

Injection Practices in U.S. Feedlots

Injection site lesions in the end product result in visual defects and increased toughness, thus yielding undesirable consumer eating experiences. Intramuscular lesions in the end product result in visual defects and an area of increased toughness. Typically, product with an injection site lesion requires further processing which decreases its value and may affect customer satisfaction. There has been considerable effort at national and state levels to decrease occurrences of injection site lesions.

Management practices designed to reduce such lesions are generally part of Beef Quality Assurance (BQA) programs sponsored by the state or the National Cattlemen's Beef Association (NCBA).

Recommendations include:

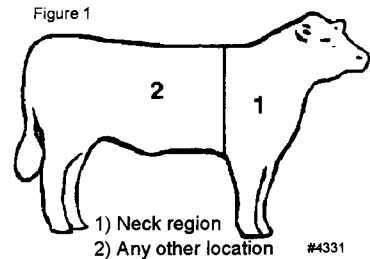
- avoiding IM injections whenever other labeled routes of administration are available
- administering IM and SQ injections in the neck region
- avoiding IM injections of 10cc or more in a single site, and
- avoiding repeated or multiple injections of clostridial toxoids.

In 1999, the USDA's National Animal Health Monitoring System (NAHMS) conducted a study of feedlots with 1,000 head or more capacity within the 12 leading cattle feeding states.¹ These operations represented 84.9 percent of United States feedlots with 1,000 head or more capacity in 1999 and contained 96.1 percent of the U.S. feedlot cattle inventory on feedlots with 1,000 head or more capacity on January 1, 2000.

Enumerators from the National Agricultural Statistics Service (NASS) administered questionnaires to the 520 feedlots enrolled in the Feedlot '99 study. Raw data were weighted to be representative of the feedlot industry in the 12 states within two size

categories (1,000 to 8,000 head and 8,000 head or more).

Efforts to inform feedlot managers about BQA program issues and practices appear to have been successful. Almost all (96.7 percent) of large feedlots and 86.3 percent of small feedlots were *very* or *somewhat* familiar with their state or national BQA program. All large feedlots had heard of such a program.

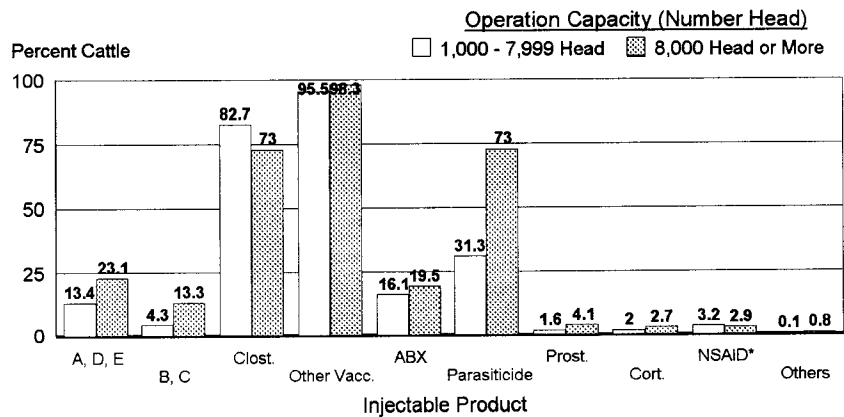


More than 95 percent of all cattle placed on feed during the year ending June 30, 1999, were vaccinated using an injectable product. Cattle placed in large feedlots were more likely than those in small feedlots to be injected with a parasiticide (73.0 percent compared to 31.3 percent, respectively). All other classes of injectables were administered to 25 percent or less of cattle.

The neck region (Figure 1) was the primary location used for all injections (Figure 2). Of the cattle vaccinated against clostridial diseases, 97.5 percent were injected in

Figure 2

Percent of Cattle that were Administered the Following Injectable Products by Feedlot Capacity



(Vitamin A, D and/or E = A, D, E; vitamin B and/or C = B, C; Clostridial toxoid = Clost.; Non-clostridial vaccination = Other Vacc.; Antimicrobials = ABX; Prostaglandin = Prost.; Corticosteroids = Cort.; Non-steroidal anti-inflammatory drugs = NSAID; and other injectables = others)

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¹ Arizona, California, Colorado, Idaho, Iowa, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Washington.

