

# AMIFoundation News

A quarterly update on research, education and information

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## Food Safety Advances in Last Decade 'Significant' Says Dr. Elsa Murano

### Former Under Secretary for Food Safety Says U.S. Food Supply is Safest in the World

"I can say unequivocally that global foodborne illness data show that the U.S. has the safest food supply in the world," said Dr. Elsa Murano, former Under Secretary for Food Safety, U.S. Department of Agriculture (2001 to 2004) and current Vice Chancellor and Dean of the College of Agriculture and Life Sciences at Texas A&M University. She noted that those gains are best highlighted by the dramatic declines in illnesses due to *E. coli* O157:H7, *Listeria monocytogenes* and *Salmonella* in the last three years. Dr. Murano has played leading roles in both government and academia, giving a great deal of insight and a unique perspective on the safety of the U.S. food supply. In a series of questions posed by AMIF staff, she commented on past

accomplishments and future challenges facing the industry:

**Q: As the former Under Secretary for Food Safety, can you comment on the gains we've made in food safety while you were at the U.S. Department of Agriculture? How about in the last decade?**

**A:** Without a doubt, the improvements made to food safety in the last 10 years have been significant, and those made in the last 3 years have truly been outstanding. Requiring the adoption of standard sanitation practices, as well as the science-based Hazard Analysis Critical Control Points (HACCP) system, started the trend we have seen in the reduction of biological, physical and chemical contaminants

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## Request for Research Pre-Proposals Released; Pathogen Control, Reduction a High Priority

The AMI Foundation is seeking research proposals on applied and fundamental research that will improve the control of microbial pathogens in meat and poultry products.

These topics have been formulated by AMIF's Research Advisory Committees and are considered the issues of highest priority. The Committees are comprised of industry representatives, government officials and members of academia.

The request covers three main topics, each with three subtopics. They are:

- Controlling *Listeria monocytogenes* on Ready-to-Eat Meat and Poultry Products
  - ♦ Innovative Pathogen Intervention Technologies
  - ♦ Operational Control and Monitoring of the Processing Environment
  - ♦ Information to Enhance Current and Future *Listeria* Risk Assessments
- Controlling *Escherichia coli* O157:H7 in Fresh Beef Products
  - ♦ Pre-Harvest Research
  - ♦ Post-Harvest Research
  - ♦ Information to Enhance Current and Future *E. coli* O157:H7 Risk Assessments

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## Science Soundbites: A Review of Recent Research

### Study Evaluates Optimum Enrichment Media for *E. coli* O157:H7 Testing

Media used for evaluation of *E. coli* O157:H7 during test-and-hold procedures for ground beef processing were studied by the Meat Animal Research Center of USDA's Agricultural Research Service to determine which has the greatest accuracy and ease of use. Researchers tested the growth and doubling time of 12 media and retested the eight with the most rapid doubling time through time-course experiments using immunomagnetic separation. Of these, tryptic soy broth (TSB) was easiest to prepare, had a wide application base and was the least expensive. The study also found that a 1-3 ratio worked as well as the typical 1-10 ratio, allowing processors using test-and-hold procedures to use a reduced amount of TSB saving reagents, time and labor while maintaining accuracy. *Journal of Food Protection*, Vol. 69, No. 5, Pages 1007-1011.

### Broiler Carcasses Mostly Free of *Campylobacter*

Approximately 74 percent of broiler carcasses studied as part of a USDA research project yielded no countable *Campylobacter* cells, USDA reports. Ten of the largest U.S. poultry integrators participated in the study, which determined the potential exposure of U.S. consumers to *Campylobacter* spp. associated with broiler carcasses during a 13-month period. About 3.6 percent of carcasses found *Campylobacter* spp. counts of greater than 10<sup>5</sup> CFU/carcass; however, the authors indicate that an acceptable level of *Campylobacter* spp. on raw poultry products has not been

determined. The study was performed by USDA's Agricultural Research Service in cooperation with members of the National Chicken Council. *Journal of Food Protection*, Vol. 69, No. 5, Pages 1034-1039.

### Thermal Inactivation of Chicken-Fried Beef Patties Tested

Thermal inactivation methods of *E. coli* O157:H7, *Salmonella* and *Listeria monocytogenes* (*Lm*) in ready-to-eat chicken-fried beef patties was tested to determine the average lethality standards by researchers at Jordan University of Science and Technology, in Irbid, Jordan, and the Departments of Biological and Agricultural Engineering and Poultry Science at the University of Arkansas.

