

Set Your Sites on Safe Injections

by Lisa Hawkins

Seedstock producer Pete has been administering 7-way clostridial vaccines intramuscularly (IM) for years. Pete herds them into an old, rusted chute and proceeds to inject them on the rump, using the same needle until it wears out.

Meanwhile feedlot manager Max is at the processing barn giving numerous injections to each of the newly arrived calves. Max likes to administer these IM injections in the loin region on the calf's left side.

What do these two cattlemen have in common? They are potential accomplices to carcass blemishes from improper injection techniques.

Ways of reducing or eliminating the incidence of carcass blemishes from IM injections of certain animal health products are being pursued by the National Cattlemen's Association's (NCA) Beef Safety Assurance Task Force.

It all began in July, 1989 when NCA followed up on retailer and meat cutter concerns about the increased incidence rate of injection site lesions showing up in the high-priced primal cuts, such as top butts and rounds.

This concern prompted NCA in conjunction with Monfort and the University of Arizona, to conduct an injection-site tissue damage study. This research, funded by the Beef Promotion and Research Board, identified IM injections as a cause of tissue irritations.

"Injection-site tissue blemishes are being effectively managed at the packer and retail level and are not getting into the meat case," says Gary Cowman, NCA's associate director of science and technology. "However, the trimming required to remove the tissue scars

represents a significant economic loss to the industry and has the potential of being misperceived by the media and consumers as a food-safety issue."

In the short-term, NCA recommends cattlemen administer all clostridial bacterins subcutaneously in the neck region; avoid repeat or multiple injections of clostridial bacterins, especially late in the feeding period, and avoid IM injections of all injectable products whenever other "labeled" routes of administration are available.

NCA recommends giving subcutaneous injections using the "tenting technique." This method consists of picking the skin up, sliding the needle under skin, releasing skin and then injecting the fluid. The technique minimizes potential tissue damage.

There are certain situations in which the "tenting technique" should not be performed, says Bill Bennet, senior veterinarian of Livestock Technician Service for SmithKline Beecham Animal Health. Bennet says the "tenting technique" works well with proper restraint and calm livestock. However if there is human safety risk involved, Bennet recommends using the free handed grip.

With the free hand technique there is a greater risk of tissue damage because the muscle is usually nicked by the needle, says Bennet but there is less operator risk involved and the damage is minimal.

When deciding on the maximum volume of product that can be injected into one site, a good rule of thumb to follow is to not exceed 10 cc (ml) at any IM site and 20 cc (ml) at any subcutaneous site.

"Carcass damage can and does occur when pharmaceuticals (drugs) and

biologicals (vaccines) are given without close attention to detail," says Louis Perino, DVM, beef cattle veterinarian at the Great Plains Veterinary Educational Center.

Perino believes the costs of the tissue damage problems are deferred to the producer and reflected in the livestock bids. "The responsibility for the solution falls squarely on the shoulders of all those involved in the maintenance of the health and well-being of our livestock, from cow-calf to feedlot," says Perino.

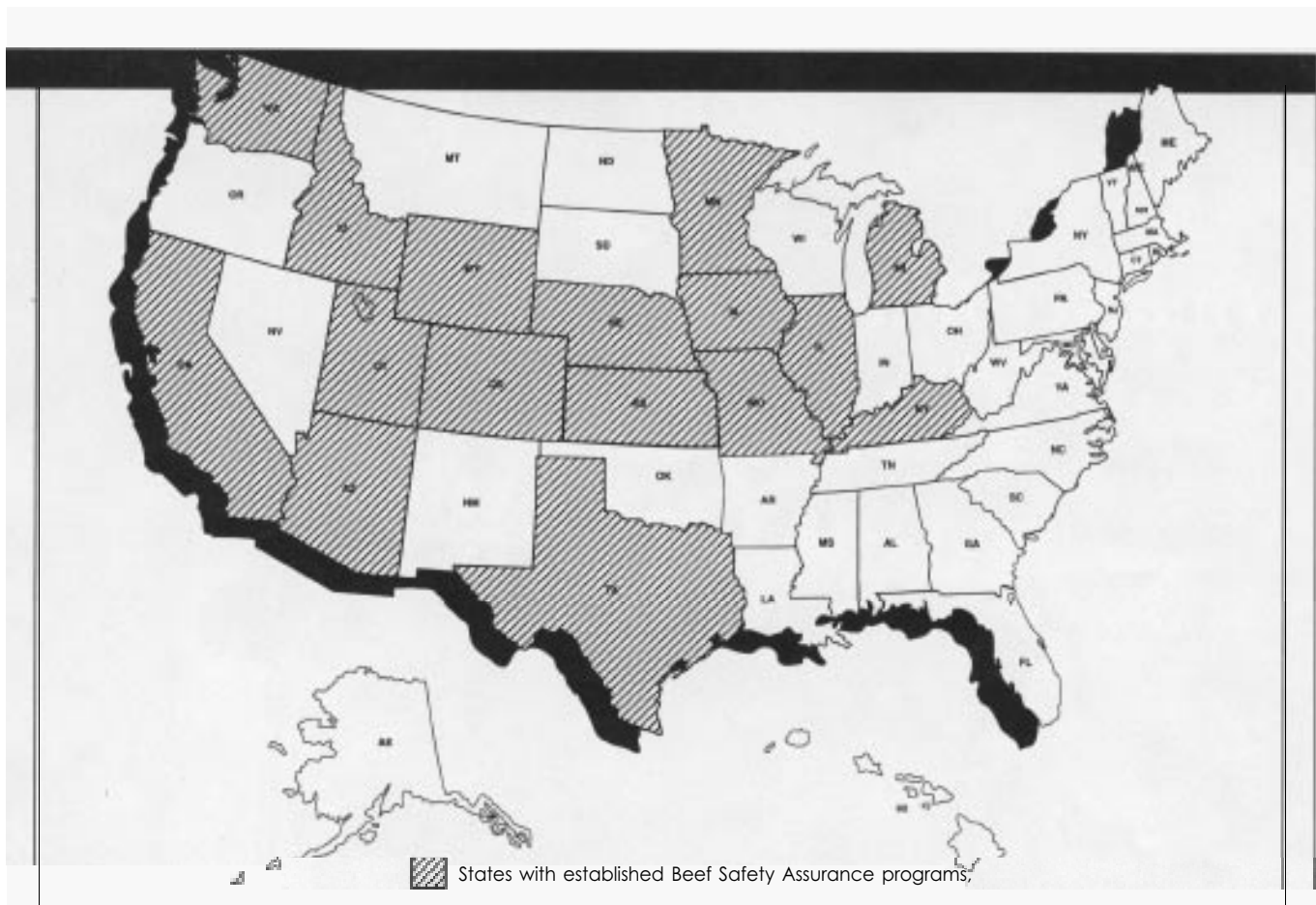
He suggests the two key elements of proper injection administration are careful technique and cleanliness.

