# Proper Cattle Health Product Handling and Administration

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***Pharmaceutical and biological companies carefully research and develop products for the cattle industry. Many quality control steps are incorporated into manufacturing processes to ensure that products sold to cattle producers and veterinarians will work as intended. However, after the product is sold, companies lose control of how the product is cared for and used. The purchaser is responsible for handling and administering the product in a way to maximize potential benefits.***

This publication contains some suggestions that may help products work to their full potential.

### *All Products*

Read the label and package insert. The instructions for handling and administration should be there.

If products require refrigeration, make certain they are refrigerated when you purchase them, keep them refrigerated before use, and keep them refrigerated while chuteside. Ice packs or a frozen gallon jug of water inside an ice chest work well to keep products cool.

Be careful – you can get too much of a good thing. Some products that require refrigeration may be damaged if allowed to freeze.

If products are designed to be stored at room temperature, or within a specified temperature range, it is important to follow the manufacturer's temperature guidelines. These products may be inactivated if allowed to get too cold or too hot.

You cannot always see physical changes that indicate that a product has been damaged by excessive cold or heat, so you have to know how it was cared for before use to ensure that it will work as intended.

Mark all syringes so that you know which product they contain while chuteside. A piece of masking tape or a piece of colored tape (different color for each product) with the name of the product written on the tape with a permanent marker is ideal.

Do not pour injectable products from original packaging into a larger container. The injectable product was sterile when manufactured, but when changing containers there is a high probability of contaminating the whole container.

Never re-enter a bottle with a used needle. The likelihood of contaminating the rest of the bottle of product is high. Put a new needle on the syringe each time you have to re-enter the bottle.

To avoid having to re-enter a bottle, use a draw-off assembly and automatic refill syringe.

Change to clean equipment any time existing equipment gets dirty enough that it creates a risk for injection site contamination.

Clean and disinfect syringes and equipment at the end of each day's use.

### *Pharmaceuticals*

If products are in a brown bottle, the contents inside can be inactivated by sunlight. Keep them out of direct sunlight.

The injectable avermectins (Ivomec®, Dectomax®) are susceptible to inactivation by sunlight. The cardboard carton containing the plastic bottle of Ivomec® will protect the bottle from sunlight, but the product is susceptible to inactivation once the plastic bottle is outside the carton. Don't leave the plastic bottle exposed to light all day while processing cattle.

Dectomax® comes in a brown bottle, so it is less likely to be damaged by sunlight. However, once you load either product into a syringe, the sunlight can affect it while in the syringe. Keep the loaded syringe out of the sunlight.

Be certain that syringes or equipment used to administer injectable Dectomax® are thoroughly dry before use. More importantly, be sure not to inject any water back into the product bottle. Water will cause the product to precipitate out (you will see little crystals) and render it useless.

Before treating with any of the white drench dewormers (Safeguard, Synanthic, Valbazen), cattle should be held off feed at least 12 hours. The presence of feed in the rumen will reduce the effectiveness of these dewormers.

Even when using injectable antibiotics, cleanliness is essential. The antibiotic in the bottle will not necessarily kill contaminants injected into it.

Do not mix different antibiotics in the same syringe or bottle – some cause an obvious physical reaction, some cause an unseen chemical reaction, and some antibiotics work by conflicting modes of action, which may neutralize the activity of each other.

### *Vaccines*

All modified live viral (MLV) vaccines are susceptible to inactivation by sunlight. When using them, keep the bottles in the cooler out of the sunlight. Also, keep syringes out of the sunlight. Sunlight will kill the vaccine in the syringe if left exposed for more than a few minutes. A cardboard box with the open side facing away from the sun will help shade the syringe.

Modified live bacterial vaccines should be handled in the same manner as MLV vaccines.

Do not reconstitute (prepare) more MLV vaccine than you will use in an hour. As soon as this type of vaccine is reconstituted, the viral particles come to life, then gradually start to die. If you take too long to use the product after reconstitution, enough viral particles may die to make the vaccine ineffective.

Keep the reconstituted product cool.

Do not combine different vaccines in the same syringe unless they are manufactured to be mixed together – i.e., do not mix Lepto-5 from one manufacturer with MLV IBR-BVD from another manufacturer, even though each manufacturer may sell a combination product containing both MLV IBR-BRD and Lepto-5. Unless the components are specifically made to be mixed together by the manufacturer, one portion of your mix may inactivate the other portion.

Keep vaccines thoroughly mixed until the bottle is completely empty. This is especially critical with any non-clear vaccines (such as blackleg). Suspended particles will settle over time.

Do not beat vaccine bottles to get the contents into suspension. Swirl them gently to keep from damaging cellular particles and/or releasing endotoxins.

Use disinfectant-soaked sponges in a plastic paint tray to disinfect needles between animals. Stick the needle into the sponge to physically clean the needle. Change the sponge when it becomes visibly soiled.

DO NOT use disinfectants with MLV vaccines. The disinfectant will kill the vaccine. Wash out the syringe and other equipment used with MLV vaccines with sterile water only. Change needles at least every 10 head.

It is safe to use disinfectants with killed vaccines (blackleg, killed IBR-BVD, etc.), antibiotics and other pharmaceuticals.

### *Implants*

Some implants must be stored under refrigeration. They also should be kept cool chuteside prior to use.

Make sure the ear is clean before implanting. Clean it with disinfectant and dry with paper towel if necessary.

Ear tag before implanting to avoid knocking out the implant with the ear tag.

Use a disinfectant-soaked sponge and plastic paint tray with implant guns. Wipe both sides of the needle on the top of the sponge to physically clean the needle and apply a light coating of disinfectant. Flip sponge over when top side gets dirty. Replace disinfectant and switch to a clean sponge when second side gets dirty.

Insert the implant needle at a point that will allow you to deposit the implant in the middle one-third of the ear. Avoid existing implants, ear tags and tag holes.

Feel the implant to make sure you did not fire a blank.

### *All Products*

Use Beef Quality Assurance techniques and guidelines suggested by the National Cattlemen's Beef Association.

DO NOT inject products into top butt or leg. Inject all products in the neck.

Use subcutaneous (SC) route of administration unless intramuscular (IM) route is specified. Select a clean area, or clean the area before injection.

Use the proper needle diameter. For water-consistency products, use an 18- or 16-gauge needle. Make sure you have adequate animal restraint to prevent needle breakage if you plan to use 18-gauge needles. For thicker products use a 16-gauge needle. Never use a 14-gauge needle except for intravenous (IV) injections.

Use either ¾- or 1-inch-long needles for subcutaneous (SC) injections.

Use 1½-inch-long needles for intramuscular (IM) injections in larger cattle. It may be necessary to restrict needle length to 1 inch in smaller calves to avoid hitting the bones in the neck or the major ligament running directly above the spine.

Follow label instructions or veterinarian's recommendations for proper dose of product.

Follow label instructions regarding maximum volume per injection site. Most products are limited to 10 to 15 milliliters per injection site. Exceeding the recommended volume per injection site may result in serious injection-site blemishes and increase the withdrawal time beyond that listed on the label.

Space injection sites at least 4 inches apart. This is a normal hand's width.

Place injections side-by-side (horizontally) instead of one-over-another (vertically). This is especially critical with subcutaneous injections where the materials may gravitate and run together under the skin.

Be sure to observe preharvest withdrawal times.

### *Summary*

Knowing and observing product handling guidelines can help ensure that animal health products work properly.

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