pastures australia

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

Bahia grass

Scientific name(s)

Paspalum notatum

Strengths

- Adapted to a wide range of soil types
- Tolerates acid/low fertility soils
- Fair shade tolerance
- Good drought tolerance
- Few pest or disease problems
- Tolerant of close grazing and traffic wear
- Suppresses weeds once established
- Responds well to nitrogen

Limitations

- Slow rate of establishment
- Seedlings susceptible to phenoxy herbicides
- Relatively unpalatable once mature
- Can become sod-bound with time
- Not suitable for high pH soils (yellowing of leaves)
- Difficult to mow
- Poor winter growth and feed quality
- Difficult to maintain legume in pasture
- Potential weed on fertile soils

Plant description

Plant: A dense mat-forming perennial grass, with a deep, strong root system. Several distinct types of bahia grass have become naturalised in Australia.

Stems: Thick, fibrous stems (to >5 mm diameter) with short internodes. Stems held flush with the soil by deep fibrous roots.

Leaves: Leaves arise from short, upright shoots arising from the nodes. Leaf blades, which may be hairy or hairless, are mostly 4 - 8mm wide and 20-30cm long when mature. The leaf sheaths of the lower leaves of the shoot are usually white with a distinctive purplish coloured tinge.

Seedhead: Usually comprises two "arms" of a "Y", and borne above the foliage on erect stems about 50cm tall.

Seeds: Light brown in colour, flat on one side, rounded on the other,

'Argentine'/'Competidor': 3.5mm long x 2.5mm wide, about 300,000 seeds/kg
'Pensacola': 2.5mm long x 2mm wide, about 500,000 seeds/kg.

Pasture type and use

Used as permanent forage for intensively grazed pastures and as a stable drought-resistant, ground cover/soil binder, particularly in traffic and shaded areas. More suitable for beef than for milk production. Naturalised in much of the subtropics and tropics, and often considered as a weed.

Where it grows

Rainfall

While bahia grass will grow over a wide range of rainfall conditions, it should only be sown in areas where its good survival and retention of ground cover under drought conditions are an advantage i.e. areas with an annual rainfall between about 700 and 1200mm.

Soils

Bahia grass grows best on fertile, well-drained lighter acid soils, but will grow on less fertile and clay soils. It is not well-adapted to alkaline soils.

Temperature

Little growth occurs in the cooler months. Tops are burnt off by frost, but growth resumes with the onset of warmer weather in spring.

Establishment

Companion species

Grasses: Normally not sown with other grasses.

Legumes: Bahia grass is too competitive to form a productive association with any commercial legumes, except white clover which grows in the cooler months.

Sowing/planting rates as single species

2 - 5kg/ha

Sowing/planting rates in mixtures

Not normally sown in mixtures.

Sowing time

Seedlings develop slowly, so it is best to sow as early as possible once there is little likelihood of frost and when there is a good chance of follow-up moisture.

Inoculation

Not applicable

Fertiliser

While bahia grass survives in fairly infertile soil, it performs best if sown with 200 - 400kg/ha superphosphate.

Management

Maintenance fertliser

Moderate soil phosphorus levels should be maintained with periodic applications of phosphatic fertiliser. Regular applications of nitrogenous fertiliser in association with intensive grazing help to maintain a productive stand.

Grazing/cutting

Bahia grass should be grazed or cut regularly.

Seed production

Flowering commences in early/mid-summer. Seed ripens progressively over the summer and at no time is all the seed mature. It can be combine-harvested in a single pass, or harvested over a number of passes with a beater or stripper to maximise yields. Commercial seed yields average 60-100 kg/ha, but can be higher when good production and harvesting practices are used. Most bahia grass seed is imported.

Ability to spread

Bahia grass spreads slowly but surely. Poor seedling competitiveness limits spread, but once plants are established, they spread strongly by virtue of the stout prostrate runners, and strong root system. Viable seed is spread readily in animal dung.

Weed potential

Many farmers consider it a weed in pastures due to its incompatibility with most other species, and low palatability when more mature.

Major pests

Army worms can temporarily damage stands, particularly if they are well fertilised.

Major diseases

Ergot is the main disease, affecting seed production in susceptible varieties.

Herbicide susceptibility

'Pensacola' can be controlled using metsulfuron methyl at 10 g/ha a.i., in association with a non-ionic surfactant in 200 L water. It is also susceptible to high rates of glyphosate, although repeat applications may be required for complete eradication. Small seedlings are sensitive to phenoxy herbicides.

Animal production

Feeding value

Feeding value varies greatly with age of regrowth, variety and fertility of soil. Crude protein levels can be >20% in 2-week regrowth, declining to about 5% by 12 weeks, with IVOMD (digestibility) declining from almost 70% to 50% in the same period.

Palatability

Palatability varies with age, variety and soil fertility. Although young growth is readily eaten, bahia grass generally, and 'Pensacola' in particular, become much less palatable with age. It is essential to maintain grazing pressure to avoid this decline in palatability. Nitrogen fertilisation has been observed to improve palatability.

Production potential

Pastures fertilised with 100 - 200 kg/ha N can produce 400-600 kg/ha/yr liveweight gain and can carry 5 head/ha during the growing season.

Livestock disorders/toxicity

No major toxicity has been reported. There is the potential for "ergot poisoning" caused by animals' eating diseased seedheads, but no problem has been documented.

Cultivars

Cultivar	Seed source/Information
Competidor	Australian Herbage Plant Cultivars
Pensacola	FAO Grassland Index

Further information

Tropical Forages database (SoFT) - Bahia grass

Acknowledgements

-

Author and date

Bruce Cook

September 2008