

Housing Management Of Cattle And Buffalo

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ABSTRACT

In India, a great diversity exists in the design of dairy animal shelters. Traditional animal shelters have grown out of needs, resources and ingenuity of farmers. Building design and construction materials largely affect the thermal comfort inside dairy shelters. Efficiently designed sheds can help lesser the thermal stress thereby increasing feed intake, milk production and reproductive efficiency. Under varied climatic, geographical and economical conditions prevailing in India, designing an ideal set of building for dairy animals throughout the country is impossible

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I. SELECTION OF SITE FOR BULL FARM BUILDING

- Proper housing which is conducive to good health, comfort and protection from inclement weather and which would enable the animals to utilize their genetic ability and feed for optimal production.
- For construction of farm buildings selection of site is most important. Before selecting a site the following points are to be considered, Soil
- Soil must be suitable for strong foundation.
- Marcy, clay, sandy, rock soils are not suitable.
- Loamy and gravelly soils are best suited for building construction.

Availability of land

- There should be vast area to construct all building and should give way to future expansion of farm.
- At least 2-3 acre land is required for 200 cows accommodation.
- For 2 cows 1-acre land is essential for fodder production.

Availability of water

- Plenty of water is needed for farm operations like washing, fodder cultivation, processing of milk and byproducts and for drinking.
- Hence a water source which provides water constantly is essential.

Drainage system

- Proper drainage of rain and subsoil water should be provided to keep healthy environment and to protect the building from dampness.

Electricity

- It should be available at the site.

- It is needed for operating various machines used in the farm and is the light source to the animals.

Protection from wind and solar radiation

- If the farm building in open or exposed area, the wind breaks in the form of tall quick growing trees should be grown near the building.
- This will reduce the wind velocity and solar radiation.

Protection from noise and other disturbance

- The farm site should be away from noise producing factory/chemical industry, sewage disposing area.
- The industrial effluents in the form of gaseous or liquid may pollute surrounding resources.
- Noise is also found to affect the animal production. Hence the farm should be away from city.

Availability of market facility

- The farm should be away from the city but at the same time it should be nearer to city thereby the products produced from the farm could be marketed easily.

Transport facility

- The farm buildings should be provided with good road and also have the accessibility to reach the market.
- This will reduce the transport cost and avoid spoilage of products.

Miscellaneous

- Other facilities like availability of telephone, nearby school for children of farm workers, post office, shopping center and entertainment facilities should be provided.

Factors to be considered while designing a livestock farm

- Different types of enterprises such as dairy, piggery, sheep and goat units need different

building design. So the design should be prepared to meet the need of a particular enterprise.

- Each enterprise may adapt different systems of production and management. The design may be influenced by enterprise also. The following factors may be considered while designing a livestock farm,



Typical animal shed with water bowl & feeding system



Feeding trough of bull shed



Feeding system outside bull pen



water bowl system for bull shed

II. STRUCTURAL FORM

- Shape and design of building should meet the needs of all classes of livestock.
- Uniformity in the appearance should be maintained. We have to decide the number of animals to be housed in the building and number of buildings to be constructed.

III. DESIGNING FOR FLEXIBILITY

- Animal building has to be designed to meet the requirement of changing enterprises.
- This will increase the utility of buildings. Spacious building without pillars can be easily being adopted for different enterprises with little modifications in the building.

- For example large intensive dairy buildings can be used for rearing pig or sheep and goat with little modification.

IV. SHAPE OF THE ROOF

- It is designed to suit the local climatic conditions. Gable with roof ventilator is necessary for hot condition.
- Monitor roof is suitable for building with smaller width.

V. STANDARD WIDTH OF BUILDINGS

- Single row cow shed should have length of 3.80 to 4.25 metres and
- Double row cow shed should have 7.90 to 8.70 metres length.

VI. STANDARD HEIGHT OF THE BUILDING

- The standard height of the building may differ according to the roofing material and agro climatic condition.

