

FEEDING SYSTEMS (Level 1)

Topic	Training & information Content
3.1	Estimating feeding value of fodder & feed on dairy farms
3.2	Sampling feeds & forages/analysis interpretation
3.3	Estimating Dry Matter intake for various breeds/age categories of dairy cattle in the tropics
3.4	Reviewing feed intake, rumen fill, Body Condition Scoring (BCS)
3.5	Life weight estimation of cows
3.6	Rumen fermentation
3.7	Mineral & vitamin requirement, guidelines
3.8	Manure scoring and evaluation
3.9	Guidelines for ration calculations for various breeds, heifers, lactation stage (Rumen8)
3.10	Use of Rumen8 software for ration calculation
3.11	Optimization of ration with Rumen8
3.12	Feeding management guidelines
3.13	Feeding management of dry cows/close up
3.14	Feeding systems
3.15	Metabolic disorders
3.16	Scoring locomotion and hoof condition
3.17	Mycotoxin in dairy cattle nutrition
3.18	Heat stress in dairy cattle nutrition
3.19	Monitoring feeding management, using KPIs (based on Rumen8)



1. You will learn about (learning objectives):

- What is a feeding system?
- Choosing a feeding system.
- Types of feeding systems.



2. Introduction

- There are different systems used in feeding animals.
- Under these systems animals can be purely fed on grass/pasture or supplemented with other feed.
- The feed can be provided using various methods under the different feeding systems e.g. cut and carry.



3. Factors influencing choice of a feeding system

- Number of cows.
- Potential number of groupings (animal categories).
- Storage area for forage and concentrates/cereals/grains.
- Milking system and/or building for milking
- Housing.
- Manure management.
- Financial capability.



4. Guidelines for selecting a feeding system

Feeding systems should;

- Be able to deliver feed to each cow.
- Meet individual cow requirements.
- Offer feed *ad lib* (free choice); this encourages intake and optimize dry matter intake.
- Be simple, efficient and easy to provide feeds and manage (reduce feed cost).



5. Types of feeding systems

- Common type of systems are;
 - i. Pasture/grazing systems (extensive feeding systems)
 - ii. Semi-confined systems (semi-intensive feeding system)
 - iii. Confined systems (intensive feeding system)

Further reference: See module on Estimating feeding value of fodder & feed.



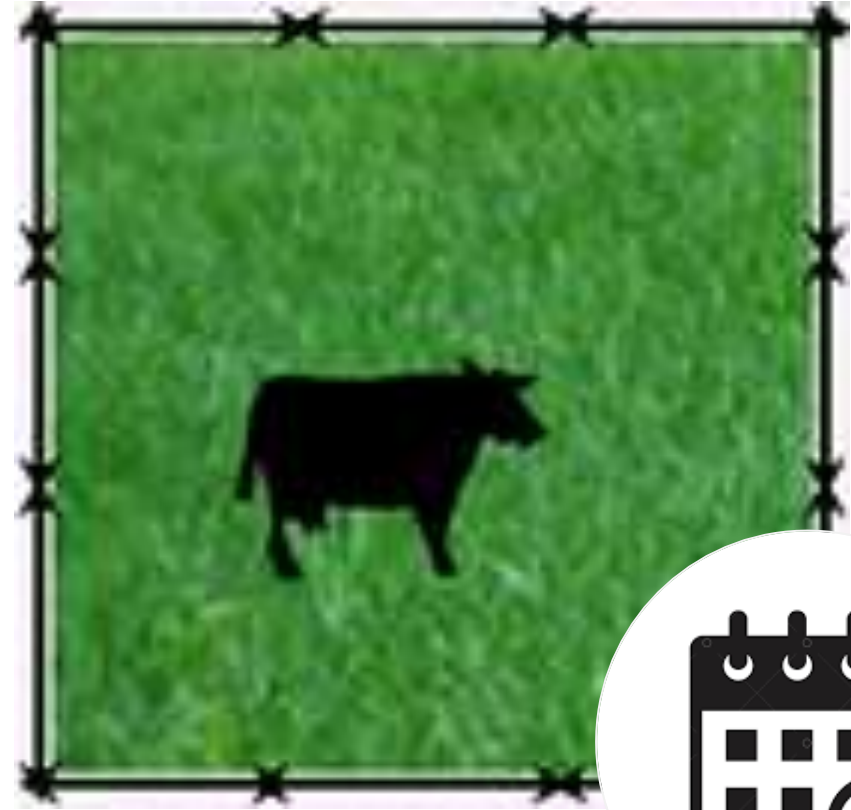
6. Pasture-based systems

- In pasture systems cows majorly rely on grazing.
- The common grazing systems are:
 - i. Continuous grazing system
 - ii. Rotational grazing system
 - iii. Management intensive grazing system (MIG)



