology, and microbiology and immunology at UBC. The vaccine stimulates production of antibodies to prevent *E. coli* O157:H7 from attaching to the intestinal wall of cattle, which impedes replication and thus reduces the number of pathogens that can be shed into the environment.

New Study Prompts Researchers to Call for Change of Approach in Preventing *Listeria* Infections

Only a small fraction of all *Listeria*-contaminated foods contain enough of the pathogen to cause illness, according to a pair of studies on *Listeria monocytogenes* in ready-to-eat (RTE) foods and associated illness rates. Researchers concluded that prevention efforts should focus on limiting the concentration of *Listeria* in selected foods, rather than the current policy of "zero tolerance," which requires elimination of the pathogen from all RTE foods.

The studies by researchers with the National Food Processors Association (NFPA) involved the collection and analysis of thousands of samples of RTE foods in Maryland and California over a two-year period, followed by a comparison of the data on *Listeria* incidence with the incidence of *listeriosis* in the same areas and same time frame.

The investigators found *Listeria* in about 577 of more than 31,705 food samples analyzed (1.82 percent), but only 21 of the samples contained more than 100 colony-forming units (about 100 organisms) per gram. The prevalence rates ranged from 4.7 percent for seafood salads to 0.89 percent for sliced luncheon meats, rates "considerably lower than expected," the researchers said.

A control strategy that left overall *Listeria* prevalence the same while limiting the number products with high concentrations of the pathogen could reduce illness cases by 89 percent, the authors said.

The second of the two studies, both of which were reported recently in the *Journal of Food Protection*, used mathematical modeling to assess the relationship between the dose of *Listeria* consumed and the risk of illness. They concluded that nearly all cases of *listeriosis* are linked with food items that have relatively high levels of *Listeria* contamination.

For more information on the study, visit <http://www.cidrap.umn.edu/>.

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Ongoing Research - *Listeria monocytogenes*

<u>Investigator</u>	<u>Institution</u>	<u>Project Title</u>
Jeffrey Kornacki	University of Georgia	Recovery, Development and Validation of Appropriate Surrogate Microorganisms in Meat and Poultry Emulsions for In-plant Critical Control Point Validation Studies
Jeffrey Kornacki	University of Georgia	The Role of Aerosols in Transmission of Microorganisms (including <i>Listeria</i>) to Ready-to-Eat Meat/Poultry Products
Ferencz Denes	University of Wisconsin-Madison	Plasma-Enhanced Disinfection of Surfaces, Air, And Water in Ready-To-Eat (RTE) Meat and Poultry Processing Environments
Robert Vinopal, Richard Jademac	University of Connecticut	Development of Ion Mobility Spectrometry (IMS) Applications for <i>Listeria</i> Detection and Monitoring In-Plant Food Processing Plants
ILSI Steering Committee	International Life Sciences Institute	Expert Scientific Review Panel on <i>Listeria monocytogenes</i> In Foods
Eric Johnson and Kathleen Glass	University of Wisconsin – Madison	Intervention Strategies: Control of <i>Listeria monocytogenes</i> in Processed Meat and Poultry by Combinations of Antimicrobials
Bradley Marks, Alden Booren and Elliot Ryser	Michigan State University	Verifying and Improving the Utilization of Microbial Pathogen Computer Models for Validating Thermal Processes in the Meat Industry

Ongoing Research - *E. coli* O157:H7

<u>Investigator</u>	<u>Institution</u>	<u>Project Title</u>
Andrew Benson	University of Nebraska	Distribution of Virulent and Avirulent Subclones of <i>E. coli</i> O157:H7 in the U.S.
Dale Hancock	Washington State University	Evaluation of Efficacy of a Bacteriophage System in Preventing or Modulating <i>E. coli</i> O157:H7 Infection of Cattle
Alison O'Brien	Uniformed Services University of the Health Sciences	<i>E. coli</i> O157:H7 Intimin Expressed by Transgenic Plant Cells as a Candidate Oral Vaccine for Cattle
Michael Doyle	University of Georgia	Methods to Control <i>E. coli</i> O157:H7 in Drinking Water for Cattle
Chobi DebRoy	Pennsylvania State University	Competitive Exclusion of <i>Escherichia coli</i> O157 using Non Pathogenic Colicin Producing <i>Escherichia coli</i> Strains
Charles Kaspar	University of Wisconsin - Madison	The Use of Egg Yolk Anti-O157:H7 Immunoglobulin to Clear <i>E. coli</i> O157:H7 from the Intestinal Tracts of Cattle

BSE Case Spurs Canadian Review Of Feed Ban, Firewalls; Is U.S. Next For Tougher Controls?

