

JOB ROLE – DAIRY FARMER-I

Sector – Agriculture

(Qualification Pack Code: Ref.Id.AGR/Q4101)

Class XIth



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

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Unit 4 : Providing Feed and Water for Livestock

Session 4 : Maintaining Feed and Water Supply

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Session Objectives

- **In this session the students will learn about maintaining**
- **Maintaining feed and water supply**
- **Broad plan to ensure availability of feed and fodder**
- **Broad plan to ensure regular supply of water**
- **Water requirement of dairy animal**
- **Factors affecting water requirement of cattle**

Introduction

Maintaining Feed and Water Supply

- Cattle require regular supply of feed and fresh water. Systematic planning is required to ensure that uninterrupted feed and water is available to the animals.
- Following three components are involved in planning regular feed and water supply to the animals.
 - (i) Material (feedstuff and water)
 - (ii) Man (labor)
 - (iii) Machinery (such as water pump, feed grinder and mixer, etc.)
- If any one component gets disturbed, the supply of feed and water gets hampered

Broad plan to ensure availability of feed and fodder

Type of feedstuff	Planning
Concentrate mixture	<p>Most of the ingredients used for the preparation of concentrate mixture are readily available during the harvesting season. However, long term storage of these items may lead to infestation and damage by insects and rodents. Therefore, these losses can be kept in mind before storing these ingredients for longer period.</p>
Feed supplements	<p>Feed supplements are regularly added to the ration of the animals. After evaluation of the price and quality, these feed supplements can be purchased and stocked if necessary.</p>
Dry fodder (wheat straw, etc.)	<p>During harvesting season, wheat straw is readily available at discounted prices. Once stored properly, it can be used for a longer period. Quantity of straw required for the whole year should be estimated in advance. Accordingly they should be stored in the farm in such a way that it can be used till the next harvesting or procurement season.</p>

Type of feedstuff	Planning
Hay and Silage Cultivating	These are usually prepared on the farm itself. When the green fodder is scarce, hay and silage are usually fed to the animals.
Cultivation forage for feeding of Animals	Green fodder crops can be easily grown throughout the year. harvesting and supply of green fodder to the animals is planned in advance

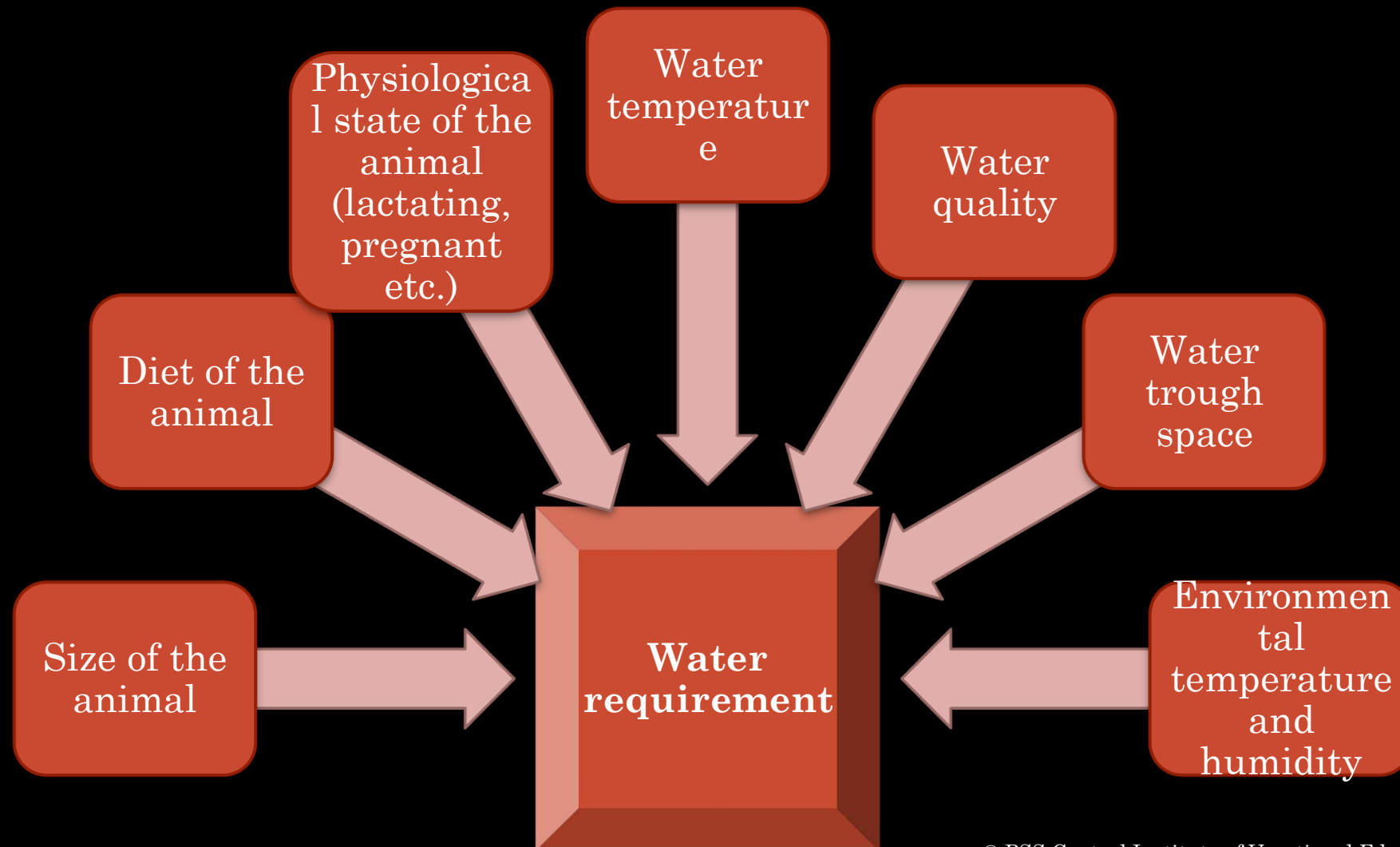
Broad plan to ensure regular supply of water