Inoculated meat was packaged in sterile bags and immersed in a circulated water bath at various temperatures for various lengths of time. Average time values at 55 to 77 C were 27.62 to 0.04 minutes for *E. coli* O157:H7, 67.68 to 0.22 minutes for *Salmonella* and 81.37 to 0.31 min for *Lm*. Average temperature values were 5.2 C for *E. coli* O157:H7, 6 C for *Salmonella* and 6.1 C for *Lm*. The results should help food processors validate the thermal processes that eliminate pathogenic bacteria associated with chicken-fried beef products. *Journal of Food Protection*, Vol. 69, No. 5, Pages 1080-1086

### Australia Completes Third National Microbiological Survey

A group of Australian researchers completed the third national baseline microbiological survey of Australian beef carcasses and

frozen boneless beef recently. Carcasses were sampled at 27 slaughter establishments. *E. coli* was isolated from 8 percent of the carcasses. No carcasses tested positive for *Salmonella* or *Campylobacter* spp. Nearly 30 percent of beef carcasses tested positive for Coagulase-positive staphylococci (CPS). Frozen boneless beef samples were taken at 24 boning (fabrication) plants. Of those, 1.8 percent of samples contained detectable *E. coli*, one sample tested positive for *Salmonella*, zero for *Campylobacter* spp. and 20.3 percent for CPS. Previous national baselines were completed in 1993-1994 and 1998. This study was completed in 2004. *Journal of Food Protection*, Vol. 69, No. 5, Pages 1113-1117.

### *Salmonella* Reduction Efforts Should Ensure Safe Handling Practices

National foodborne outbreak data from 1973 to 2001 were analyzed by researchers at the Centers for Disease Control and Prevention (CDC) to determine the proportion of *Salmonella* Heidelberg outbreaks caused by specific foods. Among more than 6,600 outbreaks with known origins, three percent were caused by *Salmonella* Heidelberg. Of those 184 incidents, 101 had specific food related to the outbreak, of which poultry or eggs caused more than half. The researchers noted that efforts to reduce illness due to *Salmonella* Heidelberg should focus on safe handling practices of poultry and eggs to minimize contamination and cross contamination. *Journal of Food Protection*, Vol. 69, No. 5, Pages 1150-1153.

The full text of these studies can be found in the May 2006 issue of *Journal of Food Protection*. ■

**Ongoing AMIF Research - *E. coli* O157:H7**

<b><u>Investigator</u></b>	<b><u>Institution</u></b>	<b><u>Project Title</u></b>
John Scanga, J.N. Sofos, G.C. Smith	Colorado State University	Use of Warm (55°C) 2.5% or 5.0% Lactic Acid for: (A) K.E. Belk, Reducing Microbial Counts on Beef Subprimal Cuts and Beef Trimmings Following Fabrication, and (B) Reducing Incidence of <i>E. coli</i> O157:H7 in Combo-Bins of Beef Trimmings and Inside (in the interior) Beef Cuts Subjected to Blade/ Needle or Moisture-Enhancement Tenderization
Rowland Cobbold <sup>1</sup> , Dale Tom Besser <sup>1</sup> , Janice Berg <sup>2</sup> , <sup>a</sup>	<sup>1</sup> Washington State University, <sup>2</sup> Lakeside Research	Role of Super-shedders in Determining Feedlot Pen Hancock <sup>1</sup> , Prevalence of <i>E. coli</i> O157:H7

<sup>a</sup> This project is co-funded by the National Cattlemen's Beef Association.

**Ongoing AMIF Research - *Listeria monocytogenes***

<b><u>Investigator</u></b>	<b><u>Institution</u></b>	<b><u>Project Title</u></b>
Kumar Venkitanarayanan, Cameron Faustman, David Dzurec	University of Connecticut	Inactivation of <i>Listeria monocytogenes</i> on Ready-to-Eat Meat Products (Deli Turkey Breast and Frankfurter) by Monocaprylin
Charles Carpenter, Jeff Broadbent	Utah State University	Anti- <i>Listeria</i> Action of Levulinate
Kathleen Glass, Eric Johnson, James Claus	University of Wisconsin	Controlling <i>Listeria monocytogenes</i> on Ready-to-Eat Meat and Poultry Products using Food-Approved Antimicrobials
Mary Alice Smith, Joseph Frank	University of Georgia	Refinement of <i>Listeria monocytogenes</i> ( <i>L. monocytogenes</i> ) Low Dose Data from Pregnant Guinea Pigs for Human Risk Assessment
Kathy Glass, James Claus	University of Wisconsin	Minimum Nitrite Levels Required to Control <i>Listeria monocytogenes</i> on Ready-to-Eat Meat and Poultry Products

