

FEEDING MANAGEMENT GUIDELINES

(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):

- ❑ Basic feed requirements of a cow and feeding;
 - Feed requirements of a cow.
 - Factors affecting feed requirement in a cow.
 - Guidelines for meeting cow feed requirements.



2. Introduction

- Feed costs make up a high percentage of the total cost of milk production in a farm.
- Rations should meet the nutritional needs of the cows, heifers or calves (a ration is all the feeds the cow eats in a day).
- A well balanced ration helps the cow to maintain good health, fertility and production.



3. Feed requirements in a dairy cow

- A cow's feed requirements include;
 - i. Water
 - ii. Energy
 - iii. Protein
 - iv. Minerals and vitamins
 - v. Additives



4. Factors affecting feed intake in cows: Animal factors

Animal factors include;

- Age
- Size/weight
- Stage of production (lactation)
 - Early lactation
 - Mid lactation
 - Late lactation
 - Dry period
- Milk production
- Health
- Cows activity



4.1 Factors affecting feed intake in cows Cont'd: Feed factors

Feed factors include;

- Feed palatability
- Digestibility
- Moisture content
- Composition of the ration
- Treatment and cleanliness of feed.

Further reference: [Module on Evaluating forage quality.](#)



4.2 Factors affecting feed intake in cows Cont'd: Feeding related factors

Feeding related factors include;

- Regular feeding
- Constant feeding
- Feeding frequency
- Restrict supply of concentrates
- Particle size
- Grazing compared to total mixed rations (TMR)
- Variation of supply.



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4.3 Factors affecting feed intake in cows Cont'd: Environmental factors

Environmental factors include;

- Heat (stress)
- Rain
- Feeding space
- Noise



5. Balanced feed for a cow

- Forages provide many nutrients for cows.
- To formulate a balanced ration supplementation with extra energy/protein/minerals/vitamins is needed.
- Supplementation can be done with;
 - i. Other forages
 - ii. Concentrates (grains, agro-industrial by products)



5.1 Feeding Forages to cows

- Forages are essential to support rumen activity.
- When feeding fresh forages it is recommended to cut them at the right and most nutritious stage.
- It is advisable to maintain a minimum forage to concentrate ratio of 40:60 percent on weight basis.



5.2 Feeding Concentrates to cows

- Feeding concentrates may vary within the year due to accessibility and cost which can influence changes in the formulation of the ration.
- Introducing concentrate needs to be gradual and dozed to avoid acidosis.



6. Feeding guidelines

- Make a feed plan for all animal categories every year.
- Observe animal behavior while feeding.
- Inspect feeding and watering areas for the animals (indoors and outdoors).
- Feed in relation to animal wellbeing and welfare.
- Compare cost of feeds (per kg, per kg DM, per MJ ME, per kg CP).



7. Feed planning

- Do not limit forage production to immediate needs of the cows.
- Feed planning ensures long-term access to quality feeds.
- Farmers with little land can consider creating more storage space and buy forages (hay or silage) when supply is high and prices are lowest.



8. Animal feeding behaviour

- Check on;
 - Eating behaviors
 - Drinking behaviors
- The amount of time animal spends eating can signify presence of adequate feed especially for pasture-based systems.
- Constant visit to watering points and drooling signifies water demand. Feeds and water need to be accessible to all cows at all times.



Drooling cow

9. Animal welfare and wellbeing

- Animal welfare refers to how an animal is protected and cared for through the treatment it receives.
- Inadequate feeding undermines animal welfare.
- Overfeeding and underfeeding affects animal welfare.



10. Feed costs

- Costs apply whether on is feeding home-grown forages or purchasing feeds from the market.
- Accounting for cost of feed ingredients is key.
- Feed costs influence profitability of the farm.
- Feed costs also guide farmers with ration formulation.



11. Summary/Take home messages

1. Consistent observation and monitoring of cows helps identify any changes before situation gets out of hand.
2. Make rations according to animal categories (groups), production levels and health status.
3. Introduce new feeds gradually to allow cows (rumen microbes) time to adjust to changes in the ration.

