

Beef Quality Assurance

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Injection Sites and Techniques

To lessen injection-site defects in economically important cuts of beef, the preferred site for all subcutaneous (SQ) or intramuscular (IM) injections is the neck region (See Figure 1). It is particularly important to use the neck region with IM products, because even the shoulder chuck primal contains “value-added” cuts that should be protected. Whenever possible, choose products formulated and labeled for SQ rather than IM injection. See Table 1 for proper needle sizes. Subcutaneous Injections (SQ injections) are made just under the skin but not into the muscle tissue. The side of the neck is the best area to make injections.

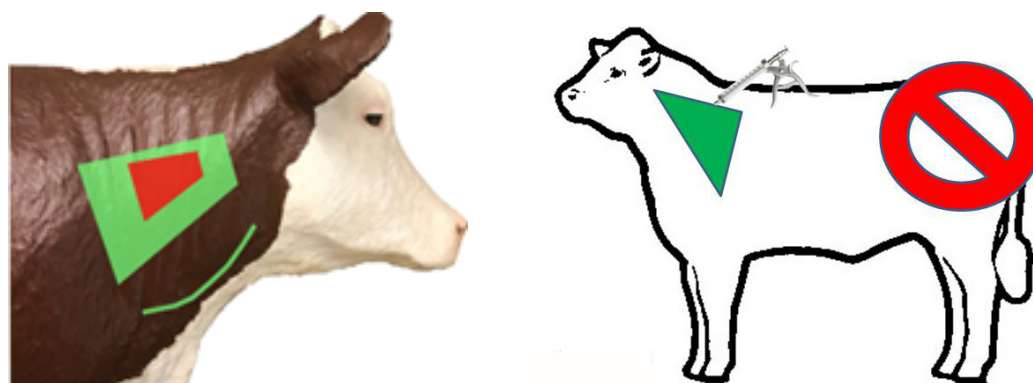


Figure 1

Route of Administration									
Injectable Viscosity	SQ (1/2 to 3/4-inch Needle)			IV (1 1/2- inch Needle)			IM (1 to 1 1/2 inch Needle)		
	Cattle Weight			Cattle Weight			Cattle Weight		
	<300	300-700	>700	<300	300-700	>700	<300	300-700	>700
Thin Example: Saline	18 gauge	18-16 gauge	16 gauge	18-16 gauge	16 gauge	16-14 gauge	20-18 gauge	18-16 gauge	18-16 gauge
Thick Example: Oxytetracycline	18-16 gauge	18-16 gauge	16 gauge	16 gauge	16-14 gauge	16-14 gauge	18 gauge	16 gauge	16 gauge

SELECT THE NEEDLE TO FIT THE CATTLE SIZE (THE SMALLEST PRACTICAL SIZE WITHOUT BENDING)

Table 1. The needle size used should never be larger than necessary to adequately perform the injection

Several animal health products are now approved to be injected into the ear of cattle. This location is excellent from a BQA perspective as ears are removed at harvest and do not enter the food chain. The ear must be clean to avoid infection, and producers should take care to avoid blood vessels. Read product labels carefully. See Figure 2 for an example of an ear injection technique. Intramuscular injections (IM injections) are made directly into muscle tissue of the neck. Absorption of the drug is more rapid in the muscle than under the skin because of the abundant blood supply to muscle tissue.

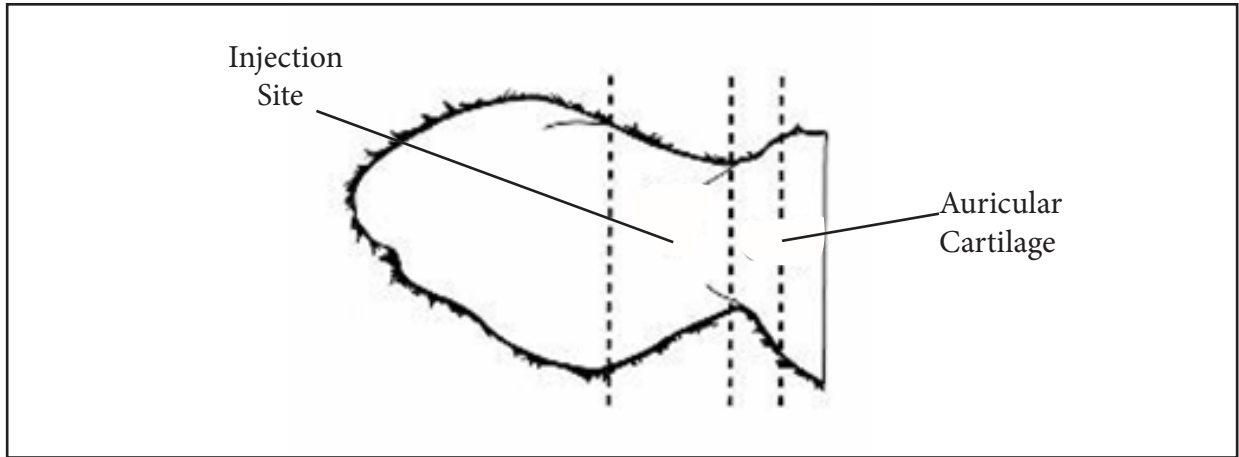


Figure 2

How often do you replace your needles?

