



BEEF CATTLE HOUSING AND EQUIPMENT

COMPLETE INSTRUCTIONS

When designing beef cattle facilities, it pays to 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. Beef cattle live through three phases of growth; cow-calf, growing calf and finishing. The season at the beginning of each phase affects what facilities are needed; for example, safe calving in January requires more elaborate shelter than calving in March. For winter and early spring calving, a dry, draft-free shelter is desirable. 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. All ages of 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. Plans in this series show various proven components for making efficient beef cattle housing and handling 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 too flat to provide good drainage (less than 4%), 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 eavestroughs to carry water away from the pens.

In heavy traffic areas such as around feeders and waterers, concrete paving will prevent mud holes. In higher rainfall areas (over 20 in. 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, add a snow fence about 150 ft upwind from a solid windbreak fence; this leaves 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, adjustable curtains or large doors in the back wall.

FEEDING 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 at least 4% away from the bunks. Build a step 4 to 6 in. high and 12 to... 16 in. wide next to the bunk. If possible, run bunks in a north-south direction so that no part of the feeding area is permanently shaded from the sun. This helps to reduce build-up of frozen manure in the shade of the bunk.

RUNOFF CONTROL Runoff from cattle lots and manure storage areas must not be permitted to enter any watercourse. Diversion banks 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 1000 REVISED 84:07

GUIDELINES FOR HOUSING BEEF CATTLE

Requirements	Unit	Cows and bred heifers	Calves to 500 lb	Yearlings to 750 lb	Heavy Feeders to 1100 lb
FEEDLOT without shed					
- lot area, if paved ¹	ft ² /head	80	40	45	80
- earth lot area 2	ft ² /head	300	150	250	300
- bedded mound area 3	ft ² /head	35	25	30	35
FEEDLOT with shed					
- paved outside lot area	ft ² /head	50	25	30	50
- earth outside lot area	ft ² /head	300	150	250	300
- shed area	ft ² /head	30	15	20	30
- shed min. clear height	ft	10	10	10	10
SLOTTED FLOORS, 100% slotted (2 to 2.5 ft ² /100 lb of live animal)	ft ² /animal	-	11	16	27
MATERNITY PENS, additional, not slotted	cows/10 x 10ft pen	20	-	-	-
WATER					
- surface area	ft ² /100 head	4	4	4	4
- daily demand, average	gal/1100 lb live	10	10	10	10
- daily hot weather demand, average	gal/1100 lb live	20	20	20	20
FEED BUNK					
- limit feeding	in. length/head	26-30	18-22	22-66	26-30
- full or self-feeding					
- roughages only	in. length/head	8	6	8	8
- complete ration	in. length/head	6	5	6	6
- grain and concentrates only	in. length/head	3	2	3	3
- max. height at throat	in.	22	18	18	22
- max. reach (top edge of throat board to far bottom corner)	in.	34	24	30	34
- limit feeding roughages with electric wire or feed fence	in. length/head	20-24	12-16	16-20	20-24
- full or self-feeding roughages with electric wire or feed fence	in. length/head	10	6	8	10
FEED STORAGE					
- hay without silage	lb/(head.day)	25*4	12*4	15*4	11*5(6)*6
- silage, 60% moisture, without hay	lb/(head.day) lb/(day.1001b live)	75*4 -	35 -	- 4.5-5*7	25*5(13)*6 -
- grain and concentrate, 10% moisture	lb/(day.1001blive)	1.5-2*8	0.7-0.9	4.5-5*7	75(10.4)6
BEDDING STORAGE except for slotted floors	lb/(head.day)	5	3	4	5
MANURE STORAGE					
- with bedding	ft ³ /(head.day)	1.2	0.6	0.8	1.2
- no bedding	ft ³ /(head.day)	1.0	0.5	0.7	1.0

*1 - Paved lot slopes *2 - Earth lot slopes 4 to 8% *3 - Typical slope at sides of mound 25%; sawmill chips and shavings are preferred to straw for bedded mounds. *4 - Maintenance only *5 - High forage: average ration intake 26.6 lb; based on 10% moisture content, feed intake 2.8% of 950 lb live weight *6 - High grain: average ration intake 28.5 lb; based on 10% moisture content, feed intake 3% of 950 lb live weight *7 - Grain may be substituted for hay @ 1:1.5 respectively. *8 - Heifers only; grain should not be fed to cows.