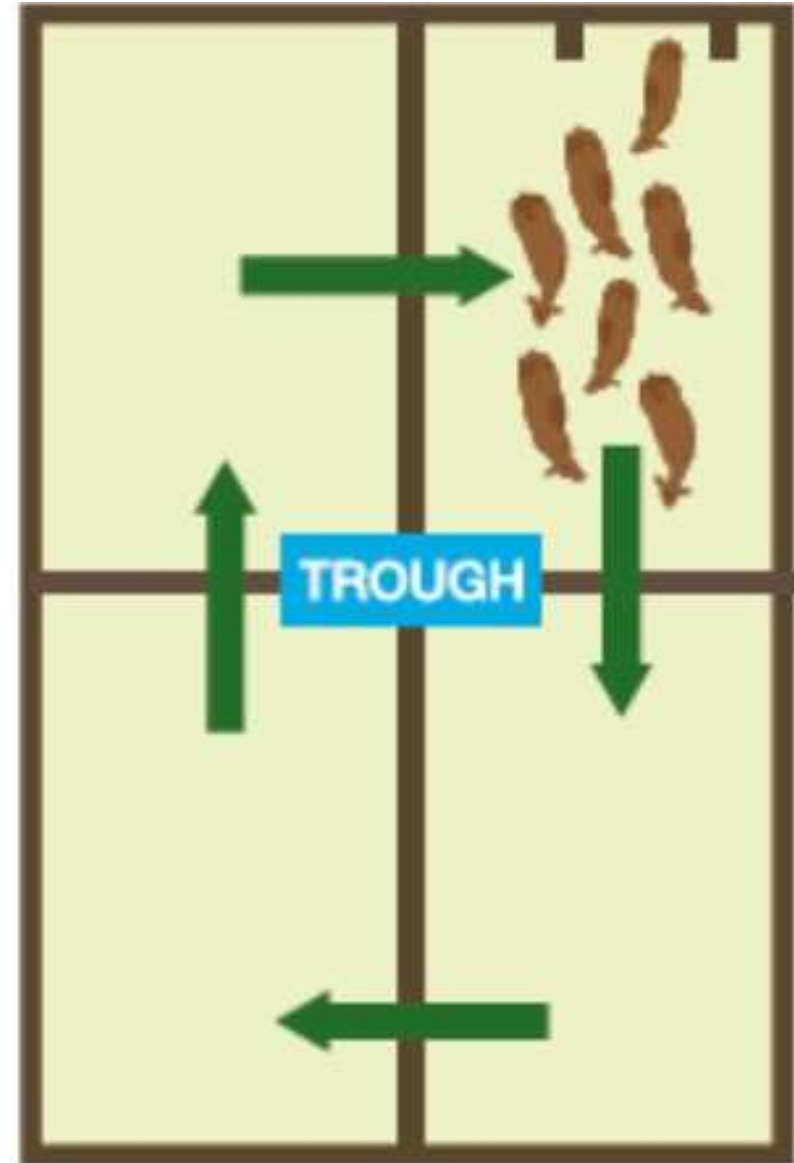
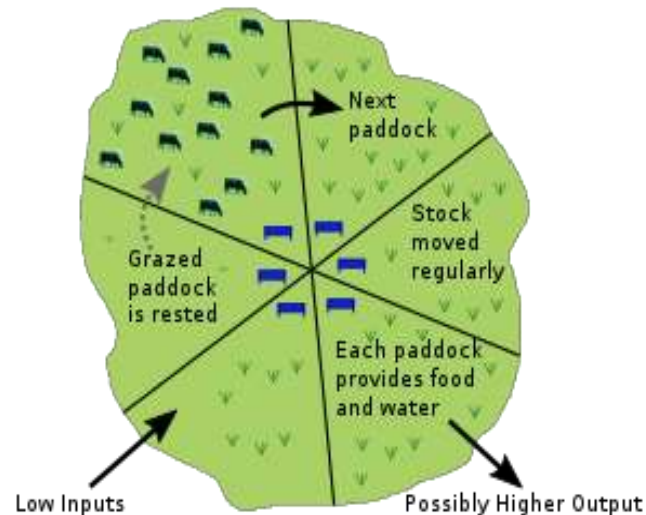
7. Pasture-based systems: Continuous grazing

- Cows are left to graze on a particular pasture for a long period of time, like a whole year.
- Cows are not restricted (no fencing).
- It usually results in poorer quality and quantity of pastures.
- Feed supplementation is generally required for this system.