Even as an international team of scientists and bovine spongiform encephalopathy (BSE) experts praised the “comprehensive scope and thoroughness” of Canada’s investigation into that country’s case of BSE, the fallout in terms of ramped-up regulatory control of various risk factors was under way early this summer.

“We wish to clearly acknowledge the openness, full disclosure and access to personnel provided by the Canadian authorities to our team, the international community and to the public,” team members said in a statement. “The approach to sharing of information and communication demonstrated by Canada is a model to be emulated.”

The team, which convened in Ottawa, Canada, June 7-9, 2003, consisted of Prof. Ulrich Kihm, from Switzerland, Will Hueston, Ph.D., Minnesota state epidemiologist, Dr. D. Heim of Switzerland and Dr. S. MacDiarmid of New Zealand, who participated via e-mail and telephone.

The review team evaluated Canada’s response to the single case of BSE confirmed in an Alberta-born cow in May and examined both the suspected cause of the BSE case – exposure to feed contaminated with the infective agent – and the epidemiologic risk factors. The panel concluded that the “measures previously [put] in place achieved the designed outcome: Identification of the positive animal in a

manner that precluded its entry into the human food chain.”

Based on its review, the international team recommended the following measures:

- A prohibition of Specified Risk Materials (SRM) in feed or food as “the most critical and valuable” measure for enhancing public health and reducing the risk of animal infectivity.
- Closer regulation of Advanced Meat Recovery (AMR) products to ensure that no central nervous tissue (CNS) is present, along with AMR sampling programs for CNS tissue on a test-and-hold basis.
- Increased surveillance of live cattle, with a focus on high-risk fallen and dead stock and cattle exhibiting clinical signs of BSE.
- Improvement and extension of Canada’s animal identity and traceability systems.
- Rigorous controls to prevent infectivity of animal feed, including testing of fish meal and poultry meal for possible contamination with mammalian meat and bone meal.

USDA and Food and Drug Administration officials are currently reviewing U.S. policies regarding the ruminant-to-ruminant feed ban and regulation of production and use of AMR systems product.

Comparison of BSE Statistics in the U.S. versus U.K.

Industry Statistics	United States	United Kingdom
Cattle inventory	96.7 million head	10.6 million head
Date of first case	N/A	1986
Number of cases since 1986	0	183,000
Peak year of cases	N/A	1992
No. of cases during peak year	N/A	37,000
No. of animals tested in 2002	19,900	333,089
No. of confirmed cases in 2003	0	172

Annual MIRC Featuring Updates on Preharvest *E. coli* O157:H7 Reduction Strategies

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could serve as a source of *E. coli* O157:H7 for several months after being contaminated by only one highly infected animal drinking from the trough only one time.

Phase II focuses on evaluating a variety of treatments to control *E. coli* O157:H7 in this environment, including the use of ozone, chlorine and competitive inhibition. The most promising drinking water treatment evaluated to date is the addition of acidic calcium sulfate plus lactic acid. Phase III studies will determine the effects of different dilutions of the acidic calcium sulfate plus lactic acid treatment.

Recent findings from a study by Alison O'Brien, Ph.D., of the Uniformed Services University of the Health Sciences also will be featured at MIRC. O'Brien's study aims to develop an inexpensive, effective, easily administered vaccine to prevent cattle from becoming infected with *E. coli* O157:H7.

O'Brien's method focuses on intimin, which is an outer membrane protein of *E. coli* O157:H7 that is required for colonization of the pathogen in newborn. Researchers hypothesized that an intimin-based vaccination strategy in calves might reduce colonization of mature cattle with *E. coli* O157:H7. Her recent findings suggest that mice immunized with intimin expressed from plant cells or fed those same plant cells showed a significantly reduced duration of *E. coli* O157:H7 fecal shedding.

