

GUIDELINES FOR TROPICAL PASTURE AND GRAZING MANAGEMENT

(Level 1 – Part II)

Topic	Training & information Content
1.1	Planning of fodder/feed requirements for the dry season
1.2.1	Integrated soil fertility management I
1.2.2	Integrated soil fertility management II
1.3	Use of natural resources, compost making, farmyard manure, manure storage and use
1.4	Growing maize and sorghum for fodder and estimating time of harvest and yield
1.5	Brachiaria, Panicum, & Napier (cut and carry) grass management
1.6	Growing fodder trees and use of feed
1.7	Estimating of dry matter content, feeding value and yield of various fodder crops
1.8	Guidelines for Tropical pasture management and grazing management
1.9	Scaled mechanization of forage production and pasture management (harvesting practices)
1.10	Operating farm equipment and self-propelled tractors
1.11	Mechanization of feeding management
1.12	Economics of forage and pasture production



1. You will learn about (learning objectives):

- How to manipulate grazing to achieve increase milk production with healthy cows.
- How to control grazing behaviour of cows in tropical perennial pastures.



IMPORTANT

This module has two parts; this is part II – ensure you download Part I.



Close up of native brachiaria / centrosema

2. Grass-based pastures: Fertilizing Kikuyu Grass

- Pasture quality is optimised with good fertilization.



3. Nutritional quality of kikuyu grass components

Kikuyu component	Metabolisable energy (MJ/kg DM)	Crude protein (%)
Leaf	9.2	21
Stem	7.4	17
Dead	6	9

Metabolisable energy (MJ/kg DM) and crude protein (%) content of kikuyu leaf, stem and dead material
Kikuyu component

- This is achieved by maintaining an optimum “grazing interval” that is based on the plant maturity.

4. Nutritional quality of mixed (grass/legume) pastures

- In general, pastures containing some legumes are higher in nutrient value and will likely be consumed in higher amounts than straight grass pastures.



5. Nutritional quality of grasses in early vegetative stage

- Grasses in the early vegetative stage are high in:
 - i. Protein
 - ii. Energy
 - iii. Forage quality
 - Palatability
 - Intake

