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NEWS

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Possible Government Actions To Reduce U.S. BSE Risks Could Be Expensive, Ineffective

A new AMIF analysis shows that risk reduction actions outlined in a USDA “thinking paper” on bovine spongiform encephalopathy (BSE) could cost hundreds of millions of dollars a year with few risk reduction benefits because the U.S. is already BSE-free and has strong firewalls in place to prevent the cattle disease. The analysis was done for AMIF by Sparks Companies, Inc.

In November 2001, a risk assessment for USDA by Harvard University showed that the chance of BSE occurring in U.S. herds is extremely small and that if it did occur, safeguards would rapidly contain the animal disease. In Spring 2002, USDA published a “thinking paper” detailing three key policy options that might reduce the small risk even further.

Under option one, USDA would designate brain, spinal cord and any material contaminated with brain and spinal cord from cattle 24 months or older as “specified risk materials” or SRMs. This designation would prohibit their use for human food.

Under option two, USDA would prohibit the use of the vertebral column from non-ambulatory cattle, and possibly from any cattle 24 months or older, as a source material in advanced meat recovery (AMR) systems, which use pressure to trim meat from bones.

The third option would prohibit cheek meat from cattle 24 months or older and all non-ambulatory cattle from human food if the meat is not removed before the skull is split.

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Pediocin Combined With Thermal Pasteurization, Irradiation Shows Promise

AMIF Study Shows Treatments Delay Listeria Growth

An Iowa State University study funded by the AMI Foundation reveals that treatments of pediocin on frankfurters, when combined with either irradiation or pasteurization, can significantly reduce the presence *Listeria monocytogenes* (*L.m.*) and inhibit future *L.m.* growth during storage. Pediocin is a bacteriocin produced by *Pediococcus acidilactici*.

The project, conducted by a team of researchers at ISU led by Dr. Joseph G. Sebranek, was published in April 2002.

In the study, Alta 2341®, a commercially available pediocin source, was sprayed on the frankfurters in two arbitrary-unit concentrations after peeling and before vacuum

packaging. A five-strain cocktail of *L.m.* was added just before vacuum sealing. Frankfurters were packaged in arrangements of 10 links in two rows of five, five links in one row, and in single link packages.

Treatment combinations included Alta 2341® with post-packaging thermal pasteurization at 81 degrees

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AMI Equipment Design Task Force Sets Sanitary Design Principles

The AMI Equipment Design Task Force (EDTF) has established a list of sanitary design principles and recommended a certification process to ensure the equipment meets these criteria.

The EDTF, chartered by the *Listeria* Task Force, is comprised of representatives from eight meat and poultry processing companies. Equipment design principles were established in an effort to inhibit the growth of *Listeria* on plant equipment. AMI and the EDTF have worked in consultation with equipment manufacturers and government officials to establish the following 10 design principles:

- **Cleanable to a Microbiological Level:** Food equipment must be designed to ensure effective and efficient cleaning and sanitation over the life of the equipment.

- **Accessible for Inspection, Maintenance, Cleaning and Sanitation:** All parts of the equipment should be easily accessible for inspection,

maintenance, cleaning and/or sanitation.

- **Made of Compatible Materials:** Construction materials should be compatible with the product, environment, cleaning and sanitizing chemicals and the methods of cleaning and sanitation.

- **No Product or Liquid Collections:** Equipment should be self-draining to ensure that the food product, water or product liquid does not accumulate, pool or condense on the equipment.

- **Hollow Areas Hermetically Sealed:** Hollow areas of equipment must be eliminated where possible or permanently sealed. Bolts, studs, mounting plates, brackets, junction boxes, nameplates, end caps, sleeves and other such items must be continuously welded to the surface of the equipment.

- **Sanitary Operational Performance:** During normal operations, equipment must perform so as

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Science Soundbites

Hydrodynamic Shock Waves Can Enhance Meat Tenderness

A new meat tenderization process via electrically generated hydrodynamic shock waves improves tenderness in lower grade beef by 20 to 30 percent, according to meat scientist James Claus of the University of Wisconsin-Madison. The technology also works in pork and chicken.

In this new process, shock waves travel through the meat, breaking some of the tiny fibers in the muscle cells. This tenderizes the meat and improves its ability to absorb and retain moisture. Claus found that meat tenderized with this process and injected with marinade afterward retained five percent more marinade than untreated meat.

