At the Chute: The

Little mistakes made around the chute can lead to big problems down the road.

by
SHARLA ISHMAEL

One small mistake made with a medicine bottle or a syringe can mean the difference between money well-spent on a vaccination program or a bunch of calves running around that are susceptible to health problems (without your realizing it) because all they received at the chute was a shot of inactive vaccine.

Unless you've been living under a rock for the last 20 years, you've probably heard somebody talk about the importance of keeping your medicine cool or using clean needles, etc. However, it might not hurt to ask yourself some questions before you start working cattle. For instance:

- Is everybody on your work crew today familiar with all the necessary precautions about handling and administering medicines and vaccines?
- Have you switched to using more modified-live virus (MLV) or chemically altered (CA) vaccines?
- And do you — and each of the crew — understand the right way to draw the diluent out into the glass vial of freeze-dried material using a transfer needle?
- Are there any small details or bad habits that you could have forgotten about?

Apparently, there are plenty of feedyard managers out there who think too many cow-calf producers could use a refresher course. Some yards have reportedly stopped buying calves out of preconditioned sales because they've seen too many problems with calves that weren't adequately vaccinated as advertised.

That doesn't mean they didn't get their shots, mind you. It may simply be due to mismanagement of the vaccines that rendered them ineffective or mismanagement of the cattle that prevented them from mounting an immune response to the vaccine. Plus, the thought of all those dollars spent on animal health products going down the drain just because they were mishandled is spooky enough to make a person think twice.

Talk to your vet

Ron Gill, extension livestock specialist for Texas AgriLife Extension and associate department head, has been doing a very popular demonstration for cattle producers called Chuteside Manners for about 18 years. He says it came about in response to Texas A&M's Ranch to Rail program in the early 1990s, when they saw many producers weren't getting the response they should have with their vaccination programs.

PHOTOS BY CORINNE PATTERSON

Even the smallest of details at the chute can give you a devil of a time if not done right.

"We were just getting the VAC-45 (Value-Added Calf vaccination program) guidelines in place and we realized that producers weren't handling their vaccines correctly," Gill explains. "I realized there were some things (actually many) I was doing wrong myself, so I decided to share it with producers. Most cow-calf producers had not used a lot of modified-live products and didn't understand the negative consequences of light and heat on their vaccines or [of] using disinfectants on the needles and syringes.

"I think it's still popular after all these years because there are some people who haven't gotten started using these kinds of vaccines until recently, and it's easy to backslide. Plus, there is always a need for continuing training and new employees that need to learn," he adds.

The very first step Gill recommends is to make an appointment with your vet to go over all the different ages and classes of cattle you are managing and match their needs to an appropriate vaccination schedule. Make yourself a calendar and a list of products that you and the veterinarian have decided to be the most appropriate for your operation. Be sure to include dates for booster shots when necessary. Giving the wrong vaccines or giving the right vaccines at the wrong time is another easy way to waste money.

"You might even want the vet to help you work out a group processing/treatment map," Gill advises. An example of the records he's referring to can be found in the Texas Beef Quality Producers's Handbook at *www.texasbeefquality.com*.

Of course, you probably know to keep your bottles out of sunlight and in a cooler as soon as you buy them, but did you know that you can accidentally freeze the vaccines, which causes more harm than not being cool enough?

"You can put too many ice packs in your cooler," Gill explains. "You also don't want direct contact between the bottles and the ice packs. Put a sack or newspaper between the two."

The fridge factor

Incidentally, you might want to check the refrigerator that you keep your medicines in. Research by multiple universities has shown that most on-farm fridges don't maintain the appropriate temperature range over time. A thermometer that records the highest and lowest temperature during a 24-hour period to keep in that unit would be a wise investment, as well as moving it to a temperature-controlled room.

The same rules that apply to your household fridge apply to the barn unit: Don't put vaccines in the door shelves or they may get too warm; don't put them in the back of the fridge or they may freeze. And clean it out regularly, discarding expired vaccines. Remember that killed-virus (K) products should be disposed of by 10 days after being opened; MLV products should be disposed of one hour after mixing.

Gill recommends buying smaller bottles, especially if you don't have big numbers of cattle, even if the bigger bottle is less expensive per dose. What's left over might — or at least should — get thrown out anyway.

As working day draws close, organize your supplies to make sure you've got the vaccines and other medicines you need, and enough of the right sizes of needles and appropriate syringes for particular medicines. Send somebody to walk through the chute and alleys to make sure there are no sharps nails or sharp edges sticking out that could hurt the animals or the workers, and be sure that your headgate works and that you'll have easy access to the neck

Devil is in the Details

when working.

Nothing is worse than having to stop for 30 minutes to undo a wreck that could have easily been avoided. These breakdowns could render MLV products useless if they are mixed prior to the breakdown.

Speaking of help, make sure you have enough help lined up to get the job done early — before it gets hot and without having to rush.

"I really recommend that producers put labels on their syringes," Gill says. "It's so easy to grab the wrong one, and you could accidentally mix vaccines when refilling, which could render one or both vaccines ineffective. It is also just as easy to grab the wrong vaccine out of the cooler if you're not paying attention. Match the syringe and vaccine every time you fill a syringe. Mixing products during processing occurs more often than anyone would like to admit."

Giving the wrong vaccines or giving the right vaccines at the wrong time is another easy way to waste money.

In terms of choosing syringes, Gill points out there are advantages and disadvantages of each kind.