**Ongoing AMIF Research – Targeted Research**

<b><u>Investigator</u></b>	<b><u>Institution</u></b>	<b><u>Project Title</u></b>
Mindy Brashears, Mark Miller, Chance Brooks, John Blanton, and Christine Alvarado, Guy Loneragan	Texas Tech University, West Texas A&M University	Risk Factors and Consequences Associated With Condensation in Fresh and Ready-to-Eat Processing Facilities
Bradley Marks, Alicia Orta-Ramirez, Alden Booren, Elliot Ryser	Michigan State University	Determine the Likelihood that <i>Salmonella</i> Develops Heat Resistance during Thermal Processing of Commercial, Whole-Muscle, Ready-to-Eat Meat Products
Catherine Cutter, Ed Mills	Pennsylvania State University	Determination of the Efficacy of Chlorine Dioxide as an anti-Listerial Agent in RTE Brine Chilling Solutions
Charles Kaspar, Ellin Doyle, Ronald Weiss	University of Wisconsin-Madison	White Paper on Human Illness Caused by <i>E. coli</i> O157:H7 from Food and Non-Food Sources

**To view status reports for these projects, visit [www.amif.org](http://www.amif.org).**

## FSIS *Lm* Risk Assessment Generally Correct Some Questions Still Exist, Study Finds

The Food Safety and Inspection Service's (FSIS) Risk Assessment for *Listeria monocytogenes* in deli meats is generally correct, although some fine tuning could enhance accuracy, concluded a recent Foundation-funded study completed by Exponent, Inc.

As described by FSIS, the dynamic in-plant model quantitatively characterizes the relationship between *Listeria* species in the in-plant environment and *Lm* in deli meats at retail. This model incorporates several parameters – such as plant size, interval between contamination events, duration of contamination events, transfer coefficient, cleaning efficiency, contamination event levels, food contact surface testing, product testing, sanitation, pre- and post-packaging interventions and the effect of growth inhibitors – and generates a distribution of concentrations of *Lm* in deli meats at retail.

In a review of the in-plant model, researchers Barbara Petersen, Leila Barraj and Nga Tran conducted a review to determine if the model works as described and to examine the impact of alternative model input assumptions on model calibration and intervention options and conclusions.

The Exponent researchers concluded that, in general, the FSIS model works as described by FSIS and the formulas used to model the mass balance approach are correctly implemented. They note that while the number of iterations used in the risk assessment (one million) is sufficient, the agency's distribution

representing the amount of *Listeria* added during a contamination event is not necessarily the distribution that resulted in the best fit when compared to the data in the FDA/FSIS risk assessment.

The model allows for a variety of input variables, for example: transfer coefficient, interval between contamination event and event duration. But, these revised parameters can impact the calibrated values of meat and standard deviation for the *Lm* added variable. Researchers noted that, in particular, when industry reported data are used to parameterize the interval between contamination events, the model cannot be calibrated to the FDA estimates of *Lm* concentration at retail.

Assessment using the FSIS in-plant model with a variety of revised input variables generally showed a modest decline in *Lm* concentration for ready-to-eat products at retail as food contact surface testing and sanitation efforts increase.

One short fall of the model, noted by the researchers, was the inability to add information related to contamination events, such as duration, the interval between events, the number of *Listeria* organisms transferred. Without this information providing adequate feedback, FSIS' conclusions about the relative effectiveness of various intervention scenarios remain in question.

To read the entire report online, visit [AMIF.org](http://AMIF.org) and click on "Research." ■

## AMI Communicates Industry Progress in New, Nationally Released Brochure

### If Upton Sinclair Were Alive Today, He'd Be Amazed By the U.S. Meat Industry, AMI Tells Nation

In recognition of the centennial of three key events – publication of *The Jungle*, passage of the Federal Meat Inspection Act and the formation of the American Meat Institute (AMI), the Institute released a new, fact-based brochure called, "If Upton Sinclair were alive today... he'd be amazed by the U.S. meat industry."

The brochure notes that since the publication of *The Jungle*, Congress has enacted dozens of federal food safety, worker safety and environmental safety laws. Today, the U.S. meat and poultry industry is a \$100 billion industry employing 500,000 workers, and is among the most highly regulated industries in the United States. The effectiveness of those

laws, as measured by published government data, paints a clear and reassuring picture of the status of the U.S. meat supply.