Data have shown that the process can have an antimicrobial effect. The process could significantly shorten broiler processing by significantly improving the tenderness of chicken breasts removed from the bone before broiler storage on ice.

Hydrodyne Inc. of San Juan, Puerto Rico, provided the small-truck-sized machine Claus evaluated. Hydrodyne Inc. holds patents for tenderizing meat with electrically generated hydrodynamic shock waves.

The European Union (EU) began enforcing a new dioxin restriction on food and feed July 1. Although most U.S. meat products have already been eliminated from export to the EU by other EU health restrictions, dioxin restrictions could impact U.S. exports of livestock byproducts, other foods and feeds.

Dioxin is a natural by-product of man-made and natural chemical reactions. Scientists have concluded that dioxin tends to accumulate in fat and that excessive long-term exposure may cause adverse health effects, including cancer. Experts estimate that about 95 percent of human dioxin exposure comes from food.

Although U.S. and EU foods currently have similar dioxin levels, analysis of U.S. data indicates that U.S. agricultural exports unavoidably will surpass the maximum EU dioxin limits for consumption. Much of the food will also fail to pass the "action level" at which a food is consumable, but triggers an investigation to identify its dioxin source in the food chain.

A low initial sampling rate of 1,500 per year for the entire EU and the entire variety of affected foods ensures that rejection rates initially will be low, but a rejection from this small sample pool could lead to a negative image for the sampled food and country of export, U.S. experts say.

The U.S. objected to the dioxin testing during a comment period provided by the EU in accord with World Trade Organization (WTO) rules. U.S. officials said there is insufficient evidence of a public health threat from dioxin and questioned the EU's unclear implementation guidelines. There is no evidence that the EU will reconsider its dioxin restriction.

Antibiotic Resistance Issues Move Into Spotlight

Animal Health Institute Expert Richard Carnevale, VMD, Offers Latest Science on Issue

Many questions surround human and animal antibiotic use and the issue of antibiotic resistance. *AMIF Newsletter* staff posed a series of questions to Richard Carnevale, VMD, vice president, regulatory, scientific and international affairs at the Animal Health Institute. Dr. Carnevale's responses follow.

Q: To what degree do you believe the public understands or misunderstands the issue of antibiotic resistance?

A: We know from consumer research that the issue of antibiotic resistance, as it pertains to meat, is not a top-of-mind issue for consumers. Consumers generally associate resistance with the issue of human use of antibiotics. We also know from research that the simplistic story that some groups have tried to communicate – that antibiotic use in animals results in resistance in human pathogens – has confused consumers, and to the extent they tie meat to resistant bacteria in humans, they mistakenly believe it comes as a result of antibiotic residues in meat.

Q: What does the science show are the roots of antibiotic resistance for microorganisms associated with human illness?

A: First of all, the serious problems with resistant pathogens in humans primarily occur with those infections that are not linked to animal antibiotic use – things like tuberculosis, MRSA and VRE.

We know that use of antibiotics in animals will select for resistant bacteria residing in animals, just as the use of antibiotics in people will select for resistant bacteria in the human body. The question is, do those resistant bacteria in animals transfer to humans, through food, in large enough doses to cause diseases that lead to treatment that doesn't work? The answer is that there is no evidence it has ever happened, and the opportunity for it to happen is declining.

While foodborne pathogens can cause illness in humans, doctors don't treat the vast majority of these infections with antibiotics. Fluids, antidiarrheal medicines, and time is usually all that is necessary to cure the illness. Scientific evidence is conflicting as to whether antibiotics even affect the course of recovery, and, in some cases, they can make things worse. And, government data shows the prevalence of pathogens in meat and poultry is declining, due in large part to successful implementation of improved meat processing and government inspection programs. So with pathogens in meat declining, and the trends in resistant foodborne bacteria in humans declining, the opportunity for

resistant foodborne pathogens to affect public health is declining.

Q: To what degree are antibiotics overprescribed in the human population?

A: It's a good question and there are many estimates. Clearly, there is widespread agreement that spread of resistant pathogens in hospitals, nursing homes and other institutional facilities combined with overuse of certain antibiotics are the major causes of antibiotic resistance problems in humans. The other problem is not from over-prescription, but from lack of patient compliance in finishing a prescribed regimen of therapy, leading to a greater likelihood that resistant strains will arise.

