

CFOs

Confined Feeding Operations

Antibiotics and Livestock Production

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Series Publications

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Preface: Here we use the term “antibiotic” as a general term to include all antibacterials used in livestock production to prevent or treat bacterial infections, both naturally occurring (e.g., penicillin) and synthetic or semi-synthetic (e.g., carbadox).

In recent years there have been some changes in how antibiotics can be used in livestock production. Many of them are quite notable. In 2015 the Food and Drug Administration (FDA), the federal agency that oversees all drug approval and use in both human and veterinary medicine, issued a **policy document** titled “New Animal Drugs and New Animal Drug Combination Products Administered in or on Medicated Feed or Drinking Water of Food Producing Animals: Recommendations for Drug Sponsors for Voluntarily Aligning Product Use Conditions with GFI #209” (USFDA 2015). This represented the biggest change in several decades to antibiotic use policy as it relates to livestock production.

The policy phases out the use of several antibiotics in livestock production for growth performance or production. To review, all antibiotics have an “indication”, which is the manner in which the drugs can be used as approved by the FDA. In livestock production, there are several antibiotics that are indicated or approved for use to improve feed efficiency or weight gain. Using the drugs in this manner can allow animals to grow faster or more efficiently. The new policy dictates that antibiotic manufacturers will no longer market antibiotics for growth performance in livestock if those antibiotics are deemed “medically important” for human medicine. The **list** of “medically important” antibiotics was established by the FDA in 2003 in GFI #152 and includes most major classes of antibiotics, such as tetracyclines and penicillins (USFDA 2003). The phasing out of this use is to take place over a three-year period (2015-2018). While the policy is called “voluntary”, the FDA has worked with both the public and antibiotic manufacturers in drafting the policy, and they report that 100% of US antibiotic manufacturers will comply with this new policy.

There are limits, however, to this new policy. The majority of “medically important” antibiotics that were previously used for growth performance also have indications or are approved for use as prophylaxis (preventing infections) or treatment of specific diseases. The use of “medically important” antibiotics in this manner will not be impacted by the new policy. There are also several antibiotics used for growth performance in livestock production that are not on the list of medically important antibiotics. The best example is probably the ionophores, which is a class of drugs not used in human medicine and not considered medically important. Antibiotics such as these will not be affected by the new policy.

The second major change involves the role of the veterinarian. Prior to 1993, several drugs included in the list of medically important antibiotics were approved for use in livestock as over-the-counter (OTC) medications. The new policy calls for all use of the medically important antibiotics in livestock to come under the direct supervision of a licensed veterinarian. Therefore, while some uses of medically important antibiotics will no longer be allowed (growth performance), all other uses—including disease prevention and treatment—will require veterinarian oversight in some manner.

Impact on human health. As outlined in “[CAFOS and Public Health: The Issue of Antibiotic Resistance](#),” it is clear the use of antibiotics in any manner—including in human medicine—very often leads to increases in antibiotic-resistant bacteria. This is also true in livestock production, whether the drugs are used for growth promotion or to treat bacterial infections. Most agree bacteria that become resistant as a result of the use of antibiotics on farms can make their way to human bacterial reservoirs either through food, human-animal contact, or the environment. Where there is more controversy and less consensus is the potential impact these bacteria may have on antibiotic resistance as it relates to human health. As Dr. Frank Aarestrup, a

professor at the National Food Institute in Denmark, writes in a recent review article on this subject, “the actual importance of the animal reservoir of antimicrobial resistance for human health is an area of great controversy and unfortunately no precise estimates exist. Estimates have ranged from almost zero to a major contribution to the human health burden” (Aarestrup 2015). All agree, however, that the issue of antibiotic resistance in general is critical with serious consequences. As such, any reductions producers can make in antibiotic use that do not compromise animal health and well-being should be encouraged.

References

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