Preliminary results also will be presented from a follow-up study to an AMIF/Texas Tech University research project, which found that two strains of *Lactobacilli*, bacteria commonly used to make yogurt, fed to cattle can substantially decrease the incidence of cattle shedding enteric *E. coli* O157:H7. The follow up study, in which AMIF is collaborating with the National Cattlemen's Beef Association, began in April 2003 and will aid in the development of an effective and economically feasible intervention strategy to reduce the prevalence of *E. coli* O157:H7 in feedlot cattle. The initial research of Texas Tech University's Mindy Brashears, Ph.D., revealed that feeding cattle a diet of so-called "good bacteria," or *Lactobacillus acidophilus*, reduced the incidence of cattle shedding *E. coli* O157:H7 by 50 percent.

The follow-up study, titled "Reduction of *E. coli* O157:H7 in Beef Feedlot Cattle Using Varying Doses of a Direct-Fed Microbial," will evaluate the effects of three different doses of the *Lactobacilli* strain NPC 747 on the prevalence of *E. coli* O157:H7 in the feces and on the hides of cattle throughout the feeding period.

Other MIRC sessions include quality and consistency issues in livestock production; product development challenges and opportunities; food safety and regulatory updates; and developing and marketing meat an ingredient. There also will be a special status report on the bovine spongiform encephalopathy (BSE) case in Canada.

Each day will feature a luncheon session with special guests giving presentations. On Monday, Oct. 27, 2003, Eric Hentges, Ph.D., executive director of the USDA Center for Nutrition Policy and Promotion will deliver a status report on USDA's nutrition policy. On Tuesday, Oct. 28, 2003, Steven Stice, Ph.D., professor and GRA eminent scholar at the Rhodes Center at the University of Georgia, will address genetic engineering and cloning.

The registration fees are as follows: Members of AMI and the American Meat Science Association, \$445; three or more members of AMI or AMSA, \$425; Nonmember, \$665; Student, \$35. A \$50 discount will be applied to those who register for both MIRC and Worldwide Food Expo 2003, which is being held Oct. 29 – Nov. 1 at McCormick Place in Chicago. To register for the MIRC visit www.MeatAMI.com to download a registration form.

National Advisory Subcommittees Tackle Performance Standards, Use-By Dates, Pasteurization

Microbiological performance standards, safety-based use by and sell by dates and the definition of pasteurization topped discussions at a meeting of the National Advisory Committee on Microbiological Criteria for Foods (NACMCF) subcommittees. The public meetings were held late last month in Washington, D.C.

The committees that met included the Subcommittee on Microbiological Performance Standards for Raw Meat and Poultry, the Subcommittee on Criteria for Shelf-Life Based on Safety and the Subcommittee on Scientific Criteria for Redefining Pasteurization.

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Food Safety Short Courses, Sanitary Design Workshop Featured at Annual Convention

Industry best practices for beef processing, ready-to-eat meat operations and sanitary equipment design will be featured at workshops held in conjunction with AMI's International Meat, Poultry and Seafood Convention and Exposition in Chicago on Oct. 29 - Nov. 1.

Two Food Safety Short Courses will provide in-depth discussion on industry best practices, implementing appropriate and effective microbial interventions and compliance with regulatory requirements. Each course will provide the most up-to-date information available and include time for participants to ask questions and solve problems in their own operations. Participants will be required to take a short quiz and will receive a Certificate of Completion at the end of each course.

In "Industry Best Practices for Ready-to-Eat Meat Operations: *Listeria* Intervention and Control," participants will learn strategies for controlling *Listeria* in the plant's environment. Topics covered will include sanitary design and ready-to-eat sanitation, product formulation and post-packaging technology, routine sampling plans for process control and data analysis, and corrective actions.

During the "Industry Best Practices for Beef Processing: Fresh and Ground Beef Product", industry scientists and operational experts will share the blueprint for microbial interventions in fresh and ground beef processing. Topics covered will include controlling pathogens in raw and ground meats,

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Food Safety Research Priorities

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solutions-based research on these primary goals," Huffman said.

The AMIF Food Safety Initiative has garnered over \$4 million to date. Research proposals face a competitive process of approval by research advisory committees comprised of industry scientists and representatives from land grant universities and USDA. AMIF submitted a summary of the 32 projects funded.

AMIF has established three primary *E. coli* O157:H7 research priorities: preharvest; post-harvest; and risk assessment.

"Given that a high percentage of cattle arrive at the plant are shedding *E. coli* O157:H7 it is logical to research opportunities for reduction and control during the preharvest stage of production," Huffman said.

