



agriculture & rural development

Department:
agriculture
& rural development
PROVINCE OF KWAZULU-NATAL

GRAZING CAPACITY

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- Successful grazing mgt is dependent on the number of animals the veld can support
- Grazing capacity is dependent on a number of factors:
 - Rainfall, veld condition, slope, aspect, soil etc.

- Therefore grazing capacity can vary considerably from area to area (VTUs).
- NB that the GC for each VTU be determined seperately

Importance of stocking rate (SR)

- As SR is increased, animal performance decreases

Herbage yield

- Positive correlation between herbage yield an the growing season rainfall (Oct - Mar)
- As veld condition decreases:

Basal cover decreases

Runoff increases

Effective rainfall decreases

- Therefore get a decrease in herbage yield
- So use growing season rainfall to determine herbage yield
- In KZN the growing season rainfall is approx 80 % of the MAP
- Use a figure of 5 kg DM/mm/annum for all BRGs except BRGs 14 & 23 (4 kg DM/mm/annum)

Calculating grazing capacity

- Expressed in terms of animal units (AU)
- An AU refers to an animal with a mass of 450 kg which consumes 10 kg of DM per day (3500 kg/annum)
- Essential to have a common term to cater for different enterprises eg: cattle, sheep, game etc.

Calculating animal units

- Two methods of calculation:

1. Conventional formula:

$$\text{AU} = \text{mass of animal}^{0.75} \times 0.01 \times \text{CF}$$

CF = 1.5 for dairy cows

= 1.25 for other lactating female animals

= 1.0 for all other animals

2. 'Thumb Rule'

$$\text{AU} = 2(\text{mass of animal}) + 100 / 10$$

- Example : calculate AU for a 420 kg lactating female

Method 1:

$$\begin{aligned} \text{AU} &= 420 \text{ kg}^{0.75} \times 0.01 \times 1.25 \\ &= 1.16 \text{ AU} \end{aligned}$$

Method 2 : Thumb Rule

420 kg lactating cow

$$AU = 2(420) + 100$$

As the palatability and value of the grass sward decline at different rates during the late summer months throughout KZN:

- Herbage consumption by livestock will vary according to veld type (BRG)

Veld type	BRG	Herbage consumption
Sourveld	3 to 11,15	2500
Sour/mixed	1,2,12,14,17	2750
Mixed	13,16,18,19,20	3000
Sweet	21,22,23	3500

- ▶ A fundamental principle of veld mgt is to limit utilization to half the total production
- Therefore to calculate grazing capacity:
 1. Assess herbage yield/ha (MAR x 0.8 x yield factor x Veld condition score %)
 2. Yield/ha is halved (take half leave half)
 3. Yield/ha divided into annual herbage consumption per AU

EXAMPLE:

Calculate the Grazing capacity for an area in BRG 5, with a MAR of 885 mm and a veld condition score of 49%

1. Herbage yield = $(885 \text{ mm} \times 0.8) \times (5 \text{ kg DM/mm}) \times 0.49$
= 1734.6 kg DM/ha
2. Halve the yield = $1734.6 \text{ kg DM/ha} \times 0.5$
= 867.3 kg DM/ha
3. Grazing capacity = $\text{Annual AU consumption} / 867.3$
= $(2500 \text{ kg/AU}) / 867.3 \text{ kg/ha}$
= 2.88 ha/AU