



## **Control of *E. coli* O157:H7 in Beef Production**

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**FSIS Public Meeting on Control of *Salmonella* in  
Poultry Products**

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# Overview of Main Points

- *E. coli* O157:H7 zero tolerance policy initially stymied progress
- Industry initiatives to treat food safety as a non-competitive issue and share best practices led to improvement
- Regulatory policy modifications allowed industry to adapt and improve



## Background on *E. coli* O157:H7 in Ground Beef

- Several large outbreaks associated with undercooked ground beef
- Zero tolerance for fecal contamination of beef carcass strictly enforced, 1993
- *E. coli* O157:H7 declared an adulterant in ground beef, 1994
- Initial industry reaction to onerous new regulatory policy was negative
- The zero tolerance policy created a 6 – 8 year window of reliance upon a faulty premise of end-of-line finished product testing

*Did regulatory focus on zero tolerance result in lack of progress?*

# The Scientific Community Opinion on Zero Tolerance

**“No feasible sampling plan can ensure complete absence of a pathogen... It cannot be guaranteed that the lot is completely free of the organism, no matter how large the number of sample units.”**

***International Commission on Microbiological  
Specification for Foods. Book 7, 2002***

# The Scientific Community Opinion on Zero Tolerance

**“Declaration of a foodborne pathogen as an adulterant in raw products: discourages testing for that pathogen; leads to false sense of security among consumers; discourages evaluation of control measures; and, encourages inappropriate use of microbiological control measures.”**

***The Role of Microbiological Testing in Beef Food Safety Programs: The Scientific Perspective. AMSA, 1999***

# Data Leads to Understanding of the Problem

- **FSIS zero tolerance policy established prevalence in ground product, assumed to be very low initially.**
- **Early focus of control was on carcass:**
  - **regulatory zero tolerance for fecal contamination,**
  - **trimming carcass to meet fecal zero tolerance,**
  - **testing carcass for generic *E. coli*,**
  - **carcass interventions were studied and implemented.**

# Industry Initiatives Led to Change and Improvement

- **Food Safety determined a non-competitive issue**
- **Significant investments in research on *E. coli* O157**
- **Implementation of valid interventions**
- **Customer-Supplier audits**
- **Expanded and robust *E. coli* O157 trim testing programs**

# Developed and Implemented Best Practices

- **Sanitary practices continually improved and implemented**
- **Significant challenges to modify practices or physical processes:**
  - **Management commitment**
  - **Employee willingness**
  - **Likely capital expenditures**
- **Cooperation among all segments of value chain**



# Beef Best Practice Efforts

- **Developed by the Beef Industry Food Safety Council (BIFSCO)**
  - **Best Practices for Producer Resource Guide**
  - **Best Practices for Beef Slaughter**
  - **Best Practices for Processing Raw Ground Beef Products**
  - **Best Practices for Vacuum-packed Sub-primals**
  - **Best Practices for Pathogen Control During Tenderization/Enhancing of Whole Muscle Cuts**
  - **Food Service Best Practice**
  - **Best Practice for Retail Operations Producing Raw Ground Beef**

**[www.bifSCO.org/bestpractice.aspx](http://www.bifSCO.org/bestpractice.aspx)**

# Post Harvest Technologies

- ❖ Sanitary slaughter practices
- ❖ Sanitary hide removal
- ❖ Spot cleaning
- ❖ Pre-evisceration organic acid rinse
- ❖ Thermal carcass treatment
- ❖ Chilled carcass treatments
- ❖ Hide Washing