The Foundation wants to continue the search for even more effective decontamination treatments post-harvest and to assist in closing the data gaps identified in FSIS' *E. coli* O157:H7 risk assessment, he said.

Listeria monocytogenes research also is a priority for the Foundation.

"Since *Listeria* is primarily a post-cooking environmental contaminant, the primary research focus should be on ways to reduce its presence in the environment or on the final product," Huffman said. This goal should be met through technological interventions, operational control and monitoring, and thorough risk assessment.

Huffman also provided an overview of AMIF's *Listeria* research funding activities to date and a vision for the Foundation's priorities in the near future.

Enhancements to the existing public health monitoring system are needed to provide an accurate assessment of the true burden of disease by specific food type. This would aid in measuring the impact of technological and regulatory changes as well as assessing emerging food safety threats, Huffman said.

Also, the Foundation would like to see USDA take the lead among federal agencies in establishing a comprehensive federal food safety research plan.

AMIF looks forward to continuing the dialogue with USDA on ways to enhance the margin of safety of the U.S. meat and poultry supply, Huffman said.

"Enhancements to meat and poultry safety can be accomplished through coordination between federal agencies engaged in food safety research and cooperation with the industry," Huffman said.

Nutrition News**Dietary Guidelines Under Review by Government Ag, Health Agencies**

The Department of Health and Human Services and USDA have begun the process of developing the sixth edition of *Nutrition and Your Health: Dietary Guidelines for Americans*. The government is required to publish the dietary guidelines at least every five years. USDA and HHS are required to review all federal dietary guidance-related publications for the general public.

A notice was published on May 15, 2003, in the *Federal Register* announcing the establishment of a Dietary Guidelines Advisory Committee and inviting nominations for the Committee. AMI nominated Bruce Watkins, Ph.D., director of the Center for Enhancing Foods to Protect Health at Purdue University. Watkins is a faculty member of the Purdue Department of Food Science and holds a doctorate in nutrition and physiological chemistry from the University of California-Davis.

Watkins is a renowned expert in nutrition biochemistry and physiology and nutrition education. He has devoted a significant portion of his career to research to develop a better understanding of dietary fat in food systems and its impact on human health.

USDA Reviewing Food Guide Pyramid, Results Expected in August

USDA has agreed to review the Food Guide Pyramid following a letter from the Office of Management and Budget encouraging them to modify the pyramid to better differentiate the health benefits and risks from foods. The May 27, 2003, letter also was directed to the Department of Health and Human Services.

Concerns have been raised among the industry and nutritionists as to the validity and appropriateness of the Pyramid in conveying healthy eating messages to the public. USDA expects to publish a technical report on the scientific underpinnings of its review by August.

OMB Proposes Trans Fat Distinction in New Food Nutrition Guidelines

The Office of Management and Budget urged USDA and the Department of Health and Human

Services last month to revise current food nutrition guidelines to distinguish between trans fatty acids (trans fats), shown to increase the risk of heart disease, and beneficial fats such as omega-3, shown to lower the risk.

Officials at USDA and HHS are preparing new Dietary Guidelines for Americans to be issued in 2005. The guidelines are used as the basis for food labeling. They also are used as a reference for meal planning at schools in the federal lunch program.

In November 1999, the Food & Drug Administration proposed a requirement that the amount of trans fats present in a food be included in the amount and percent of Daily Value (%DV) declared for saturated fatty acids. In December 2002, FDA reopened the comment period on the proposal to request comment on requiring an asterisk in the %DV column for trans fat when it is listed. The asterisk would be tied to a similar symbol at the bottom of the Nutrition Facts box and would be followed by the statement, "Intake of trans fat should be as low as possible."

Concerns about trans fatty acids, or trans fats, have increased in recent years as more studies show that they increase the risk of heart disease by lowering levels of good cholesterol, or HDL, while raising levels of bad cholesterol, LDL.

Upcoming AMIF Events

October 27 - 28, 2003

Meat Industry Research Conference

Palmer House Hilton, Chicago, IL

October 29 - November 1, 2003

2003 International Meat, Poultry and Seafood Convention and Exposition (as part of the Worldwide Food Expo)

McCormick Place, Chicago, IL

December 3 -4, 2003

Listeria Intervention and Control Workshop,

Hyatt Harborside, Boston, MA

NAS Report Focuses on Fat Intake, Feed Controls as Dioxin Control Measures

The National Academy of Sciences recommended the formation of a federal interagency group to develop and implement risk-management strategies to reduce human exposure to dioxin, a toxic by-product of combustion and certain industrial processes that tends to accumulate in the fatty tissues of animals. The report was released July 1, 2003.

