



PRM 505  
PRINCIPLES OF PASTURE AND  
RANGE SCIENCES

COURSE LECTURERS  
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&

PROF. O. S. ONIFADE

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# TEXTBOOKS

A decorative background on the right side of the slide. It features a stylized bar chart with several vertical bars of varying heights. Overlaid on the chart are several bursts of fireworks in red and orange, with long, thin trails radiating outwards. The overall aesthetic is vibrant and celebratory.

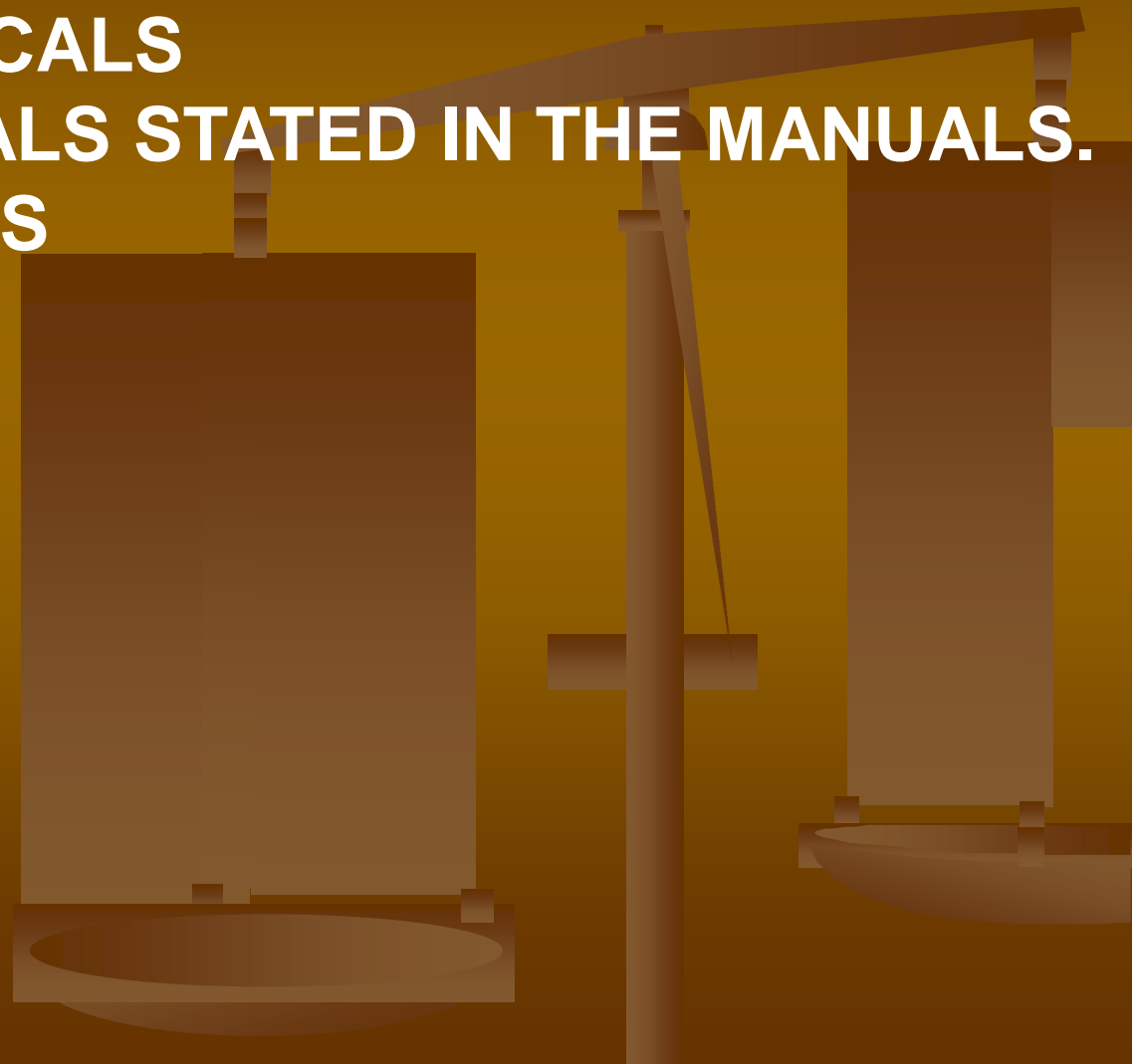
- **1. WHITEMAN, P.C. 1980: TROPICAL PASTURE SCIENCE. PUBLISHED BY OXFORD UNIVERSITY PRESS.**
- **2. HOGSON, J. AND ILLIUS, A. W. 1996: THE ECOLOGY AND MANAGEMENT OF GRAZING SYSTEMS. CAB INTERNATIONAL WALLINGFORD, USA.**
- **3. MICHEAL, B. JONES AND ALEC LAZENBY, 1988: THE GRASS CROP. THE PHYSIOLOGICAL BASIS OF PRODUCTION CHAPMAN AND HALL LTD USA.**
- **4. PEARSON, C.J. AND ISN, R. L. 1987: AGRONOMY OF GRASSLAND SYSTEMS. CAMBRIDGE UNIVERSITY PRESS NY.**

