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

Aleman grass

Scientific name(s)

Echinochloa polystachya

Strengths

- Vigorous and productive.
- Palatable.
- Tolerant of heavy grazing.
- Tolerant of waterlogging and prolonged flooding.

Limitations

- No seed production.

Plant description

Plant: Robust vigorous aquatic or semi aquatic perennial grass. Sward grows to a height of 1.2 m.

Stems: Stout stems up to 3 m long, containing 7- -10 nodes, are 10 - 15 mm in diameter

Leaves: Linear to lanceolate, tapering to an acute point. Leaves generally 6 - 20 - 60 cm long and 1 - 2.5 cm wide. Leaves and leaf sheaths are smooth. The grass is a light blue-green colour.

Seedhead: Inflorescences an open panicle 15 - 25 cm long.

Seeds: 4 - 5 mm long.

Pasture type and use

It is mainly sown as a permanent pasture for grazing, in wet and flooded areas.

Where it grows

Rainfall

It is suitable for areas receiving 1100 mm/year or more. In the semi-arid tropics, it will only persist on seasonally flooded wetter areas where rainfall is 1300 mm or less.

Soils

It is tolerant of a wide range of soil types from acid infertile solodic soils to heavy cracking clay soils. It is tolerant of poor drainage and seasonal flooding to a depth of approximately 3 m. It survives prolonged flooding, but the bulk of growth is produced after the water recedes.

Banks can be constructed to create ponds to store runoff water to grow Aleman grass where rainfall is too low for it to persist.

Temperature

It is well adapted to tropical lowland environments.

Establishment

Companion species

Grasses: None. It is best sown as the only grass in a mixture.

Legumes: Is extremely competitive when established and will choke out legumes. Can be sown with Glenn, Lee, phasey bean, Bundey or Cavalcade as pioneer legumes. These legumes are not as tolerant of flooding as Aleman grass and will not persist if flooded for more than 2 months.

Sowing/planting rates as single species

Can only be planted by cuttings or runners as the seed is sterile.
Stem sections 30 - 40 cm long containing 2 - 3 nodes are planted at 1 -4 m spacing, with at one node showing.

Sowing/planting rates in mixtures

Can only be planted by cuttings or runners as the seed is sterile.

Stem sections 30 - 40 cm long containing 2 - 3 nodes are planted at 1 -4 m spacing, with at one node showing.

The legumes will provide feed during the first year and an input of nitrogen, but generally will not be competitive with the grass after the second year, particularly where flooded.

Sowing time

Plant cuttings into mud or shallow water (up to 15 cm deep) in January and February, depending on rainfall.

As establishing Aleman grass requires protection from excessive weed competition, a well prepared seedbed is an advantage.

Inoculation

Not applicable.

Fertiliser

On the more fertile clay soils, Aleman grass pastures are generally not fertilised.

They require fertiliser, at least initially on less fertile soils such as the solodics. Responds strongly to nitrogen and phosphorus. Generally apply 100 - 250 kg/ha of superphosphate or its equivalent at establishment. Apply nitrogen at 25 - 50 kg/ha to grazed pastures. Applications of potassium, molybdenum, zinc or other deficient elements may be necessary on some soils.

Management

Maintenance fertliser

On infertile soils, generally apply 50 - 100 kg/ha of superphosphate or its equivalent. Apply nitrogen at 25 - 50 kg/ha to grazed pastures.

Grazing/cutting

The pasture can be lightly grazed during its first dry season. Once established it can tolerate heavy dry season grazing. Aleman grass pastures should be fenced off to prevent access by grazing animals during the wet season. This spells the pasture and allows it to regenerate each year.

Aleman grass is usually grazed down to the crown during the dry season. This does not reduce its ability to grow once moisture is available. Heavy grazing of young regrowth will reduce plant survival.

While it is tolerant of fire, and recovers after burning if the regrowth is not grazed, it should not be burnt. A hot fire can make Aleman grass vulnerable to drought, overgrazing or flooding.

Seed production

Nil, it does not produce viable seed.

Ability to spread

Good. Plants are competitive once established, and will spread vegetatively into surrounding areas if there is little competition. It can spread 5 m in a year by stems lodging onto bare ground created by ploughing or spraying, and rooting down at the nodes.

Weed potential

Unknown, has not been evaluated. Adapted to wet and flooded areas, may be a threat to biodiversity in wet areas.

Major pests

None recorded.

Major diseases

None recorded.

Herbicide susceptibility

Annual grasses can be controlled using low rates of Diuron.

Tolerant of selective herbicides used to control broadleaf weeds.

Animal production

Feeding value

It is of high quality compared to other tropical grasses. Crude protein (CP) of tops during the dry season is generally up to 8 - 13 %. The CP of regrowth, which is selected by grazing animals is generally 8 - 15 %, and up to 21 % in young regrowth at the beginning of the wet season. In vitro digestibility of tops is generally up to 63 % during the growing season and to 57 - 68 % during the dry season. In vitro digestibility in fresh regrowth can be up to 74 %.

Palatability

It is extremely palatable to cattle, buffalo and horses.

Production potential

Without applications of nitrogen fertiliser dry matter yields on infertile soils are generally 4 - 7 tonnes/ha. On clay soils or with the application of 100 - 200 kg/ha of nitrogen, yields are 10 - 25 tonnes/ha.

Livestock disorders/toxicity

No major problems reported in Australia.

Cultivars

Cultivar	Seed source/Information
Amity	Does not produce viable seed, planted by runners. Leafy, has thicker stems, blue-green appearance and is disease free.
Local	Does not produce viable seed, planted by runners. Introduced into the Northern Territory in 1890s. Previously known as Echinochloa praestans. Less leafy, has thinner stems, darker green appearance and fungal spots on leaves.

Further information

Web links:

Tropical Forages (SoFT) - Aleman grass

NT PDI Aleman grass Agnote E53

Acknowledgements

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Author and date

Arthur Cameron

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