Q: We hear conflicting information about the proportion of veterinary antibiotics used to treat illness and the proportion used for growth promotion. What is your best estimate?

A: AHl annually surveys its members – producers of animal health products – about the amount of antibiotics sold for animal use each year. Each year, results consistently show about 87 percent of antibiotics sold to the veterinary market are for the treatment, control and prevention of disease, and 13 percent for growth promotion.

Antibiotics are approved and used for four specific purposes: treating disease, controlling disease, preventing disease and enhancing growth. The latter purpose is more accurately described as maintaining the health of the animal by shifting the balance of harmful bacteria in favor of beneficial bacteria in the gastrointestinal tract, resulting in better nutrient utilization measured by feed efficiency and average daily gain.

Q: Is the use of selected antibiotics for growth promotion safe? Or are we creating bacteria with resistance to too many antibiotics that are also used for human disease intervention?

A: Absolutely the use is safe. Safety to the animal, humans and the environment has to be demonstrated as part of FDA's approval process. Otherwise, these products would not be on the market. Antibiotics have been used for these purposes in animals for more than 40 years with no evidence that they pose a significant threat to public health. On the contrary, the use of these products has helped to provide an abundant and safe meat and poultry supply to consumers. Moreover, nearly 50 percent of antibiotics used in animal feed have little or no relationship to those drugs used in human medicine.

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Antibiotic Resistance

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Available government data demonstrates the margin of safety is growing. The National Antimicrobial Resistance Monitoring System (NARMS), a collaborative effort of CDC, FDA and USDA, shows the trend in the incidence of resistant foodborne pathogens in humans is generally declining.

Q: We now have antibacterial soaps and other products aimed at creating “clean” environments. Are we too clean for our own good?

A: Any use of antimicrobials creates resistance pressure. We do need to be careful and cautious in our use of these products. That’s why in the veterinary medical community we continue to educate and promote the need to adhere to prudent use principles.

Q: Some groups have suggested that potential antibiotic residues in meat and poultry will cause antibiotic resistance in humans. Since the issue really pertains to antibiotic resistance of microorganisms that may be present both in animals and in humans, doesn’t this imply that better education of media and consumers is needed?

A: Residues are highly regulated and monitored by the federal government and do not pose a health risk to consumers. As a result, consumers do not develop resistant pathogens as a result of antibiotic residues in meat. It is important for people – and the media – to understand that animals and people do not develop resistance; bacteria develop resistance. This is an education challenge for all of us. Educating the media is a key component, and FDA also has a strong platform and credibility that should be used for this kind of education.

Q: A very limited study in late 2001 suggested that meat and poultry purchased in the Washington, DC, area was widely contaminated with antibiotic resistant bacteria. If cooking destroys all bacteria, how concerned should consumers and policymakers be about this issue?

A: You are right – an important public policy goal should be educating consumers on proper cooking methods. Groups that are truly concerned about human health and not media platforms should also focus on consumer education. In addition, widespread irradiation could be a valuable tool in eradicating foodborne pathogens.

Q: What is your reaction to the FDA’s effort to withdraw approval for fluoroquinolones in poultry?

A: First of all, this drug is used only to treat serious life-threatening infections in chickens and

turkeys and only under the order of a licensed veterinarian. It is used sparingly in about one to two percent of birds in a given year. It is never used to promote growth.

FDA has recently granted the sponsor of the product a hearing on the proposed withdrawal, a strong indication that they do not have a clear scientific case. FDA’s proposed withdrawal was in large part based on the fact that NARMS data showed human resistance to ciprofloxacin (a human fluoroquinolone) rose from 13 percent in 1998 to 18 percent in 1999. However, the recently-published 2000 data shows a decrease to 14 percent. There is no evidence that use of fluoroquinolones in poultry is a threat to public health. Withdrawal of use is a threat to the health of poultry and the safety of food and their use should be continued.

Q: What is the future of the use of selected antibiotics as growth promotants?

A: All of the products currently marketed have met all of the requirements FDA has mandated to assure their safety including tests to assess bacterial resistance concerns. Will the U.S. adhere to science or follow Europe’s example of implementing the precautionary principle? Scientific evidence shows these products to be safe and effective. If we continue to make decisions based on science, veterinarians and livestock and poultry producers will continue to use these tools that are important to producing healthy animals.

