



# Advancing the Pre-Harvest Commitment

## BEEF FACTS Safety Research

### Beef Safety Solutions

**F**or the beef industry, safety is a threshold issue – if we don't have a safe product, we don't have a market," says Rick McCarty, vice president of issues analysis and strategy for the National Cattlemen's Beef Association (NCBA). And, data exist to support his statement. According to James Mintert who is assistant director of the Purdue University Cooperative Extension Service and has for several years done extensive research on factors affecting beef demand, every time a beef safety recall is issued, it negatively impacts consumer buying behavior.

"Between 2006 and 2007, beef safety recalls issued by the government were responsible for approximately a 2.6 percent decline in beef demand," says Mintert. "When a recall hits the news, an immediate response follows and can continue as a lagged response for up to six months."

The industry has made significant strides in better understanding foodborne illness as it relates to beef products and beef production. Reductions in human illness are due, in part, to industry efforts to develop new safety interventions. In fact, since 1993, the beef industry has spent more than \$28 million on beef safety research, outreach and education. Including private industry efforts, collectively, the industry spends more than \$350 million annually on improving beef safety.

The majority of this work originally focused on the harvest and processing sectors, as they offered the greater opportunity for improving beef safety. However, ten years ago, the industry began to more aggressively research food safety interventions at the pre-harvest level. The goal was, and remains today, to build upon the success achieved using in-plant safety interventions and apply the same concept further back in the production chain to create another layer of safety.

To provide a roadmap for future work, the Beef Industry Food Safety Council (BIFSCo) held a special Pre-Harvest Symposium during the 2010 Beef Industry Safety Summit for all industry participants.<sup>1</sup> This meeting featured presentations from those who implement pre-harvest food safety measures and leading researchers who continue to advance intervention development.

### Product Development and Regulatory Aspects

*Kent D. McClure, D.V.M., J.D. Animal Health Institute*

- Effective industry implementation of existing pre-harvest safety interventions is challenged by the inability to get regulatory approval of products for commercial use.
- Products developed for livestock to prevent human illness are a new category for regulatory agency approval; 100 percent efficacy is not the goal as it is in conventional animal health products; rather, the goal is to reduce the pathogen burden in live animals presented for harvest, so that in-plant safety interventions are more effective.
- Industry participants and researchers continue to educate regulatory agencies responsible for animal health product approval on the importance of making pre-harvest food safety interventions more widely available.

### Food Safety and Best Management Practices Working Together to Make a Difference

*John Butler, C.E.O. – Beef Marketing Group (BMG) and James Marsden, Ph.D., – Kansas State University*

- BMG is a producer-owned feedlot cooperative that has implemented a trademarked system of production best management practices (BMP) to improve beef safety.

<sup>1</sup>The Beef Industry Safety Summit has been held since 2003 and is coordinated by the National Cattlemen's Beef Association (NCBA) on behalf of the Beef Industry Food Safety Council (BIFSCo) and is partially funded by the Beef Checkoff.



- The system is based on the principles of Hazard Analysis Critical Control Point (HACCP) and identifies where vectors of contamination may occur at the feedlot level and uses BMPs to address them.
- In cooperation with Kansas State University, the cooperative is validating the effect of the BMPs to reduce pathogen contamination levels.

### Discovery to Policy: the Role of Research in Developing Evidence-Based Pre-Harvest Policy

**David Smith, D.V.M., Ph.D. – University of Nebraska, Lincoln**

- Using the bovine tuberculosis eradication program as an example, Smith demonstrated how the costs of pre-harvest interventions must be balanced with their public benefit.
- While science and research may indicate that a pre-harvest intervention is effective in a specific application, it may or may not be effective in a systems application due to costs or other challenges to implementation in industry.
- Even if an intervention has a biological effect on food safety, it has to be determined if the effect is useful to improving food safety.

### Building a Common Framework for Intervention Studies

**Guy H. Loneragan, B.V.Sc., D.V.M. – West Texas A&M University**

- Different research methods, while all effective, make it difficult for the scientific community to effectively compare studies.
- Standardizing reporting methods in pathogen-prevalence studies should aid in the ability to compare the results of individual experiments and should enhance the body of research available to validate various pre-harvest intervention methods.
- Researching pre-harvest interventions in a systems application should also aid in understanding their ultimate impact on food safety versus their impact at a specific stage of production.

### Determining Pre-Harvest Food Safety Education Needs of Feedlot Managers

**Todd Brashears, Ed.D. – Texas Tech University**

- As pre-harvest technologies continue to be developed and made available to industry, it is important to educate producers about their role in food safety.
- A trial educational workshop was developed to gauge current knowledge of feedlot managers from throughout the United States, Canada and Mexico and to determine

future educational needs for this sector of the beef industry.

- Validation research will be conducted at some of the participating feedlot locations to determine if behavioral changes positively impact the safety of beef products sourced from the feedlots.

### Pre-Harvest Symposium Wrap-up

**Ross Wilson, President and C.E.O. – Texas Cattle Feeders Association (TCFA)**

- Advancing pre-harvest research and intervention strategies is another proactive step the industry can take to improve beef safety and enhance consumer confidence.
- An action plan should be developed that includes the following components:
  - ~ Develop large-scale commercial trials with experimentally available pre-harvest technologies
  - ~ Understand price points for the various pre-harvest technologies
  - ~ Conduct research using a systems approach and identify methods for packers and processors to cooperate in investigations

“The purpose of this symposium was to build upon the successes that have been achieved using post-harvest, in-plant interventions and apply these concepts to the pre-harvest production phase,” said John Paterson, extension beef cattle specialist for Montana State University and moderator for the session. “Realistically, the goal of pre-harvest interventions should be to reduce pathogen loads on live animals so that when harvested, they do not overwhelm in-plant food safety interventions.”

The outcomes of the Pre-harvest Symposium conducted during the 2010 Beef Industry Safety Summit offer a roadmap for the next chapter in the industry’s quest to improve beef safety. “The rate of human illness from *E. coli* O157:H7 significantly decreased in 2009, reaching the lowest level since 2004, according to a report released in April 2010 by the Centers for Disease Control (CDC),” said Michelle Rossman, director of beef safety research for NCBA. “That kind of progress is only achievable through efforts like the Pre-Harvest Symposium that bring together some of the most progressive researchers in beef safety with the industry partners who implement new innovations and technology to achieve the universal goal of providing the safest beef possible.” To learn more about pre-harvest beef safety research, visit [www.bifsc.org](http://www.bifsc.org) or [www.beefresearch.org](http://www.beefresearch.org).

**For more information contact:**

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