 **Crude Protein**

 **Energy Concentration**

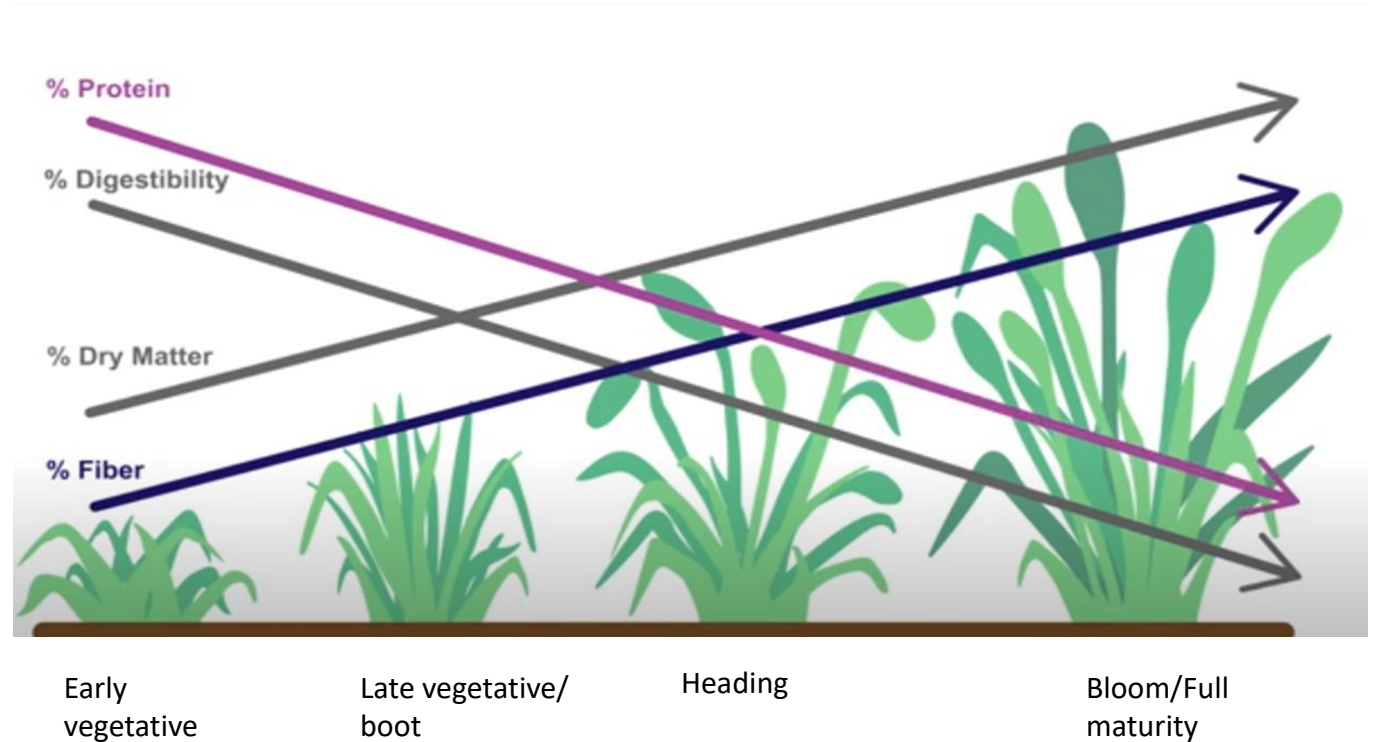
 **Forage Quality**



6. Forage quality as related to maturity

As pasture matures:

- Leaf % decreases
- Stem % increases
- Protein and energy decrease
- Fibre and lignin increase
- Pasture intake decreases



7. How to get the best out of tropical pastures

- Well-managed tropical pastures are capable of reasonable levels of production.
- Select and plant species of higher feeding value.
- Select species that are persistent/hardy.
- Adopt good grazing management practices, particularly by grazing less mature forages.



8. How to get the best out of tropical pastures – Energy

- It is highly desirable to feed concentrate supplements to cows in the first phase of the lactation.
- Energy supplements such as maize bran, maize germ or molasses are required, in some circumstances protein supplements may be necessary.



Energy based concentrates
packed in bags

9. How to get the best out of tropical pastures – Fibre

- Nutritional quality (chemical composition) of pastures is related to the maturity of the forage material when harvested.
- Farmers need to strive to achieve legume forage with 20 to 23% crude protein (CP).



Silver-leaf desmodium

10. How to get the best out of tropical pastures – Protein

- When total protein in well-managed pastures is high:
 - the protein in the pasture is high in rumen degradable protein (RDP).
 - 70 to 80% of the protein in pasture will be degraded in the rumen.
 - providing carbohydrates available in the rumen, primarily from concentrates, and also from other forages, will help the cows to utilize the high levels of RDP in pastures more effectively.



11. How to get the best out of tropical pastures during drought

- During periods of heat and drought, additional forages (supplementation) may need to be provided to lactating dairy cows.
- While in the wet season, perhaps only single source or compounded concentrates and minerals are all that is necessary.



Good pasture management can reduce the need for supplementation and yield enough biomass to make hay.

12. Consequences of poor pasture management

- Poor plant re-growth as a result of high stocking rate hinders proper re-growth of grasses to produce enough leaves (forage material).
- This type of pastures cannot meet the nutritive requirements of the cows.



12.1 Consequences of poor pasture management Cont'd...

- Animal health issues may result from parasite infestation in pastures that are poorly managed.
- Low pasture height stresses cows during grazing.
- Pasture density is affected by poor crop spacing and fertilization. These pastures are prone to constant weed attacks and soil erosion.



13. Conditions for Pasture Condition Scoring (PCS)

- Pasture scoring (PCS) involves evaluation of the pasture on different key indicators as observed in the field.
- It is useful in determining when to move livestock to new pasture and plan for pasture management.



14. Pasture Condition Scoring (PCS)

Pasture scoring (PCS) is based on among others:

- i. Plant cover
- ii. Percentage of desirable plants.
- iii. Plant diversity
- iv. Plant residue
- v. Plant vigor
- vi. Livestock concentration
- vii. Uniformity of use
- viii. Erosion
- ix. Percentage of legume
- x. Soil



15. Keys/Tips to high quality pasture

- Know when the pasture (canopy) is ready to be grazed.
- Grazing management strategies that maintain the pasture in vegetative growth stage and reduce the proportion of stem and dead material will also enhance feed quality.
- Know how much stubble residue to leave before moving the herd to another paddock.
- Know how long it takes to use the canopy to the desired stubble height.



Under-grazed

Ideal

Over-grazed