Housing & fencing structures for beef cattle

Things you need to know about safe living spaces for beef cattle.

Beef cattle facilities should be designed with a number of factors in mind.

- Facilities must provide the required space, shelter, feed, water, waste management and livestock handling features.
- Facilities must be adapted to the natural features of the site.
- Facilities should be organized for efficient and easy operation.

Cow-calf herds often graze on range or pasture during summer months. However, they still need winter shelter and protection. Cattle can be affected more by mud, winter winds or wet weather than they are from cold temperatures. Therefore, windbreaks and open-front sheds that are properly located and designed are often necessary. Winter and early spring calving requires a dry and draft-free area.

Beef cattle do not require elaborate housing, especially if they are pastured during the grazing season. Farmers and ranchers often use existing two-storey barns or machinery sheds, or build simple structures like fabric-covered buildings. A well-drained yard with a good windbreak can be a suitable alternative. The primary purpose of housing is to provide shelter from extreme weather conditions. However, cattle can be kept outside if they have protection from the weather.

Most cattle housing facilities are one of three main types of designs:

- Open lot with shelter belt
- Open lot with shed
- Confinement lot with solid floor.

**LINK**
Cattle handling facilities contribute to safe and humane handling. Plans can be accessed on the Canada Plan Service website at [www.cps.gov.on.ca/english/frameindex.htm](http://www.cps.gov.on.ca/english/frameindex.htm). Go to the plans for Beef Cattle and look for Cattle Handling Facilities.
KNOW DIFFERENT TYPES OF HOUSING STRUCTURES

Beef enterprises can be cow/calf, feeder or a combination of both. Cow/calf enterprises usually require less financial investment in facilities than feeder operations. Feeder cattle facilities require more confinement pens, more automation of feeding systems and less need for roofed shelters. Each type of facility must be designed with appropriate, safe and efficient features.

Several different designs for housing and handling facilities are suitable for beef operations. These facilities must take the weather, topography and availability of feed and pasture into account. It is important to know rules and regulations that affect choices about location, design and type of operation.

It is important to choose a location for buildings and handling facilities that is on well-drained soil. The location should also have properly designed surface water drainage situated away from streams, other bodies of water and away from population centres.

Open sided, single slope roof shed

This type of housing is most typical and is suitable for all cattle on the farm. This is the least expensive of new structures and very easy to build. Open sheds should face the south for winter sun and block the prevailing winds. Pole barns of this design can be partitioned for groups of animals without complicated interior construction.

Open sided, clear span pole shed

The clear span provides more space for equipment to remove manure and therefore any side of the building can be open to the environment. The gable end of the barn should be open so that the discharge of rain and snow is not over the open side of the building. When the gable end is open, the bays areas are usually deeper and provide more protection from the wind. The back end of the structure may be dark and damp and may need additional ventilation and lighting. This type of housing is more practical for herds that are under 20 head.
KNOW SHELTER & HOUSING DESIGN CRITERIA

- Design of housing and shelters should be kept simple.
- Cattle in backgrounding facilities or feedyards must be offered adequate space for comfort, socialization and environmental management.
- Pen maintenance, including manure harvesting, will help improve pen conditions.
- Mud is more of a problem in the winter with low evaporation rate or improper drainage conditions. Accumulation of mud on cattle should be monitored to measure pen condition and cattle care in relation to recent weather conditions. Bedding can reduce mud.
- Feedyards should use dust reduction measures.
- Floors in housing facilities should be properly drained and barns and handling alleys should provide traction to prevent injuries to animals and handlers.

Former dairy barns

Unused dairy barns provide another housing option. The renovation costs are usually less than the cost of a new structure. Lighting and ventilation are often suitable for use by beef cattle. Manure removal is a major piece of the renovation plan. Conventional tie stalls are not recommended. Free stall barns are the ideal dairy facility for use with beef cattle since the manure handling is already set up.

Hoop barns

One of the least expensive structures for housing cattle is the hoop barn. Hoop barns are similar to greenhouses. One disadvantage can be heat and ventilation problems during the summer months, but this should not pose an issue if cattle are grazed.

DO YOU KNOW

how elements of housing design help meet basic physical requirements of beef cattle? If you need to know about light, air and ventilation, go to Beef cattle requirements for light, air & ventilation in the inquiry topic, Know physical requirements for care at www.etsanimals.ca/va2040/production.html. If you think you need to know more about space guidelines, check Space requirements for beef cattle in the same inquiry topic.

LINK

Visit the Canadian Farm Building Code at www.nationalcodes.ca/nfbc/index_e.shtml for more information on livestock housing requirements.
• Share water bowls between two pens maximum. Pen layout should be rectangular if possible.

• Handling alleys and housing pens must be free of sharp edges and protrusions to prevent injury to animals and handlers.

• Alley width is important. Determine what the alley will be used for. Will it move cattle, machinery or both? Make alleys for moving cattle only 2.4 to 4.2 metres wide as wider alleys can make cattle movement difficult.

• Machinery alleys, for feed trucks and wagons, should be 4.8 to 5.4 metres wide. However, when machinery must turn within an alley, the width must be increased to as much as 12 metres.

• If a tractor with front-end loader is to enter the pens from a narrow alley, diagonally placed pen entry gates increase the effective alley width. Always take into account that manure removal equipment must be able to manoeuvre into, within and out of pens. Custom manure hauling businesses use very large trucks and spreaders. Gates and alleys must be designed to accommodate this equipment. A generally accepted width of access gate for machinery is 4.8 metres.