The report, titled “Dioxin and Dioxin-Like Compounds in the Food Supply: Strategies to Decrease Exposure,” stopped short of suggesting regulatory limits on dioxin or dioxin-like compounds (DLCs) in foods or animal feed. Instead, committee members promoted the Dietary Guidelines for Americans’ advice on consumption of fats as the key to reducing the risk of dioxin exposure without compromising nutrient intake.

The report recommended that government officials collaborate with the private sector to identify and pursue voluntary interventions in animal feeding and production to minimize levels of dioxin

in livestock. The NAS committee members acknowledged that the health risks posed by current levels of dioxins in foods have yet to be fully ascertained and that neither an adequate scientific database on dioxin distribution nor a precise understanding of what bio-levels in humans trigger health problems currently exists.

Instead, the report called for the following initiatives:

- Collection of more comprehensive data on levels of dioxin in the food supply
- Reduction of dioxin contamination in animal feed, and a curtailment of dioxin “recycling” that occurs when animal fat is used in animal diets.
- Development between federal agencies and food producers of voluntary guidelines for animal feeding and food-production practices.

The U.S. Department of Health and Human Services, FDA and agencies within USDA sponsored the report.

Read a version of the report online at <http://www.nap.edu/books/0309089611/html>.

AMIF Leverages USDA Dollars to Fund Four New Food-Safety Projects

Based on the AMI Foundation research priorities, four potentially high-impact research projects involving both pre-harvest and RTE interventions are being conducted — and funded — by USDA’s Agricultural Research Service (ARS).

Congress since FY 2000 has appropriated dollars earmarked specifically for food safety-related research at ARS. In line with the greater attention being paid

to live animal interventions, four new projects totaling \$510,800 are under way (see chart below).

In addition, a promising study investigating the use of steam and vacuum surface interventions, or so-called “flash pasteurization” technology, is under way at ARS’s Eastern Regional Research Center. The industry will be apprised of results as these projects unfold.

Investigator	Project Title	Total Cost
USDA/ARS Eastern Regional Research Center	Develop the Vacuum/Steam/Vacuum Surface Products Intervention Process for RTE Meat	\$50,000
USDA/ARS Southern Plains Agricultural Research Center	Determination of the Metabolic Fate of Radiolabeled Sodium Chlorate in Fed Cattle	\$112,000
USDA/ARS Southern Plains Agricultural Research Center	Development of a Cost-Recoverable Pre-Harvest Food Safety Strategy to Reduce <i>E.coli</i> O157:H7 in Cattle	\$48,800
USDA/ARS Meat Animal Research Center	Regional Variation in the Incidence of <i>E. coli</i> O157:H7 on the Hides and Carcasses of Feedlot-Finished Cattle	\$300,000
		\$510,800

RMC Meeting Provides Insights Into Key Food Safety, Regulatory Initiatives

The recent Reciprocal Meat Conference, sponsored by the American Meat Science Association, gave several hundred attendees at the University of Missouri-Columbia targeted yet comprehensive exposure to key issues involving ongoing research investigations, as well as regulatory developments affecting the meat industry.

A few highlights include:

- Fred Pohlman, an associate professor of meat science at the University of Arkansas, discussed the latest post-harvest intervention strategies, including hide cleaning, steam vacuuming and spray washing. He noted that cetylpyridinium chloride (CPC), the active ingredient in certain dental hygiene products, shows promise as a carcass wash solution and possible treatment for raw ground beef, particularly when combined with trisodium phosphate, for reducing *E. coli* O157:H7 with minimal impact on sensory characteristics. However, CPC is currently undergoing Food and Drug Administration review and is not yet approved for red meat applications.
- John Sofos, Colorado State University professor of meat science, reviewed FSIS' *E. coli* O157:H7 surveillance program, which has tested nearly 7,000 retail samples of ground beef and found only 60 positive samples, an incidence of 0.84 percent. Despite the low incidence, Sofos suggested that the sampling program be expanded because of the difficulty in detecting the pathogen due to the extreme variability of its distribution.
- Sofos also reviewed his recent research revealing that organic acids can significantly reduce such pathogens as *E. coli* O157:H7. But he also cautioned that certain pathogens can develop resistance to these acidic treatments, thus emphasizing the need for multiple-hurdle systems using a variety of technologies, including thermal treatments.
- Ann McNamara, vice president of Silliker Inc., discussed the impact of USDA's new interim final rule for *Listeria monocytogenes* in ready-to-eat meats (9 CFR part 430 Part V). Based on her observations, processors often use too small of a sample area for food contact surfaces, she said. McNamara noted that the rules require a one square-foot area. Other processors fail to "map" these sampling areas, and do not apply site rationalization, the selection of sites where *Listeria* contamination is likely to occur.