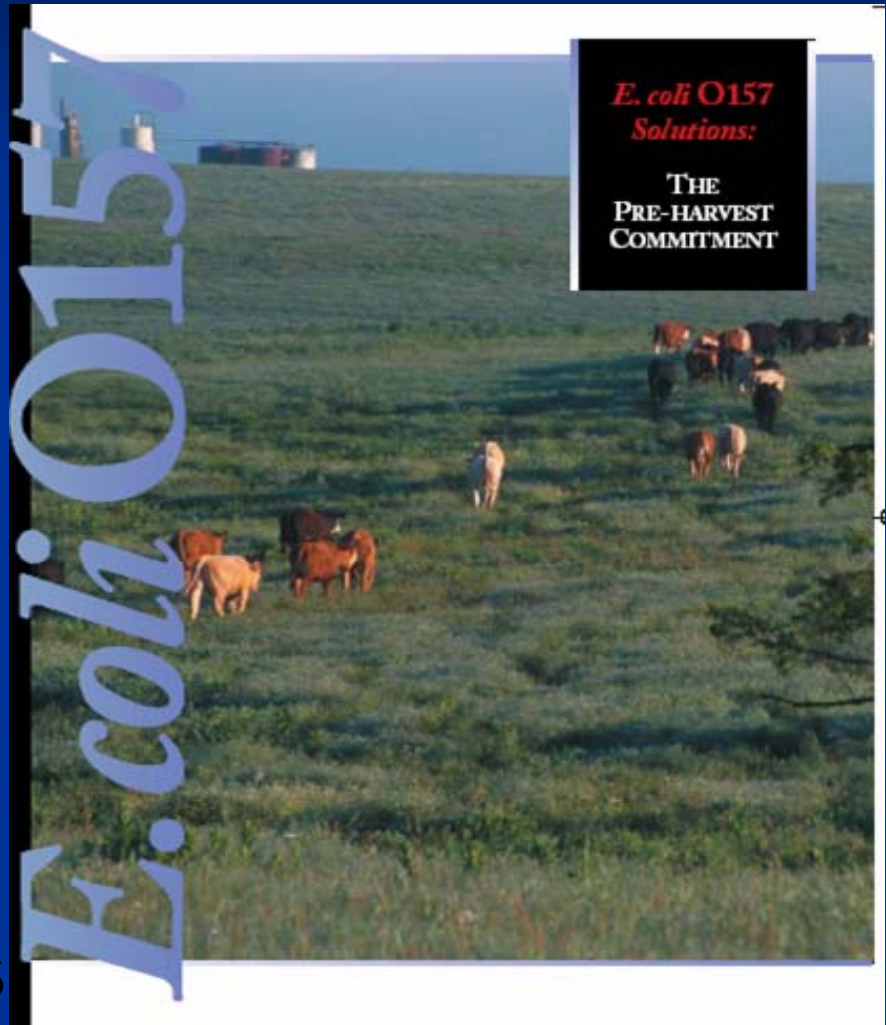


*A Workshop For Beef Processors By Invitation*

April 29-30, 2003  
Hyatt Regency  
Kansas City, MO

# Pre-Harvest Actions

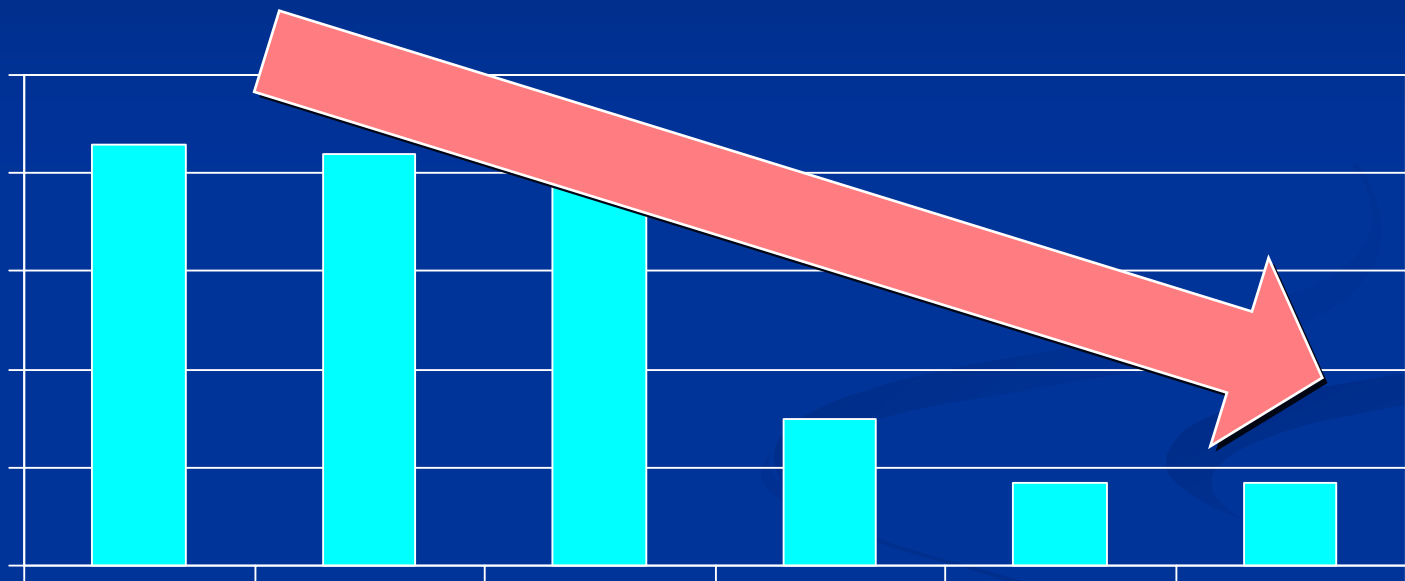
- AMIF, NCBA, USDA and others actively funding research
- BIFSCO E. coli Summit
- Basic info guide developed for producers
- Distributed through state BQA programs

