4. HOUSING OF DAIRY CATTLE

4.1 Selection of Site for Dairy Farm:

The points which should be considered before the erection of dairy buildings are as follows:

1. **Topography:**

   A dairy building should be at a higher elevation than the surrounding ground to offer a good slope for rainfall and drainage for the wastes of the dairy to avoid stagnation within. A levelled area requires less site preparation and thus lesser cost of building. Low lands and depression and proximity to places of bad odour should be avoided.

2. **Soil Type:**

   Fertile soil should be spared for cultivation. Foundation soil as far as possible should not be too dehydrated or desiccated. Such a soil is susceptible to considerable swelling during rainy season and exhibit numerous cracks and fissures.

3. **Exposure to the sun and protection from wind:**

   A dairy building should be located to a maximum exposure to the sun in the north and minimum exposure to the sun in the south and protection from prevailing strong wind currents whether hot or cold. Buildings should be placed so that direct sunlight can reach the platforms, gutter and mangers; in the cattle shed. As far as possible, the long axis of the dairy barns should be set in north-south direction to have the maximum benefit of the sun.

4. **Accessibility:**

   Easy accessibility to the buildings is always desirable. Situation of a cattle shed by the side of the main road preferably a distance of about 100 meters should be aimed at.
5. **Durability and Attractiveness**:

It is always attractive when the buildings open upto a scenic view and add to the gradeur of the scenery. Along with this, durability of the structure is obviously an important criteria in building a dairy.

6. **Water Supply**:

Abundant supply of fresh, clean and soft water should be available at a cheap rate.

7. **Surrounding**:

Areas infested with wild animals and ‘daoits; should be avoided. Narrow gates, high manger curbs, loose hinges, protruding nails, smooth finished floor in the areas where the cows move and other such hazards -should be eliminated.

8. **Labour**:

Honest, economic and regular supply of labour be available.

9. **Marketing**:

Dairy buildings should only be in those areas from where the owner can sell his products profitability and regularly. He should be in a position to satisfy the needs of the farm within no time and at a reasonable price.

10. **Electricity**:

Electricity is the most important sanitary method of lighting a dairy. Since a modern dairy always handles electric equipments which are also economical, it is desirable to have an adequate supply of electricity.

11. **Facilities, labour and food**:

Cattle yards should be so constructed and situated in relation to feed storages, hay stacks, silo and manure pits as to effect the most efficient utilisation of labour. Sufficient space per cow well arranged feeding mangers and resting areas contribute not only to greater milk yield of cows and make the work of
the operator easier but also minimise feed expenses. The relative position of the feed stores should be quite adjacent to the cattle barn. Noteworthy features of feed stores are given below.

a) Feed storages should be located at hand near the centre of the cow barn.

b) Milk house should be located almost at the centre of the barn.

C) Centre cross-alley should be well designed with references to feed storage, the ’stall areas and the milk house.

4.2 SYSTEMS OF HOUSING - LOOSE HOUSING SYSTEM

The most widely prevalent practice in this country is to tie the cows with rope on a Katcha floor except some organised dairy farms belonging to government, co-operatives or military where proper housing facilities exist. It is quite easy to understand that unless cattle are provided with good housing facilities, the animals will move too far in or out of the standing space, defeating all round and even causing trampling and wasting of feed by stepping into the managers. The animals will be exposed to extreme weather conditions all leading to bad health and lower production.

Dairy cattle may be successfully housed a wide variety of condition, ranging from close confinement to little restrictions except at milking time.

1. The loose housing barn in combination with some type of milking barn or parlour.

2. The conventional diary barn.

4.2.1 LOOSE HOUSING SYSTEM

Loose housing may be defined as a system where animals are kept loose except milking and at the time of treatment. The system is most economical. Some features of loose housing system are as follows.

1. Cost of construction is significantly lower than conventional type.
2. It is possible to make further expansion without change
3. Facilitate easy detection of animal in heat.
4. Animals feel free and therefore, proves more profitable with even minimum grazing
5. Animals get optimum excise which is extremely important for better health production.
6. Over all better management can be rendered.

4.3. SANITATION IN DAIRY FARM

Sanitation is necessary in the dairy farm houses for eliminations of all micro organism that are capable of causing disease in the animals. The presence of organisms in the animal shed contaminates the milk produced thus reducing its self life, milk produced in an unclean environment is likely to transmit diseases which affect human health: Dry floorings keeps the houses dry and protects from foot injury. Similarly the presence of flies and other insects in the dairy farm area are not only disturbs the animals but also spreads deadly diseases to the animals egg. Babesiosis, Theileriosis.

