

PolicyPennings by Dr. Daryll E. Ray

Systemic sources of bacterial contamination of meat, but where is the outrage?

As part of researching and writing this column for nine years now, we have uncovered a number of remarkable divergences between the original intents of public policies and, after years of reshaping, their current actual administration. We thought nothing would surprise us in this regard. Wrong.

The jolt to our consciousness came when researching food safety issues, specifically issues surrounding meat.

We assumed all the systemic sources of potential bacterial contamination of meat had been eliminated decades ago through hard-fought public policy legislation and strict federal enforcement. That would leave random, largely uncontrollable sources of contamination, which we assumed were the reasons for the various recalls of meat and other food products.

We were shocked by the revelation reported by John Munsell, Manager, Foundation for Accountability in Regulatory Enforcement (FARE), and quoted in last week's column, that a USDA sampling experiment found that 8 of "24 packages of vacuum packaged boxed beef items" tested positive for E. coli bacteria. Even more troubling than that, the USDA does not consider E. coli on the surface of primal cuts of beef to be an adulterant.

BUT if the Bush administration's USDA would have had its way, that would have been fixed.

In a recent Wall Street Journal article (<http://online.wsj.com/article/SB124725846273124757.html>), Bill Tomson wrote "A June beef recall by JBS Swift & Co. for deadly E.coli contamination could have been prevented if a plan devised during the Bush administration to build new barriers between the bacteria and the public had been enacted."

According to the article, "The USDA has been considering for more than a year a policy change that would allow whole beef cuts to be considered 'adulterated'- and thus subject to recall-even if they aren't 'intended for use in ground beef,' according to Daniel Engeljohn," a deputy assistant administrator for USDA's Food Safety and Inspection Service, or FSIS.

So why didn't this change occur? The meat packing industry has been strongly lobbying the USDA to prevent the whole cut rule from coming into effect. Tomson writes, "American Meat Institute Foundation President Jim Hodges said there was no need to divert primals [whole beef cuts that are made into steaks and roasts] away from the raw market, just because E. coli was found in the carcass trim."

Well, EXCUUUUSSSE MEEE! (us, actually). E. coli O157:H7-the deadly strain that is found in beef processing plants-is not a contaminant?

So how does one [attempt to] explain this away? Munsell quotes part of Excel's testimony in an E. coli court case: "The uniform national standards governing the production of raw meat expressly provide that whole-intact meat containing E.coli may be distributed for consumption in interstate commerce. This is because, although pathogenic bacteria (such as E.coli) occurs naturally in the production of meat (and is virtually impossible to avoid, safe food-handling readily destroy the bacteria). Instead of requiring meat producers to do the impossible (by completely eliminating pathogenic bacteria), the federal government relies on the end-user to follow safe food-handling practices to avoid the dangers associated with raw meat."

The rationale of the Excel representative would make some sense if we didn't have untold numbers of people getting sick, some dying, and millions of pounds of meat being recalled every year because of E. coli. Controlling E. coli at a limited number of packing houses has to be easier than trying to combat it in thousands of restaurants and millions of homes across the nation.

Certainly, restaurants and household kitchens should be expected to engage in safe food-handling practices, but why not eliminate much of the problem at the source?

The path of E. coli contamination from a primal cut has been described as the "comet effect:" it starts out intense and concentrated and trails off into nothing.

A primal cut that is contaminated with E. coli leaves some of the bacteria on conveyor belts as it passes through the packing plant. Subsequently, additional cuts pick up some E. coli as they are placed on the contaminated spot on the belt.

As these cuts are routed to various lines in the plant, the contamination is spread to other belts and other pieces of meat. Eventually, each conveyor belt is once again E. coli-free because the bacteria have been transferred to the outside of numerous cuts of meat.

Cuts and trims that are converted into hamburger at the packing plant are subject to testing. When E. coli is identified, the meat is sent to a cooking line to kill the bacteria.

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When the packing plants do not cut the primals into steaks and roasts and grind the trims into hamburger on-site, the primals are typically sent out as boxed beef to be processed by downline facilities that usually have no slaughter facilities.

A statement that the beef is not to be used for grinding often accompanies the beef. The idea is that the vacuum-sealed boxed beef will be cut into steaks and roasts by the processing plant, restaurant, or homeowner.

But as is the case when the cutting is done at the packing plants, converting primals into steaks and roasts results in a significant amount of trim that is typically not throw away but ground into hamburger. Much of the trim comes from the outside of the cut. If the outside is contaminated with *E. coli*, the hamburger will also be contaminated as the "comet effect" continues to spread out and makes its way through the system.

Many of the outbreaks and subsequent recalls happen in just this way.

But the potential for contamination does not end there. *E. coli* on the outside of steaks can be transferred to meat preparation and other surfaces. If the restaurant or householder is not careful to sterilize the meat preparation surface, knives and other kitchen tools, and the hands that handled the meat, the *E. coli* can be transferred to other foods.

If those foods are served cold, the *E. coli* can be consumed along with the potato salad, cheese cubes, and raw fruits and vegetables. It was just such an event that caused the death of a 6-year-old in 2000 who ate a slice of watermelon that had been cross-contaminated from a piece of beef.

In the case of meat, the critical control point in the system is the packing plant. Eliminate *E. coli* there and a lot of processing plant, restaurant, and home kitchen contamination problems will be eliminated.

In his Wall Street Journal article, Tomson describes the testing the packing industry is resisting: "In an August 2008 draft 'guidance guideline' for slaughterhouses, FSIS suggested that when 4 out of 91 trim tests show a positive result for *E. coli* in beef trim-the material primarily used to make ground beef-that should be considered a 'high-event day.' If that happens,

Engeljohn, a deputy assistant administrator for USDA's Food Safety and Inspection Service, said, all of the beef-not just the trim-could be dangerous."

Not to sound alarmist, but allowing 3 positive tests in 91 sounds very generous. One positive test should call for heightened scrutiny, including an increased testing rate and an investigation to identify how the contamination took place.

How did we get to this state of affairs?

As discussed in last week's column, during the 1990s, the USDA decided to move to the HACCP (Hazard Analysis and Critical Control Point) system of inspection. Based on the idea that the plant operator knows the plant better than the USDA, the responsibility for designing an inspection system was turned over to each individual plant.

As a result, the plant operator was required to identify potential hazards and the critical control points in the process where those hazards could come into play. The plan would then identify procedures that would be used to minimize the hazard risk at those control points. The plant would be responsible for the implementation of the plan.

The manner in which the HACCP system was implemented seemingly affected the balance of power between the packers, processing plants and USDA regulators with regard to safety issues.

Livestock and poultry producers have a lot at stake here. Nothing is more important to preserving and expanding the domestic and export market for US meat and poultry than the products' reputation for wholesomeness and high standards of safety.

In the case of beef, are cattlemen as much in the dark about packers' being a major source of *E. coli* contamination as we were? If not, why haven't they demanded that their organizations, including the National Cattlemen's Beef Association, mount lobbying efforts to make legislative and regulatory changes?

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