Data from the U.S. Department of Agriculture reveals major reductions in the pathogens most responsible for food-related illness in the U.S. – *E. coli*, *Listeria* and *Salmonella*. The presence of *E. coli* in ground beef has declined by 80 percent since 1999. More importantly, the Centers for Disease Control and Prevention report a 50 percent reduction in *E. coli* O157-related illnesses over the past five years.

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# Murano: Data Shows U.S. Food Supply Safest in the World

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in meat and poultry products in the U.S. over the last decade. That was the beginning, but as we know, requiring certain practices does not guarantee success. Any good regulation must be followed by proper implementation by industry, and perhaps more importantly, by verification by well-trained inspectors. The gains in food safety over the last few years, as demonstrated by dramatic declines in illnesses due to *E. coli* O157:H7, *Listeria monocytogenes* and *Salmonella*, all attest to the fact that our efforts were successful. For its part, industry redoubled its efforts to apply the scientific principles of HACCP, leading most plants to conclude that *E. coli* O157:H7 should be considered a “hazard reasonably likely to occur,” turning the key for the use of interventions. For the government’s part, we redoubled our efforts to train our inspectors, not just on how to enforce the rules, but also on how to apply critical thinking and scientific analyses in conducting inspections. Both of these efforts resulted in improvements in public health outcomes beyond our wildest dreams. Gone are the multiple multi-million pound recalls and although still very much present, the number of illnesses caused by these pathogens have reached all-time lows.

**Q: Can you discuss the role of USDA oversight in ensuring the safety of the meat supply?**

**A:** USDA has the unique role of ensuring that its regulations, designed to protect public health, are being implemented to the greatest extent possible by industry. The first part of this role involves promulgating rules that are based on evidence, not wishful thinking. The evidence must support the need for the regulation and the approach included to address the problem in the regulation must also be based on fact, not fiction. Secondly, the role of USDA is, through the efforts of its workforce, to ensure that regulations are properly being adhered to. However, no matter how well its inspectors carry out their responsibilities, the ultimate burden is with the industry producing the food. This is why I always said as Under Secretary that it is the industry that makes food safe, not government. We just look over their shoulder!

**Q: As you spoke to members of the public during your tenure at USDA, were you surprised at the number of people who did not realize that USDA inspectors are present in all federally inspected meat packing plants?**

**A:** Indeed, it became my mantra to let everyone know, whether at a public function, or while riding on an airplane sitting next to a stranger, of the tremendous job that FSIS inspectors do every day in every one of the almost 6,500 meat and poultry plants. Even more surprising to me was the fact that most people are very confident in the job that USDA is doing in keeping our food the safest in the world, even

during the large recalls we experienced in 2002! Having said this, we know from the science of risk assessment that the same risk of contamination is not present in every meat and poultry plant. It depends on many factors, some of which have to do with the types of interventions and decontamination practices being applied, as well as the ability of plant management to abide by government regulations. In higher-risk operations, the activities of USDA inspectors should be magnified, and this is why I support the concept of risk-based inspection currently being considered by FSIS.

**Q: Do you think the public knows that the food we consume is regularly tested for foodborne pathogens, such as *Salmonella* and *E. coli* O157:H7? Is government and industry doing enough to ensure the public’s trust of the safety of the food supply?**

**A:** Most people have no idea what the industry does, let alone what USDA does, to ensure food safety. From my observations, the vast majority of people rely on their own experiences with foodborne illness to decide whether food safety is a problem. They know that it’s not safe to drink the water in a developing country and that one should be careful of eating raw shellfish or undercooked beef or pork. But given that their experiences with food are overwhelmingly positive, they have a sense that the industry and the government are doing all they can to ensure those experiences remain that way, and they are right.

**Q: What would you say to those who charge that U.S. meat products are unsafe or unsanitary?**

**A:** First, I believe they need to visit other countries, including industrial nations and judge for themselves where the U.S. ranks in terms of food safety. I can say unequivocally that global foodborne illness data show that the U.S. has the safest food supply in the world. Second, I would say that we all have a role to play in food safety, and if food is not safe, most studies show that more often than not, it is because the food preparer did not follow adequate sanitation or food preparation protocols, not because of failures at the food processing level.

**Q: How would you compare food safety standards in the United States to those in other countries?**

**A:** Our standards are simply second-to-none. This is not based on nationalistic bragging, but on facts. Cases of salmonellosis, for example, are several magnitudes lower in the U.S., compared with Canada and the European Union.

