

JOB ROLE – DAIRY FARMER-I

Sector – Agriculture

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Class XIth



PSS Central Institute of Vocational Education
Shyamla Hills, Bhopal – 462 013 , Madhya Pradesh, India

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UNIT 2 :Livestock Accommodation

Session 1: Basics of Animal Housing

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Session Objectives

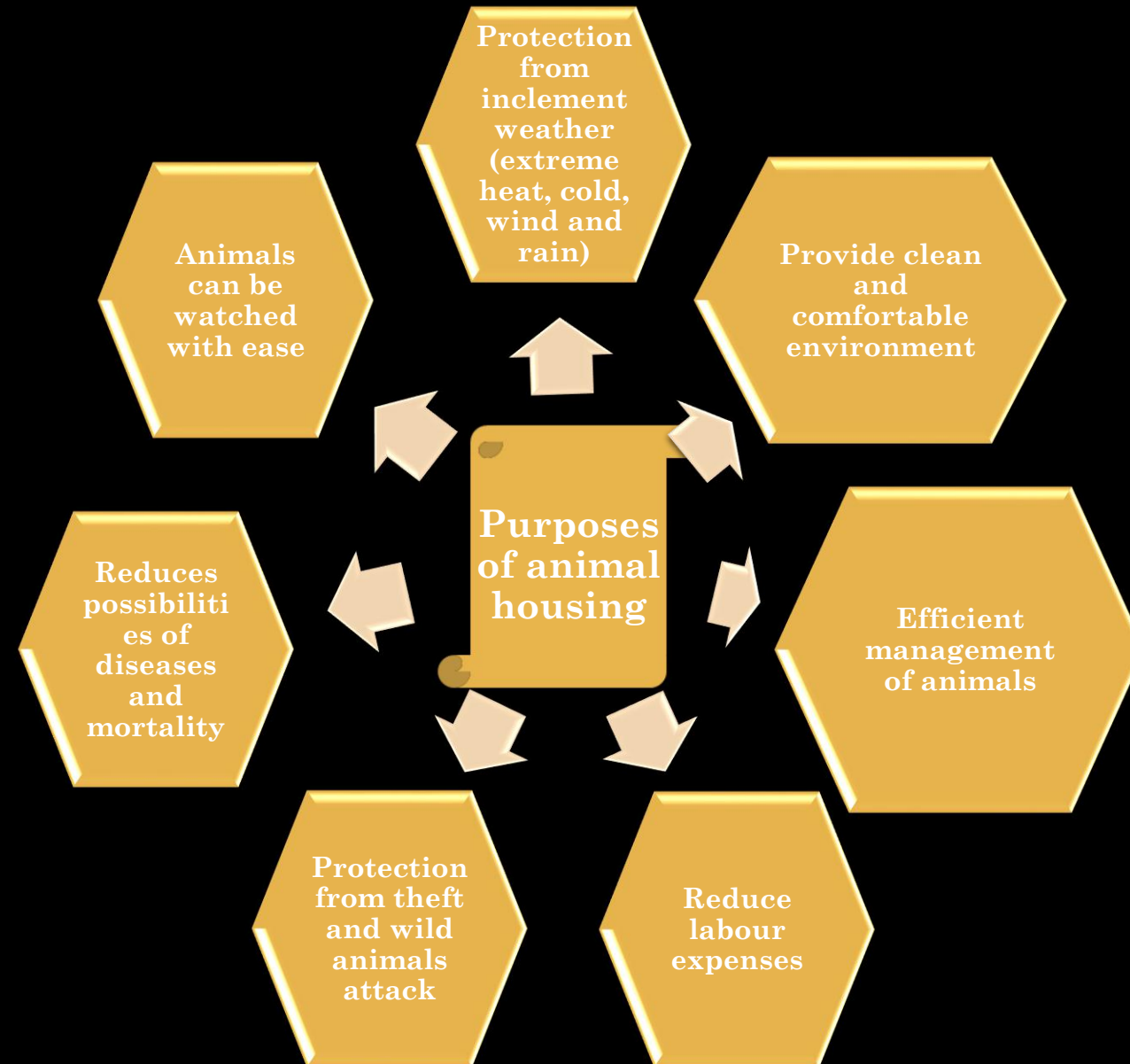
In this session the students will learn about the :

