NORTH AMERICAN MEAT INSTITUTE

MEDIA MYTHCRUSHER

Bacteria on Fresh Meat and Other Foods Does Not Equal 'Fecal Contamination'

Periodically, confusion occurs among the media about the significance of finding something called "generic E. coli," "Enterococcus" or "coliform bacteria" on raw products. At times, reporters confuse the bacteria with fecal matter and even go so far as to suggest that there is "feces" or "poop" in meat products when this type of bacteria is found. Here are ten facts to help you avoid mistakes in your reporting about bacteria and the meat and poultry supply.

#1: Bacteria on Raw Products is Normal.

All raw agricultural products, whether bananas, beef or broccoli, contain bacteria. That's what we call "fresh" food and that's why over time, fresh foods spoil.

#2: Some Bacteria Cause Illness, But Most Do Not.

Bacteria that can cause illness are called "pathogenic." *E. coli*, for example, is a broad category of a bacteria that has many strains. *E. coli* O157:H7 is the most notorious of the strains because it can cause illness and it is considered an "adulterant" when found in food. That means that if the government detects it in raw ground beef, the product will be recalled. But the generic strain of *E. coli* is not considered an "adulterant." If it were an adulterant in food, most fresh food would need to be recalled.

#3: Spoilage Bacteria are Not Pathogenic.

The type of bacteria that cause foods to spoil are not typically illness-causing bacteria. According to USDA, "Spoilage bacteria are microorganisms too small to be seen without a microscope that cause food to deteriorate and develop unpleasant odors, tastes, and textures. These one-celled microorganisms can cause fruits and vegetables to get mushy or slimy, or meat to develop a bad odor." While no one wants to consume spoiled food, if someone were to get past the sensory signals like an off odor and eat a spoiled product, they would not develop a life-threatening infection as they might if they consume something that could be freshly produced but contaminated with a pathogen.

#4: E. Coli Does Not = Poop.

Media often use "*E. coli*" and "poop" or "fecal contamination" interchangeably, but that's not accurate. Some bacterial names like *Enterococcus*, coliforms and *Enterobacter* sound like they should originate in the colon. When they were originally named, researchers found they were associated with the gastrointestinal tract, but further study showed that they are present throughout the environment and rarely signal the actual presence of feces. A swab of phones and keyboards would likely find *E. coli*, but that doesn't mean there is 'poop' on your phone. Finding *E. coli* means that you have found bacteria that probably originated in a gastrointestinal tract, but it could be several times removed from actual feces. Meat companies test for the presence of bacteria like generic *E. coli* because it can signal the presence of pathogenic bacteria from the GI tract that can potentially make someone sick, but finding it does not automatically mean feces is present.

#5: Feces is a Whole Lot More Than Bacteria.

Bacteria are invisible; feces is not. So what is feces? It's a combination of fiber, fat, protein, water and bacteria. Just as egg is an ingredient in cake, the presence of egg does not mean that cake is also there. While generic *E. coli* or coliforms may be found in feces, finding *E. coli* doesn't mean that feces is present. In the textbook, *Compendium of Methods for the Microbiological Examination of Foods*, the author writes "Many investigators have reported a lack of correlation between *Enterococcus sp.* and *E. coli* counts and the unreliability of *Enterococcus* counts as a reflection that fecal contamination is established."

#6: Fecal Contamination is Illegal on Meat Carcasses.

Yes, meat plants process animals that produce manure or "feces." But plants have technologies and procedures to prevent contamination including hide washes and steam pasteurization cabinets. USDA has a "zero tolerance" for fecal contamination on meat carcasses. Inspectors are present in slaughter plants at all times (large plants may have a dozen inspectors per shift). If an inspector finds contamination, a carcass must be cleaned, trimmed or condemned.

#7: Harmful Bacteria Are Not Common on Meat—They are Rare.

E. coli O157:H7 is found in less than one half of one percent of all raw ground beef samples according to USDA Food Safety and Inspection Service sampling results.

#8: Bacteria That Are Resistant to An Antibiotic Are Not 'Superbugs'.

Bacteria have a strong survival instinct and they tend to develop resistance to any threat, including antibiotics. In 2013, FDA Center for Veterinary Medicine Director Dr. Bernadette Dunham told the New York Times, "It is an oversimplification to conclude that resistance in any bacterium is problematic for human health. Some bacteria are naturally resistant to certain drugs. Also, describing bacteria that are resistant to one or even a few, drugs as 'superbugs' is inappropriate. Rather, "superbugs" are pathogens that can cause severe disease and are very difficult to treat." The term superbug is particularly misleading when speaking of bacteria that do not cause foodborne disease and have natural resistances, such as *Enterococcus*.

#9: The Body of Scientific Research Shows That Production Methods (i.e. organic, grass-fed, conventional) Don't Impact the Presence of Bacteria on Meat in Significant Ways.

While isolated studies may show a higher or lower level of bacteria on meat derived from a certain production method, taken together, the data show very little difference.

#10: Cooking Destroys Bacteria

All bacteria, whether pathogenic or not, are destroyed by cooking. Ground beef should be cooked to 160 degrees F. and that temperature should be validated with an instant read thermometer. Ground poultry should be cooked to 165 degrees F. Anyone who wants to prepare high quality food uses a cooking thermometer – not only to make sure food is safe, but to keep from overcooking and unnecessarily destroying the quality of the food.

For more information:

U.S. Department of Agriculture
Food Safety and Inspection Service
Office of Public Affairs
202/720-9113

Gary R. Acuff, Ph.D.
Director, Texas A&M Center for Food Safety
Professor, Food Microbiology
Texas A&M Center for Food Safety
2501 Earl Rudder Freeway South
Suite 700
College Station, TX 77845
(979) 458-8518
gacuff@tamu.edu

Janet Riley
Senior Vice President of Public Affairs
202/587-4245
jriley@meatinstitute.org

Eric Mittenthal
Vice President of Public Affairs
202/587-4238
emittenthal@meatinstitute.org

www.MeatInstitute.org