

Register of Australian Herbage Plant Cultivars

A. Grasses

25. Aleman

Echinochloa polystachya (HBK) Hitchcock (aleman grass) cv. Amity

Reg. No. A-25a-1

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Origin

Aleman grass, or pasto aleman, forms extensive colonies in the swamps and on less wet ground in tropical and sub-tropical countries of America from southern U.S.A. to northern Argentina and is much used for animal forage, especially in Brazil (Bogdan 1977). CPI 61147 aleman grass derives from the Orinoco Delta in Venezuela via the International Research Institute, Tucupita, Venezuela. It was tested for use in ponded pastures in water too deep for para grass (*Brachiaria mutica* Stapf) on properties in central Queensland, especially 'Granite Vale', the property of J. and P. Olive on Amity Creek near St. Lawrence. Originator: J.H. Wilden, Queensland Department of Primary Industries.

It was approved for general release by the Queensland Herbage Plant Liaison Committee which recommended its registration on the submission of the Queensland Department of Primary Industries. Registered July 1988.

Morphological description

Echinochloa polystachya is an aquatic or sub-aquatic perennial with course stems 1 – 2.5m high, thick in the lower parts, from long rhizomes, internodes glabrous, nodes glabrous or obscurely pubescent. Ligule a rim of stiff, yellow hairs to 4mm long. Leaf blades 20 – 60cm long 10 – 25mm wide, scabrous on the margin. Panicles mostly 15 – 25mm long, dense, the short, thick branches ascending. Spikelets 5 – 7mm long, lanceolate. Upper floret hermaphrodite, 5 – 6mm long, with awn 5 – 7mm long, or mucronate; lower floret staminate with awn on lemma 7 – 17mm long (Bogdan 1977; Hitchcock 1950).

Amity differs from the species norm in having flowering culms 100 – 200cm long, 7 – 10-noded, nodes glabrous. Ligule hairs 1 – 1.5mm long. Leaf blades 30 – 36cm long, 10 – 12mm wide. Panicle axis 20 – 30cm long. Spikelets 4.5 – 5.5mm long, 1.7 – 2.0mm wide. The most distinctive differences are the much shorter mucros of the lemmas of Amity; the lemmas of *E. polystachya* are normally awned rather than mucronate (B.K. Simon, pers. comm.).

In greater detail (B.K. Simon, pers. comm.), Amity has flat linear, glabrous leaves, tapering to a narrow apex, rounded or auriculate at the base. Panicle axis scabrous; primary branches with spikelets appressed to the rachis, 2.5 – 9cm long. Pedicels 0.2 – 2.0mm long, scabrous, disarticulation at the base of the spikelet. Spikelets plano-convex, lanceolate. Lower glume 2.5 – 3.0mm long, ovate-lanceolate. Upper glume 4.5 – 5.5mm long, lanceolate 6 – 7-nerved, chartaceous, glabrous, strigose on the nerves apically, acuminate, 5.0 – 5.5mm long. Lemma of lower floret 5.0 – 5.5 × 1.0 – 1.5mm, lanceolate, chartaceous, 7 – 9-nerved, the surface glabrous, acuminate, with mucro 1.0 – 1.5mm long; lower palea linear, acute. Upper floret lemma 4.5mm long, white, cartilaginous, smooth, ovate-lanceolate, acuminate, with mucro 0.5mm long; upper palea cartilaginous, smooth, enclosed at its apex by the lemma.

Agronomic characters

Valued as a deep water plant of the seasonal swamps of South America where it is used for grazing, silage and for hay-making (Bogdan 1977), Aleman grass can also be used in normal sown pastures in high rainfall areas, although if planted in dry uplands it will thrive for the first year only, then become weak and slowly succumb (Judd 1975).

Adapted to relatively infertile soil but responds strongly to improved fertility, especially nitrogen application. It is particularly well adapted to complementing para grass in ponded pasture areas where water is too deep for para grass. The latter does not grow well in water deeper than 30cm and, in some regions such as central Queensland, will not grow in water deeper than 60cm (Wilden and Chapman 1987). Aleman will grow in water seasonally up to 1m deep, and for short periods even deeper. It is, as a result, useful in locations near the ponding banks. Deeper water reduces the frost risk and extends the period of green forage availability considerably. Seed production is poor. Aleman grass is normally propagated by stem cuttings.

Aleman is very palatable and eagerly sought out by grazing animals. In Venezuela dry matter digestibilities after 41, 48, 55 and 62 days regrowth were 63, 62.2, 59.1 and 60.5% respectively, and crude protein levels were 10.3, 9.1, 8.9 and 8.2% respectively (Combellas and Gonzales 1973).

In central Queensland Aleman will flower throughout the year when plants have stems longer than 1m. However, seeds have not been found and propagation by seed is unlikely.

References

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5. Wilden, J.H., and Chapman, G.D. (1987). Ponded Pasture Systems – capitalising on available water. Queensland Department of Primary Industries Bulletin RGR 87006.