Q: Can you address the impact on animals if subtherapeutic antibiotic use was eliminated?

A: We know from the European experience it would increase animal disease and thus decrease our food safety protections.

In Denmark, where some growth promotion products were banned, therapeutic use increased 30 percent in one year – a clear indication of increased animal disease. Similar evidence from Sweden, France, Holland, Germany, Switzerland and the UK shows the same story – the ban on growth promoters has resulted in greater use of antibiotics to treat disease in animals. In general, therapeutic compounds are more important in human medicine than growth promotion compounds, so there are significant questions about the benefits of this tradeoff.

Sick animals increase pressure on other links in the food chain to reduce pathogen contamination. For instance, we know that the intestinal tract of chickens is more likely to burst and spread pathogens in the processing plant due to increased prevalence of subclinical diseases that antibiotics used in the feed prevent. Removal of these products

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AMIF's Huffman to Address International Meat Conference

AMIF's Vice President of Scientific Affairs Randy Huffman, Ph.D., will address the International Congress of Meat Science and Technology in Rome, Italy, August 25-30. Huffman will deliver a paper "Current and Future Technologies for the Decontamination of Carcasses and Fresh Meat," which will be published in the journal *Meat Science*.



In his address and journal article, Huffman will discuss how more intense microbiological testing and improved microbiological methods have led to a greater awareness by industry and government of the levels of pathogens on meat carcasses and products. The increased awareness has spurred research and development into new anti-microbial technologies.

A copy of Huffman's paper will be available from AMIF upon request after publication.

AMIF BSE Risk Analysis

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According to AMI Foundation President Jim Hodges, "The options in USDA's thinking paper would only be effective to protect public health if we had BSE in this country, which we do not. BSE poses no risks via the meat supply because we do not have BSE in U.S. herds." Hodges said the beef industry supports contingency planning, but said the economic analysis by Sparks underscores the fact that the options outlined would be extremely costly in a BSE-free nation without achieving any significant risk reduction.

Findings

In its analysis, Sparks noted that USDA's thinking paper targets animals that USDA believes to be at the highest risk of developing BSE - cattle 24 months or older and non-ambulatory cattle. USDA also suggests that the economic impact of this position is relatively small because they represent a small percentage of all cattle slaughtered.

According to Sparks, there is currently no reliable and precise method to determine the age of cattle at the time of slaughter. The risk analysis by Harvard University suggested that as many as 34 percent of all steers and heifers are slaughtered at or beyond 24 months of age, while breeding cattle like cows and bulls overwhelmingly are slaughtered beyond this age limit. Therefore, a "zero tolerance" policy would require meat packers to apply these regulations to all cattle entering the facility, even though such an action would provide a negligible reduction in what has already been deemed a very low risk of human exposure to BSE.

According to Sparks, consumers, plant workers and livestock producers all would be impacted by the costs of these regulations.

Analysis: Option 1

While the domestic market for cattle brains and intestines for human food is very small, the value of

these exports in 2001 exceeded \$33 million. Option 1 would effectively eliminate this market. In addition, if these materials are designated SRMs and cannot be rendered into animal feed, the packer will incur enormous disposal fees estimated at \$54 million per year. Additional recordkeeping and segregation costs also would be incurred.

Analysis: Option 2

Under option two, AMR systems likely could not be used in any beef slaughter plants because it is impossible to determine the age of cattle at the time of slaughter and therefore vertebral columns from all cattle would be excluded. Under this scenario, plants would not only lose their investment in existing AMR systems, they would also incur costs in retrofitting the plant with alternative auto knife technology, higher labor expenses to hand trim what was previously removed through AMR systems and a direct reduction in meat yield. In addition, worker injuries - particularly cumulative trauma disorders - likely would increase as a result of repetitive hand trimming. Total costs of this option are estimated at \$190 million.

Analysis: Option 3

Most meat packers in the U.S. currently remove cheek meat prior to splitting the skull. Industry-wide impact is estimated to be minor and limited to some smaller packers who may incur costs of reconfiguring their slaughtering processes.