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## Murano: Gap Between Academia, Government Must Be Closed

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This is not surprising, given the high standards that are followed in food production in our country, as well as our superior sanitation infrastructure.

**Q: As the Dean of the College of Agriculture at Texas A&M University, what observations do you have about the interaction of government agencies, academia and industry in the goal of food safety?**

**A:** Academia is the producer of unbiased data, and as such, plays an extremely important role in this interaction. The problem is that many academics do not engage themselves in policy discussions, depriving government agencies of the valuable research that many times is needed by policy makers to make sound decisions that are supported by science. It is my goal to bridge the gap that exists between academic institutions and government, in order to improve this interaction and therefore facilitate the prompt generation of data that often can make the difference between effective and ineffective policy.

**Q: What role does university-sponsored research play in improving the safety, quality and availability of food in the U.S.?**

**A:** Research is the key ingredient to producing the information that policy makers need in order to continue to safeguard our food supply. Such research, whether sponsored by government or by industry, should be without reproach. By subjecting it to extensive review by the scientific community through journal review panels, biases are removed, allowing the reliability of the data to be confirmed. This process of funding, followed by experimentation, followed by data analysis and publication, is the engine that should provide the fodder for sound decision-making by regulatory agencies, as well as by industry. Along these lines, it is imperative for lawmakers to fully-fund programs such as the USDA's National Research Initiative and others, for without such funding, the discovery of answers to our most fundamental food safety questions cannot be obtained. In addition, industry needs to continue to do its part in allocating resources for food safety research. Now that our food is safer than ever, let us not allow ourselves to stop the forward momentum that has been gained over the last three years, but rather move ahead in the science of food safety, in order to anticipate future risks before they become headline news once again. ■

## Request for Research Pre-Proposals Released

(Continued from page 1)

- Controlling *Salmonella* in Meat and Poultry Products
  - ◆ Epidemiological Evaluation of *Salmonella* in Livestock Production and Processing
  - ◆ Innovation Pathogen Intervention Technologies
  - ◆ Information to Enhance Current and Future *Salmonella* Public Health Risk Assessments

AMIF is also soliciting pre-proposals on areas of research identified by AMI member companies as necessary to assist the industry in solving unique technical challenges within meat and poultry facilities. AMI member companies have specifically suggested these Targeted Research areas and some detail concerning product design are provided in the proposal request. This cycle's projects include:

- Improve and augment epidemiological data on food attribution for listeriosis, both sporadic and outbreak cases.
- Determine the rate of transfer of foodborne pathogens from food contact surfaces to meat and poultry products under commercial conditions.
- Validation of on-package cooking instructions for uncooked, breaded, boneless poultry products that also may be stuffed or fill, charmarked, or artificially colored.
- Evaluation and analysis of meat products contaminated by low levels of ammonia.
- White paper on destruction of H5N1 avian influenza in meat and poultry products.
- Validation research to confirm safety of cooking and cooling procedures for large (>20 pounds) whole-muscle meat products (e.g., bone-in hams).

Pre-proposals are due via email by Friday, July 28, 2006. For additional details, visit [AMIF.org](http://AMIF.org) and click on "Research." ■

# Unscientific Attacks on Modified Atmosphere Packaging Continue to Percolate

## AMIF Educates Government, Media on the Safety and Science of the Technology

“Low oxygen modified atmosphere packaging (Low-ox MAP) that uses minute levels of carbon monoxide (CO) is a proven technology that has been thoroughly reviewed by the Food and Drug Administration and that offers distinct benefits to consumers,” noted testimony submitted by the AMI Foundation during a Chicago City Council committee hearing. This was the third time in just six months that AMIF experts appeared and submitted testimony before a committee of the council, which is considering whether or not they will ban, or require labeling on products using Low-ox MAP CO packaging within the city limits.

AMIF testimony again underscored the fact that modified atmosphere packaging systems are proven technologies that have been used on numerous foods, including peanuts, bag salads and fresh cut produce for decades. When used on fresh meats, one form of the technology eliminates oxygen and uses minute amounts of carbon monoxide mixed with other gases to prevent premature browning before the meat’s expiration date.

“When meat turns prematurely brown, consumers often reject it thinking that it poses a safety concern,” Mark Dopp, senior vice president of regulatory affairs and general counsel said. “By helping meat maintain its red color throughout its shelf life, the product maintains both its appeal and its safety,” he added.