• All alleys must accommodate snow removal and drainage from heavy rains. This drainage should not enter cattle pens. Alleys must have a solid base and an all weather surface. A base mixture of compacted gravel/clay topped with gravel makes an excellent alley.

• Design and operate alleys and gates to avoid impeding cattle movement. When operating gates and catches, reduce excessive noise, which may cause distress to the animals.

• Adjust hydraulic or manual restraining chutes to the appropriate size of cattle to be handled. Regular cleaning and maintenance of working parts is imperative to ensure the system functions properly and is safe for the cattle and handlers.

• Mechanical and electrical devices used in housing facilities must be safe.

KNOW ABOUT FENCING

- There are two types of fencing — fixed and permanent or portable. Fencing keeps livestock on the farm or ranch and off areas such as roads and private property.

- Permanent fencing along property boundaries keep livestock safe and secured. This type of fencing systems consists of woven or barbed wire or electrified high-tensile smooth wire.

- **Barbed wire fences** contain strands of horizontal wires twisted together with barbs spaced every 10 to 12 cm.

- **Woven wire fences** are smooth horizontal and vertical wires made of mild steel. Many producers use them, but they typically are more expensive and may be less effective than high-tensile electric fences.

- **High-tensile wire** is used for both non-electric and electric fencing. It is lighter than mild steel and has greater elastic capacity. High-tensile wire costing about the same amount as mild steel is two and a half times stronger than mild steel.

- Interior fencing can consist of a temporary electric fence, more permanent dividing fences or a combination of both. Temporary fencing can be used to subdivide pastures for grazing or to separate areas.

- If electric fencing is used, cattle should be trained to it before they are released into a pasture so that they recognize and respect the fence.

In addition to keeping livestock out of neighboring pastures and off roads or highways, fencing is an important component of good grazing management. Fencing allows control over the movement of livestock and the use and quality of forage crops.

- The location of water, shade and handling facilities are important factors when making decisions about fencing layout. Effective lanes and the placement of gates makes movement to handling facilities and movement between pastures more efficient.

- Windbreak fencing provides excellent protection for cattle during strong, cold winds.

- Windbreak fencing also acts like a snow fence. Provision must be made for the snow bank that will occur in the pen or else the snow must be trapped before it reaches the windbreak fence. Shelterbelts and/or snow fences located upwind are necessary to prevent large snow accumulations within the cattle pens.

What does the Code of Practice for the Care and Handling of Beef Cattle say about shelter and housing facilities?

The Canadian beef industry comprises the cow-calf, backgrounder and feedlot sectors. Production practices for all sectors have developed in response to Canada’s diverse climatic and geographical conditions. Even though the areas involved may be large, facilities for pastured or range cattle still require monitoring and maintenance.

It is beyond the scope of this Code to describe all shelter and housing facilities used in beef cattle production. Individuals requiring further details should refer to local sources of information, such as universities, agricultural and environmental ministries, producer organizations and experienced beef producers.

The following requirements are identified in the Code of Practice.

All beef operations must have access to equipment or facilities for the safe handling, restraint, treatment, segregation, loading and unloading of animals.

Design or manage indoor and outdoor cattle facilities to provide well-drained, comfortable resting areas.

All cattle in a group must have sufficient space to adopt normal resting postures at the same time.

Cattle kept in groups must be able to move freely around the pen and access feed and water.

Stocking density must be managed such that weight gain and duration of time spent lying is not adversely affected by crowding.

Maintain indoor air quality and ventilation at all times (ammonia levels < 25ppm).

Provide cattle housed indoors that do not have access to natural light with supplementary lighting to allow natural behaviour patterns and monitoring of the cattle.

These recommended practices are also provided in the Code of Practice.

a. Ensure that all cattle facilities and areas are safe and free of hazards that can cause injury.

b. Provide a separate area with dry bedding for the recovery of severely sick or injured cattle.

c. Consider biosecurity measures when designing and managing cattle facilities.

d. Ensure restraint devices are used properly. Pressure that causes pain or discomfort can cause cattle to panic and should be avoided.

e. Minimize noise from handling equipment to facilitate movement. High-pitched sounds are especially disturbing to cattle.

f. Provide daily exercise for any cattle that are tethered. Tethering devices must be safe for the animals and should not interfere with the actions of standing up or lying down. Tethering devices should be regularly inspected for proper function and safety.
What does the Code of Practice for the Care and Handling of Beef Cattle say about protection from extreme weather?

Beef cattle in Canada are housed in a variety of ways, depending on age, size and reproductive state. Systems may include range conditions, fields, corrals or yards, indoor pens or stalls. Treed areas or geographical features (such as coulees) can provide shelter from wind and sun.

Animals' ability to cope with sudden changes in weather or extreme weather events varies with many factors, such as:

- Age (especially newborn calves)
- Body condition score
- Access to feed, water and shelter
- Degree of acclimation (e.g., winter hair coat)
- Health status
- Stress (such as newly-arrived feedlot cattle)

The following requirements are identified in the Code of Practice.

**Cattle must have access to areas, either natural or man-made, that provide relief from weather that is likely to create a serious risk to their welfare.**

Promptly assist individual cattle showing signs of not coping with adverse weather.

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The process for the development of updated Codes can be accessed through the National Farm Animal Care Council at [www.nfacc.ca/codes-of-practice](www.nfacc.ca/codes-of-practice).