

Mention beef quality assurance (BQA) to most producers, and they automatically quote the rule to always give injections subcutaneously (sub-Q), or under the skin, and in front of the shoulder. That way, ugly injection site blemishes are less likely to show up in high-value cuts and on consumers' plates.

That rule is even more important now that increased supplies of beef are hitting the supermarkets as case-ready.

"Injection site lesions look worse in modified atmosphere packaging. They show up as big green spots," says University of Florida animal scientist Todd Thrift.

Still, that's only part of the BQA story. How those vaccines and syringes, not to mention the cattle, are handled plays a tremendous role in the animal's ability to stay healthy.

The cattle

No. 1: Make sure you've got a healthy animal before you vaccinate.

"Stress from shipping, weaning, castrating or dehorning; nutrition; and the presence of internal and external parasites all impact how effective a vaccine is going to be," says University of Georgia veterinarian Mel Pence.

He recommends castrating and dehorning (if needed) at birth, or at least in the first week of life. Then the calf will be over those stresses well before being vaccinated.

Timing is also a major factor. Pence says the calf is still under the protection of colostrum, or maternal immunity, until it is around 4 months old. "It blocks the ability of the animal to respond to vaccines," he explains. "Wait to vaccinate until the calf is 4 to 6 months old."

Vaccination day is not the time to show up short-handed or short-tempered. "Get plenty of help," Thrift says. "That is one



► Todd Thrift keeps vaccines and syringes cool with two coolers.

especially modified-live virus (MLV) vaccines," Thrift emphasizes. "I don't like to use any disinfectant on needles or syringes that I am going to use for vaccinations."

As for the animal's neck, find a clean place to make the injection instead of cleaning his hide with disinfectant.

Cleaning your syringes

So, how do you get those syringes and needles clean? Pence recommends cleaning the outside of metal syringes with soap, water and a brush. Rinse the inside and the components with boiling water.

Reassemble the syringe and store in the freezer in a new Ziploc® bag.

Before using it again, rinse the inside with water that is almost boiling and let it cool for five minutes before using MLV vaccines.

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Pence says plastic

syringes can be

sterilized in the

microwave. Wash

them in plain water,

leave them wet (for

automatic syringes,

fill the tube and

syringe with water),

wrap in wet paper

towels, and put the

syringe and towels in

an open Ziploc® bag in the microwave.

The heating time depends on the size and number of syringes. For one 60-cc or three 10-cc syringes, one minute should do it. For 15 60-cc or 30 10-cc syringes, microwave for 10 minutes. Five minutes should sterilize a 5-cc automatic syringe.

"If you are microwaving for over three minutes, don't let the paper towels dry out," Pence warns. "They can catch on fire."

If any water is still in the syringes after the microwave treatment, squirt it out. Pence also says to let syringes cool for 5-10 minutes before using them.

To store, microwave again and place them in a new Ziploc® bag in the freezer.

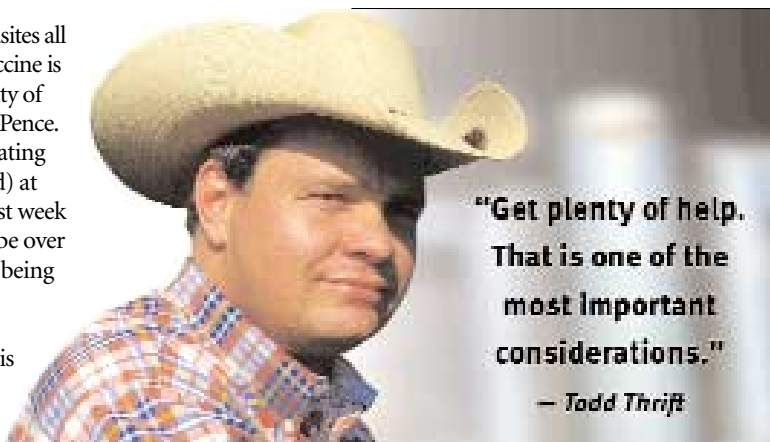
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Beef Quality Assurance:

The Rest of the Story

How vaccines, syringes and cattle are handled plays a role in the animal's ability to stay healthy.

Story & photos by **Becky Mills**



"Get plenty of help. That is one of the most important considerations."

— Todd Thrift

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If it can't be helped and you do have to castrate or dehorn when you vaccinate, or if implanting is on the chore list, Thrift says to mix up disinfectant before the calves ever get to the working corral. Then, put the instruments in to soak. "It takes 30 minutes of

contact time to work," he notes. "Anything you can do to keep an animal from establishing an infection is a positive."

This does not mean to douse your needles, syringes or the calf's neck in disinfectant (which includes bleach and rubbing alcohol). "Disinfectants are horrendous to vaccines,

Needles

Needles are another major component in the BQA effort.

Thrift says if you are only going to use one size, stick with a 16-gauge, 1-inch (in.) needle. However, he adds, "A ¾- or ½-inch is better for sub-Q injections."

He also prefers needles with a B bevel. "There is less chance of picking up muscle on a sub-Q vaccination."

He adds, "A 1½-inch needle might be okay for fat cows or bulls, but if you use it on a calf, it is going to come out the other side of its neck."

"Do not use a 20-gauge needle," he emphasizes. "It bends too easily and will break off in the animal."

If the worst happens, and a needle does break off, get your veterinarian to surgically remove it. If that isn't an option and it happens in a cow, Thrift says, "Mark her and let her live out the rest of her productive life on your

farm. Although it doesn't happen very often, it is a serious issue if a consumer encounters a broken needle in the end product."

He adds, "If you burr a needle, throw it away. If you bend a needle, throw it away."

The Florida animal scientist continues, "Change the needle every 10 to 12 head, or at the most every 15 head. Change the needle before you go back in the vaccine bottle."

He also says, "Dispose of needles in approved containers. If you don't have one, put them in a milk jug until it is full, then pour liquid concrete in the jug before you throw it away."

He advises using a syringe close in size to the dose you're giving, to improve dose accuracy.

Handling vaccines

When it comes to vaccine handling, the key words are clean and fresh, especially with MLV vaccines. "They are more fragile

than killed vaccines and absolutely must be refrigerated," Pence says.

To keep vaccines cool, Thrift uses two coolers when he is working cattle. One keeps the unopened vaccine on ice. The other keeps the bottle or bottles he is currently using insulated and out of the direct sun. He borrowed an idea from Texas A&M animal scientist Ron Gill and cut holes in the side of the second cooler to stick his syringes in when he isn't using them. Then they stay clean and cool, too.

He also uses the foam covers for canned soft drinks to slip over bottles of vaccine. If he is using a continuous-feed syringe, he insulates the tube with foam.

Also, when it comes to MLV vaccines, don't try to save minutes by mixing up big batches at one time. "They lose potency in a short time after they are mixed," Pence warns. "Don't mix up more than you can use in an hour."

The ultra-fragile MLV vaccines can be inactivated if they come in contact with killed

vaccines, particularly pasteurella. Antibiotics wreak havoc with them, too.

Thrift says, "If the vaccine manufacturers had meant for them to be mixed, they would have put them in the same bottle."

To avoid cross contamination, he color-codes his syringes according to which vaccine he is using.

Pence comments, "We spend millions of dollars a year on vaccines. If they aren't handled properly, we're wasting our money."

Write down where and when you vaccinated and the animal's number. "This is the most important thing," Thrift stresses. "Fill out a processing map."

He also says to pay attention to withdrawal times on medications. "This is not as big an issue with calves, but it is a huge issue with cows."

Pence agrees, "The ultimate goal is to protect our customers."

