

Food Safety and Wholesomeness of Grass-Fed Beef

Courtesy of Jo Robinson, Eatwild.com

Pasture-raised products have fewer disease-causing bacteria

Recently, Australians discovered that raising cattle on pasture reduced their risk of carrying a bacteria called "**campylobacter**." Fifty-eight percent of the cattle raised in a feedlot carried the bacteria, but only two percent of those raised and finished on pasture.

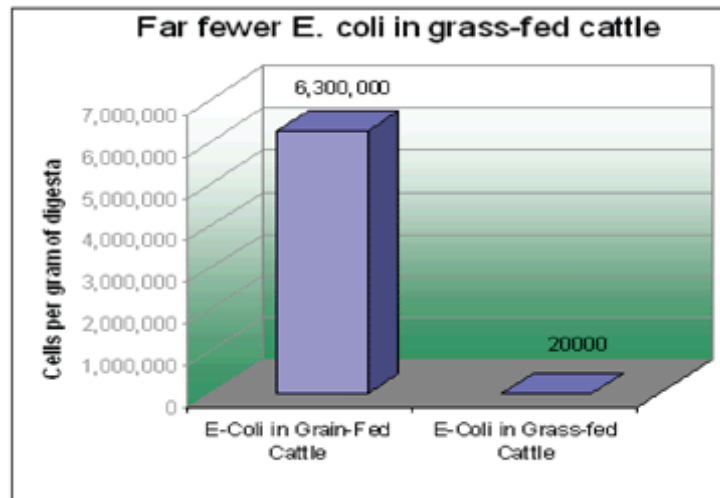


Campylobacter bacteria can cause fever, nausea, vomiting, abdominal pain, headache, and muscle pain. Most cases are mild, but it can be life-threatening if other diseases such as cancer or liver disease are present. People most likely to be affected are children under the age of 5 and young adults from 15–29. Symptoms can occur from two to ten days after eating infected meat.

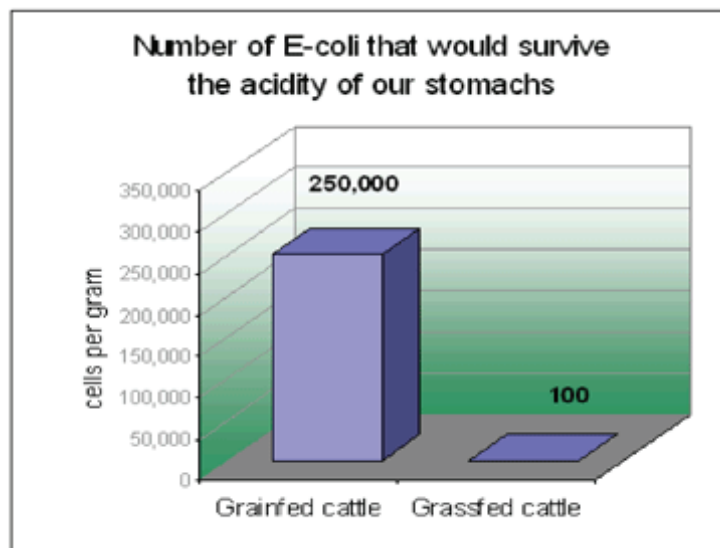
Bailey, G. D., B. A. Vanselow, *et al.* (2003). "A study of the food borne pathogens: Campylobacter, Listeria and Yersinia, in faeces from slaughter-age cattle and sheep in Australia." *Commun Dis Intell* 27(2): 249-57.

Eating grass-fed beef lowers your risk of *E. coli* infection

Mad cow disease is a frightening disease, but you have a greater risk of becoming ill and dying from the more familiar *E. coli* bacteria. When you eat grass-fed meat, you have a much lower risk of becoming infected with the bacteria. Why is this? First of all, work conducted at Cornell University has determined that grass-fed animals have far fewer *E. coli* than grain-fed animals.



What's more, the small amount of E. coli they do have is much less likely to survive the natural acidity of our digestive tract—our first line of defense against infectious diseases.



Why this marked difference in the survival of the bacteria? Feeding grain to cattle makes their digestive tracts abnormally acidic. Over time, the *E. coli* in their systems become acclimated to this acid environment. When we ingest them, a high percentage will survive the acid shock of our digestive juices. By contrast, few *E. coli* from grass-fed cattle will survive because they have not become acid-resistant. When cattle are fed their natural diet of grass, our natural defenses are still capable of protecting us.

Nonetheless, you should still follow all safe-handling recommendations when you prepare meat from grass-fed animals. It takes only a few *E. coli* bacteria to make us ill.

But you can be assured that your risk of becoming infected is much, much lower.

Russell, J. B., F. Diez-Gonzalez, and G. N. Jarvis. "Potential Effect of Cattle Diets on the Transmission of Pathogenic *Escherichia Coli* to Humans" *Microbes Infect* 2, no. 1 (2000): 45-53. (Chart data extracted from this document.)

The "bad" *E. coli* persists in the barn but not on pasture

The type of *E. coli* bacteria responsible for most cases of human illness and death is called "E. coli 0157:H7. Recently, calves that had tested positively for this deadly strain were divided into two groups. One was raised in a barn, and the other on pasture.

Samples were taken once a month from April to September. The calves raised on pasture showed no signs of 0157:H7 for the entire period. Meanwhile, every one of the calves raised in pens had at least one positive sample. According to the Swedish researchers who conducted the study, "This suggests that calves on pasture may be less exposed to the bacteria or that they clear themselves."

Jonsson, M.E. *et al.* "Persistence of Verocytotoxin-Producing *Escherichia Coli* 0157:H7 in Calves Kept on Pasture and in Calves Kept Indoors" *Int. J Food Microbiol* 66, 1-2 (2001): 55-61.

Hay feeding does indeed reduce acid-resistant *E. coli*, says Nebraska Beef Report

In 1998, researchers Diez-Gonzalez and colleagues from Cornell University drew worldwide attention when they reported that switching cattle from grain to grass lowered the production of acid-resistant *E. coli* bacteria. Acid-resistant *E. coli* are believed to be much more difficult for humans to combat. The fact that keeping animals on pasture might protect consumers from *E. coli* was very good news, indeed.

Since publication of the Cornell study, however, these results have been contested by a number of groups, including researchers at the University of Idaho. Now a study by the USDA Meat and Animal Research Center in Lincoln, Nebraska supports the Cornell findings. The Nebraska researchers began their investigation by trying to find alternative feeding strategies to combat acid-resistant *E. coli*, contending that hay feeding "is not a practical approach for cattle feeders." Unfortunately, none of their experimental approaches worked. When they switched the animals to hay, however, they found that the more natural diet did indeed have the desired effect. The researchers concluded: "This study confirms Diez-Gonzalez (1998) report that feeding hay for a short duration can reduce acid-resistant *E. coli* populations." Score one for Mother Nature.

"Influence of Diet on Total and Acid Resistant *E. coli* and Colonic pH." Tony Scott, Klopfenstein, T., *et al.*" 2000 Nebraska Beef Report, pages 39-41.