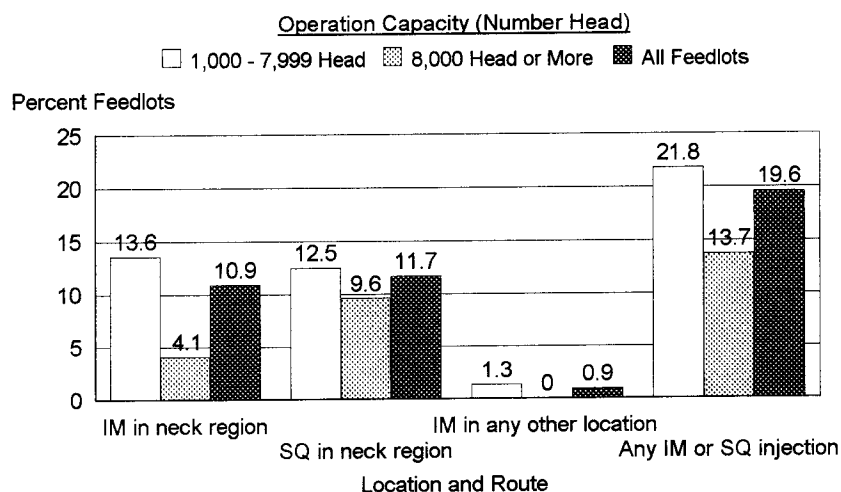
the neck region with 84.7 percent being subcutaneous (SQ) injections. Only 0.2 percent of cattle, none of which were on large feedlots, were given a clostridial toxoid using an intramuscular (IM) route not in the neck region. Of the cattle that received other vaccines/bacterins, approximately 90 percent were injected in the neck region and approximately 60 percent were IM. Only 2.2 percent of cattle vaccinated against non-clostridial diseases were injected IM in a location other than the neck region. Approximately 98 percent of the cattle that received an injectable anthelmintic were given this injection in the neck region, with three-quarters administered SQ. Approximately 90 percent or more of the cattle that received an injectable antimicrobial were injected in the neck region. Most of the remainder of the cattle that received an antimicrobial injection were administered using a route other than IM and SQ. These injections were most likely administered intravenously.

Small percentages of cattle were given IM injections at a location other than in the neck region. The only apparent exception was for oil-soluble vitamins (A, D, and/or E), where cattle on small feedlots were more likely than cattle on large feedlots to have been injected IM in a location other than the neck region (15.5 percent of cattle compared to 2.1 percent, respectively). However, these cattle only accounted for 0.7 percent of all cattle placed in feedlots.

Of the 86.1 percent of feedlots that vaccinated cattle against clostridial diseases, 45.2 percent administered more than one clostridial toxoid either at the same time or on different occasions. This practice accounted for 15.9 percent of all cattle placed on feed being given more than one clostridial vaccination.

Less than one-eighth of all feedlots administered any injections of more than 10cc in one IM site (Figure 3). Products that specified more than 10cc be given in one

Figure 3
Percent of Feedlots that Gave More than 10cc of an Injectable Product* in One Intramuscular (IM) or Subcutaneous (SQ) Site by Operation Capacity



* Excluding those products that specify that a larger volume may be given in one site, e.g., Micotil®.

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site were excluded. This practice was more common on small feedlots than on large feedlots. No large feedlots administered an injection of greater than 10cc in a single IM site at a location other than the neck region. Across feedlot capacities, 2.2 percent of cattle (4.8 percent on small feedlots and 1.7 percent on large feedlots) were administered an injection of greater than 10cc in a single IM or SQ site.

Nearly all cattle entering feedlots are given at least one injection. Feedlots are predominantly administering injections in the neck region with a preference for a SQ route resulting in a small percentage of cattle injected in an IM route at a location other than the neck region. The BQA programs implemented by the NCBA or state organizations appear to be successful at the feedlot level.

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