- Basics of animal housing and their key aspects
- Type of livestock housing systems
 - Loose housing system and its benefits
 - Conventional housing system and their types i.e. tail- to- tail and head-to-head housing systems and their benefits
- Equipment and machinery required for livestock housing
- Routine activities of a dairy farm

Introduction

- Proper housing based on scientific principles is an important aspect of dairy animal management for obtaining maximum productivity of the animals
- Clean and comfortable shelter increases the comfort level of the animals and results in their good health
- The essential criteria for housing dairy animals includes animal health and comfort, hygiene, protection from predators, theft and diseases, efficient and economical use of labor and provision of suitable environment for hygienic milk production.
- In the absence of proper housing, animals are exposed to extreme temperature, wind, cold, rain, snowfall, etc., which adversely affect their health, production and reproduction.

Basics of Animal Housing



Key Aspects of Animal Housing

Six important aspects of livestock housing are as follows:

1. *Space* : Availability of sufficiently spacious area allows the animals to move freely and gives them easy access to feed and water.

2. *Feed* : Arrangements are made in housing so that animals can eat a palatable and well-formulated feed. The feed is available daily for at least 21 hours.

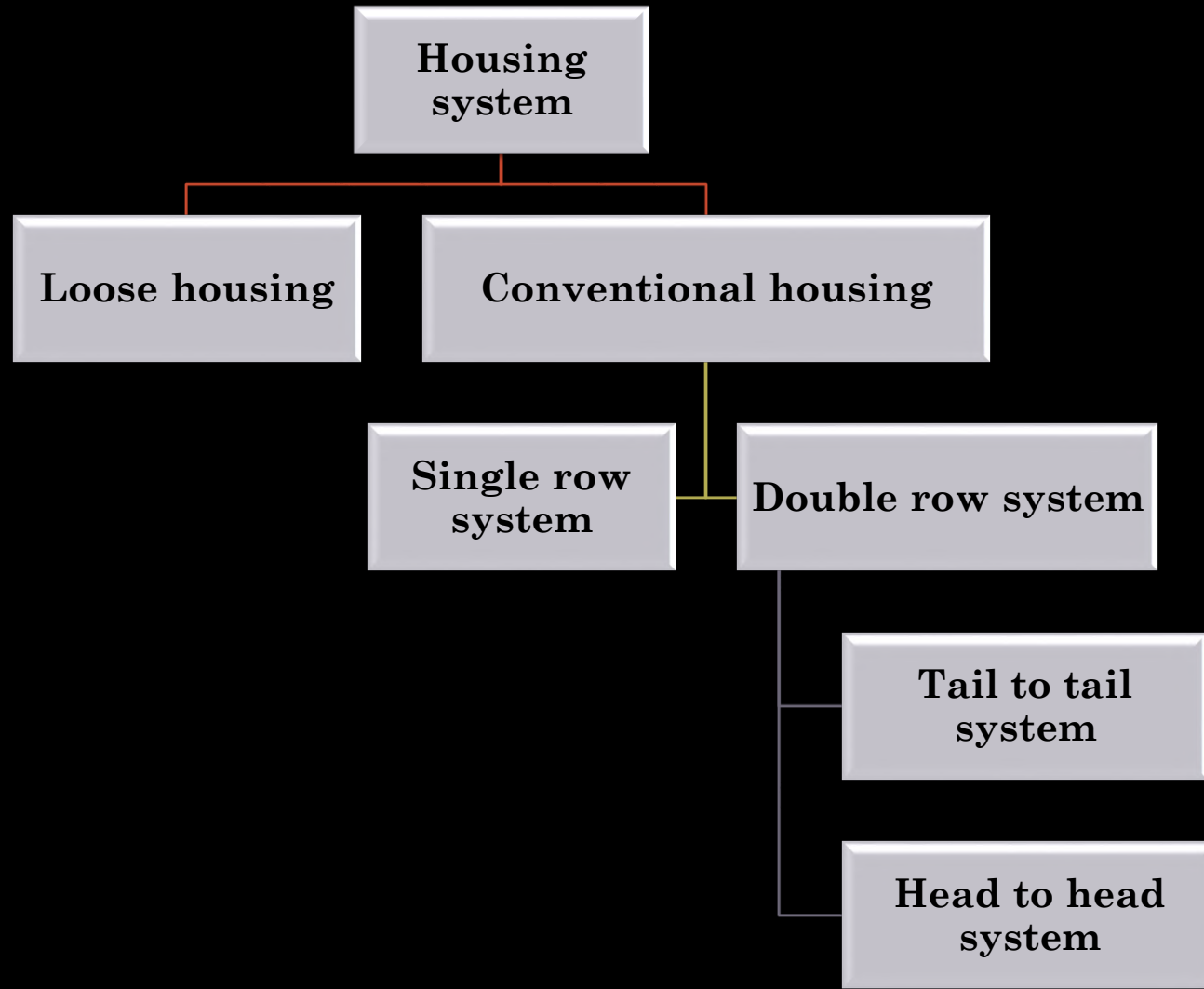
3. *Water* : Accessibility of clean water for at least 21 hours daily.