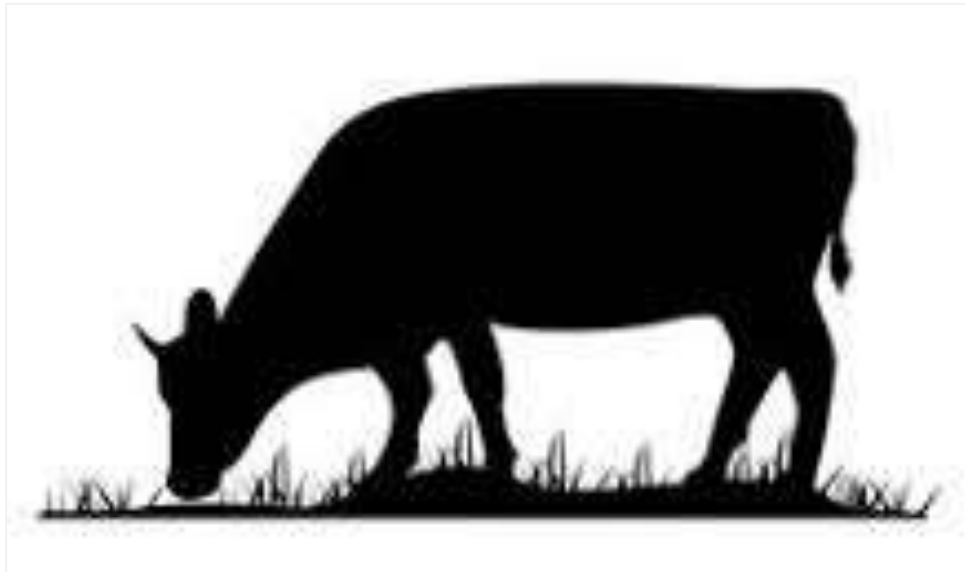
8. Pasture-based systems: Rotational grazing

- Pastures are divided into paddocks. Animals move from one paddock to another.
- Once the last paddock has been grazed, animals go back to the first paddock and the herd will start rotating the paddocks once again.
- Once a paddock is grazed it is left to rest. The 'rest period' facilitates recovery.



9. Pasture-based systems: Management intensive grazing system (MIG)

- MIG refers to several systems that allows farmers to subdivide and utilize particular pastures, allowing other grazing areas to rest and recover. This controls grazing.
- Farmers incur more costs at initial stages of production such as fencing and water systems.
- The system also requires higher level of skills and management.



10. Checklist for cows on pasture-based systems

- **Cow appearance:** dull and rough haircoat may signify pasture deficiencies or infestation by pests and diseases.
- **Cow behavior:** refusing to graze, isolating themselves or discomfort while walking implies health problems.
- **Grazing behavior:** by cows helps identify when to rotate cows to new paddocks (walking especially in the morning).
- **Rumen fill and body condition score** helps farmer determine if pasture feeding is sufficient.
- **Specific injuries and infections** confirms bullying, infections or pests and disease infestations.



11. Semi-confined systems

- This is also known as semi-intensive feeding system.
- Cows access pastures in the field for a period of the day and get confined mostly at night.
- At confined places the cows are provided with extra feed.



12. Fully confined feeding systems

- Are best known as intensive-feeding systems, for example zero-grazing or indoor cow barns.
- Animals are housed in relatively densely populated barn where feed and water are brought to them.
- Forages are harvested manually or mechanically and transported and spread along the feed fence or in a feed trough for the cows to feed.



13. Advantages of confined feeding systems: Fully and semi confined feeding systems

- i. Improved feed management.
- ii. Improved cow productivity and performance.
- iii. Confining cows during the dry period of the year allows pastures to recover and rest.
- iv. Animal health, reproductive activity, weight and body condition score is easier to observe and monitor.

