

### **Antimicrobial Stewardship and Critically Important Antibiotics**

Without a doubt you will have heard the media and advertising campaigns addressing antimicrobial use in food-producing animals. Many companies are labelling meat as “raised without the use of antibiotics” with a lot of success. Anyone that raises livestock will know that not using antibiotics is almost an impossibility. However, when looking into your antibiotic use, most farms should be able to say that they can do a better job in using antibiotics responsibly and appropriately. This is antimicrobial stewardship. Whether it be selective dry cow therapy on a dairy farm or implementing a pneumonia vaccine programme on a cow/calf operation, there are countless ways we can reduce and improve antibiotic use on farms. And this is what the consumer is demanding.

All of this antimicrobial talk is being driven by in the increase in antimicrobial resistant bacteria. This is bacteria that has acquired resistance genes via exposure to antimicrobials, which now means these antimicrobials are unable to kill the bacteria. These bacteria then go on to multiply and produce countless amounts of antimicrobial resistant offspring. Antimicrobial resistance has led to increased human illness and mortality all over the world. Improper use of antibiotics in both human medicine and veterinary medicine are partly to blame for the increase in antimicrobial resistance. Studies have also found links to antimicrobial use in food-producing animals to antimicrobial resistant bacteria in humans, whether foodborne or via contact with the animals.

Both the Canadian Veterinary Medical Association and the American Association of Bovine Practitioners have released statements and documents about antimicrobial stewardship and the importance of working with your veterinarian to use antimicrobials appropriately and responsibly. This is very achievable and will become more and more important with each passing year.

On top of the importance of antimicrobial stewardship, we must consider the use of critically important antibiotics (CIA). According to the World Health Organization these are antibiotics which are of critical importance in human medicine. CIA overuse or misuse in food-producing animals can lead to antimicrobial resistance of bacteria such as E coli and Salmonella, which are common infections in humans and can be fatal. These antibiotics include fluoroquinolones (ie: danofloxacin, enrofloxacin, marbofloxacin) and 3<sup>rd</sup> and 4<sup>th</sup> generation cephalosporins (ie: ceftiofur, cefquinome). Most farms in Canada will have and currently do use these CIA's, especially on dairy farms where the 3<sup>rd</sup> and 4<sup>th</sup> generation cephalosporins have zero milk hold. However, there are numerous other non-CIAs that can be used as replacement with similar efficacy and decreased cost.

We must all be prepared for a world where CIAs will be banned completely in food-producing animals. Reducing your CIA use now with the intention to stop use altogether can be accomplished with your veterinarian and will put you ahead of the times. In fact, several veterinary practices throughout the UK and even the University of Bristol's veterinary college large animal hospital have stopped using CIAs altogether! Between farmers, veterinarians, and buying groups we can all work together to reduce antimicrobial use with the aim of eliminating CIA use too. This is always a topic we are happy to discuss.