4.3.1 CLEANING OF ANIMAL SHEDS:

The easy and quick method of cleaning animal house is with liberal use of tap water, proper lifting and disposes all of dung and used straw bedding, providing drainage, to the animal house for complete removal of liquid waste and urine. The daily removal of feed and fodder left over in the manger, reduces the fly nuisance. Periodical cleaning of water through eliminates the growth of algae, bacterial and viral contamination and thus keeps the animal healthy.

4.3.2 SANITIZERS:

Sunlight is the most potent and powerful sanitizer which destroy most of the disease producing organism. Disinfection of animal sheds means making these free from disease producing bacteria and is mainly-carried out by sprinkling chemical agents such as bleaching powder, Iodine and lodophor, sodium carbonate, Washing soda, Slaked Lime (Calcium hydroxide), Quick Lime (Calcium oxide) and phenol.
4.3.3 BLEACHING POWDER:

This is also called calcium hypo chloride. It contains upto 39% available chlorine which has high disinfecting activity.

Iodine and Iodophor:-

This is commercially available as lodophores and contains between 1 and 2% available Iodine which is an effective germicide.

4.3.4 SODIUM CARBONATE:

A hot 4% solution of washing soda is a powerful disinfectant against many viruses and certain bacteria.

4.3.5 SLAKED LIME AND QUICK LIME:

White washing with these agents makes the walls of the sheds and the water troughs free from bacteria.

4.3.6 PHENOL:

Phenol or carbolic acid is a very disinfectant which destroy bacteria as well as fungus.

4.3.7 - INSECTICIDE:

Insecticides are the substances or preparations used for killing insects. In order to control flies and disease transmitting ticks, insecticides are used in dairy farms. Ticks usually hide in cracks and crevices of the walls and mangers. Smaller quantities of insecticide solutions are required for spraying. Liquid insecticides can be applied with a powerful sprayer, hand sprayer, a sponge or brush, commonly used insecticides are BHC, DDT, Gramaxane wettable powders, malathion, surriithion, Sevin 50% emusifying concentration solutions. These are highly poisonous and need to be handled carefully and should not come in contact with food material, drinking, water, milk etc.
Precautions While using disinfection I Insecticide.

* Remove dung and used bedding completely.
* Avoid spilling of dung and used bedding while carrying it out.
* Avoid the use of dirty water in cleaning the sheds.
* Never put the fresh fodder over the previous day’s left over fodder in the manger.
* Prevent algae to grow in the water troughs
* Use proper concentration of disinfectant / insecticide solutions to avoid any toxic effects poisoning.
* Avoid of the mat the milking time as milk absorbs these quickly.

PROCEDURE:

* Remove the dung from the floor and urine channel with the help of a shovel and basket (iron) and transfer it to the wheel - barrow. Remove the used bedding and leftovers from the mangers in a similar way.

* Empty the water trough and scrape its sides and bottom with the help of a floor brush.

* Wash the water trough with clean water and white wash it with the help of lime mixture once a week.
* Scrape the floor with a brush and broom and wash with water.

* Clean and disinfect the splashes of dung on the side walls, railing and stanchions.

* Remove the cobwebs periodically with the help of a wall brush.

* Sprinkly one of the available disinfecting agent in the following concentration. Bleaching powder should have more than 30% available chlorine. Phenol 1-2% solution. Washing Soda (4% solution).
* Allow adequate sunlight to enter into the shed.
* Spray insecticides at regular intervals specially during the rainy season (Fly season).
* White wash the walls periodically by mixing insecticides init to eliminate ticks and mites living in cracks and crevices.

SUMMARY

In this chapter different points to be considered while selecting the site for establishment of dairy farm are explained. Different housing systems are explained in detail to know the advantages and disadvantages in different systems. For different climatic conditions, the alterations or provisions to be made are explained to protect the animals during different climatic condition. The animal responses for environmental changes are discussed. Different steps to be followed for good sanitation in dairy farm will give guide to maintain dairy farm.

SHORT QUESTION

1. What is loose housing system?
2. What is conventional dairy barn?
3. During winter what alteration to the floor of shed is required?
4. What arrangement should be done to the roof of animal shed during summer?
5. What is sanitizer?
6. Give two sanitizers used in animal sheds.

LONG QUESTIONS

1. What are the points to be considered while selection of site for dairy farm?
2. Write in detail about loose housing system “?”
3. Briefly discuss about conventional dairy barns?
4. What are the changes adopted to suit for different climatic conditions?
5. Briefly write about sanitation in a dairy farm shed?
6. What are the animals responses for environmental changes?