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Livestock Injection Basics

If you are following along with my mumblings, and if articles are run in sequence, this is a follow-up to processing calves from last week. We spent some time talking about animal and vaccine handling, but today the focus will be on placing those vaccines using proper techniques. One of the most important aspects of quality in our industry is performing injections properly. Remember that your injection techniques have a big impact on meat quality, personnel safety and product efficacy. Review your practices with your herd health veterinarian.

Adequate restraint is a basic requirement. Every effort should be made to have the animal still when administering an injection. Needle movement during intramuscular (IM) injections increases muscle damage, and could cause a significant portion of the injection to be deposited subcutaneously (SQ or SubQ). Movement during SQ injections may lead to a significant portion of the injection ending up IM. Restraint can be accomplished with chutes, cradles, gates, ropes or good old fashion brute cowboy strength, but it is paramount to injection success and safety.

In either injection case, the result is a product in a different site than intended. This may affect efficacy and can contribute to an altered withdrawal time. The "tented technique," where the skin is pinched and raised with one hand while injecting parallel to the hide with the other hand, should only be used when the animal is restrained in a squeeze chute or completely immobile. It works well, but does pose a human injection risk if you are not careful.

The injection site audit work done within the industry illustrates the importance of staying away from the top butt for all injections and confining IM injections to the neck. The best way to learn the injection site triangle in the neck is to ask for an anatomy lesson from your veterinarian (especially during a necropsy), attend an injection site demonstration or online BQA trainings. If you're giving IM neck injections in front of the head gate, you're likely giving injections too far forward in the neck. Consider SQ-labeled products whenever possible.

Separation between injection sites is as important as site selection. Moving a hands-width away for the next site is a good rule to follow. On small calves, this may mean only two to three injections per side of the neck. If you find yourself routinely running out of injection sites, it's time for an in-depth evaluation of your preventive and therapeutic programs. Read and follow volume-per-site instructions. It's a rare case where more than 10-15 ml per site is indicated.

Needle selection and care are essential to quality assurance. A 16-ga. needle is the maximum size for IM injections. An 18-ga. needle may be used for administration of some products, but proper restraint becomes more important to avoid bending and possible breakage of these small needles. Discard bent needles. Never straighten and reuse them due to potential breakage. Needle length for SQ injections shouldn't exceed three fourths inch, and one-half inch may be the best choice. Many IM injections can be done with a 1-in. needle. If you feel resistance as the needle penetrates the hide, check for barbs. It's probably time for a new needle and remember new needles are needed every 10-12 animals.

Protecting product integrity (sterility and efficacy) includes always drawing the product from the original container and paying attention to sanitation of syringes and injection systems. A new sterile needle should be used every time you draw product from a multi-use container that will not be used immediately. The rubber stoppers in these bottles also tend to dull needles very quickly. Remember that even traces of soap or disinfectants left in syringes can inactivate modified-live viral vaccines.