Good technique begins with proper restraint and handling of the animal. The headgate, chute and alleys need to be kept in working order and should be adjusted for cattle size. Careful handling of the animal will result in reduced levels of stress for the calf as well as the handler.

When giving injections it is important to refer to the label directions for the optimal route and site for the injection of the animal health product. Injectable products are given one of three ways: subcutaneously, intramuscularly or intravenously. Perino says intravenous administration of products does reduce carcass damage but should not be attempted without proper training.

If given a choice, Perino recommends using the subcutaneous injections since when administered properly they should not cause tissue damage. "We are in the business to make edible tissue and by going under the skin we can avoid tissue damage," says Perino.

If IM injections must be used Perino recommends administering them in the



neck (chuck) or back leg (below pins in gooseneck round) region. NCA agrees with Perino and recommends injecting in the areas of the lower-priced cuts such as the neck area.

"In general, injections of irritating substances, such as oil-based products, some antibiotics and some vaccines, should be limited to areas of lower carcass value," says Perino.

Perino recommends having an organized plan such as "injection site mapping." With "injection site mapping" the producer records the product name and serial number; how and where the injection was administered; and the date it was given. Then if the packer notices carcass blemishes it can be easily traced. "Injection site mapping" ensures proper recordkeeping that will make agents causing tissue damage easily identifiable.

"I always tell producers to remember cattle have two sides," says Perino. He says producers tend to give injections on the side of the chute where the controls are. Using both sides of the calf to avoid multiple injections in one site reduces the risk of tissue damage.

A clean sharp needle should always be used. Perino recommends replacing

needles every 10 injections, or whenever they become contaminated, dull, bent or barbed.

"Dull, bent or barbed needles create more tissue trauma and increase injection site leaking, a problem especially with low volume health products," says Perino.

In respect to needle size, producers should use a 16 gauge or smaller needle for routine injections. Perino says as a general rule the smallest needle through which the product is easily delivered should be used.

"Intramuscular injections should be given with a 1 1/2 inch-needle, except in the case of small calves where a 1-inch needle should be used," says Perino. "Subcutaneous injections should be made using a needle less than 1 inch in length."

Another critical factor in reducing carcass blemishes is environmental sanitation. It is very important to have a clean work surface on which to place the syringes and needles. The area should be cleaned prior to working and throughout the day as needed.

In order to reduce contamination and increase syringe longevity, the syringes should be cleaned between uses. Perino says when working at the chute, the

rinsing of syringes and needles in open containers of disinfectant should be avoided.

These containers are easily contaminated and the disinfectant may be irritating to the tissue," says Perino. If rinsing is necessary, a sterile bottle of water or saline should be used.

All of these concepts relate to good management practices. The NCA task force believes that by simply relocating injection sites, 90 percent of the lesions can be eliminated by the end of 1991 and 95 percent by the end of 1992, says Cowman. The focus of the program is to educate and inform the cattle producers.

"NCA will continue to monitor the incidence of injection site-related lesions until the problem is resolved and will continue to communicate to packers and retailers that the industry does have an 'action plan' in place to effectively eliminate the problem," says Cowman.

As for Pete and Max, once they learn of ways to improve their management practices they will join the ranks of conscientious cattlemen and share a common goal — to raise a high quality, economical beef product that consumers can enjoy.

