

INJECTION TECHNIQUES

Key Recommendations for Beef Cattle Producers

Restraint



Ensure cattle are **safely restrained**, allowing easy access to the neck and preventing unnecessary movement by the animal.

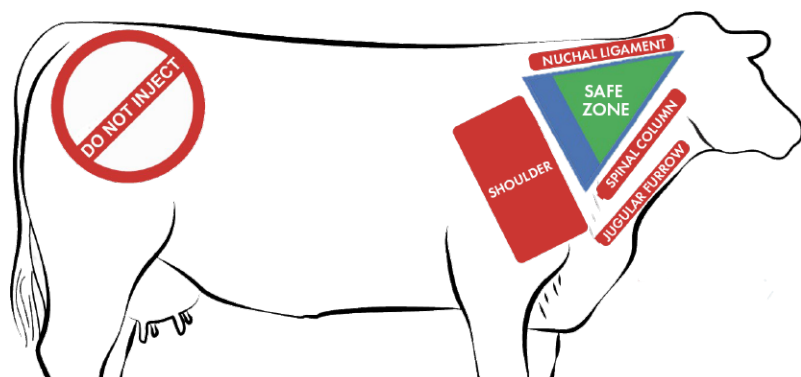
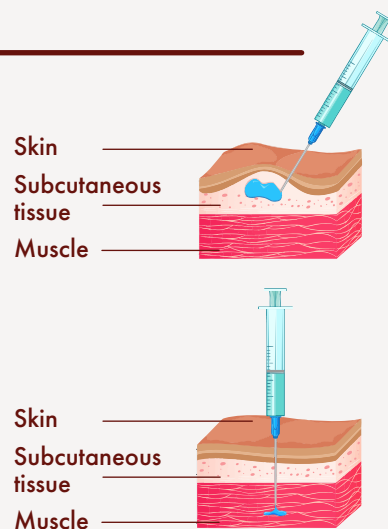


Improperly restrained cattle are at a **higher risk** for tissue trauma, needle breaks, improper injection technique and incorrect injection location.

Routes of Administration

Subcutaneous (SUB Q): Subcutaneous injections are placed just under the skin in the safe injection zone. The needle should be inserted at a 45-degree angle to the animal. Always follow label instructions for recommended dose and route of administration (ROA) for the product being used.

Intramuscular (IM): All intramuscular injections should be given in the neck muscle in the safe injection zone. The needle should enter at 90 degrees, or perpendicular to the animal into the muscle tissue. Always follow the label direction for ROA.



-  Intramuscular injection
-  Subcutaneous injection
-  AVOID injection

Needle Size

Choose an appropriate needle size to ensure the product can be delivered with minimal tissue damage based on size of the animal and ROA. Choose the smallest gauge needle that can effectively deliver the medication. See the table below for specific guidelines.

Class of Cattle	Route of Administration	Needle Gauge	Needle Length
Calves < 500 lbs	Intramuscular	20-18	1 inch
	Subcutaneous	20-18	1/2 - 5/8 inch
Cattle > 500 lbs	Intramuscular	18-16	1 - 1.5 inch
	Subcutaneous	18-16	1/2 - 3/4 inch

Hygiene

- ✓ Keep equipment clean and in good working order to prevent tissue trauma and abscesses.
- ✓ Inject through clean hide, being careful not to drag bacteria and debris into the tissue.



Volume and Location

- ✓ Recommended maximum volume per injection site is **10 ml (cc) per site**. Increasing the volume of medication injected into one location impedes absorption and excretion of medication.
- ✓ Ensure a **hand-width between injection sites** when administering multiple injections.



Record-Keeping

Keep these records every time you inject an animal:

- ① Animal identification and date of treatment
- ① Reason for treatment
- ① What drug and dose
- ① Route of Administration (ROA)
- ① Withdrawal time
- ① Second dose date (if required)

Scan for a list of
downloadable record
keeping templates.

VerifiedBeef.ca/records



Scan for a short how-to
video on injection best
practices.

BeefResearch.ca/injections



Broken Needles

Broken needles are an animal care and food safety concern as they can migrate causing infection, pain or damage to internal structures. Take the following precautions to prevent broken needles:

Before Injecting

- ✓ Change your needle every **10-15 injections**.
- ✓ Inspect needles **before each injection** to ensure they are not burred, bent or dull.
- ✓ **Never attempt to straighten** a bent needle; dispose of it and replace it with a new one.

After Injecting

- ✓ Check the needle to ensure it is not bent and no part has broken off. This includes when using **remote drug delivery devices** such as dart guns.
- ✓ If the needle or dart is **broken or missing**, record this information and the associated animal.
- ✓ Documentation of a broken or suspected broken needle **must be included** in any transfer of ownership or management records (e.g., shipping documents, invoices). If documentation isn't possible, the animal should be euthanized or slaughtered for personal use to **uphold consumer standards for safe, quality beef**.

When documenting a broken or suspected broken needle, the following should be recorded:

- | | |
|---|---|
| ① Date | ① Planning for how the animal will be used or marketed |
| ① Animal ID | ① Procedure to ensure animals are identified and shipped with appropriate documentation or excluded from shipment |
| ① Location of suspected broken needle on the animal | ① Withdrawal time is considered as the entire life of the animal |
| ① Type of needle | |



Scan for access to the VBP+
Broken Needle Record Template

VerifiedBeef.ca/needle



Disposal of Used Needles



Appropriate Containers: Containers should be puncture-resistant, leak-proof, strong, durable and clearly labeled.



Local Regulations: Comply with regional laws on sharps disposal.



Environmental Impact: Follow needle disposal guidelines to minimize harm to the environment, especially in rural areas where contamination could affect water and wildlife.



Safety: Proper disposal prevents disease spread and injury.

Disposal methods may vary depending on regional guidelines. To the right are the **best, good and acceptable disposal practices** for needles used in beef cattle production.

Following best practices ensures the safest approach, while good practices are effective.

Acceptable methods should be used only when other options are unavailable.

BEST PRACTICES

- Use designated sharps containers.
- Check if local landfill accepts agricultural sharps waste.
- Drop off at local veterinary clinics or designated sites.

GOOD PRACTICES

- Consult with a veterinarian about disposal practices.
- Incinerate if permitted and appropriate incineration equipment is available (standard burning barrels are not incineration equipment).
- In some cases, local pharmacies or emergency services, including fire halls, may accept agricultural sharps waste. Check your area for availability.

ACCEPTABLE PRACTICES

- Dispose of sharps in laundry detergent bottles (or other thick plastic containers) that are clearly labeled and secured.

Syringe Cleaning

Proper syringe cleaning is essential to maintain hygiene and prevent cross-contamination on the farm. If possible, designate specific syringes for each product and use only with that product. **Syringes should not be cleaned with soaps or antibacterial agents, as they may affect the efficacy of vaccines.** Syringes used for antibiotic injections may contain residue that can affect vaccine efficacy.

- 1 Pre-rinse:** Immediately after use, rinse the syringe with warm water to remove any leftover substances.
- 2 Disassemble syringe:** Separate the barrel, plunger and needle (if reusable).
- 3 Wash with hot water:** Clean all parts using hot water and a cleaning brush.
- 4 Dry:** Hang the syringe upside down or place it on a clean towel, ensuring it is fully dry before reassembling.
- 5 Store:** To prevent contamination, store syringes in a clean, dry place that is separate from medications or feed.

Scan for a short video on proper syringe cleaning.

BeefResearch.ca/
clean-syringes