Sanitary Design Workshop Featured at Annual Convention

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best practices for personnel, facility and equipment sanitation, best practices for process critical tasks and microbial interventions, and sampling and testing principles. The Food Safety Short Courses are offered free of charge on Saturday, Nov. 1, 2003, 7 am to noon. Participants are required to preregister to save a spot for these workshops.

The AMI Foundation's workshop Sanitary Design Principles for RTE Processing Equipment will help companies design facilities and purchase equipment for enhanced sanitation and food safety. During the workshop, participants will hear in detail the 10 principles of sanitary design developed by a special AMI Foundation Equipment Design Task

Force, a group of leading, innovative meat and poultry processors. The workshop is designed specifically for processors of ready-to-eat meat and poultry, as well as equipment designers and suppliers who serve the industry.

The Sanitary Design Principles Workshop is being offered Oct. 28, the day before the start of the annual convention. To register, visit www.MeatAMI.com.

National Advisory Subcommittees Tackle Performance Standards

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The Subcommittee on Microbiological Performance Standards for Raw Meat and Poultry Products is developing a response to questions posed by FSIS regarding performance standards with particular reference to broilers (young chicken). The Subcommittee plans to respond to the full Committee when it meets in August. The Subcommittee used the same format as the NACMCF Subcommittee on Microbiological Performance Standards for Ground Beef. Lack of scientific data upon which to base good performance standards created concerns among the committee members, who described what data will need to be collected for new baseline studies to support their answers.

The Subcommittee on Criteria for Shelf-Life Based on Safety is identifying what scientific data should be collected for safety-based use-by dates. Issues surrounding this labeling on ready-to-eat (RTE) foods includes the diverse types of RTE foods, the many points of production of RTE foods, and the unknown aspects of consumer handling associated with RTE foods. The committee will revisit the issue in a meeting scheduled for August.

At the NACMCF kickoff meeting for the Subcommittee on Scientific Criteria for Redefining Pasteurization, the subcommittee discussed the current and proposed definitions of pasteurization. Through review of background information they developed the following working definition of pasteurization:

Pasteurization is the process or treatment or combination thereof that is applied to achieve inactivation or elimination of the most resistant microorganism to a level that is not likely to present a public health risk in the food throughout the shelf life under normal and moderate abuse conditions.

Members of the subcommittee were charged with researching different methods of pasteurization and sharing their findings at their next working subcommittee meeting in August. Other methods being considered in the redefinition of pasteurization include microwave and radio frequency, ohmic and inductive heating, high pressure processing, pulsed electric field, high voltage arc discharge, pulsed light, oscillating magnetic fields, ultraviolet light, ultrasound, X-rays, steam application and chemical treatment.

Science Soundbites

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British Scientists Now Predicting Drastically Fewer vCJD Cases

New research predicts that as few as 40 people over the next 80 years could die from variant Creutzfeldt-Jakob disease (vCJD) from eating beef products containing the infective agent for BSE. London researchers from Imperial College published the study in the medical journal *BMC Infectious Diseases* in May.

Previous estimates had been uncertain, with the upper limit of projected cases in the United Kingdom as high as 50,000 only two years ago. The worst-case scenario outlined by the new research predicts 540 cases in the UK between now and 2080. The group also estimated that the incubation period for vCJD is 12.6 years. The researchers used a statistical model based on the annual number of cases of vCJD seen in the UK and the levels of exposure to infected cattle. The updated predictions included 17 new cases from 2002 in the calculation. These estimates only include people who would be afflicted with vCJD from BSE-tainted bovine products. They do not include any cases arising through secondary transmission.

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