The use-by dates on all packages that use this system take the guesswork out for consumers about product freshness and give clear guidance about when to use or freeze and when to discard, according to AMIF. Ninety-nine percent of consumers responded that they are aware of “sell-by and/or use-by dates on any food products” they purchase, according to a national survey of 2,100 consumers conducted by Harris Interactive and released by the Food Marketing Institute in December 2005. AMIF’s Vice President of Scientific Affairs Randall Huffman, Ph.D. also pointed out that another finding in the same Harris poll revealed that 80 percent of consumers recognize that use-by dates were a valuable piece of information when they are purchasing fresh meat and poultry.

While the technology does prevent premature browning, it does not prevent the unmistakable spoilage odor from developing if a product is held at improper temperatures or if it has been kept beyond its shelf life. Under these conditions, if spoilage has occurred, the package will likely bulge and the meat will likely have a slimy texture, Huffman noted in comments to the media. He likened any skepticism regarding the innovative technology to consumers in the 1970s that worried

about the safety of microwave ovens. “Yet once they took the time to understand how safe they were, they became indispensable. Can anyone today imagine a kitchen without one,” Dr. Huffman questioned in a nationally released statement to the media.

Recent data from a study conducted at Texas Tech University supports these claims. The study indicates that Low-ox MAP CO packaged product had consistently superior scores for sensory traits and bacterial growth was significantly less than more traditional packaging formats. Furthermore, this research project evaluated what would occur if Low-ox MAP CO packages were artificially contaminated with *E. coli* O157 or *Salmonella*. Under normal refrigerated conditions, the organisms were prevented from growing, and actually showed a tendency to decline in numbers during the normal shelf life of the product. These data further support the safety and acceptability of the low-oxygen packaging format.

Other scientists from across the country are sounding off about the unfair attacks against Low-ox MAP CO packaging.

“The claim that CO packaging will result in unsafe products is not scientifically sound,” notes a joint guest expert editorial in the May issue of *Food Technology* written by Drs. Joe Sebranek of Iowa State University; Mel Hunt of Kansas State University; Daren Cornforth of Utah State University; and Susan Brewer of the University of Illinois. In addressing the claims by critics of the Low-ox MAP CO technology, the authors state that, “it is unlikely that meat which is truly spoiled would be consumed, even if the color was still red, because of the other warning signs that accompany excessive bacterial growth.”

The experts urged the government to allow consumers to decide which packaging technology best suits their needs. “Because scientific studies have validated the safety of Low-ox MAP CO packaging technology for fresh meat, it seems appropriate to let the marketplace decide the success or failure of the process,” they said. ■

## Avian Influenza Topic of First-Ever AMIF Webinar

Avian influenza (AI) preparedness was the topic of AMIF's first-ever Webinar. More than 30 meat industry professionals and scientists participated in the 45-minute presentation hosted in May by AMI President and CEO J. Patrick Boyle.

Dr. Skip Seward, AMI's vice president of regulatory affairs, noted that high path H5N1 (HPAI) has continued to spread across the globe, with 58 countries experiencing outbreaks in 2006 – a more than three-fold increase since 2004. He also noted that the number of human cases caused by HPAI have numbered more than 200, with more than 125 deaths in 10 different countries.

Seward described the U.S. turkey monitoring program, which samples birds at the processing plant or on the farm, and the chicken monitoring program, which tests each flock no more than 2 weeks before the marketing date. He also said the U.S. has an aggressive wildlife surveillance program to detect the disease early if it occurs in the U.S. In addition, he noted that the government has implemented efforts to stop the spread of the disease through smuggling and trade interdiction.

Finally, he detailed the government's response plan should HPAI be discovered in a domestic flock in the U.S. That plan includes the establishment of zones and quarantine around the infected area, controlling human and animal movement within that zone, the use of vaccinations for animals near the zone and compensation to poultry owners when the incident has been resolved and the infection terminated.

John Reddington, AMI's vice president of international trade, said that in countries where HPAI has been discovered, poultry consumption levels are down as much as 70 percent, and the overall profitability of the poultry business is down 10 to 40 percent. Reddington estimated that should HPAI infect a commercial U.S. flock, total losses to the industry, caused by lost export markets and domestic declines in poultry consumption, could total nearly \$3 billion with over 40,000 jobs lost.

