



Cornell University
Cornell Center for Animal Resources and Education

CARE548.02 Beef Cattle Husbandry

The intent of this standard operating procedure (SOP) is to describe the routine husbandry procedures at Cornell University for beef cattle. This procedure is approved by the Cornell Institutional Animal Care and Use Committee (IACUC) and the Cornell Center for Animal Resources and Education (CARE). The facility may have supplemental SOPs that further describe their specific manner of operation. Any exemption must be approved by the IACUC prior to its application.

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1. Introduction

This SOP describes routine beef cattle husbandry procedures.

2. Materials

- Animal identification devices (e.g. tattoo, ear tag, neck tag/collar, electronic transponder)
- Feed, water, and bedding
- Water quality testing materials
- Restraint device (e.g. squeeze chute system)
- Elastrator band (e.g, Callicrate)
- Electric dehorner
- Sanitizing disinfectant (e.g. chlorine and phenolics)

3. Procedures

- a. Animal Care
 - i. Observe animals daily for signs of illness, injury, or distress.
 - ii. Provide food daily.
 - iii. Provide a water source to assure cattle have the opportunity of ingestion every 12 hours.
- b. Emergency care
 - i. Emergency veterinary care is available at all times including work hours, after working hours and on weekends and holidays

through the Ambulatory & Production Medicine Clinic (607-253-3140) or CARE (1-800-349-2456).

- ii. Post contact information for emergency assistance at the entrance to the animal facility.
- c. Animal identification methods
Use at least one of the following methods for individual animal identification:
 - tattoo
 - ear tag
 - neck tag
 - electronic transponder.
- d. Records and documentation
Refer to CARE SOP 542 for record keeping requirements at Cornell animal facilities.
- e. Feeding routine
 - i. Feed animals to meet current National Research Council recommendations for beef cattle nutrition. Store feed ingredients and finished feeds in a manner that minimizes their contamination or spoilage (e.g. clean & dry area). Remove unconsumed feed daily from feeders and mangers.
 - ii. Check water containers daily for cleanliness.
 - iii. Water quality: Refer to CARE SOP 543 for water sample methods and acceptable levels.
- f. Breeding program
 - i. Artificial insemination (AI): trained technicians or veterinary staff must perform AI with semen from a commercial stud service.
 - ii. Natural service: select a bull from the facility based on performance history and individual traits.
 - iii. Use veterinarian approved synchronization protocols (e.g. Select Synch and CIDRS).
 - iv. Breed the majority of cows (~75%) between mid June and late July for spring calving. A small number (~25%) can be bred in November and December for fall calving.
- g. Social and environmental enrichment
Assure that cows have visual and physical contact with one another and with animal care personnel.
- h. Potentially painful or distressful procedures
 - i. Animal Restraint – Some procedures (e.g., vaccinations, rectal palpations, placement of implants) require that cattle are restrained to ensure the safety of animals and people. This is accomplished with the use of a manually operated restraining (squeeze) chute system. In many cases only the use of the head-lock is necessary. Keep restraint in the chute brief (less than one minute). Whenever possible, restrain young calves by hand.
 - ii. Castration –
 - a. Calves: perform prior to one week of age via application of elastrator bands.
 - b. Older bulls: refer to CARE SOP 628.

- iii. Dehorning – Selection of polled cattle is practiced; however, occasional dehorning is needed.
 - a. New borns: perform dehorning within the first month of life using an electric dehorner according to the manufacturer's recommendations.
 - b. Adults: a veterinarian must perform this procedure with appropriate restraint and local anesthesia. (Refer to CARE SOP 648).

Note: These procedures are routinely conducted by trained professional staff unless otherwise indicated.

- i. Euthanasia and disposal of dead animals
 - i. Perform euthanasia under the supervision of a veterinarian per CARE SOP 307, Euthanasia of Non-Rodent Mammals.
 - ii. Dispose of the carcass by one of the following methods:
 - compost on site;
 - commercial rendering service;
 - incineration or chemical digestion at the veterinary college.
- j. Pest control:
 - Refer to CARE SOP 538 for a description of the vermin control program in agricultural facilities.
 - Utilize approved vendor or licensed professional for monthly site control updates.
- k. Housing: house cattle via one of the enclosures listed below:
 - pastures with windbreaks;
 - bedded pens enclosed within a barn;
 - pens on slatted floors within a barn.
- l. Space requirements: House all cattle in an enclosure that meets or exceeds the recommendations set in Table 5-1 (pg. 31) of the Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching (FASS, 1999).
- m. Cleaning and sanitation of pens
 - Slatted floor pens:scrape alleys daily; pump the manure pits at least 2–3 times per year.
 - Main Barn and Calf Wing: remove manure1–2 times per week.
 - Bull Barn: remove manure 1–2 times per month.
 - Clean all pens with a high-pressure washer between groups of animals.
- n. Cleaning and sanitation of equipment
 - Cleaned feed troughs daily.
 - Clean waterers of gross material daily and scrub weekly.
 - Clean feed and manure handling equipment between usages.
 - Utilize chlorine and phenolics as sanitizing disinfectants.
- o. Transportation: clean truck beds after each use and sanitize after hauling animals from outside sources. Keep a log of each use.
- p. Waste management: spread collected manure on fields.

4. Safety

- a. Observe CARE SOP 707.01 for animal-related injuries.
- b. Observe CARE SOP 715.02 for personal protective equipment.
- c. Refer to CARE - OH&S - Zoonoses webpage for zoonotic information specific to cattle.
- d. Working with animals can trigger related allergies or zoonotic infection. (refer to CARE Allergens and Zoonoses web pages). Check with the facility manager regarding requirement for personal protective equipment and refer to CARE SOP 715.

5. Contingencies

- a. Post contact information for emergency assistance in a conspicuous location within the animal facility.
- b. Emergency veterinary care is available at all times, including during work hours, after business hours, and on weekends and holidays, through the Ambulatory & Production Medicine Clinic (607-253-3140) or CARE (Pager 1-800-349-2456)

6. References

- *Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching*. Federation of Animal Science Societies, Savoy, IL 1999.
- *Nutrient Requirements of Beef Cattle*. National Academy Press, Washington, DC 1996.
<http://books.nap.edu/openbook.php?isbn=0309069343>
- CARE SOP 707 Animal Related Injury:
<http://www.research.cornell.edu/care/documents/SOPs/CARE707.pdf>
- CARE SOP 715 Personal Protective Equipment:
<http://www.research.cornell.edu/care/documents/SOPs/CARE715.pdf>
- CARE SOP 628 Preventative Health Care for Beef Cattle:
<http://www.research.cornell.edu/care/documents/SOPs/CARE628.pdf>
- CARE - OH&S - Zoonoses:
<http://www.research.cornell.edu/care/zoonoses.html>
- CARE SOP 542 Maintaining Clinical Records for Animal Research Models
<http://www.research.cornell.edu/care/documents/SOPs/CARE542.pdf>
- CARE SOP 543 Water Quality Monitoring in Agricultural Facilities
<http://www.research.cornell.edu/care/documents/SOPs/CARE543.pdf>
- CARE SOP 538. Vermin Program
<http://www.research.cornell.edu/care/documents/SOPs/CARE538.pdf>
- CARE Allergens Prevention web page:
<http://www.research.cornell.edu/Care/documents/OHS/AllergyPreventionFactSheet.pdf>

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