4. *Air* : Access to fresh and clean air.

5. *Light* : Availability of sufficient natural light and provision to maintain six hours of darkness for farm animals are essential for optimum production.

6. *Rest* : Sufficient dry and comfortable space for taking rest and lying down for at least 13 hours per day.

Types of livestock housing



Loose housing system

- In this system of housing, animals are kept loose in an open area in groups, during the day and night.
- A loose housing layout has an open area and a resting area.
- The open area has a covered shed on one side under which the animals can retire during excessive heat, cold, rains, etc.
- In this system of housing, feed and fodder is offered in a common manger and water is provided in common water troughs.
- There is a separate milking parlor with facilities for milking of animals

Flooring in loose housing system

- The floor of the dairy animal shed is made of waterproof material which can be easily cleaned and dried so that it is not slippery.
- Paving with bricks or grooved cement concrete floor can be used for this purpose.
- The following space per animal shall be provided for various categories of animals

Type of animals	Floor space required (m ²)		Height of shed at eaves
	Covered area	Open area/ paddock	
Cows	3.5	7.0	40
Buffalo cows	4.0	8.0	40
Bulls	12.0	24.0	1
Down calver	12.0	12.0	1
Young stock	2.0	4.0	30
Calf	1.0	2.0	30

175 cm in medium and heavy rainfall area and 220 cm in semi arid and arid areas.

Mangers and water troughs

- The water troughs are located near the feeding area and seldom in the resting area
- Mangers and water troughs are constructed with reinforced cement concrete, or brick with cement mortar or stone slabs with cement joining.
- The mangers need to have smooth surfaces for easy cleaning and easy intake of feed by the animals.

Feeding and watering space requirements in a paddock

Types of Animal	Linear length per animal (m)	Total manger length (m)/ 100 animals	Water troughs (m)/ 100 animal	Dimensions of manger/ water trough		
				Height of wall (cm)	Depth (cm)	Width (cm)
Adult cattle and buffaloes	0.6-0.7	60-75	6.0-7.5	60	40	50
Calves	0.4-0.5	40-60	4.0-5.0	40	15	20