Sixty-one percent of U.S. consumers are concerned about an AI outbreak in the U.S., and many are concerned that the government is not prepared to handle a potential pandemic, Senior Vice President of Public Affairs and Professional Development Janet Riley said. Riley outlined AMIF's ongoing efforts to educate the public, explaining the firewalls that create a layer of protection between the bird disease and humans and noted that "cooking messages" are valuable secondary messages for consumers.

More than 30 experts, including poultry science academics, scientists and extension agents from more than 20 states have agreed to be part of an "AI Fact Squad" managed by AMI that will provide experts to speak with local and national media about HPAI should it gain sudden media attention, she noted. Additionally, in an effort to get the facts out about AI in advance, more than 1,300 editorial boards, food writers and journalists from across the country have received AI information kits, which include issue briefs and contact information for the "AI Fact Squad." ■

## AMI Communicates Industry Progress

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One of the major criticisms of the industry explored in *The Jungle* was worker safety and compensation. Since 1906, major gains have been achieved. According to the Bureau of Labor Statistics, meat and poultry plants have experienced major declines in job related injuries in both of the major indices used by the government to measure the relative safety of any given job. Since 1990, lost work days due to illness and injury have declined by 60 percent and total recordable injuries have declined by 70 percent.

Workers have also enjoyed fair and competitive salaries and benefits. For example, hourly workers in packing plants earn about \$25,000 per year plus benefits, while living in mostly rural areas of the country. By comparison, preschool teachers in Iowa, a major pork producing and packing state, earn less than \$21,000 annually.

Concern about fat and cholesterol has encouraged the production of leaner animals and closer trimming of fat on retail cuts of meat. Thus, despite near record-high per capita consumption of meat in 2000, the proportion of fat in the U.S. food supply from meat, poultry and fish has declined from 33 percent in the 1950s to 24 percent in 2000.

The brochure also documents how Americans enjoy not only one of the safest and most wholesome food supplies on earth, but one of the most affordable as well. Americans are spending less of their income on food at home than nearly any comparable country. While Canadians, the British and the Dutch spend more than 10 percent of their disposable incomes on food, Americans are spending only 6.4 percent.

To download a copy of the brochure, visit [MeatAMI.com](http://MeatAMI.com) and click on the link to AMI's Centennial Celebration. ■



## Microbiological Advisory Panel Releases Parameters for Alternative Methods of Pasteurization

New guidelines for determining necessary scientific parameters for establishing alternative pasteurization methods were released recently by the National Advisory Committee on Microbiological Criteria for Food (NACMCF).

These new measures, considered essential in developing new pasteurization processes, are:

- Conduct a hazard analysis to identify the microorganism(s) of public health concern for the food.
- Determine the most resistant pathogen of public health concern that is likely to survive the process.
- Assess the level of inactivation needed. Ideally, this would involve determining the initial cell numbers and normal variation in concentration that occurs before pasteurization.
- Consider the impact of the food matrix on pathogen survival.
- Validate the efficacy of the pasteurization process.
- Define the critical limits that need to be met during processing that will meet the performance standard.
- Define the specific equipment and operating parameters for the proposed pasteurization process. This may include developing specific good manufacturing practices in addition to the HACCP system.

Also in its findings, the Committee stated that research to determine the adequacy of pasteurization for alternative

processes is needed and is technologically dependent. Pasteurization processes will need to be validated through one, or a combination of the following: process authorities, challenge studies, predictive modeling and safe harbors.

NACMCF studied other technologies that may satisfy the definition of pasteurization for certain foods, besides the traditional thermal pasteurization. These included ohmic heating, microwave heating, steam and hot water treatments, high-pressure processing, UV radiation, irradiation, pulsed electric fields and chemical treatments. Additional technologies, such as filtration, infrared processing and high voltage arc discharge may also be useful, either alone or in combination with other treatments.

The Committee recommended that research of consumer knowledge and understanding of pasteurization, and related terms, specifically how consumers interpret and respond to labeling statements, be completed.

A provision of the Farm Security and Rural Investment Act of 2002 required a broader definition of pasteurization. The Committee's complete recommendations, with specifics on a variety of processes and technologies, are available in the May 2006 issue of *Journal of Food Protection*. ■

## Government *Salmonella* Reporting Methods Refreshed

Reporting methods for results from the Food Safety and Inspection Service's (FSIS or the agency) *Salmonella* verification sampling program for meat and poultry establishments are being revised, the agency announced in February.

FSIS will incorporate individual *Salmonella* verification sample tests into reports sent to meat and poultry establishments. The results will be available to interested establishments immediately following completion and FSIS will also post quarterly data, presented by product class, on the agency's Web site.