- 5. CROWDER, L.V. AND CHHEDA, H.R. 1982. TROPICAL GRASSLAND HUSBANDARY. TROPICAL AGRICULTURE SERIES. LONGMAN LONDON.
- 6. HUMPHERYS, L.R. 1991: TROPICAL PASTURE UTILIZATION. PUBLISHED BY THE PRESS SYNDICATE OF THE UNIVERSITY OF CAMBRIDGE NY.
- 7. BOGDAN, A.V. 1977: TROPICAL PASTURE & FODDER PLANTS (GRASSES & LEGUMES). TROPICAL AGRICULTURE SERIES. LONGMAN LONDON



# INTRODUCTION

- **WHAT THE COURSE ENTAILS**
- **1. WEEKLY PRACTICALS**
- **2. TEST AT INTERVALS STATED IN THE MANUALS.**
- **3. LIVELY LECTURES**
- **4. DRAWINGS**



# BOTANY AND SYSTEMATICS OF GRASSES AND LEGUMES

- GRASSES BELONGS TO FAMILY GRAMINEAE (POACEAE)
- MADE UP OF TWO MAIN PARTS: SHOOT OR TILLERS (AERIAL PARTS) & ROOTS (SUBTERRANEAN PARTS). AT FLOWERING THE REPRODUCTIVE PARTS ARE INCLUDED.
- MONOCOTYLEDONOUS
- THEY ARE HERBACEOUS (NON-WOODY), divergent in size, shape and growth habit, can be annual or perennial in life form.

# A. VEGETATIVE ORGANS

## 1. AERIAL PARTS

- **SHOOTS** CONSISTS OF STEM (CULM, HAULM) AND THE LEAVES.
- **STEMS** ARE CYLINDRICAL OR ROUNDED AND JOINTED I.E MADE UP OF **NODES** SEPARATED BY **INTERNODES**.
- **INTERNODES** CAN BE HOLLOW (e.g. *Brachiaria mutica*) FILLED WITH WHITE PITH (e.g. *Zea mays*, *Sorghum vulgare* and *Hyparrhenia spp.*) or SOLID e.g. *Axonopus scoparius*).
- Stems can be glabrous or pubescent.

## BOTANY OF GRASS PLANT (CONTINUED)

- Shoots develop from buds found at the nodes and produce side branches.
- The basal portion of tufted grasses is called CROWN.
- Stolons are creeping stems that grow above the surface of the ground and develop roots and shoots at the nodes. E.g. *Pennisetum clandestinum*, *Cynodon nlemfuensis* and *Digitaria pentzii*.
- LEAVES CONSISTS OF THE SHEATH, LIGULE AND THE LEAF BLADE.
- LEAF BLADES ARE BORNE ON SHEATHS
- LEAVES ARE SITUATED ON STEM IN OPPOSITE ROWS ALTERNATIVELY.
- SHEATH: edges are free, have chlorophyll.
- Leaf blade can be setaceous (wiry and bristle) or filiform (thread-like)
- Leaves could be smooth or rough
- Midrib is usually prominent with faint lateral veins



**LIGULE** is an appendage found at the junction of the leaf blade and the sheath, usually closely adpressed to the culm. It may be a membrane, a fringe of hairs or a hardened ring & varies in size, shape & texture, can be used for identification.

**AURICLES** are earlike outgrowths at the leaf base of some spp. They can be prominent and encircle the stem, minute & inconspicuous or absent, no chlorophyll, no function, but use in taxonomic identification.

**COLLAR:** marks the junction of the outer surface (upper region) of the sheath and leaf blade, usually discoloured, leaves breaks at the collar.

**PROPHYLLUM:** is a two-keeled organ (a reduced leaf) covering the bud in the axil of the sheath.