"Multiple-dose syringes or sterile disposable syringes are appropriate for administering sensitive vaccines, but remember that multiple-dose syringes need to be completely disassembled after each working, and all the components boiled in water to sterilize," he explains. "Many continuous-feed syringes cannot be cleaned effectively because they can't be disassembled and boiled.

"However, they can have boiling water drawn through them to get them

(Continued on page 22)

Ron Gill, extension livestock specialist for Texas AgriLife Extension and associate department head, recommends taking two coolers to the working pens: one working cooler to store syringes and working bottles; the other to store unmixed MLV vaccines and extra K product until you need them. It minimizes exposure to light and temperature changes.

At the Chute: The Devil is in the Details *(from page 21)*

clean," Gill adds. "It's not as good as cleaning disassembled syringe components though, and it often damages the syringe. Another method that has been developed is microwaving these syringes for a short period of time to sterilize them. Even if a continuous-feed syringe can be disassembled and adequately disinfected, there are other potential problems with this delivery mechanism.

"With continuous-feed syringes, it's very difficult to keep the bottle, hose and syringe protected from UV light unless your facilities are covered, and it's really difficult to keep the whole thing cool while working. A better use of this syringe is for administering dewormers or antibiotics, products that aren't as sensitive as vaccines.

"Sterilized disposable syringes ensure a sterile delivery instrument, and are very accurate for a single dose. But when used for multiple-dose delivery they can be very inaccurate," he says. "If the tip of a plastic syringe breaks, throw away both the syringe and the product left in it. You can't transfer exposed vaccine into another syringe without contaminating it."

Other tips include some do's and don'ts.

Don't do this

- Do *not* use alcohol, soap, Betadine®, Nolvasan®, Clorox® or other chemicals to disinfect syringes or needles. Any residue will kill MLV vaccines and damage K vaccines. *Only* use boiling water.
- Do *not* lubricate syringes with petroleum-based products, including silicone, mineral oil, Vaseline®, etc. They kill MLV and CA products and alter the quality of K products. The first draw of the syringe will lubricate it. If the plungers and washers are too difficult to move, replace the syringe, or at least the O-rings and washers.
- Do *not* leave syringes on top of working tables, barrels or tailgates, even for a short time. Sunlight heats up syringes dramatically and exposes vaccine to UV light. If any delay occurs during processing, put the syringe back in the cooler immediately.
- Never draw from a bottle with a needle that has entered an animal. It contaminates the rest of the bottle.
- Do *not* continue to use a needle with a burr. It causes more muscle trauma. Change needles.
- Do *not* leave a draw needle in a bottle. It will allow contaminates to enter the bottle each time the syringe is removed after filling. A new needle should be used each time the syringe is filled.
- Do *not* shake bottles too hard or too long. With both K and MLV vaccines, you can actually rupture the cells and release endotoxins, which can render the vaccine ineffective and/or cause shock.
- Do *not* throw used needles on the ground. Use a sharps container. You can make one from something like a liquid detergent bottle or you can

One of the more common problems that Gill sees among cow-calf producers is not mixing MLV products correctly. "Be sure to put your sterile transfer needle into the stopper of the plastic bottle first," he explains. "Then, invert

get a sharps container from your vet and dispose of the sharps container properly so no animal or human can get hurt.
- Do *not* give injections outside the recommended intramuscular (IM) or subcutaneous (sub-Q) route.

Do this

- *Always* use a sterile transfer needle, every time.
- Check gauged syringes *often* to make sure the dosage setting hasn't been dislodged.
- Take *two* coolers to the working pens: one working cooler to store syringes and working bottles; the other to store unmixed MLV vaccines and extra K product until you need them. It minimizes exposure to light and temperature changes.
- *Read* and *follow* label directions to make sure you're giving the proper dosage. Many products have changed their dose rate or approved route of administration in the recent past. Some products may be 2 cc when administered alone, but 5 cc when other products are included in the dose, as an example.
- *Weigh* cattle if at all possible when giving antibiotics to get the dosage correct. If you overdose an animal there are potential residue problems; if you underdose an animal, they may not respond as expected.

Finally, one of the more common problems that Gill sees among cow-calf producers is not mixing MLV products correctly. "Be sure to put your sterile transfer needle into the stopper of the plastic bottle first," he explains. "Then, invert the needle and diluent as the other end of the transfer needle is placed in the stopper of the glass vial containing the freeze-dried MLV fraction.

"The glass vial has a vacuum draw on it that will be lost if the transfer needle is inserted into the glass vial first. Once the vacuum is lost, the diluent will have to be physically drawn and forced into the vial. Not only is this time-consuming, but it also exposes the contents of the glass vial to contaminants," he says.

"Another problem is when the product doesn't completely draw out of the diluent bottle," Gills says. "You can avoid that problem if you pinch the sides so the bottle collapses. That's also a problem with K vaccines — you want to collapse the sides while drawing the vaccine so the vacuum in the bottle does not draw air through the stopper and contaminate the remaining product. You also want to avoid drawing air into the syringe and pushing air into the vaccine bottle. This is a common practice, which contaminates the vaccine remaining in the bottle and the syringe you are using.

"Lastly, once you rehydrate the MLV product, gently swirl the contents to mix, don't shake it. Otherwise, it might form air bubbles and some of the contents won't mix in."

Even the smallest of details at the chute can give you a devil of a time if not done right.

PHOTO BY MICKY WILSON

the needle and diluent as the other end of the transfer needle is placed in the stopper of the glass vial containing the freeze-dried MLV fraction."