Antibiotic Use in Livestock Under Increased Scrutiny
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Antibiotics have been powerful tools in the development of livestock systems that produce a marvelous quantity of economical, safe and nutritious food in the United States. These products are not without risks and drawbacks, however. Increasing opinion mounts to further regulate the ways in which antibiotics are used in livestock.

Why the Concern?
The most scientifically based concern over antibiotic use deals with the development of the resistance of bacteria to antibiotics. Whenever an antibiotic is used in an animal or a human, there is a good chance that some of the target bacteria will escape being killed by the antibiotic. These bacteria that are more resistant to the antibiotic then become a larger part of the surviving pool of bacteria. With continued treatment the likelihood that future illnesses caused by this bacteria will respond to future treatments with that bacteria decrease.

The concern that livestock treatment with antibiotics will have an impact on human health is based on the concern that bacteria which develop in livestock settings will make their way into human populations. They do this in a natural way as humans interact with livestock. They also get to humans when livestock products that are contaminated with bacteria are consumed by humans in what we sometimes call "food poisoning". In the end, there is increasing public concern in the US that use of antibiotics in livestock will mean that sick people will be less able to receive successful treatments.

Other concerns about antibiotic use in humans stem from a concern that livestock products (milk, meat and eggs) will be contaminated with antibiotics. Some humans are very allergic to antibiotics so that even tiny amounts of antibiotic can cause an allergic reaction. Many people in the US just don't want any antibiotic from any source to be taken into their bodies.

What's New in Regulation?
Regulation of antibiotic use and prescription has been controlled for many years by both voluntary and legislative measures. Most notably on the legislative side in 2003, the Food and Drug Administration’s Center for Veterinary Medicine issued Guidance 152 that stated the FDA believed ingestion of antimicrobial resistant bacteria from animal derived foods is significant and the risk for antibiotic resistance should be assessed for drugs significant for human treatment.

Since many classes of antibiotics approved for use in livestock were developed and approved prior to Guidance 152, concern has grown about how the sub-therapeutic (low level as in feed additives) use of antibiotics is potentially aiding bacterial resistance to many antibiotics. Most recently the FDA has sought to amend Guidance 152 by adding the word “judicious” in association with using drugs that are medically important for humans in livestock.

In January 2011, the FDA has proposed to prohibit certain uses of Cephalosporin antibiotics, off or extra-label, in major food producing animals including cattle, swine and poultry. Extra-label use means using a drug for any condition, in any species or at any dose or regime other than according to the label. Cephalosporin drugs are commonly used in human medicine to treat
infections affecting diabetics or treatment of pneumonia. In the livestock sector, Ceftiofur, a drug within this antibiotic family and marketed by Pfizer as Naxcel™, Excenel™ and Excede™, is typically used in the treatment of bovine respiratory disease complex. If approved, actions such as this proposed by FDA will limit off label dosage recommendations or using these drugs for prevention of disease. As beef producers, it is important to remember, however, that extra-label use of any drug is prohibited by law unless directed under prescription by a veterinarian, even in treatment of disease.

**What Should Beef Producers Do?**
Appropriate husbandry and hygiene, routine health examinations and proper vaccinations of beef cattle go a long way in preventing problems that would require antibiotic use. Producers should consult with their veterinarian on the selection and use of antibiotics when a need is recognized. Those medications that are important for treating strategic human or animal infections should be avoided as the first line therapy. The uses of narrow spectrum antimicrobials are recommended and avoid combination antibiotic therapy when possible for treatment regiments.

Producers should limit antibiotic use to sick or at-risk animals and treat for the recommended time period in order to help minimize the potential for bacteria to become resistant to antimicrobials. Always follow the product label directions, especially dosage and withdrawal times. Drug withdrawal time is the period of time that must pass between the last treatment and the time the animal will be harvested, marketed or milk can be sold. Extra-label treatments may only be administered by a licensed veterinarian or under the supervision of a licensed veterinarian and within the scope of a valid Veterinarian-Client-Patient relationship.

Beef Quality Assurance guidelines for judicious use of antibiotics in livestock is an important element of production practices for producers to follow. Ensuring a safe, wholesome beef product is a responsibility of every producer in the industry.