In addition, completed sample sets will be compared with existing regulatory standards or recently published baseline study results. Depending upon conclusions reached, the agency could take action, including scheduling another sample set or assessing the design and execution of an

establishment's food safety system.

A new compliance guideline document will be made available containing information FSIS finds relevant to the control of *Salmonella*, especially in poultry.

Monthly verification samples will be monitored throughout 2006 and FSIS will evaluate the data to reassess how *Salmonella* results are reported at the end of the year.

These revisions are based on comments received from an April 2003 *Federal Register* Notice soliciting suggestions on how the agency could improve its policy to better enhance public health protections. ■

## Calendar of Events

For additional information on any of these upcoming events, or to register, please visit our website at [MeatAMI.com](http://MeatAMI.com) and navigate to Events/Education or contact Anne Nuttall at 202/587-4241 or [anuttall@meatami.com](mailto:anuttall@meatami.com).

### Meat Industry Research Conference (MIRC)

**When:** Oct. 4 – 5, 2006  
**Where:** Westin Diplomat Resort, Hollywood, Fla.  
**What:** Featuring a new format to provide specific sessions on meat safety, fresh meat and packaged meat research, the 2006 MIRC will provide session attendees with new research results and the opportunity to discuss future topics. Attendees will also have the opportunity to participate in developing future industry research goals.

### Advanced and Rapid Methods in Quality Control

**When:** Aug. 10 – 11, 2006  
**Where:** Delta Bow Valley, Calgary, Alberta  
**What:** This symposium, sponsored by the Canadian Meat Council, will educate attendees on advancements in laboratory methods, create awareness on upcoming products and state-of-the-art technologies and provide an opportunity to network with industry experts. For additional information, contact CMC at [info@cmc-cvc.com](mailto:info@cmc-cvc.com).

### AMI Annual Convention & 2006 Innovation Showcase

**When:** Oct. 4 – 6, 2006  
**Where:** Westin Diplomat Resort, Hollywood, Fla.  
**What:** The AMI Annual Convention and Innovation Showcase is your only opportunity in 2006 to gain the latest insights and perspectives on the meat and poultry industry. Attendees have a chance to visit with some of the most creative companies in the industry. This convention is the perfect place to discuss the future of the industry with those who will help to create it.

### Implementing *LM* Intervention & Control

**When:** Nov. 14 – 15, 2006  
**Where:** Hyatt Regency Denver at Colorado Convention Center, Denver, Colo.  
**What:** AMIF is pleased to present the new Implementing *Listeria monocytogenes* Intervention and Control Workshop. This highly rated educational opportunity is designed to help manufacturers of ready-to-eat (RTE) meat and meat products examine the issues surrounding testing and to provide experience in developing appropriate sanitation standards and procedures for processing RTE products. In addition to assuring optimal product safety, implementing best practices for RTE processing offers a key benefit: helping to assure compliance. **Note:** Registration is limited to 60 participants.

### 2007 Annual Meat Conference

**When:** Feb. 18 – 20, 2007  
**Where:** Caribe Royale All-Suites Resort and Convention Center, Orlando, Fla.  
**What:** The Annual Meat Conference is the premier educational event for retailers of meat and poultry products. Conference programming examines the hottest trends from ethnic marketing to flavor innovation, details pressing public policy issues in areas such as nutrition and labeling and offers training in key areas such as crisis management and media relations. Attendees also sample hundreds of meat and poultry products at the conference's most popular event: the Product Tasting Reception. A special Tech Fair Luncheon offers exhibits of new technologies of interest to retailers and processors. The conference also provides ample networking opportunities to gather new ideas – and new customers.  
**Online:** [www.meatconference.com](http://www.meatconference.com)

### Annual Animal Care and Handling Conference

**When:** Mar. 28 – 30, 2007  
**Where:** Sheraton Overland Park, Overland Park, Kan.  
**What:** Featuring the leading academic experts in the field, this conference provides a wealth of information on the latest trends and ideas for implementing change and improvement to animal care at the plant level.

### Worker Safety, Health and Human Resources Conference

**When:** Apr. 3 – 4, 2007  
**Where:** Hyatt Regency Denver at Colorado Convention Center, Denver, Colo.  
**What:** Leading experts provide attendees to this conference authoritative and practical instruction for improving working conditions and employee relations. The conference also features the AMI/National Safety Council Worker Safety Awards Program.

## AMIF Contacts

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