

A CHANGING WORLD

Antibiotics and food production

by Dave Daley, Ph.D., and Tom Talbot, DVM

For the past 50 years cattle producers have been fortunate to routinely access antibiotics to prevent and treat animal disease. The development of antibiotics marked a milestone in animal agriculture, as we were able to significantly reduce both morbidity and mortality. We improved animal welfare and the general health and well-being of all livestock. Who would disagree that antibiotics were one of the most important and influential discoveries in human and animal medicine in the 20th century?

As Bob Dylan said, “But times they are a-changing!” In the past decade, we have seen growing concern from the medical community and the general public regarding the use of antibiotics in food animal production. The concern is that our “overuse and indiscriminate use” of antibiotics in livestock is one of the primary causes of antibiotic resistance in humans.

The statistic most frequently cited is 80 percent of the antibiotics used in the United States go to livestock production. Although that number is skewed to suit a particular agenda and not entirely accurate, it shows up in every discussion regarding antibiotic resistance.

We can argue the science and debate whether the concern with food animal antibiotics is factual or not, but the reality is antibiotic resistance is real and increasing. To be clear, resistance is a natural phenomenon that occurs with the use of antibiotics.

If we treat an animal for a bacterial infection, most of the bacteria are killed. Some may survive and reproduce. Those bacteria that survive are more resistant to that particular antibiotic. And, since the bacteria survived, reproduction occurs naturally and quickly—thus perpetuating a more resistant strain. Remember how effective penicillin used to be to treat many infections? That no longer is the case. Bacteria have built resistance.

Most of us realize that there are

other sources of resistant bacteria not caused by livestock at all. The human medical community has unintentionally caused significant resistance problems as well. When people go to the doctor, they fully expect an antibiotic be prescribed. Most people do not even realize that antibiotics will not work on viral infections. They just expect to be prescribed “something” so they will feel better. Later, if their condition improves, they often never finish their prescription and leave it in the cabinet for years, or flush it away—and add those antibiotics to the water supply. This common practice has become a significant source of antibiotic resistance.

To address the growing issue of antibiotic resistance, the Food and Drug Administration (FDA) issued Guidance for Industry #213 in January 2014 to eliminate the sub-therapeutic feeding of medically important antibiotics to livestock if the antibiotics were labeled specifically to enhance growth or feed efficiency.

FDA Guidance 213 does not preclude feeding those antibiotics under a VFD (veterinary feed directive), where a veterinarian prescribes feeding the product as a preventative to disease. For example, Tylan® can still be fed in feedlots to reduce liver abscess, under the written guidance of a veterinarian. It cannot be fed specifically as a growth promotant.

Almost all major pharmaceutical companies have endorsed this approach, along with several major commodity groups. This is a good compromise, intended to start reducing the amount of antibiotics used in livestock, thus beginning to address antibiotic resistance, but not eliminating the tools used by producers to prevent disease and treat animals.

For some in the medical community and consumer activists,

FDA 213 does not go far enough. For some producers, however, we should not weaken on this issue at all, “because it is a slippery slope.” The rationale is that if we give up subtherapeutic feeding for growth promotion, what’s next? However, for most reasonable people who have studied the science, this is a well thought out approach intended to protect antibiotics so they will be effective when needed to treat both livestock and people.

The issuance of FDA 213, resulted in action in our legislature in California. Two bills have been introduced, Senate Bill (SB) 835, authored by Sen. Jerry Hill (D-San Mateo), and Assembly Bill (AB) 1437, which is authored by Assemblymember Mullin (D-South San Francisco). We could argue whether these are necessary, since federal rules will take precedence over the availability of antibiotics for subtherapeutic feeding.

However, the Senate and Assembly bills are decidedly different. SB 835 basically mimics FDA 213. It moves us in the right direction, and will not have a significant negative impact on the ability of producers to care for livestock. On the other hand, AB 1437 is quite drastic, and would essentially take the tools out of a producer’s hands that are necessary for them to function, particularly in range conditions.

Your CCA staff is working very hard on SB 835 and AB 1437 to make sure the bill’s language reflects FDA rules and will not negatively impact your ability to treat livestock appropriately or are defeated. It looks like this approach has a good chance to succeed.

But what does this mean for the future? This issue will not go away, and as cattlemen, we need to seriously think about how we improve our utilization of antibiotics. For many years, CCA and other organizations have regularly administered quality

assurance certification programs. Many of the issues of appropriate use have been thoroughly discussed—dosage, timing, label use, veterinary/client/relationships, etc. These are all things necessary to do things “right.”

Yet, if we are honest, we have all been guilty at some time of inappropriate use as well. California Cattlemen have passed a code of ethics which clearly emphasizes how important it is to consult with a licensed veterinarian and to use products according to the label. So how closely do all of us follow this established membership policy?

If you find a sick calf in the field and the only thing you find is an expired bottle of LA 200® rolling around in the toolbox, do you use it? Or, perhaps you’ve taken a “shotgun” approach to treating a problem? We have even heard things from producers like, “Not sure what’s wrong...just give them some sulfa boluses and hope it works.” In reality, we believe these practices are the exception, not the norm. But it does happen. And we need to do better if we want these tools to be around for the future.

Most of the major common antibiotics in current use require a veterinary prescription anyway – products like Draxxin® (tulathromycin), Nuflour®

(florencinicol), Resflor® (florencinicol), etc. Larger producers who have a purchasing point and a veterinary/client/patient relationship, generally have standing prescriptions available so they can order antibiotics as needed. Meaning their veterinarian knows and trusts that they use the antibiotic appropriately.

But what about penicillin, tetracycline and sulfas? Those can be purchased at most feed or farm stores over the counter, frequently by part-time producers, who may have not had quality assurance training. These producers could potentially be given advice by a part-time employee with minimal training. The public will not have confidence in a system that works like that long term. It is a gap in our system that we need to carefully consider, before the legislature makes dramatic changes that really limit our ability to utilize these powerful and important tools.

As we visit with producers around the state and nation, the common theme is every one would prefer to prevent disease rather than treat sick animals. It is the right thing from an animal welfare perspective and it is the right thing economically. We need to start paying more attention to appropriate vaccination programs (which the public will endorse), and preserving antibiotics so they are

effective for livestock and for people.

As a beef cattle community, FDA 213 will have comparatively minimal impacts on what we do. The impacts on poultry and swine are potentially more significant. However, California’s cattlemen and women have a long history of looking down the road and anticipating where we need to be. That includes a thorough and thoughtful discussion of how we presently use antibiotics, and how we can improve that practice in the future. Careful, judicious and thoughtful use, with veterinary oversight, is a story the public understands and one that we can support.

ABOUT THE AUTHORS

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CCA PRODUCER CODE OF ETHICS

California cattle producers recognize their livelihood and way of life are dependent upon the wise stewardship of all livestock and natural resources. CCA members pledge to meet the following standards:

- Produce a quality, wholesome, nutritious product.
- Provide a high standard of livestock health.
- Manage livestock in a humane manner.
- Use and maintain transportation and handling facilities that provide livestock health and safety.
- Provide routine observation of livestock for the animals’ health and well-being.
- Provide feed and water to maintain livestock health and productivity.
- Consult with a licensed veterinarian concerning health care practices.
- Use approved livestock health products according to the label directions.
- Sustain and conserve natural resources by proper management of land, air, water and wildlife.
- Support and maintain rural and family traditions important to our society.