VII. LENGTH OF BUILDING

- The standard length of building may be of any. It may vary depends upon the number of animals housed.
- Length can be determined based on the total stock to be housed within the building.
- Example: In case of dairy 15-20 animals in single row system and 20-50 animals in double row system and above 50 animals a separate shed should be provided.

Floor space requirements

Type of animal	Floor space requirement (m2)		Maximum no of animals / pen	Height of the shed (cm)
	Covered area	Open area		
Bulls	12.0	24.0	1	175 cm. in medium and heavy rain fall and 220 cm. in dry areas.
Cows	3.5	7.0	50	
Buffaloes	4.0	8.0	50	
Down – calver	12.0	12.0	1	
Young – calves	1.0	2.0	30	
Old – calves	2.0	4.0	30	

Construction principles

Wall

- In an enclosed loose box, the solid wall should be constructed with the height of 1.5 meter and above these walls two or three horizontal tubular rods with the gap of 20 to 30 cm are fixed.

Floor

- Flooring should be laid properly for bulls because this will help to reduce the hoof problem.
- Floor can be constructed with rough cement concrete and should have a gradient slope of 1/40 to 1/60 to have easy accessibility to the drainage channel.

- In hot regions, the floor should be cool in summer and should insulate the heat properly.
- Generally, vitrified paving bricks can be used in order to prevent slippery floors.

Roof

- Gable or monitor roof with eaves of 2.5 – 3 m height should be provided and ridge height should be 3.2 – 3.5 m.
- Roofing material used for the bull shed in hot regions should be of good insulating property and poor conductivity of heat.
- Generally, asbestos or galvanized iron sheets are used as the roofing materials.



Thatched Roofing



Loose Housing



Asbestos Sheet Roofing



Concrete Flooring



Bricks Flooring



Mangalore Tile roofing



Feeding Trough of animal sheds



Internal passage, feeding trough of sheds



Bull shed with Loafing area & green shed net



pre coated roofing sheets & vertical turbo

Fittings and Facilities

Manger

- A cement concrete manger with the dimension of 60 cm width, 40 cm depth and 50 cm height of inner wall should be provided inside the bull shed.
- The essential part of fitting in the manger is construction or provision of yoke or tubular stanchions set over the manger.

Water trough

- The bull shed should have a water trough with the dimension of about 60 to 75 cm length.
- The best method for watering in bull shed is by automatic water bowl.

Doorway

- Each bull box should have a main entrance of the half door type 4 feet width and 7 feet height, the upper part of the doorway having two strong bars across the opening to prevent any possibility of a bull jumping the lower door when the upper half is left open.
- Provision should be made on the opposite end of the box for a means of exit, either to a feeding passage or yard.

Yard

- A yard is an open area for the bull and should be of 120m² and the yard should be enclosed on all sides by 0.3 m solid wall and iron tubular rods as partitions to a height of 1.2 m placed at 0.25 m intervals.
- A doorway of 1.2 m width is provided at the end of the yard. The yard should have the floor with cement concrete type and should be

grooved and roughened properly and should have easy access to the drainage system.

- The bull yard is provided for the bulls for the purpose of exercise and also they can view the other animals of the herd so that the feeling of isolation can be avoided for the bulls.

Protection against hot climatic conditions

- The libido and semen quality of bull vary with season and they decrease during summer due to hot weather.
- Bull should be housed in cool and well ventilated shed.
- Showering or splashing of cold water 2-3 times during hotter part of the day is also effective.
- The bulls can be taken for grazing or exercise in the early morning or late evening i.e., cooler part of the day.
- Planting quick growing tall trees around the shed to provide natural shade and good ventilation which will also reduce the effect of unfavorable solar radiation.
- Spreading straw over the roof may reduce the heat inside the animal house.
- The upper surface of the roof may be painted with white or light coloured material to reflect the heat.
- The underside of the roof may be painted with black or dark colour.

REFERENCE

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