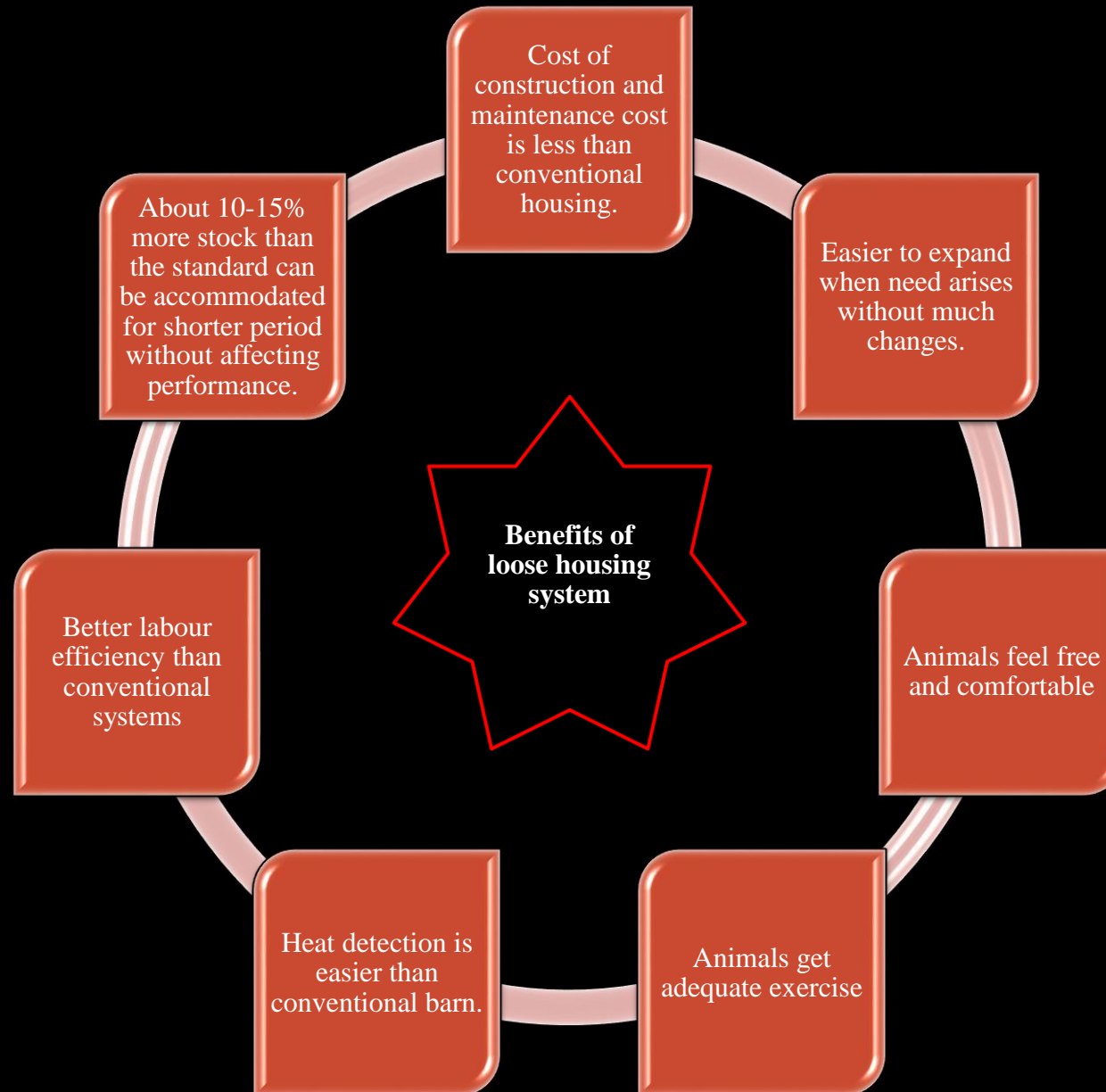
Resting Area

- The resting area is a building or enclosure where cattle can rest or lie down on a dry bed.
- It provides shelter from cold winds, snow, rain and extremes of weather, and is always roofed. Resting area is not used as a waiting or exit area for the milking parlor.
- Feeding and watering is never provided in the resting area.

