



Declines in Bacteria

Throughout the 1990s and into the new millennium, the industry's ability to reduce the levels of bacteria on meat and poultry products has increased dramatically as a result of various new in-plant technologies like steam pasteurization and the transition of the industry to the use of the HACCP (Hazard Analysis and Critical Control Points) system. At the same time, the ability to detect pathogens on products has increased dramatically. In addition, the ability to track food borne disease and tie it to a specific food product has evolved into a practical technology.

Data from the U.S. Department of Agriculture (USDA) show a downward trend in the incidence of *Listeria monocytogenes*, *Salmonella* and *E. coli* O157:H7, excellent examples of food safety progress in the meat and poultry industry.

These developments all offer promise in the fight against food borne disease. Below is a timeline of significant events that have impacted recall frequency and food borne disease rates.

1993

- Major *E. coli* outbreak in Pacific Northwest makes headlines, brings public attention to the risk. *E. coli* O157:H7 is a reportable disease in only a few states at this point in time, but over the next few years, it will become reportable in virtually every state. This change in reportability complicates the ability to compare the incidence of *E. coli* O157:H7 over time.
- Safe handling labels are required by USDA on fresh meat and poultry products to urge consumers to cook products thoroughly, handle carefully. These labels are the first in a series of efforts to raise awareness among consumers of the need to handle meat and poultry safely.

1994

USDA announces that *E. coli* O157:H7 will be considered an adulterant when detected in raw ground beef. Food Safety and Inspection Service (FSIS) begins a sampling program at processing plants and retail stores to detect the pathogen. FSIS begins collecting 5,000 samples per year from ground beef in plants and retail meat cases and initiates a recall when positives are found.

1995

Centers for Disease Control (CDC) launches FoodNet, a new system for enhancing and expanding food borne disease surveillance. FoodNet gives the public health community the first comprehensive picture of food borne disease incidence and causes. FoodNet also prompts more physicians to run tests on what previously might have been diagnosed as simply "stomach flu."

1996

Partnership for Food Safety Education FightBAC! Campaign is launched by government and industry to reach out to consumers about how to handle food safety. Web site and PSAs were initiated to proactively highlight safe food handling.

1998

CDC launches PulseNet, which uses DNA fingerprinting technology to match human isolates to foods. The use of PulseNet expands the size of outbreaks and recalls. Individual illnesses, previously considered single, unrelated events, are more readily linked to one another and, in turn, to a food product.

1999

USDA modifies ground beef sampling program protocol. Sample size increases from 25 grams to 375 grams. The 375-gram sample is divided into five, 75-gram samples, each of which is tested. Implementation of a more sensitive test methodology (magnetic beads) began. As a result, the rate of positives increase, triggering more recalls.

2000

USDA modifies recall policy to require a press release for every recall, whether or not the consumer is impacted.

2001

American Medical Association launches a new campaign to educate physicians about food borne diseases, their symptoms, methods of detection and patient empowerment, to prevent food borne disease.

2003

CDC reported a 16 percent decline in food borne illness over the past 6 years. FSIS reported significant declines in the rate of *Salmonella* detected on meat and poultry products. Data collected and analyzed between Jan. 1 and Oct. 31, 2003 by FSIS revealed the rate of *Salmonella* in raw meat and poultry had declined 62 percent over the past six years and by 16 percent compared with 2002.

USDA announced data showing similar reductions in *E. coli* O157:H7 in ground beef and *Listeria* in ready-to-eat meat and poultry products. The incidence of *L. monocytogenes* in processed meat and poultry products is at an all-time low -- down 70 percent since the HACCP-based meat inspection system was implemented in 1998. There is also a sustained decrease in major bacterial food borne illnesses caused by *Campylobacter*.

2004

New data released CDC show that *E. coli* O157:H7 infections declined 36 percent between 2002 and 2003, the largest decline ever. Since 1996, *E. coli* O157:H7 infections have declined 42 percent.

According to CDC, *Campylobacter* illnesses have dropped 28 percent, *Salmonella* 17 percent and *Yersinia* illnesses 49 percent since 1996. Illnesses caused by *Listeria monocytogenes*, which have consistently decreased over the last decade, have nearly reached the U.S. Department of Health and Human Services public health goal.

These data confirm that efforts to control foodborne illness in the meat industry are having a sustained and measurable impact on meat safety.

To view charts for the declines in bacteria, visit the Charts section of this site.