

Antibiotic Residue Avoidance Strategy

1. Identify all animals treated.
2. Record all treatments: Product, date; animal ID; dose given; route of administration; the person who administered the treatment; withdrawal time (WD).
3. Strictly follow label directions for product use.
4. Use antibiotics with an improved efficacy against microorganisms of clinical importance when possible.
 - A. Reduce unwanted depot effect. Select low volume products when available.
 - B. Select generic medications and vaccines with EXTREME CAUTION.
 - C. Avoid inferior products. They may cause performance loss or damage quality.
5. Select with short WD when antibiotic choice is equivalent.
6. Never give more than 10 cc per IM injection site.
7. Never give subsequent SQ or IM doses closer than 4 inches from previous medication doses.
8. Avoid Extra-Label Drug Use (ELDU) of antibiotics.
 - A. Use label dose and route of administration.
9. Avoid using multiple antibiotics at the same time.
10. Don't mix antibiotics in the same syringe, especially if given IM or SQ.
11. Check ALL medication/treatment records before marketing.
 - A. Don't market cattle with less than 60 WD without examining the treatment history.
 - B. Extend the WD time if the route or location of administration is altered.
 - i. Example; the WD for ear route of administration ceftiofur will be over 120 days if given SQ in the neck.
 - ii. Example; tissue irritation will cause the WD for Banamine® to be over 30 days if given IM or SQ instead of IV.
 - C. Extend the WD for all penicillin given at doses which exceed the label dose.
 - i. Example; the WD for Procaine Pen G given at 3 cc per CWT IM or SQ is over 30 days
 - ii. Example; the WD for Procaine Pen G given at 4 cc per CWT IM or SQ is over 30 days
 - iii. Example; the WD for Long Acting Pen G given at 3 cc per CWT IM or SQ is over 120 days
 - iv. Example; the WD for Long Acting Pen G given at 4 cc per CWT IM or SQ is over 180 days
 - a. Testing urine may not detect injection site residues that may test positive by the USDA-FSIS.
 - D. Never inject gentamicin or neomycin. The estimated WD is longer than 24 months.
 - i. Testing urine may not detect a kidney that may test positive by the USDA-FSIS.
 - E. Don't market cattle that have relapsed without examining the treatment history.
 - F. Don't market cattle with suspected liver or kidney damage without examining the treatment history.

BQA: All injections should be given in front of the shoulder slope and if possible avoid products that require IM use

Intramuscular (IM) injections not only increase soreness compared to subcutaneous (SQ) injections, many of the products given IM cause significant muscle damage which subsequently causes a significant amount of expensive carcass trim. Knots or blemishes from SQ injections are much easier to find, examine and remove at the packers. Because of these, the national Beef Quality Assurance program adopted a policy that ALL injections (antibiotics, vaccines, parasiticides, vitamins, prostaglandins, hormones, and all other injectables) be given in front of the slope of the shoulder, that products with SQ labeling be selected in preference to products labeled for IM use only, and that IM injections if required, be limited to not more than 10 cc per injection site. These injection site guidelines have been adopted by all state BQA programs. Almost all of our pharmaceutical and biological product suppliers and government agencies responsible for those product approvals have worked diligently to design and label products to meet the national BQA program injection guidelines. Every antibiotic developed and approved by the FDA-CVM for our use in the last two decades has included use approval other than for IM, including the development of injectables that may be given in the SQ space of the ear and around the head. It is important to remember the safety of the operator, other bystanders, the animal and the food supply must never be jeopardized. Change the injection needle between every 15 animals maximum or if it becomes contaminated, or damaged. **Never, never, never straighten a bent needle and use it again.** Animals that have an un-retrieved injection needle broken off in them CAN NOT be marketed through normal market channels.

A Producer's Guide for Judicious Use of Antimicrobials in Cattle

1. **Prevent Problems:** Emphasize appropriate husbandry and hygiene, routine health examinations, and vaccinations.
2. **Select and Use Antibiotics Carefully:** Consult with your veterinarian on the selection and use of antibiotics. Have a valid reason to use an antibiotic. Therapeutic alternatives should be considered prior to using antimicrobial therapy.
3. **Avoid Using Antibiotics Important In Human Medicine As First Line Therapy:** Avoid using as the first antibiotic those medications that are important to treating strategic human or animal infections.
4. **Use the Laboratory to Help You Select Antibiotics:** Cultures and susceptibility test results should be used to aid in the selection of antimicrobials, whenever possible.
5. **Combination Antibiotic Therapy Is Discouraged Unless There Is Clear Evidence The Specific Practice Is Beneficial:** Select and dose an antibiotic to affect a cure.
6. **Avoid Inappropriate Antibiotic Use:** Confine therapeutic antimicrobial use to proven clinical indications, avoiding inappropriate uses such as for viral infections without bacterial complication.
7. **Treatment Programs Should Reflect Best Use Principles:** Regimens for therapeutic antimicrobial use should be optimized using current pharmacological information and principles.
8. **Treat the Fewest Number of Animals Possible:** Limit antibiotic use to sick or at risk animals.
9. **Treat for the Recommended Time Period:** To minimize the potential for bacteria to become resistant to antimicrobials.
10. **Avoid Environmental Contamination with Antibiotics:** Steps should be taken to minimize antimicrobials reaching the environment through spillage, contaminated ground run off or aerosolization.
11. **Keep Records of Antibiotic Use:** Accurate records of treatment and outcome should be used to evaluate therapeutic regimens and always follow proper withdrawal times.
12. **Follow Label Directions:** Follow label instructions and never use antibiotics other than as labeled without a valid veterinary prescription.
13. **Extra-label Antibiotic Use Must follow FDA Regulations:** Prescriptions, including extra label use of medications must meet the Animal Medicinal Drug Use Clarification Act (AMDUCA) amendments to the Food, Drug, and Cosmetic Act and its regulations. This includes having a valid Veterinary/Client/Patient Relationship (UCPR).
14. **Subtherapeutic Antibiotic Use Is Discouraged:** Antibiotic use should be limited to prevent or control disease.

Withdrawal (WD) Time Considerations-Cattle Animal Health Products

- ✓ All WD times must be figured from the last day of treatment and for the longest WD of the list of products used.
- ✓ Withdrawal times for the products used should be followed as listed on the approved FDA, EPA and USDA labels or as directed by the veterinarian servicing the operation. Off-label use of non-feed additive medications requires a veterinary prescription and the withdrawal time must be extended to ensure no violative residues will be present.
- ✓ Injecting greater than 10 cc per IM site will increase the potential for a violative residue.
- ✓ Generally, the extended withdrawal a veterinarian may assign will be at least an additional 60 days greater than the label withdrawal.
- ✓ Off-label use of medicated feed additives violates federal law and is strictly forbidden.