Bedding material for resting area

- Bedding is provided to the animals to keep them clean and comfortable.
- The usual bedding material are wheat straw, rice straw and sawdust. The desirable qualities of the bedding material are bulkiness and large liquid absorption capacity

Benefits of loose housing system



Conventional Housing System

- In the conventional barn, each animal is tied up in a stall for resting, feeding, milking and watering
- In this system, animals are confined together on a platform and secured at neck by stanchions or neck chain.
- The barns are completely roofed and the walls are also complete with windows and/or ventilators.
- Feed is delivered in a trough in front of the cows. Milking is done individually in the stall using bucket or machine

- Manure is collected in a gutter. This type of housing is most suitable in the temperate region to protect animal from heavy snow fall, rain and strong wind.
- Heat detection demands more attention.
- Where winter is prolonged and severe, conventional barns are suitable.
- The distance between two sheds should not be less than 30 feet.

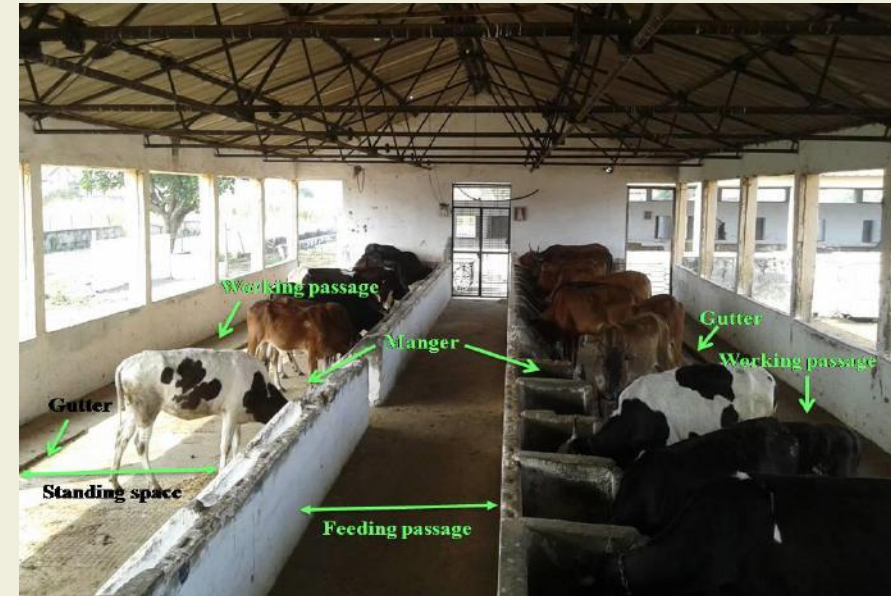
Cattle shed

- The arrangement of the animals within a shed depends upon the number of animals to be accommodated
- It is advised to have a single row system when the number of animals is up to 10.
- When the number of animals exceeds 10, the double row system is desirable
- Generally, one shed can accommodate 50–60 cattle.
- Modern management system allows one shed to accommodate
- even 100 cows.
- In double row housing, either the cattle face out from each other (tail-to-tail system) or face in towards each other (head-to-head system).

