

ESTIMATING FEEDING VALUE OF FODDER AND FEED (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):

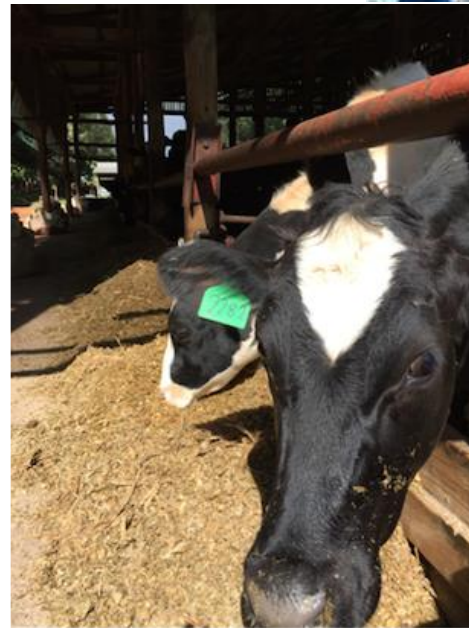
- How to estimate feeding value of fodder and feed in the farm.
 - What is feed quality?
 - How estimating/evaluating of feed quality is done?

- Know importance of feeding value in meeting animal nutrient requirements.



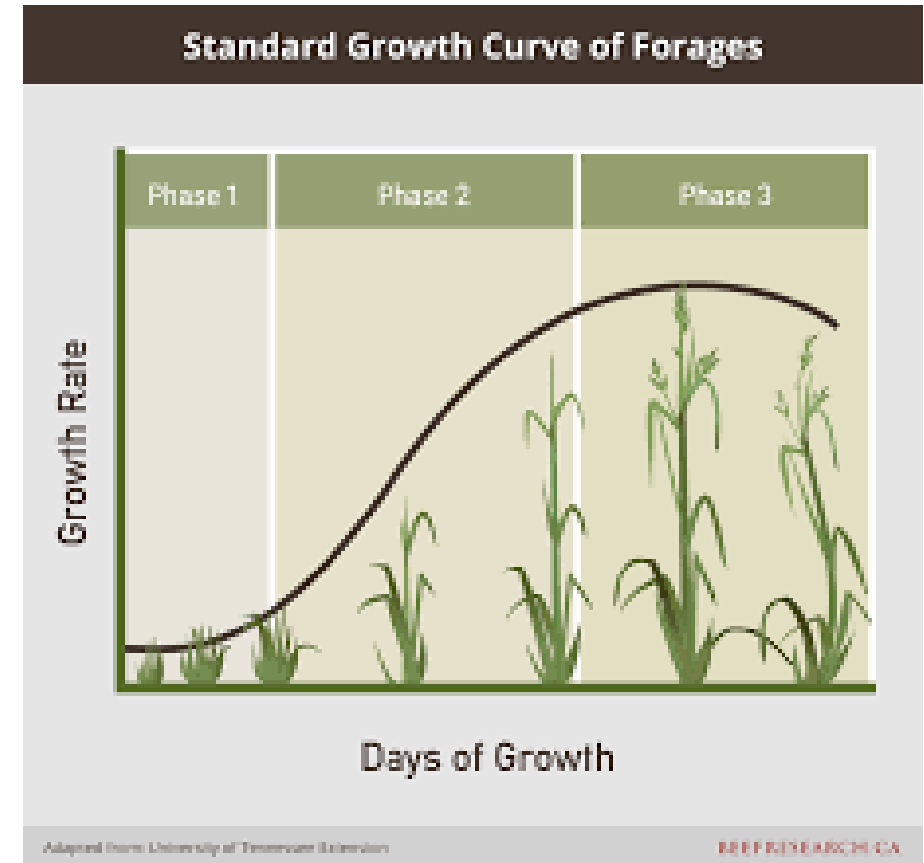
2. Introduction

- Feed nutritive value refers to the content of available energy and crude protein in forages.
- Forage quality entails forage intake as well as its nutritive.
- Forage quality influences animal performance directly.



3. Importance of knowing forage quality

- Low quality forages such as overgrown (mature) grasses, often in the generative (seeding) stage have low levels of nutrients.
- Imbalanced rations with low quality forages cannot meet the expected animal performance (milk production, growth rate and health).



4. Primary evaluation of forages/feed

Physical tests

- These are the first steps a farmer takes to estimate feeding value of fodder/feed.
- These tests are taken at various stages of plant growth (as forage mature) and even at storage.
- They guide farmers to make decisions on harvesting and where to fertilize.
- Include:
 - i. Visual assessment (color).
 - ii. Smell.
 - iii. Touch/feel.
 - iv. Size(quantity).
 - v. Homogeneity (presence of weeds/molds etc.).



VISION



SMELL



TOUCH

4.1 Primary evaluation of forages/feed

Cont'd: Color

- Colours go from brown via yellow to light green, green and dark green for fresh forages.
- Dark green colour of leaves in particular indicates higher protein content, low fibre contents and higher digestibility.
- Yellow or even a grey/brown colour from dead leaves/stems indicate low protein content.
- Greenish-light brown or golden colour in silage is sign of good silage.



Silage

4.2 Primary evaluation of forages/feed

Cont'd: Touch/feel

- Softer more fleshy stems indicate lower fiber contents and higher digestibility.
- Crops with rough stems, usually deep yellow to brown in colour with few/ dead leaves exhibit forage with high fibre content.
- Stems in crop are more than amount of leaves.
- Crops with high fibre content have low digestibility and low nutritive content.



4.3 Primary evaluation of forages/feed

Cont'd: Smell

Fresh forages

- Good quality forage will have a fresh mowed grass odor.
- Low quality grass has a musty or moldy odor.

Silage

- Bad smell of silage affects feeding by cows.
- Silage smells generally different depending on the cause or exposure of the silage during storage.



4.4 Primary evaluation of forages/feed Cont'd: **Homogeneity**

- Refers to uniformity in composition, checks the pureness of a feed ingredient.
- Feeds should be as pure as possible.
- Look for the presence and amount of objects (wire, stones etc.), weeds, moulds or poisonous plants.
- Foreign objects/materials tampers with quality of feeds.



4.5 Primary evaluation of forages/feed

Cont'd: **Size**

- Size of forage & feed gives information on growth.
- Forages should be harvested at the right stage to avoid losing nutritive value of feed.
- As forage matures the forage gets stemmy and the leaf becomes less soft.
- Chopping forage reduces selection by cows while feeding while encouraging feed intake.

