



**AGT Foods Africa Pty Ltd.**  
 8 Jacobs St., Chamdor, Krugersdorp 1739  
 P.O. Box 414, Krugersdorp, South Africa 1740  
 Reg. No. 1994/001269/07  
 VAT Reg. No. 484 014 1495

Tel: +27 11 762 5261  
 Fax: +27 11 762 4111  
 0861 AgriCote (247426)  
 sales@advanceseed.com  
 www.agtfoods.com/za

## Rhodes grass – *Chloris gayana*

Rhodes grass is a summer growing perennial forage crop. Plants are tufted with stolons enabling stands to fill open spaces. The stolons and deep root system (up to 4.7 m) makes this species highly adaptable, while also providing good soil cover for erosion control. This grass is best adapted to areas where the annual rainfall exceeds 500 mm.



### Strengths

- 2 to 18 t DM/ha/season  
**Depending on environmental conditions and management**
- Perennial species
- Widely adapted
- High salt tolerance
- Tolerant to heavy grazing
- Few pests and diseases
- Can suppress nematodes
- Good seed production
- Has the ability to spread naturally

### Limitations

- Fluffy seed can be difficult to sow
- Not adapted to acid, infertile soils
- Plants require good soil fertility to persist
- Low shade tolerance
- Rapid decline in quality at initiation of flowering



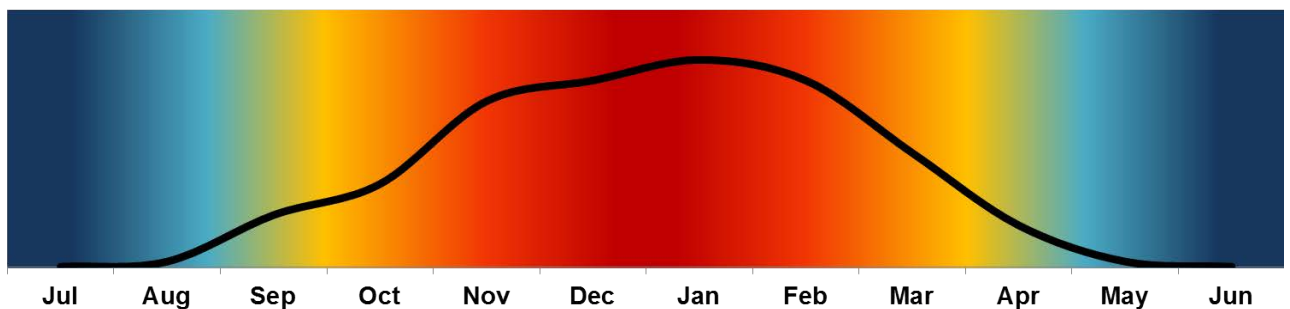
## What can it be used for?

**Grazing:** Grazing before flowering provides high quality forage. Nutritive value declines rapidly post flowering.

**Hay:** Good quality hay can be produced if cut before or at the initiation of the flowering stage.

**Cover Crop:** Rhodes grass is an excellent protector against soil erosion and builds the soil aggregate stability. The grass is also good at building soil organic material. Rhodes grass is exceptionally tolerant to saline soil conditions. It is used to control nematodes in other crops.

**Production potential:** Up to 18 t DM/ha/season can be achieved. This depends on soil fertility, environmental conditions and frequency of utilisation. Production is often higher in the second season after establishment as plant density is optimised by tuft size and its creeping nature. Even though this grass is tolerant of heavy grazing, production is reduced by frequent defoliation (e.g. 14 days vs 28 days) <sup>(1,2)</sup>.



Relative growth curve of an established Rhodes grass stand- one year cycle

### Metabolic disturbances in animals on cultivated pastures:

No toxicities have been recorded

## Establishment

**Climate:** Rhodes grass is widely adapted and optimal growth takes place between 20 and 37 °C. It can survive temperatures of -10 °C.

**Moisture:** Under dryland conditions it requires at least 500 mm per annum, but production can be greatly increased under irrigation.



SEED



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**Soil:** Provided that soil fertility is adequate, Rhodes grass grows well in most well drained soils. A soil pH (KCl) of 5.5 – 7.5 is recommended for optimal production, but will grow well between pH (KCl) 5 and 10<sup>(2)</sup>. It is very tolerant to high soil Sodium levels but high soil Manganese levels can be toxic.

**Fertilization:** Rhodes grass has a moderate soil fertility requirement, but productivity is severely compromised. A soil analysis before establishment is essential<sup>(1, 2, 3)</sup>.

	N (kg/ha)	P (mg/kg soil)	K (mg/kg soil)
Requirement for establishment***	20-40*	15-20	100-140
Seasonal application (kg/ha)	60-220**	Use removal rates	
<b>Production - Removal rates (kg/ton):</b>			
Good quality fodder	25	5.3	29.4
Average quality fodder	14	2.9	18.7
Poor quality fodder	8	1.3	7.7

\*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<sup>(5)</sup>. 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 <sup>(1,2)</sup>		Broadcast <sup>(1,2)</sup>	
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.**



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**Planting time:** Optimal establishment periods are between October and February (or as soon as average minimum soil temperatures exceed 16°C), whenever rainfall is the most reliable.

## Management

**Utilisation:** Cutting or grazing during the late vegetative stage provides for good balance between yields and quality. Cutting before the reproductive stage will promote healthy regrowth during the growing season. The longevity of Rhodes grass is significantly increased when it is allowed to seed once a year.

## Cultivars

### **Katambora**

This is the most common cultivar in South Africa

## Resources

1. Pasture Handbook, Kejafa Knowledge Works, ISBN 0-620-31994-1
2. Tropical Forages - [http://www.tropicalforages.info/key/Forages/Media/Html/Chloris\\_gayana.htm](http://www.tropicalforages.info/key/Forages/Media/Html/Chloris_gayana.htm)
3. Feedipedia - Animal feed resources information system - Rhodes grass (*Chloris gayana*) - <http://www.feedipedia.org/node/480>
4. FAO - <http://www.fao.org/ag/agp/AGPC/doc/Gbase/data/pf000199.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. *Chloris gayana* (Rhodes grass). Integrated Crop and Pasture-based livestock production systems. Conservation Agriculture – Part 4 . SA Grain. ISSN 1814-1676. Page 48-50.



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