



A collaboration between AWI, GRDC, MLA, RIRDC and Dairy Australia

Guinea grass

Scientific name(s)

Panicum maximum (*Megathyrsus maximus*)

Strengths

- 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

Plant description

Plant: Leafy erect perennial tussock grass with a deep root system; capable of growing to over 2m tall.

Stems: Develop to over 0.5cm diameter, and can root down at nodes that come in contact with moist soil.

Leaves: Mostly somewhat hairy, up to 3cm wide and 100cm long.

Seedhead: Much branched open panicle, usually 30 to 45 cm long.

Seeds: A little over 2mm long, ellipsoidal, straw-coloured, and approx. 1,600,000 per kg.

Pasture type and use

Long term pasture in open ground or under trees if fertility maintained. Has been used successfully for making silage and hay.

Where it grows

Rainfall

Guinea grass is mostly grown in the wet and seasonally dry tropics of Australia, preferably with a rainfall over 1,500 mm, but will extend into about 1000 mm rainfall areas in the subtropics. Both listed cultivars have good drought tolerance.

Soils

Grows best on deep, fertile, moist soils, but will grow in most soil types providing they are well-drained, at least moderately fertile and with reasonable moisture availability. Generally intolerant of waterlogging or salinity, and very acid soils.

Temperature

Tops are killed by frost, but plants recover with the onset of warm conditions.

Establishment

Companion species

Grasses: usually sown as the sole grass, but may combine with other palatable grasses like rhodes grass and setaria in the upland tropics, southern margins of the wet tropics, and subtropics.

Legumes: American jointvetch, centro, centurion, leucaena, macro, siratro, stylo.

Sowing/planting rates as single species

3 - 5 kg/ha, depending on seed quality. Seed should be sown on the surface of a well-prepared seedbed (or no deeper than 2 cm), and rolled to achieve good soil contact with the seed.

Sowing/planting rates in mixtures

1 - 3 kg/ha

Sowing time

Best sown when conditions are warm and humid, the soil moist, and there is a good chance of follow-up rain.

Inoculation

Not applicable

Fertiliser

It is advisable to use an establishment application of say 200 - 300 kg/ha of superphosphate on less fertile soils. A post-emergence application of 100 kg/ha of urea (= 46 kg/ha N) in pure stands will stimulate more rapid stand development.

Management

Maintenance fertiliser

Soil phosphorus levels should be maintained with annual dressings of 50 - 100 kg/ha superphosphate. Potassium may also be required on some soils, particularly with more intensive use e.g. haymaking. Split applications, each of 50 - 100 kg/ha N, are used in pure stands as required when economically feasible.

Grazing/cutting

Guinea grass should not be grazed in the first year until plants are well established, and preferably not until initial seed drop. If the grass dominates associated legumes during this period, grass bulk can be reduced by a short period of intensive grazing. Continuous heavy grazing of young regrowth can kill plants.

For long-term maintenance of stand, it should not be cut or grazed below 20 - 30 cm, and should be cut or grazed at about 4-weekly intervals to obtain best balance between quality and quantity.

Seed production

'Alto' and 'Hamil' flower around early May. Seed ripens unevenly, and is shed as it matures. The highest seed yield is obtained when 40 - 60% of the seed has been shed from the seed-head, which occurs about 12 - 14 days from appearance of the head. Direct heading is less efficient in terms of seed recovery than mowing, windrowing and sweating. Yields of 50 - 100 kg/ha pure seed are common.

Ability to spread

As guinea grass is very palatable, spread is minimal or slow under grazed conditions. It is a very effective coloniser in ungrazed areas, particularly on more fertile soils where some form of soil disturbance has occurred.

Weed potential

It spreads along water courses and ungrazed roadsides, and is a major weed in sugar-cane fields, due to its ability to grow under shaded conditions.

Major pests

No major problems.

Major diseases

No major problems.

Herbicide susceptibility

Susceptible to Roundup® (glyphosate) and readily controlled by drizzle applications. Young plants are susceptible to selective grass-killers, and to diuron at 2.5 kg/ha of an 800 g/kg AI.

Animal production

Feeding value

IVDMD from 64% (2 week regrowth) to 50% (8 week regrowth). Crude protein (CP) from 6 - 25% depending on age of regrowth and N supply. Sodium levels may be marginal.

Palatability

Well eaten by all classes of grazing livestock, with particularly high intakes of young leafy growth. Reasonably palatable when mature, providing good roughage for use in conjunction with urea-molasses licks.

Production potential

Can achieve up to 0.8 kg/hd/day LWG and up to 1,200 kg/ha/yr LWG (commonly 300 - 500 kg/ha/yr LWG) depending primarily on stocking rate and N fertiliser rate

Livestock disorders/toxicity

None recorded.

Cultivars

Cultivar	Seed source/Information
Alto	Southedge Seeds
Hamil	Australian Herbage Plant Cultivars

Further information

Tropical Forages database (SoFT) - Guinea grass

Guinea grass in the Northern Territory

Acknowledgements

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Author and date

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