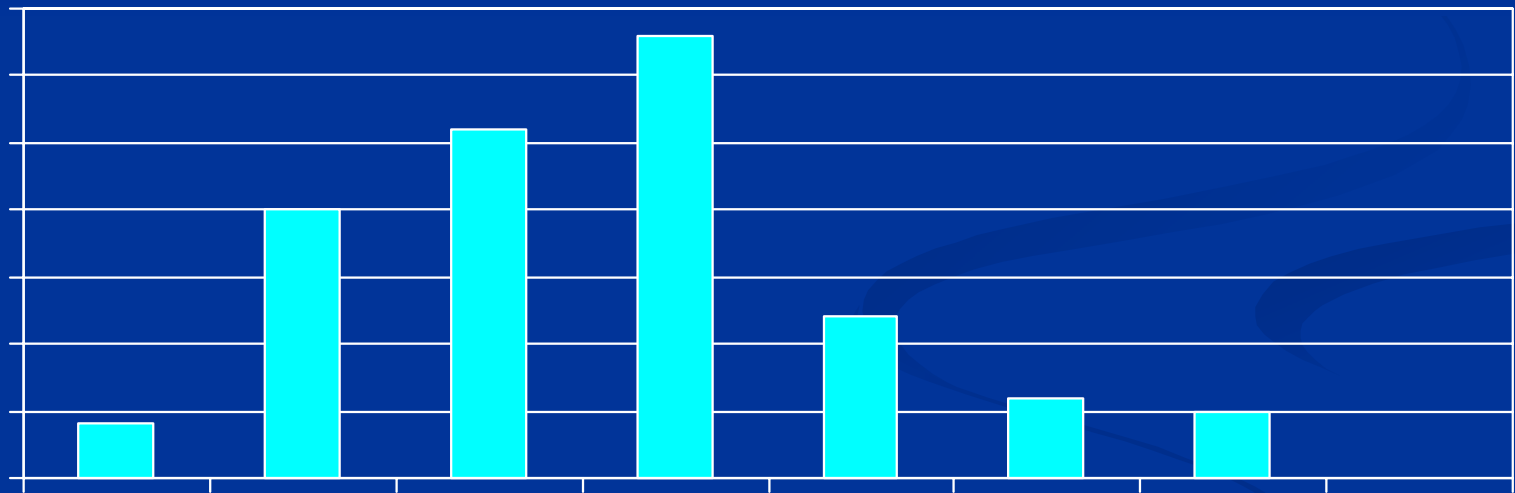


# Recent Regulatory Actions

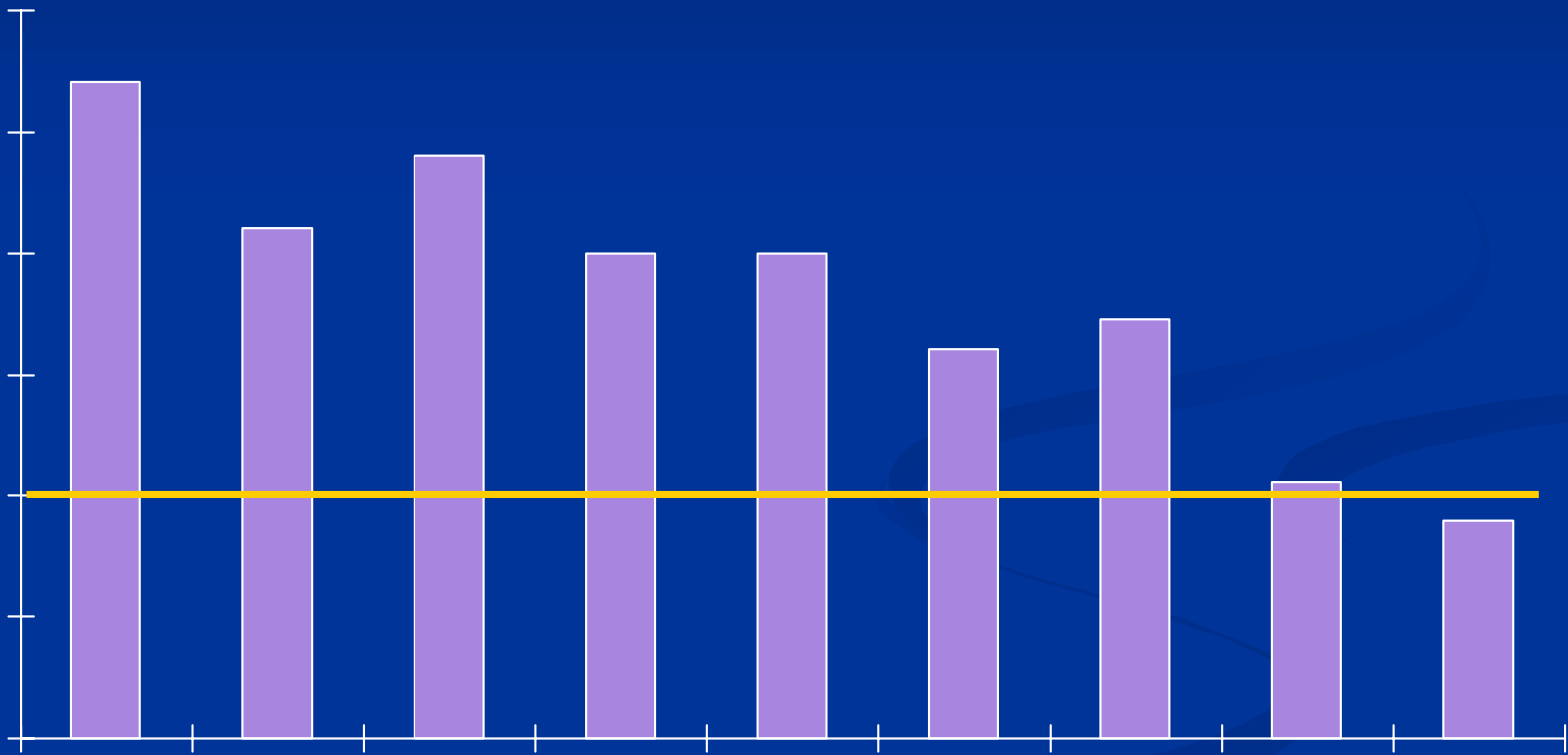
- **Required HACCP reassessment by every beef processing company**
- **Recognition of “negative” test results for a lot**
- **Targeting of regulatory oversight to other ground beef components**
- **Targeted in-depth Food Safety Assessments (FSA's)**

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# Closing Questions

- Is the *E. coli* O157 problem in beef solved?
- Have improvements in the safety of beef been made in the last decade?
- Has zero tolerance for *E. coli* O157 caused change in the beef processing industry?
- Have the changes led to reduction in human *E. coli* O157-illnesses related to beef consumption?
- Has zero tolerance for *E. coli* O157 been good public policy?



# Summary

- **Begin with a rational and achievable regulatory policy, based upon a measurable public health goal**
- **Collect data to fully understand the process**
- **Use data to develop valid control strategies and best practices**
- **Share knowledge and best practices in a non-competitive fashion**
- **The industry's food safety record is good and getting better; however,  
... there are *no Silver Bullets!***



**Thank you.**