

# Antibiotics in animal feed: weighing risks and benefits

USDA Farmline  
News Service

WASHINGTON, D.C. — It's been called a hazard to human health, and defended as a necessary agricultural practice.

The issue is the use of antibiotics in animal feed—not for treatment of a diagnosed disease, but as a regular part of the animal's diet. Added to poultry, hog, or cattle feeds in low-dose, subtherapeutic levels, certain antibiotics such as penicillin and tetracycline are effective in preventing disease and promoting growth in animals.

Although widespread, the practice has long been a controversial one, prompting a number of scientific inquiries.

Some scientists have concluded that the use of certain antibiotics in animal feed can result in the emergence of disease-causing bacteria that are resistant to antibiotics.

If spread to humans, say these scientists, such strains of bacteria could cause serious outbreaks of infectious diseases—diseases that would be difficult to treat quickly and effectively with the antibiotics available today.

But more questions are being asked than can be answered, says economist Clark Burbee of USDA's Economic Research Service.

Burbee says the available research has provided no certain conclusions. Some queries are centered on the actual existence of an animal-to-human link. Could these resistant bacteria affect anyone who eats improperly prepared animal products—or simply those who handle such products or have physical contact with livestock? Other questions are more basic, focusing on whether low-level antibiotic use in animals can even promote growth of antibiotic-resistant bacteria in large numbers—and whether such bacteria can be transmitted to and survive in humans.

#### Antibiotics Battle Disease

The questions are important, obviously, because of the major reliance on antibiotics in the treatment of life-threatening, as

well as less dangerous, infectious human diseases.

Penicillin and its derivatives effectively combat a whole host of infections—meningitis, certain forms of pneumonia, strep and staph infections, and some venereal diseases. Other infections, such as those affecting the urinary tract, the eye, and the gastrointestinal tract, are effectively treated with tetracycline, says the Food and Drug Administration.

Penicillin and tetracycline are also two of the most widely used antibiotic feed additives, according to the Animal Health Institute, located in Arlington, Virginia.

"Drugs are used in animals for many of the same reasons they are used in humans," says Burbee. "No one wants animals to be sick or suffer, and it's just bad economics not to keep them as healthy as possible. Antibiotics are one tool to promote the efficient growth of animals and to prevent disease."

He adds, however, that the practice of adding antibiotics to animal feed may have become too routine, an excessively regular practice in the industry.

"We may not need to feed as much antibiotic today," Burbee says. Since such use started in the early 1950's, "livestock enjoy better nutrition and are produced under much better sanitary conditions. Other chemical compounds have also come along that serve growth promotion purposes and can be substituted for antibiotics."

#### The FDA Connection

In 1977, the Food and Drug Administration (FDA) proposed regulations to prohibit the subtherapeutic use of penicillin in animal feeds and to restrict the use of tetracyclines. The regulations would also have imposed restrictions on the distribution and use of the remaining applications of penicillin and tetracycline. Congress, however, directed FDA to conduct further studies to determine if a definite link could

be established between antibiotic use and human health. Some now believe that link has been made with the Holmberg study.

Several consumer and public-interest groups, citing the Holmberg report, have pressed particularly hard for a ban on antibiotics in animal feed. Late last year, the Natural Resources Defense Council filed a petition with the FDA seeking such a ban. A hearing on the petition was held in January, but no action was taken.

For its part, FDA has been conducting a comprehensive review of the issue with an eye to recommending whether or not penicillin and tetracycline use should be restricted. The agency has commissioned several studies on the matter.

FDA's Center for Veterinary Medicine will weigh these studies, as well as other available data and scientific literature published in recent years. Its decision on what action, if any, to take will probably not be made before this summer.

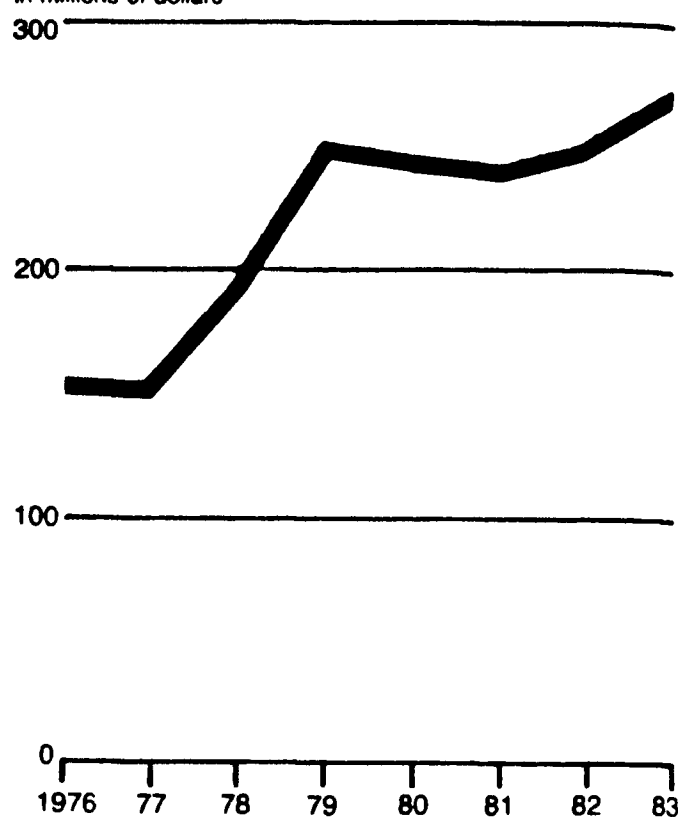
Unless FDA declares certain uses of penicillin and tetracycline to be imminent health hazards, proposals to ban or restrict their use could be contested for many months under a federal review process. Such regulations could also be challenged in the courts.

Whether health concerns are justified or not, banning the use of antibiotic feed additives now could cause a significant shakeup in the livestock industry's production practices and the consumer marketplace.

#### Rising Meat Prices

"Consumers would likely pay slightly higher prices for smaller supplies of meat," says Burbee. "The practical effect of even a partial ban would mean that it would take longer to produce some meat animals because they

Value of antibacterial feed additives, in millions of dollars<sup>1</sup>



<sup>1</sup>Antibacterial feed additives include antibiotics and other antibacterial agents

Source: Animal Health Institute

wouldn't grow as fast. Imports would probably also increase, which could dampen some of the possible rise in prices."

In addition, he says, the cost of feed grains might go up because animals would have to eat more to gain the same amount of weight. The availability of large excess supplies of feed grains should keep any rise to a minimal level.

"However, higher consumer prices would more than offset

farmers' higher costs, and farm income might actually go up," Burbee says.

He adds that "equilibrium in prices would be reached in a year or two, but at a higher level. Right now, animal producers are presumably operating at a least cost level because penicillin and tetracycline are two of the cheapest substitutes, other antibiotics and

(Turn to Page D33)



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