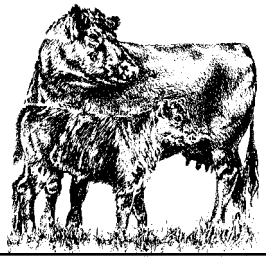
Western Beef Resource Committee

Fourth Edition



Cattle Producer's Handbook

Animal Health Section 617

Recommendations for Producer Disposal of Livestock Antibiotics and Vaccines

James J. England, DVM, Professor and Extension Veterinarian,
Caine Veterinary Teaching Center, University of Idaho, Caldwell
Danielle Gunn, Agricultural Extension Educator, Fort Hall Indian Reservation, Idaho

The growing public concern regarding environmental health and the increased public pressure against the use of antibiotics in animals has created a need to dispose of animal pharmaceutical products safely and in an environmentally friendly manner. Proper disposal of all animal pharmaceutical products, including containers in which they are stored, at the farm and ranch level is as important as proper antibiotic use in the animal.

Unused and/or expired animal products that are disposed of incorrectly (i.e., dumped in sinks or drains or flushed down the toilet) can enter the environment and have an adverse environmental impact. Environmental contamination, particularly of lakes, rivers, streams, and groundwater with hazardous or potentially hazardous biological wastes is among public environmental concerns.

Once pharmaceutical products enter water sources, they cannot simply be removed by water treatment facilities. Therefore, veterinarians and livestock industry representatives should be at the forefront of educating livestock producers about the proper disposal of animal pharmaceutical products, including containers and vials in which products are stored, needles, and syringes.

Antibiotics and vaccines are important and necessary for maintaining animal health and are used judiciously by veterinarians and livestock producers. Consequently, questions arise as to the proper disposal of these products and the associated syringes, needles, empty vials and bottles, and outdated products that are no longer efficacious for animal treatment. As of 2014, few regulations exist regarding the disposal of these pharmaceutical products. The Department of Environmental Quality and Western State Departments of Agriculture do not have regulations that are specific to the disposal of veterinary medical or bio-hazardous animal pharmaceutical product waste. However, some general guidelines should be followed to ensure animal health products do not enter or have an adverse impact on the environment.

Animal vaccines containing live attenuated virus may be disposed of in most municipal solid waste landfills without being autoclaved or otherwise treated to inactivate the virus. Reconstituted live virus vaccines are unstable immediately and begin to inactivate at unrefrigerated temperatures and will become inactive within a few hours. However, some local landfills may have special treatment requirements and policies for discarded modified live (MLV) and attenuated animal vaccines. MLV vaccines can be inactivated by filling the vial with diluted bleach, however, this process may make the vaccine acceptable for disposal to landfills with specific requirements.

Many county landfills accept veterinary waste as non-hazardous provided the material is adequately packaged. DO NOT USE ORANGE BIOHAZARD BAGS—use "plain brown wrappers" or black construction strength plastic bags to wrap these products in before disposal to avoid any possible confusion with human bio-waste materials at the landfill.

Animal vaccines, both modified live and killed/inactivated, can also be disposed of via trash or incineration. Many killed or inactivated veterinary vaccines that contain thimersol, an ingredient containing mercury, are best disposed of via incineration or disgarded in a lined landfill. As an endpoint user, producers or veterinary practices using thimersol-containing vaccines are not considered "thimersol generators" and are not subject to thimersol reporting and waste management regulations.

Outdated or unused antibiotics and vaccines should be placed into a rigid plastic container with cat litter, coffee grounds or compost, sealed and placed into a trash receptacle (Fig. 1). DO NOT pour any animal health products into sewer or septic systems, down sink drains, or flush down toilets. Empty antibiotic bottles should also be disposed in trash containers or incinerated.

Fig. 1. Place products in plastic coffee container with cat litter before filling with more cat litter.

Fig. 2. Bleach bottle and commercial sharps containers.

Needles should be placed into an appropriate "sharps container" and placed into the trash. A rigid plastic gallon jug, such as a bleach bottle, with a small neck and screw on type lid are appropriate containers to use as sharps receptacles (Fig. 2). Plastic milk bottles are not recommended for use as they are too soft to be safe to be used as sharps receptacles. Most landfills will accept veterinary sharps containers when placed inside a plain box or dark heavy plastic bag. Used syringes should be disassembled and the tip removed (Fig. 3) before disposal; incineration is the optimal disposal method to eliminate any possible misuse of these materials.

To further improve judicious use and disposal of animal pharmaceutical products, only purchase the amount of product you can reasonably use by the expiration date. This practice will help resolve the problem of extra, expired product sitting in your refrigerator and getting disposed of improperly. Always use antibiotics for the entire prescribed time period. This practice ensures harmful bacteria are completely eliminated from the body and helps reduce the likelihood any product will remain after the prescribed treatment period.

Fig. 3. Disabled syringe.

It is highly recommended that you contact your state veterinarian's office, state department of agriculture, or landfill manager to find out possible requirements for accepting animal pharmaceutical products. In addition to using landfills for product disposal, some communities host take-back events, or household hazardous waste collection facilities may also accept unused and expired animal vaccine. Remember, proper disposal of animal health products is critical to the health of our environment and the livestock industry.

For Further Reading

Idaho Department of Environmental Quality: http://www.deq.idaho.gov/pollution-prevention/p2-for-citizens/safe-pharmaceuticals-disposal.aspx&

Food and Drug Administration: http://www.fda.gov/ICECI/ComplianceManuals/CompliancePolicyGuidanceManual/

American Veterinary Medical Association. http://www.avma.org/issuespolicy/jtua_cattle.asp

Assessment of Potential Antibiotic Contaminants in Water and Preliminary Occurrence Analysis. Ching-Hua Huang, et al. Accessed 2012: http://opensiuc.lib.siu.edu/cgi/viewcontent.cgi?article=1155&context=jcwre

Fourth edition; December 2016 Reprint