New Needle	Used - 4HD	Used - 8HD	Used - 12HD
Used - 1HD	Used - 5HD	Used - 9HD	Used - 13HD
Used - 2HD	Used - 6HD	Used - 10HD	Used - 14HD
Used - 3HD	Used - 7HD	Used - 11HD	Used - 15HD

Proudly Producing Safe, Wholesome and Healthy Beef

This picture is from a study conducted to evaluate needles after multiple uses. The needles were used and then a picture was taken with a scanning electron microscope. Even though the needles were not burred, it is evident that after only one use, the needle is contaminated and will serve as a contaminant if used for an injection or introduced into a medication container.

Injection Reference Checklist

A. Correct Injection Techniques

- Injectable products should always be measured accurately and administered according to the manufacturer's label recommendations.
- Make sure animal is properly restrained prior to injection.
- Check proper syringe adjustment and proper needle placement onto the syringe.
- To greatly reduce swelling and/or abscessation at the injection site:
 1. Inject only into clean, dry areas.
 2. Use single dose sterile needles.
 3. Prevent contamination by not using the same needle to inject animals in which used for removing medication from multi-dose vials.
- Injection site selection is an important management decision in preventing blemishes to valuable cuts.

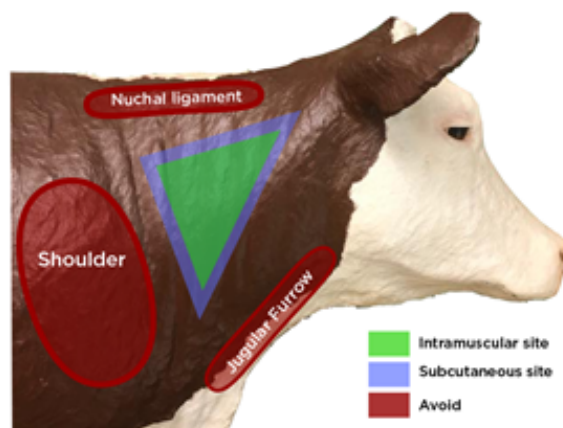
B. Injection Types

Intramuscular (IM): Deposits the drug into the muscle

- Inject only into clean, dry areas.
- Inject only into well-muscled areas where there is no danger of striking bone or internal organs.
- Needle gauge: 16 to 20 depending on viscosity of product
- Length: 1- to 1½-inch long
- No more than 10 cc per injection site.
- Too much drug in one area can cause muscle damage.

Subcutaneous (SQ): Deposits the drug under the skin

- Inject only into clean, dry areas.
- Use areas of loose skin for injection site.
- Slide needle under the skin away from the site of skin puncture before injecting
- Needle gauge: 16 to 18
- Length: 3/4 to 1 inch; 3/4-inch if tent technique is not used.
- No more than 10 cc at a single injection site.
- Separate injection sites by at least 4 inches.



Needle Use and Handling General Guidelines

- Select a clean injection site.
- Single-use needles are recommended to reduce spread of blood borne diseases.
- Keep the contents of the vaccine bottle sterile; do not store a syringe and needle in the top of a bottle.
- Do not put a needle back into the vaccine bottle once it has been used for anything else.
- Keep transfer needles in a closed container when at chute-side and after use, boil and place in a clean marked container.

Changing Needles

- To prevent the spread of known blood-borne infectious diseases, use a new needle for each animal.
- Change any needle that is bent, or becomes contaminated (manure, dirt, or chemicals)
- Note: A broken needle is an emergency; it will migrate farther into the tissues. Under no circumstances should animals with broken needles be sold or sent to a packer.
- Using proper restraints when injecting cattle can help to avoid accidents.

Proper Disposal of Sharps for Producers

- Place in a thick plastic container such as washing detergent bottles. When full, cap the container, then wrap with duct tape and write “do not recycle” on the container and treat as solid waste.

Beef Quality Assurance is a national program that raises consumer confidence through offering proper management techniques and a commitment to quality within every segment of the beef industry.

For more information, including videos, manuals and training opportunities visit Beef Quality Assurance at <https://www.bqa.org>

Acknowledgments

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