Water required for	Planning
Drinking	Watering points are constructed in such a way that each animal has free access to water throughout the day and night. The quality of drinking water for animals is assured. In summer months, animals need more water, therefore sufficient water supply is made available.
Cleaning of sheds and surrounding	Daily cleaning of the sheds and surrounding is quite important, otherwise chances of disease incidence will be higher.
Washing of animals	Milking animals are regularly washed just before milking. Other categories of animals may be washed daily. In summer, at least two times washing is required to avoid stress due to extreme heat.

Water requirement of dairy animal

- Water is the major constituent in the animal body. Adult animal body contains about 65 per cent water.
- While deprivation of food for a short period is not fatal to the animal, the deprivation of water can prove fatal.
- Water is regularly lost from the animal body through urine, faeces, exhaled air and skin.
- In addition, milking cows lose water through milk (contain about 87% water).
- The requirement of water increases along with milk yield, high protein diet, non-availability of succulent green fodder and climatic condition (hot summer months).

Factors affecting water requirement of cattle



Salient points regarding watering of dairy animals

- (i) Dairy animal drinks water several times in a day. Total water intake in a day depends upon the type of feed available to the animals and milking status of the animal (milking or dry).
- (ii) Cattle generally drink 30 to 40 per cent of daily water requirement within 1 hour of milking.
- (iii) Temperature of drinking water: Cattle like to drink water in the range of 17–27°C rather than very cold or hot water.
- (iv) Minimum water depth in the water trough: Water depth of a minimum of 3 inches is maintained to allow the animals to submerge their muzzles 1 to 2 inches deep in water
- (v) Watering point: For each group of animals, at least two watering points (water troughs) are required in a paddock

(vi.) As a rule of thumb, water intake is about 8–10 per cent of body weight during favorable environmental conditions. It may reach to 13-14 per cent of body weight during hot weather.

(vii.) 400 kg cow producing 10 liters of milk is provided with $\{[(400 \times 10\%) + (1.5 \times 10)] \text{ liters} = [40 + 15] \text{ liters} = 55 \text{ liters}\}$ 55 liters of drinking water.

(viii.) About 70–75 liters of water is required for washing of animals and cleaning of shed.

(ix.) The minimum daily water requirement for a cow is about $55 + 75 = 130$ liters

Salient aspects of planning feed and water supply to animals

(i) The dairy entrepreneur understands the basic behavior of the animals and treats them accordingly. The farm workers need to be trained on the importance of maintaining cleanliness and hygiene.

(ii) Feed and fodder are supplied at least twice daily. Therefore, total required daily quantity of feed and fodder is divided into two parts and supplied to the animals at regular intervals

(iii) It is better to mix chopped green fodder, straw and concentrate mixture to increase the feed intake and better utilization of feed by the animals

(iv) Feed is given to sick animals as per veterinarian's recommendations.

(v) In extreme summer months, major quantity of feed is preferably supplied during night.

(vi) Regular observations on feeding and drinking habits of animals are made. Marked changes in feeding and drinking pattern of particular animal is an indication of adverse health conditions

(vii) Feeding manger is cleaned daily. Any leftover and stale feed is discarded as per standard waste disposal methods

(viii) The equipment and machinery used for feed and water supply are cleaned regularly and maintained properly.

(viii) Water troughs are cleaned and dried every fortnight and lime is painted on the inner walls of the water troughs to check the growth of algae.

(ix) Special attention is given to the young, sick, injured animals, and animals in advanced pregnancy.

(x) The workers serving feed to the animal are expected to have a compassionate approach towards the animals

Causes of feed wastage and measures to minimise it

- In every farm some amount of loss of feed is inevitable. Feed losses on farm occur during the following stages.
- *(a) Storage of feed:* During storage of feed a major amount of feed is wasted due to the infestation of insects, rodents, etc.
- *(b) Preparation of feed:* During grinding and mixing, some amount of feed is liable to be wasted.
- *(c) Feeding of animals:* Animals generally spill and waste feed. Such a wasted feed is wet and covered with saliva of the animal, and is susceptible to spoilage. If this feed is left in manger, animals do not consume it. This wasted feed is a breeding ground for flies and attracts rodents, etc.

Mixing chopped green fodder, straw and concentrate mixture for better utilization of feed by the animals



Chopped green fodder, straw and concentrate mixture kept in feeding manger before mixing



Dairy worker manually mixing the chopped green fodder, straw and concentrate mixture



Mixed up green fodder, straw and concentrate mixture ready for animal feeding

Summary

In this session the students have learnt about

- **Maintaining feed and water supply**
- **Broad plan to ensure availability of feed and fodder**
- **Broad plan to ensure regular supply of water**
- **Water requirement of dairy animal**
- **Factors affecting water requirement of cattle**

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