



Consumers are Responsible for Beef Safety Too

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There is no doubt that every sector of the beef industry is responsible for producing wholesome and safe beef. The safety of our beef supply starts in the pasture and ends at the dinner plate. Before the final retail product reaches the hands of a consumer, several “best management practices” have already taken place. Producers and cattle feeders follow beef quality assurance guidelines that focus on strict management methods to prevent quality defects. During fabrication and preparation all packers, retailers, and food service vendors follow and comply with steps that are outlined in their Hazard Analysis and Critical Control Points (HACCP) manual. HACCP is a system that ensures that food safety practices are being applied and monitored during steps in production or preparation where there is a high risk of introducing a biological, physical, or chemical hazard. The aforementioned practices are vital in keeping our beef supply safe, but the issue of beef safety does not stop here.

Consumers play an important role in beef safety as well. Each year it is estimated that there are over 3 million foodborne illness cases in the United States. The vast majority of these cases occur at the consumer level due to inadequate handling, cross contamination of raw meat products, and insufficient cooking methods. Consumers may take for granted the safety of their beef supply and, therefore, may think it will remain safe until preparation. An area that has not been heavily researched is the transport and handling of foods by the consumer from the grocery store to the home refrigerator. Not everyone lives right next

to a grocery store, so it is anticipated that beef products will undergo a period of time when storage temperature will be inadequate. A study reported in 2005, found that out of 551 consumers there were 266 consumers (48%) that took 20 minutes to over one hour to return home from the grocery store. Beef can become contaminated with pathogens if it reaches temperatures that support pathogenic growth. During transportation of 20 minutes or more in a standard grocery bag, temperature of cold food items, like raw meat, can start to rise. This increase in temperature can allow for the growth of foodborne pathogens. Thus, once a beef product leaves the store, it should be at room temperature or in the car as little time as possible. Room temperature or temperatures between 40° F and 140° F provides an ideal climate for a variety of pathogens. Placing beef in a cooler or in the coolest part of the car until refrigeration will help maintain a safe temperature.

Safe handling practices from the grocery store the home refrigerator is of little use if the home refrigerator is not at the proper temperature. Amazingly, very few consumers know the correct refrigerator temperature. If a consumer does not have a thermometer in the refrigerator, getting the refrigerator to the correct temperature is quite difficult. Consumers may analyze refrigeration temperature by evaluating food items (i.e. checking to see if the milk jug is cold). This method of determining temperature is insufficient. Just because food items may feel cold, it does not mean that the proper refrigeration tempera-

ture is being maintained. As a rule of thumb, meat should be refrigerated at 40° F or less and frozen at 0° F or below. A common pathogen associated with raw meat is *E. coli* 0157:H7. This harmful pathogen can multiply at temperatures as low as 44° F. Therefore, thawing beef at room temperature is not a responsible safety practice. When thawing beef, handling practices are extremely important. There are three ways to safely defrost beef. Thawing beef in the refrigerator is safe because the temperature of the beef is kept cold and prevents pathogenic growth. If going to be cooked right away, it is also safe to defrost beef in the microwave or in cold water.

Cross contamination is another safety concern. A common place for cross contamination to occur is in the grocery bag. Juices from raw meat products can drip onto other food items. This can be prevented by individually wrapping raw meat products and keeping them separate during transport. The kitchen is another good source of cross contamination. Raw meat products stored in the refrigerator can drip onto other food items if not wrapped and stored in the meat compartment of the refrigerator. Kitchen utensils such as knives and cutting boards can also spread pathogens from one food product to the next if not cleaned properly. Although cross contamination of raw meat products can be a problem, most instances can readily be solved with adequate cooking temperatures.

Different beef retail cuts have different methods and ways in which they can be prepared. Regardless of retail cut, cooking ground hamburger patties, steaks, or roasts to an internal temperature of 160° F is a sufficient temperature

for killing harmful pathogens. Consumers may like to rely on color to determine temperature. The majority of consumers who prepare meat at home rely on visual cues to evaluate doneness. This can be deceiving when using a cooking method such as grilling. Grilling can cause beef to turn brown very fast on the outside, which may lead a consumer to think that the proper cooking temperature has been reached. Because color can not accurately determine temperature, it is not safe to use the color of beef as an indicator of safety. The only way to ensure that an internal temperature of 160° F has been reached is to use a thermometer. The use of a thermometer will also help the consumer to avoid the overcooking of beef products as well.

Consumers do share the responsibility of ensuring the safety of beef products in addition to the producers, feeders, packers, and retailers. Educating the consumer on proper handling and preparation of beef is an ongoing effort. It is good that consumers are confident in the safety of their beef supply, but at the same time it is important that they aware of potential safety risks that can occur after purchasing the product. Through continuous awareness and education on how to properly handle, transport, and prepare beef at home, the occurrence of foodborne illness due to improper consumer handling can be reduced and/or eliminated. For more information about food safety practices visit the University of Minnesota Food Safety Team website at <http://www.extension.umn.edu/foodsafety>.

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