"This study concludes that additional regulation of meat packing practices will cause real and significant economic shocks and dislocations throughout the livestock complex," the report says. "Even though these costs will be distributed widely, their impacts will not disappear; they are more likely to be amplified in the forms of reduced meat supplies to consumers and reduced profitability to firms in the livestock sector."

The complete analysis may be viewed at <http://www.amif.org>.

Pediocin Spray Study

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C for 60s, 96 degrees C for 60s and 120s respectively, and Alta 2341® with post-packaging irradiation at 1kGy and 2.3kGy respectively. Samples were stored at 4 degrees C, 10 degrees C and 25 degrees C for up to 12 weeks. All three packaging arrangements underwent the same combination treatments.

The study found that irradiation had a strong synergistic effect when combined with pediocin treatment. Post-packaging irradiation at 2.3kGy combined with pediocin in both concentrations virtually eliminated *L.m.* over the 12-week growth period and greatly reduced growth during the storage period.

Although the presence of pediocin in thermally pasteurized packages lengthened the initial lag phase before *L.m.* growth began, pediocin and thermal pasteurization combinations did not show a synergistic effect. Pediocin presence in these samples lengthened the lag phase before *L.m.* growth began, but later growth was dependent on time and pasteurization method. Higher pasteurization temperatures were found to produce slower *L.m.* growth than lower pasteurization temperatures applied for longer time periods.

Pediocin plus pasteurization treatments were partly affected by packaging as frankfurter-to-frankfurter contact was found to protect *L.m.* from the heat process of pasteurization. Consequently, pasteurization was not as effective in the five and 10-link packages as in single-link packaging.

Frankfurter quality factors were virtually unaffected by the anti-listerial treatments. All treatments, however, produced a slightly darker and redder color than the control samples. Sensory panelists found the texture score was firmer for thermally pasteurized frankfurters, but this score was not confirmed by instrumental texture measurements. Purge, odor, pH and TBA (an indicator of oxidation) were not significantly affected by any treatments.

AMI Foundation Vice President of Scientific Affairs Randall Huffman, Ph.D., emphasized that implementing a combination of anti-*Listeria* treatments at the packaging stage can significantly reduce the likelihood of contamination on RTE products.

"This research provides important data on three potential food safety tools that ready-to-eat (RTE) meat and poultry manufacturers may be able to implement in the ongoing battle to eradicate *L.m.* from RTE products," Huffman said.

The full research report is available for viewing at the AMI Foundation web site, <http://www.amif.org>.

Pediocin is available commercially from Quest International.

AMI Equipment Design Task Force

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not to contribute to unsanitary conditions or the harborage and growth of bacteria.

- **Validated Cleaning and Sanitizing Protocols:**

Cleaning and sanitation procedures must be clearly written and designed and proven to be effective and efficient. Recommended cleaning and sanitizing chemicals must be compatible with the equipment and manufacturing environment.

- **No Niches:** Equipment parts should be free of niches such as pits, cracks, corrosion, recesses, open seams, gaps, lap seams, protruding ledges, inside threads, bolt rivets and dead ends. All welds must be continuous and fully penetrating.

- **Hygienic Compatibility With Other Plant Systems:** Equipment design must ensure hygienic compatibility with other equipment and systems.

- **Hygienic Design of Maintenance Enclosures:** Maintenance enclosures and machine controls must be designed, constructed and maintainable to ensure food product, water or product liquid does not penetrate into, or accumulate in or on, the enclosure and interface. The enclosures also should be sloped or pitched to prevent use as a storage area.

These principles will be discussed in detail at the AMI Annual Convention and Innovation Showcase in New Orleans, October 24-26, 2002.

Upcoming AMIF Events

October 24 - 26, 2002

AMI Annual Convention

New Orleans Hilton, New Orleans, LA

October 24 - 26, 2002

Meat Industry Research Conference (MIRC)

