



Frequently Asked Questions About Antibiotics and Meat Production

What is an antibiotic?

Antibiotics kill or inhibit the growth of bacteria and related microorganisms that can harm animals and compromise food safety. Most antibiotics are produced through fermentation from naturally occurring substances. Antibiotics are highly regulated and closely managed in accordance with stringent U.S. government standards.

Why are antibiotics used in meat-producing animals?

Just as humans become ill, animals get sick, and veterinarians need antibiotics to treat and manage antimicrobial infections. For more than 45 years antibiotics have been used safely in food-animal production, enabling farmers to raise healthy animals. This helps prevent packing/processing losses due to beef-liver abscesses and/or respiratory-disease effects. It also helps reduce the risk of food-borne pathogens while using less land and water to produce meat and poultry.

How are antibiotics administered to animals?

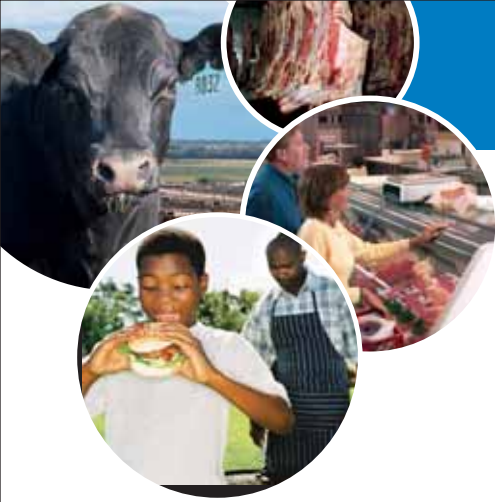
When needed, antibiotics are administered to the animal via injection or through feed or in water. This judgment is made by the animal-care provider under the professional guidance of a veterinarian or nutritionist. Animals receive antimicrobials either individually or in groups, depending on the need, with the healthcare decision determined by factors such as disease severity, type and duration. Treatment of the entire flock or herd may be necessary if all animals are exposed to an infection at the same time and are of similar immune status.

How do antibiotics compare to hormones used in meat-animal production?

While both antibiotics and hormones require U.S. FDA registration, they have different modes of action, different methods of administration and are used for different reasons. Most hormones are administered as cattle implants to improve weight gain and feed efficiency. Antibiotics are administered through injection, water or feed, and are used to treat, prevent and control disease.

What systems are in place to prevent improper use of antibiotics in meat-animal production?

Antibiotics are highly regulated and closely managed in accordance with stringent U.S. government standards. Before granting approval, the U.S. Food and Drug Administration requires antibiotics to meet scientific standards for human-food safety, human exposure, effectiveness, animal safety and environmental safety. Various government agencies monitor antibiotic products in the marketplace through randomized sampling and laboratory testing to



further assure consumers about the safety of their meat supply. In addition, veterinarians and professional consultants work with producers to implement industry-sanctioned quality-assurance standards, while packers/processors continuously adopt improvements.

Internationally, the World Veterinary Association (WVA), the International Federation for Animal Health (IFAH) and the International Federation of Agricultural Producers (IFAP) have developed a set of guidelines for the use of antibiotics in food animals (*Prudent Use Of Antibiotics: Global Basic Principles*).

Do U.S. meats contain antibiotic-resistant bacteria that can promote resistance in humans?

The Food Safety Inspection Service (FSIS) within the U.S. Department of Agriculture inspects and analyzes meats to ensure they do not contain residues of drugs, pesticides or pathogens that would cause them to be adulterated as defined in federal regulations. And, to reduce the risk of antibiotic residues, the Food and Drug Administration (FDA) requires withdrawal of antibiotics from animals for a specified period prior to harvest.

Is “antibiotic-free” meat better for consumers?

USDA’s FSIS does not allow “antibiotic-free” marketing claims. While antibiotic-residue testing technology can detect residues that exceed the U.S. FDA’s minimum thresholds, it does not have the sensitivity to verify “antibiotic-free” or that no antibiotics ever were administered. Consumers can trust that all USDA-inspected meat they purchase meets federal regulations for safety, including residue analysis for drugs, pesticides or pathogens.

Does the use of antibiotics in animals contribute to antibiotic resistance in human medicine?

According to risk-assessment studies, the risk of bacterial resistance in humans caused by raising animals with antibiotics is extremely low. For example, independent scientific research shows that the chance of a person having an additional day of illness due to treatment failure resulting from resistance transfer from *campylobacter* when eating pork is less than one in 53 million. Resistance transfer from *E. faecium* is less than one in 29 billion when eating beef. By comparison, the chance of being attacked by a shark is one in 700,000.

Would banning some animal antibiotics help reduce antibiotic-resistant bacterial infections in humans?

After certain antibiotics were banned in Denmark in 1998, there is evidence of increased animal disease. At the same time, there is no evidence that the incidence of antibiotic-resistant bacterial infections has been reduced¹. If the United States were to take similar action, research shows that consumers and producers would pay higher costs for pork² and beef production³. Past experience suggests that this action would be uncorrelated with the occurrence of antibiotic resistance in human medicine.



How do consumers feel about using antibiotics in meat-animal production?

Research in several countries worldwide has shown that consumers who are informed about the practice of using antibiotics to prevent and treat bacterial infections in food animals often believe this use is acceptable, as it ensures animal health and food safety.⁴

Healthy animals and safe food using antibiotics

- Antibiotics are highly regulated and closely managed by the U.S. government, veterinarians, producers, packers and processors
- Antibiotics ensure animal welfare and efficiency of meat production
- Independent, science-based risk-assessments have established that Elanco antibiotic brands used in meat-animal production are safe
- Consumers can trust the U.S. meat supply

¹ Animal Health Institute. European Union Experience Withdrawing Antibiotic Growth Promoter Use, 2004. <http://www.ahi.org/antibioticsDebate/documents/Factsheet-EuropeanExperience1-151.pdf>

² Hayes, AJ, HH Jensen, L Backstrom. Lessons from the Danish Ban on Feed-Grade Antibiotics. 2003. <http://www.choicesmagazine.org/2003-3/2003-3-01.htm>

³ Mathews, Jr., KH. Economic Effects of a Ban Against Antimicrobial Drugs Used in U.S. Beef Production, *Journal of Agricultural and Applied Economics*, 34,3:513-530, 2002.

⁴ Ipsos Reid, conducted November 2001



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The label contains complete use information, including cautions and warnings. Always read, understand and follow the label and use directions.