Types of Conventional Housing Systems

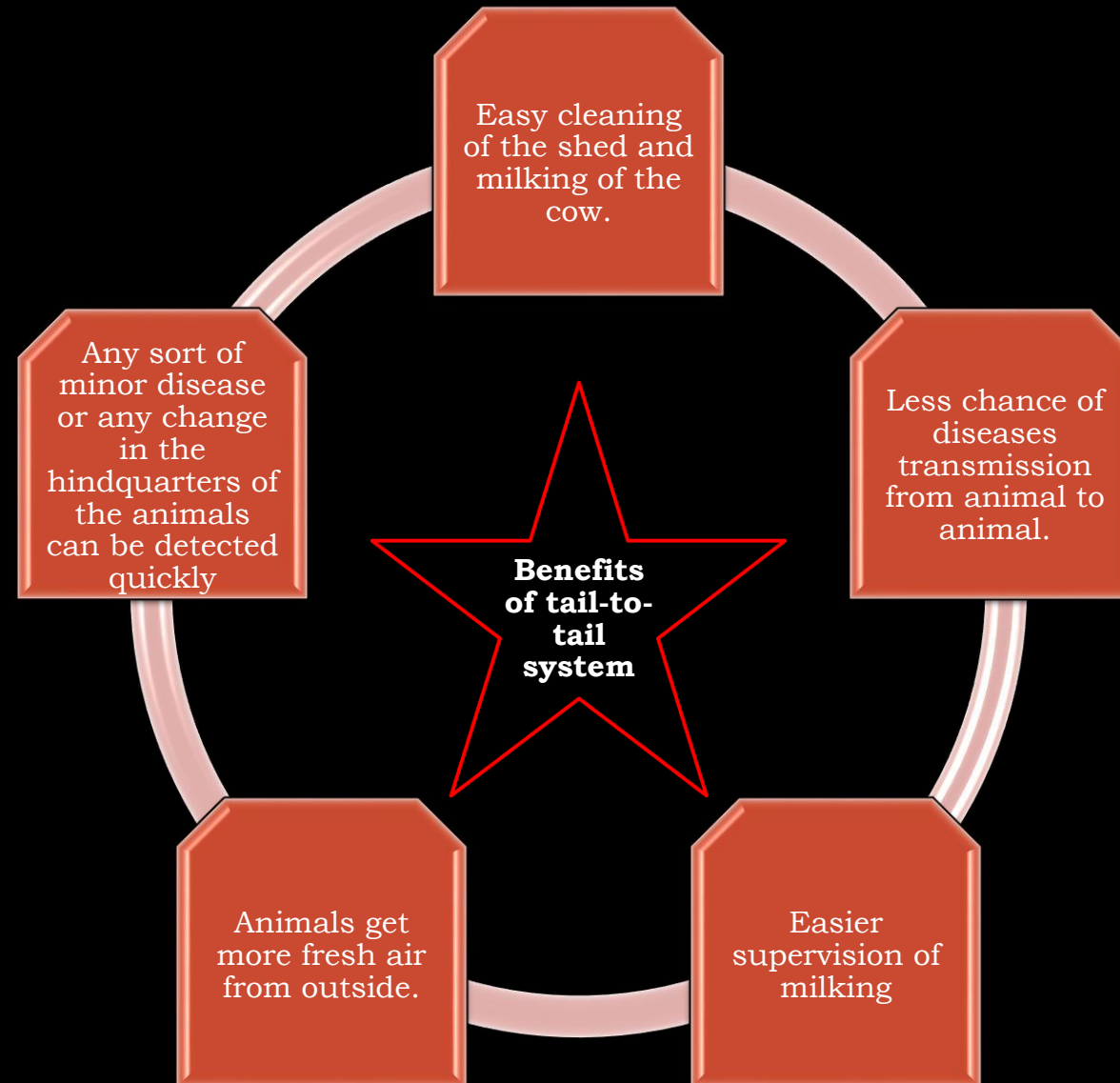


Tail to tail housing system

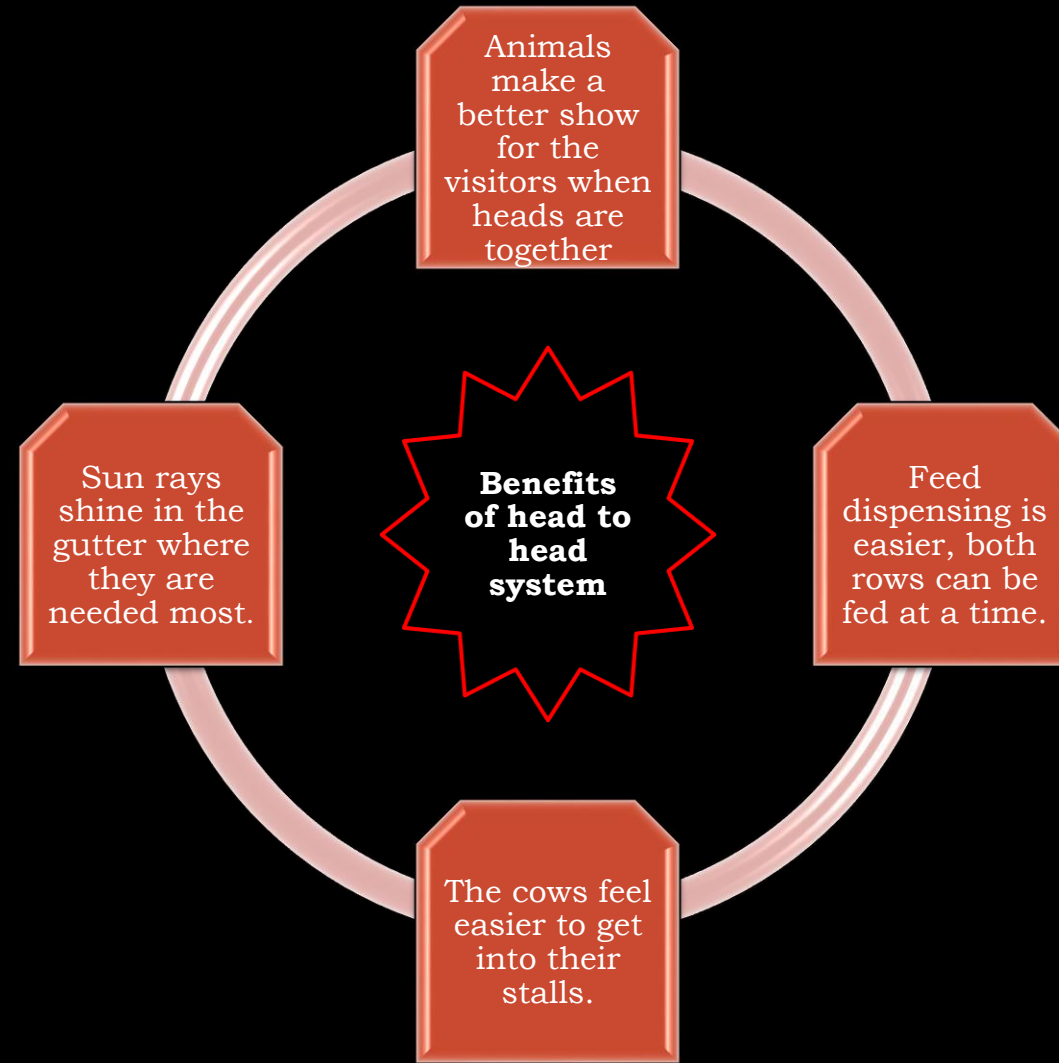


Head to head housing system

Benefits of tail-to-tail housing system



Benefits of head-to-head housing system



Equipment and machinery required for livestock housing

- The type and quantity of machinery required for dairy farm depends on the level of mechanization and number of animals.
- If the farm is situated in an area with extreme weather conditions, then there is a need of cooling and heating devices especially for young calves, ill or injured and pregnant cows.
- In case of a farm with more than 50 animals, milk cooling devices, generator set and utility vehicle are also essential for distribution, procurement and selling of milk, etc.

Equipment and machinery required for livestock housing



Platform type electronic animal weigh bridge: Used to measure the body weight of animals



Bull nose ring: Nose rings are inserted through the nasal septum of bull. It helps in controlling of bulls



Bull leader: Used for controlling of bull



Ear tags and tag applicator: Used for identification of animals



Electrical dehorner: Used for disbudding of horn of calf



Branding numbers: Used for identification of animals by branding method.



Metal drenching bottle: Used for application of medicine through oral route



Burdizzo castrator: Used for castration of male calves



Hoof trimmer: Used for trimming of hooves



Bulk milk cooler: Used to cool the milk just after milking

Routine activities of a dairy farm

Daily routine

- milking
- cleaning of shed
- cleaning of mangers
- cleaning of milking utensils
- feed preparation
- feed distribution
- routine treatments of animals
- heat detection
- artificial insemination
- checking stock balance
- recording of data

Monthly routine

- cleaning and painting of waterer
- thorough cleaning of premises
- checking of all implements and machinery
- oiling and greasing of implements and machinery
- repairing of small wear and tear inside the animal house

Quarterly or yearly routine

- vaccination
- deworming
- major repairing or farm building and premises

Summary

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- Equipment and machinery required for livestock housing
- Routine activities of a dairy farm

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