Part of the Innovation Showcase

New Orleans Hilton, New Orleans, LA

December 4 - 5, 2002

Implementing *Listeria* Intervention & Control Workshop

Hilton Cincinnati, Netherland Plaza

Cincinnati, OH

February 27 - 28, 2003

Animal Handling and Stunning Conference

Kansas City Marriott, Kansas City, MO

Ongoing Research - *Listeria monocytogenes*

Investigator	Institution	Project Title
Amy C. Lee Wong	University of Wisconsin -Madison	Reduction of <i>Listeria monocytogenes</i> Biofilm Formation in RTE Meat Processing Environments
Kalidas Shetty	University of Massachusetts	Elite Herb Extracts Containing High Rosmarinic Acid and Inhibition of <i>Listeria monocytogenes</i> in Meat and Poultry Products
James Dickson	Iowa State University	Optimum Radiation Dose to Eliminate <i>Listeria monocytogenes</i> in Packaged RTE Processed Meats and Survival of <i>Listeria monocytogenes</i> in RTE Processed Meats after Irradiation Processing
Harshavardhan Thippareddi	Kansas State University	Control of <i>Listeria monocytogenes</i> in Ready-to-Eat Meats Using Cetyl Pyridinium Chloride (CPC) and Shelf Life Extension of RTE Meats Treated with CPC
Michael Doyle	University of Georgia	Control of <i>Listeria monocytogenes</i> in Food Processing Facilities by Competitive Exclusion Microorganisms
Jimmy Keeton	Texas A&M University	Antimicrobial Effects of Surface Treatments and Ingredients on Cured RTE Meat Products
Jack Losso	Louisiana State University	Pathogen Inhibition and Shelf-Life of Raw and Precooked Meat with Protamine
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, Dick Jadamec	University of Connecticut	Development of Ion Mobility Spectrometry (IMS) Applications for <i>Listeria</i> Detection and Monitoring In-Plant Food Processing Plants

Ongoing Research - *E. coli* O157:H7

Investigator	Institution	Project Title
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

Antibiotic Resistance

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would make it harder for processors to reduce pathogens in their establishments, which compromises food safety.

Q: Could you also estimate the impact of elimination of subtherapeutic antibiotic use on the cost of food?

A: Someone will absorb the increased cost. There have been many studies estimating this impact. We know there is extreme sensitivity in the supply chain to any cost increase – witness McDonald’s recent decision to begin importing lean beef because of cost differences. More importantly, it is elitist to dismiss small price increases, as many do. While many in our society can absorb increased costs, it is those who can least afford it who will be hurt most by any increase in food costs. Our food policy should not be “survival of the fittest.”

Moreover, no one need absorb increased costs that removal of antibiotics will lead to if there is no demonstrable public health benefit.

Q: Looking into the crystal ball to 2012, what government policies do you anticipate we will see in effect to address antibiotic resistance of micro-organism that may be present in humans and animals?

A: There are two policies that we should see in order to effectively address antibiotic resistance. First, NARMS needs to be fixed. We need better, more robust, more scientifically valid surveillance

of resistance in foodborne pathogens. We cannot make informed management decisions without a sound knowledge base about the trends and occurrence of resistance.

Second, we need sound risk assessment. We know antibiotic resistance CAN be transferred. The big question is, DOES it transfer with sufficient frequency to cause a public health threat? So far, we believe the answer is no, due to careful government control over the approval of products combined with prudent use by veterinarians and producers. We should set policy not on theoretical risks, but rather on an informed and deliberate process to really define the potential impact or non-impact. Risk assessment is the way to answer that question.

Q: What is the climate worldwide on the subject of antibiotic resistance as well as antibiotic use and overuse in both human and animal populations?

A: Antibiotic resistance is an even more pressing problem in many places around the world because of the indiscriminate use of antibiotics in humans and animals. That has important implications for the U.S. because of the increased frequency of foreign travel. It is clear that foreign travel is one of the major risk factors for contracting an antibiotic-resistant foodborne disease. As a result, we cannot solve the problem of resistance by taking action only here; any solution must be global in nature.

Q: Consumers are hearing a great deal of advertising about the availability of meat and poultry produced without the use of antibiotics, which in turn raises questions and concerns. What is your best advice to the concerned consumer?

A: Be very careful and please be informed. In almost every instance “antibiotic-free” products will cost more—without providing any additional benefit. It is by no means any safer.

In one study conducted in Denmark, organic chicken – raised without antibiotics – was three times more likely to contain a disease-causing foodborne pathogen than chickens raised in a conventional way using antibiotics and other animal medicines.

Consumers should know that “antibiotic free,” “hormone free,” or other such claims are marketing based. The government agencies that assure the safety of our meat and poultry supply do not support such claims as offering any real benefits to consumers over conventional products.

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