



BEEF CATTLE HOUSING AND EQUIPMENT

When designing beef cattle facilities, you must provide the required space, shelter, feed, water, waste management and livestock handling features, adapt them to the natural features of the site, and organize them for efficient and easy operation. Cow-calf herds may graze on range or pasture during summer months but need some protection in the winter. Feeder cattle are usually penned in relatively confined areas. Cattle suffer more from mud, wet weather and cold winter winds than from low temperatures alone. Windbreaks and open-front sheds, when properly laid out, can give adequate protection. For winter and early spring calving, a dry, draft-free area is desirable. Plans in this series show various proven components for making efficient beef cattle facilities.

LOCATION Construct buildings and pens for beef cattle on a well-drained site. An ideal location is a south-facing slope on well-drained soil, near an adequate water supply but away from streams and population centers. Natural shelter provided by trees is also desirable.

DRAINAGE Where existing slopes are insufficient to provide good drainage (less than 1:25), move fill to increase effective slope and to build earth mounds. Shape pens so that drainage is away from resting, feeding and watering areas. Slope barn roofs away from the pens, or provide cave troughs to carry water away from the pens.

In heavy traffic areas such as around feeders and waterers, concrete paving will prevent the formation of mud holes. In higher rainfall areas (over 500 mm annually) the entire pen can be paved.

SHELTER In areas subject to cold winter winds where natural shelter is insufficient, porous windbreak fences (20% open) give the best protection. In regions of heavy snow accumulation, erect a snow-fence about 45 m upwind from the windbreak fence, and leave enough space between the fences for a snow trap.

Protection of the resting area from rain and snow can be provided by an open-end barn, or an open-front shed with a roof that slopes away from the opening. In most areas these openings should face south for protection from winter winds and to get the most benefit from the winter sun.

VENTILATION Buildings for beef cattle must be adequately ventilated to prevent the accumulation of heat and moisture. Eave and ridge openings are recommended for air movement in open-front buildings. If the same buildings are to be used as summer sunshades, provide hinged panels, retractable curtains or large doors in the back wall.

FEEDING FACILITIES Feeders should be placed high enough so that lot drainage is away from the feeding area. Concrete aprons are recommended along the feeder; they should be at least as wide as the scraper and wheels of the tractor used for scraping, and sloped 1:10 away from the bunks. With less slope on the apron, build a step 100 to 150 mm high and 300 to 400 mm wide next to the bunk. If possible, run bunks in a north-south direction to reduce build-up of frozen manure.

RUNOFF CONTROL Runoff from cattle lots and manure storage areas must not be permitted to enter any watercourse. Diversion dykes or ditches may be needed to prevent "clean" runoff from surrounding fields and roadways from entering the cattle lots. Also, settling and retention basins are usually required to trap and hold runoff from the lots during spring thaw and heavy rains.



The Canada Plan Service prepares detailed plans showing how to construct modern farm buildings, livestock housing systems, storages and equipment for Canadian Agriculture.

This leaflet gives the details for a farm building component or piece of farmstead equipment. To obtain another copy of this leaflet, contact your local provincial agricultural engineer or extension advisor.

BEEF CATTLE HOUSING AND EQUIPMENT

PLAN M-1000 NEW 06:05

GUIDELINES FOR HOUSING BEEF CATTLE

Requirements	Cows and Bred Heifers	Yearlings	225 kg Calves
FEEDLOT (without shed)			
- hard surfaced ¹	7 m ²	4 m ²	4 m ²
- soil ²	28 m ²	23 m ²	14 m ²
- bedded mound ³	3.25 m ²	2.8 m ²	2.3 m ²
FEEDLOT (with shed)			
lot area			
- hard surfaced (minimum)	5 m ²	3 m ²	2 m ²
- soil	28 m ²	23 m ²	14 m ²
shed area			
- floor area	3m ²	1.9 m ²	1.4 m ²
-clear height (minimum)	3 m	3 m	3 m
SLOTTED FLOORS			
space per animal (100% slotted)	2.8 m ²	1.9 m ²	1.1 m ²
	(0.4 to 0.5 M ² /100 kg of live animal)		
MATERNITY PENS			
(additional area, not slotted)	1 pen/20 cows 3 m x 3 m (min.)		
WATER			
surface area, per 25 head	0.1 m ²	0.1 m ²	0.2m ²
water demand, ave.	38 L/(head-day); hot weather, 76 L/(head-day)		
FEED BUNK			
length per head			
- simultaneous or limited feeding	660 to 760 mm	560 to 660 mm	460 to 560 mm
-full or self-feeding			
- roughage only	200 mm	200 mm	150 mm
- complete ration	150 mm	150 mm	125 mm
- grain & concentrates only	75 mm	75 mm	50 mm
height at throat	560 mm max	560 mm max	460 mm max
max reach (top of throat board to bottom outside corner) ⁴	860 mm	760 mm	600 mm
FEED STORAGE			
hay, without silage	11 kg/head-day (maintenance only)	7 kg/head-day (maintenance only)	5 kg/(head-day (maintenance only)
silage without hay	34 kg/head-day (maintenance only)	4.5-5.0 kg/day per 100 kg live wt. (fattening)	16 kg/(head-day)
grain and concentrate	Cows: no grain 2-yr olds: 1.5-2.0 kg/day per 100 kg live wt. 2.3 kg/(head-day)	may substitute grain for hay at 1 kg per 1.5 kg hay 1.8 kg/(head-day)	0.7-0.9 kg/(head-day)
BEDDING STORAGE			
(except for slotted floors)			
MANURE STORAGE			
--with bedding	0.034 m ³ /(head-day)	0.023 m ³ /(head-day)	0.017 m ³ /(head-day)
- no bedding	0.028 m ³ /(head-day)	0.021 m ³ /(head-day)	0.014 m ³ /(head-day)

1. Slope: 1:50 to 1:25 on concrete.

2 Slope: 1:25 to 1:125 on soil.

3 Slope mounds 1:4 Sawmill chips and shavings preferred to straw for bedding mounds.

4 Bunk width: 1200 mm if fed from both sides

1370 to 1500 mm if divided.

460 mm bottom width if fed from one side.