

WEEK ONE

Agricultural Rangeland

A Rangeland is an extensive area of land which contains forage grasses and legumes and other herbage plants where animals like cattle, sheep and goat can graze. The forage plants such as the grasses and legumes used for grazing by the farm animal are called **Pasture**.

IMPORTANCE OF RANGELAND

1. Rangeland provides food for livestock, especially ruminants.
 2. Grasses and legumes in the rangeland, when cut at early flowering stages of growth, can be preserved in the form of hay or silage.
- Rangeland allows animals to exercise their body.
1. The animals have access to varieties of forage, thus, eating balanced feed.
 2. Rangeland reduces the cost of feeding animals, especially ruminants
 3. Rangeland increases infiltration and percolation of water, thereby reducing run off and soil erosion
- Dead plant materials from rangeland build up the fertility of the soil
 - Rangeland affords animals the opportunity for mating without the supervision of the livestock attendant
1. Rangeland also provides adequate nutrients to the soil through legumes which fix nitrogen into the soil by the bacteria in their root nodules.

CHARACTERISTICS OF RANGELAND

1. It contains high quality grasses and legumes
 2. It contains no weed except some plant for shades
- Selected grasses and legumes are growth in adequate proportion
1. It has a high regenerative ability after being fed on by animals
 2. It can withstand trampling by farm animals
 3. It is property managed for high productivity of the forage crops, e.g, fertilization, irrigation and rotational grazing.

COMMON GRASSES OF LIVESTOCK IN RANGELAND

Common Name	Botanical Name
(1) Elephant grass	Pennisetum purpureum
(2) Guinea grass	Panicum maximum
(3) Giant Star grass	Cynodon plectostachyum
(4) Carpet grass	Axonopus compressus
(5) Spear grass	Imperrata cylindrical
(6) Bahama grass	Cynodon dactylon
(7) Northern gamba	Andropogon gayanus
(8) Sourthern gamba	Andropogon tectorum

Common Legumes of Livestock in Rangeland

Common Name	Botanical Name
(1) Centro	Centrosema Pubescens
(2) Stylo	Stylosanthes gracilis
(3) Kudzu or puero	Pueraria phaseoloides
(4) Calopo	Calopogonium mucunoides
(5) Muccuna	Muccuna utilis
(6) Sun hemp	Crotalaria juncea

FACTORS AFFECTING THE LEVEL OF PRODUCTION OF HERITAGE

Factors which affect the level of productivity of herbage include:

1. **Rainfall:** Rainfall is needed for the continuous growth of grasses and legumes. Rainfall helps to dissolve nutrients and makes it available to pasture plants
 2. **Grass and Legumes Mixture:** Pasture or rangeland should include a mixture of grasses and legumes because legumes help to increase the fertility of the soil for rapid growth of the grasses.
- **Grazing:** The range should be carefully planned to ensure adequate grazing by animals. Rotational grazing should be adopted to provide opportunity for the grazed plants to regenerate. Overgrazing, a condition whereby there are too many animals on a piece of grassland feeding on the herbage should be avoided.
1. **Removal of Trees:** Trees within the rangeland should be cut off since they can provide shade that might prevent grasses and legumes from receiving adequate sunlight. This can reduce the productivity of herbage
 2. **Fertility of the Soil:** The soil on which herbage plant grows must be fertile so that their production can be enhanced
 3. **Control of Weeds:** For herbage plants to improve their productivity weeds must be removed from the rangeland and regularly, since they compete with herbage plants for nutrients, space, sunlight, etc.
- **Avoidance of Overstocking:** The correct number of animals should be allowed to graze a specified area of pasture.

MEHTOD OF RANGELAND AND PASTURE IMPROVEMENT

To ensure the continuous availability of grasses and legumes, it is necessary to adopt some management principles that would lead to the improvement of rangeland and pasture. Such principles include:

- **Controlled Stocking:** This refers to the situation whereby the correct numbers of animals are allowed to graze a particular area of land. An adequate stocking rate should be maintained as overstocking could lead to deterioration of the rangeland.
- **Reseeding:** This involves replanting of seeds of forage crops on a depleting rangeland. When animals have grazed a lot of rangeland, the crops may start to show signs of dying off, and then reseeding becomes

necessary. The farmer should improve on the range by broadcasting new seeds and allowing the rangeland to rest. Reseeding is most beneficial where rotational grazing is practiced.

- **Legume and Grass Mixture:** In natural grassland without legumes, the farmer may improve it by introducing legume seed into the rangeland. Legumes provide protein for animals and also add nutrients to the soil. Once the legumes and grass mixture has been established, it should be maintained. Legumes such as: pueraria, centrosema, stylosanthes, etc, can be used.
- **Paddock:** Paddock involves dividing the rangeland into a number of sections with fences. The animals normally feed on each section on a rotational basis. This allows for good regeneration of forage crops and prevents the pest and disease build-up. While the animals are grazing on one section, others will be at rest. The farmer may cut forage for hay and silage from the resting rangeland.
- **Avoidance of Overgrazing:** Overgrazing involves constant grazing and cutting of forage crops such that the crops start to die and the land becomes bare. Overgrazing and overstocking should be avoided as it leads to the destruction of rangeland and erosion. It also leads to overgrazing and soil pulverization.
- **Use of Fertilizers:** Fertilizers should be applied to rangeland plants. This ensures enough foliage formation for grazing and silage preparation. Compound fertilizers e.g., NPK should be applied once every year or two.
- **Pest Control:** In order to destroy some pests of crops and animals, it may be necessary to spray the rangeland with suitable pesticides. This ensures that the rangeland is pest-free. It reduces the rate of disease spread.
- **Controlled Burning:** This aids regeneration of forage crops. It also sanitizes the rangeland, i.e, by getting rid of weeds, seeds, disease organism and pest. It adds some nutrients e.g potassium to the soil
- **Irrigation:** Rangeland should be irrigated especially during dry season to ensure an all year round availability of fresh and succulent grasses.