

## Antibiotic Use in Agriculture

In the US, more than 80% of farms raising poultry, swine, cattle and sheep feed low dose antibiotics to the animals to promote growth and expedite weight gain. This low dose regimen leads to the emergence of antibiotic resistant bacteria. Many of the antibiotics fed to animals are identical or closely related to those used in humans such as tetracyclines, bacitracin, penicillins and sulfonamides. Transmission of antibiotic resistant bacteria to humans occurs through the consumption of meat, close contact with the animals or contamination of streams and ground soil by the animal waste. Sampling of meat in grocery stores found many contaminated by methycillin-resistant staphylococcus which is killed by cooking but care must be taken not to contaminate the kitchen. In 2009, 80% of all antibiotics sold in the US were administered to livestock animals so that decreased antibiotic use by humans would have little effect on the growth of antibiotic resistant bacteria (National Academy of Sciences report). The US is among the last developed countries to implement policies to control antibiotic use in animals. In 1998 the EU banned feeding of antibiotics valuable for human health to animals and in 2006 they banned all antibiotic use in livestock for growth promoting purposes. There followed a decrease of antibiotic-resistant bacteria in animals, in meat and in the general human population. Also the increase in cost of meat produced has been quite small. Congressional action will most likely be required to ban non-therapeutic use of antibiotics in animals because several agencies control drug use and would need to coordinate (USDA, CDC, HHA, FDA). To date relevant bills proposed in congress have failed since they are opposed by a strong agricultural/pharmaceutical lobby.

Other articles for additional information

CDC Threat Report: Yes, Agricultural Antibiotics Play a Role in Drug Resistance

<http://www.wired.com/wiredscience/2013/09/cdc-amr-rpt2/>

Pros and cons of using antibiotics in animal feed

[http://www.udel.edu/chem/C465/senior/fall98/AntibiotFood2/pros\\_cons.html](http://www.udel.edu/chem/C465/senior/fall98/AntibiotFood2/pros_cons.html)