

Guinea/ White Buffalo grass

Panicum maximum

Guinea / White Buffalo grass is a summer growing perennial species. This grass is highly variable and can be tufted with or without short rhizomes. Pastures are usually used as long-term pastures if the soil fertility is maintained. The tolerance to shade makes this species suited for agroforestry. This grass is best adapted to areas where the annual rainfall is 550 mm per annum.



Strengths

- 10 – 60 t DM/ha/season
Depending on environmental conditions and management
- Perennial species
- Very leafy
- High quality feed
- High production potential
- Readily eaten by all stock
- Suited to grazing and cutting
- Drought tolerant
- Early season growth in some lines

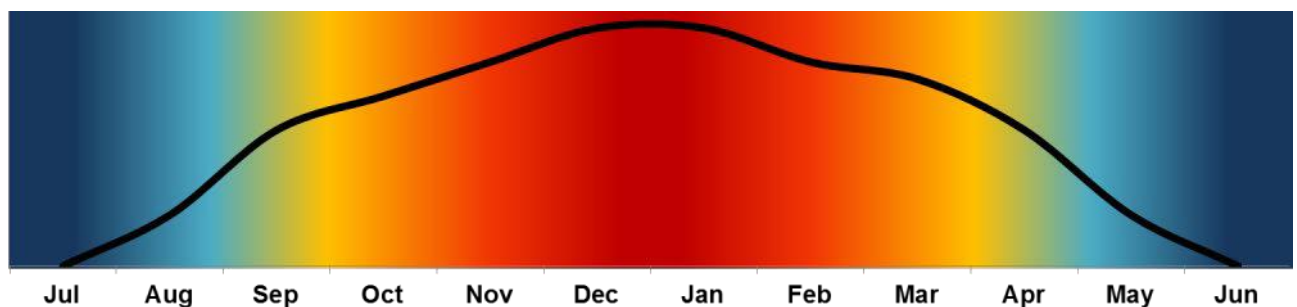
Limitations

- Requires fertile soils
- Intolerant of waterlogging
- Intolerant of heavy grazing
- Becomes stemmy if not cut or grazed frequently

What can it be used for?

- Grazing:** Utilizing a pasture with high pressure rotational grazing system will minimize wastage and maintaining stand uniformity. The minimum grazing height of 30-35 cm will optimize regrowth of the stand.
- Hay:** Good quality hay can be produced from this pasture. Frequent cuttings will optimize yields and minimize waste.
- Foggage:** Good quality foggage is achieved due to leafiness and palatability during winter.
- Silage:** Good quality silage can be produced if harvested when the seed is in a soft dough stage or after the stand has flowered.
- Cover Crop:** White Buffalo Grass is included in blends for long term erosion control. It stabilises the soil aggregate stability and builds organic material in the soil.

Production potential: The production of Guinea/ White Buffalo grass can vary from as low as 10 to as high 40 t DM/ha/season depending on soil fertility, environmental conditions and the frequency of utilisation ^(1,2).



Relative growth curve of an established Guinea/ buffalo grass stand -
one year cycle



Metabolic disturbances in animals on cultivated pastures:

Dikoor: Toxicity in sheep causing a photosensitisation disease perhaps linked to smut infection.

Establishment

Climate: It grows well in hot environments and can tolerate light frost but is sensitive to regular/heavy frost events.

Moisture: Under dryland conditions, optimal production requires at least 550 mm per annum, but can survive seasons with rainfall as low as 400 mm per annum.

Soil: Guinea grass grows in a variety of soil types and performs well as long as the soil is fertile, well drained and moist.

Fertilization: High levels of fertilization are required for optimal production. A soil analysis before establishment is essential ^(1, 2,3).

	N (kg/ha)	P (mg/kg soil)	K (mg/kg soil)
Requirement for establishment***	20-40*	15-20	120-140
Seasonal application (kg/ha)	60-220**	Use removal rates	
Production - Removal rates (kg/ton):			
Good quality fodder	34	4.7	50.3
Average quality fodder	18	2.4	23.1
Poor quality fodder	5	0.8	5.7

*Fertilizer just after establishment (kg/ha)

**Selected rate should maximise profit

***Determined by production potential

Phosphorus (P) and Potassium (K) can be recycled back to pastures when grazed by animals. This is dependent on the grazing system and the type of animals used. Up to 40% of P and 90% of K can be recycled ⁽⁵⁾. It is however necessary to do annual soil analysis to determine the level to which recycling occurred. The difference should be fertilized.





Methods: Establish on a firm, fine, weed free seed bed. Consolidating (rolling) the seedbed after sowing/planting will ensure good seed-soil contact and subsequently better germination and establishment.

Our prescribed seeding rate:	Rows ^(1, 2)		Broadcast ^(1, 2)	
	Uncoated	AgriCOTE®	Uncoated	AgriCOTE®
	7 – 10 kg/ha	10 kg/ha	7 – 10 kg/ha	10 – 15 kg/ha

Under ideal environmental conditions, combined with excellent seedbed preparation and equipment, the seeding rate of uncoated seed can be lowered.

Planting time: Optimal establishment periods are between October (or as soon as average minimum soil temperature exceeds 16°C) to January, whenever rainfall is the most reliable.

Management

Utilisation: In the first season, allow the pasture to go through the whole production cycle before grazing, *i.e.* graze after the seeding period. Grazing cycles of 6 – 7 weeks have proven to be successful ⁽¹⁾, by allowing pasture a long time to recover after grazing. Frequent cutting will yield good quality hay, but lower yields will be realized. Later cutting will increase the yields, but the quality of the hay will be lower. The 10% flowering stage is an indicator of a good midway between yield and quality. Quality and yield is also influenced by soil fertility.

Cultivars

Gatton

The most common cultivated cultivar in South Africa has broad, long leaves making it very palatable and nutritious. It does however require good fertilisation to reach its genetic potential.





Resources

1. Pasture Handbook, Kejafa Knowledge Works, ISBN 0-620-31994-1
2. Tropical Forages - http://www.tropicalforages.info/key/Forages/Media/Html/Panicum_maximum.htm
3. Feedipedia - Animal feed resources information system – Guinea grass (*Panicum maximum*) - <http://www.feedipedia.org/node/416>
4. FAO - <http://www.fao.org/ag/agp/AGPC/doc/Gbase/data/Pf000278.htm>
5. Dannhauser CS. 1991. Die bestuur van aangeplante weiding in die somerreëval-dele, vol. 1. Warmbad
6. SANSOR - <http://sansom.org/sub-tropical-grasses/>
7. Truter, WF. Dannhauser, CS, Smith, H. and Trytsman, G. 2014. *Panicum maximum* (Guinea grass). Integrated Crop and Pasture-based livestock production systems. Conservation Agriculture – Part 5. SA Grain. ISSN 1814-1676. Page 80-82.

