

## REGISTER OF AUSTRALIAN HERBAGE PLANT CULTIVARS\*

## A. GRASSES

## 24. HYMENACHNE

a. *Hymenachne amplexicaulis* (Rudge) Nees (hymenachne)

cv. Olive

Reg. No. A-24a-1)

*Origin*

*Hymenachne* occurs widely in South and Central tropical America in swampy situations on riverbanks and seasonally flooded land (Bogdan, A. V. [1977]. *Tropical Pasture and Fodder Plants (Grasses and Legumes)* pp. 152-153. Longmans: London). It is closely related to *H. acutigluma* (Steudel) Gilliland of Northern Australia (Calder, G. J. [1981] *Hymenachne acutigluma* in the Northern Territory. N.T. Dep. Primary Production Tech. Bull. No. 46) and *H. pseudointerrupta* C. Muell. from the Indo-Malayan region (Bogdan, *loc. cit.*). CPI 61149 was received, as *Eriochloa imbricata*, from the International Research Institute, Tucupita, Venezuela and is believed to have come originally from either Haiti or the Dominican Republic. It was tested for use in ponded pastures in water too deep for para grass (*Brachiaria mutica* Stapf) on commercial properties in Central Queensland, especially "Granite Vale", the property of J. & P. Olive, St Lawrence.

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*

*H. amplexicaulis* is a robust, rhizomatous perennial grass, spreading on dry land or floating in water. Stems glabrous, up to 1.6 m high, erect, or ascending from a prostrate base. Leaf sheaths often spongy, blades mostly lanceolate, cordate at base and markedly narrower in the upper half, 10-45 cm long and up to 3 cm wide. Ligule membranous. Panicle narrow, spikelike, cylindrical, 20-40 cm long, sometimes with 2 to a few long upright branches. Spikelets lanceolate, upright, 3-4 (-5) mm long. Lower glume shorter than the spikelet, upper glume acute or mucronate, as long as the spikelet, and similar to the lower lemma. Upper floret with herbaceous lemma and palea and easily detached caryopsis (Bogdan, *loc. cit.*; Cabrera, A. L. (Ed.) [1970]. *Flora de la Provincia de Buenos Aires, Coleccion cientifa, Pt. II Gramineas*, p. 505. Instituto Nacional de Tecnologia Agropecuaria, Argentina.)

Olive hymenachne has flowering culms 80-95 cm tall, sparingly branched, up to 4 nodes. Leaf blades flat, 19-23 cm × 12-21 mm, linear-lanceolate, tapering to a narrow apex, auriculate at the base. Primary branches of panicles with spreading secondary branches, 0.5-2 cm long, scabrous on the margins. Pedicels 0.2-1 mm long, scabrous, disarticulation at the base of the spikelet. Spikelets dorsiventrally compressed, linear-lanceolate, 3-4 × 0.6-0.8 mm. Lower glume 1.5-1.8 mm long, triangular, 3 nerved, hyaline, smooth, glabrous, acute. Upper glume 3-4 mm long, linear-lanceolate, 5 nerved, hyaline, glabrous, long acuminate. Lower floret neuter; lower lemma 3-4 mm × c. 1 mm, linear-lanceolate, hyaline, 5 nerved, the surface glabrous, long acuminate. Upper floret hermaphrodite; upper lemma 2.5-3.5 mm long, white, hyaline, smooth, lanceolate, glabrous, acute; upper palea hyaline, smooth, not enclosed at the apex by the lemma (Simon, B. K. [1987]. *Pers. comm.* Queensland Dep. Primary Industries, Indooroopilly).

*Agronomic characters*

*Hymenachne* can form extensive colonies in its natural habitats. These colonies are valued as natural grazing by cattle, even at advanced stages of growth after flood

waters have receded (Bogdan, *loc. cit.*). The native *H. acutigluma* in northern Australia serves a similar purpose, and is one of the major forages of buffaloes on the flood plains east of Darwin (Calder, *loc. cit.*). The flooding and drying cycles throughout the year allow massive regeneration by seed (Wildin, J. H. and Chapman, D. G. [1987]. Poned Pasture Systems—capitalising on available water. Queensland Dep. Primary Industries Bulletin RQR 87006) and this ensures persistence after extensive drought periods (Wildin, J. H. [1987]. Pers. comm. Queensland Dep. Primary Industries, Rockhampton).

In practice hymenachne serves a similar purpose to aleman grass (*Echinochloa polystachya* (HBK) Hitchcock) as a deep water complement to para grass in the ponded pasture systems being developed in central Queensland. Olive hymenachne grows better than Amity aleman in the water up to 1 m deep adjacent to the pondage banks (Wildin, J. H. and Chapman, D. G. *loc. cit.*). However, it does not grow in permanent water, requiring alternating periods of flooding and dryness to establish and survive (Calder, G. J. [1981]. *Hymenachne acutigluma* in the Northern Territory. Northern Territory Dep. Primary Industries Bulletin No. 46). It is not as drought resistant as para and may not be as drought hardy as Amity Aleman (Wildin, J. H. Pers. comm.).

In Surinam, crude protein content was found to be high, 15.8% in the whole plant and 22.6% in the leaves with crude protein digestibilities of 66 to 80% (Bogdan *loc. cit.*).

Propagation to date has been by stem cuttings (Bogdan; Wildin and Chapman, *loc. cit.*). However, in central Queensland Olive hymenachne flowers and sets viable seed during short days commencing in May (Wildin, J. H. pers. comm.).

## 25. ALEMAN

### a. *Echinochloa polystachya* (HBK) Hitchcock (aleman grass)

#### cv. Amity

(Reg. No. A-25a-1)

#### *Origin*

Aleman grass, or pasto aleman, forms extensive colonies in the seasonal swamps and on less wet ground in tropical and subtropical countries of America from southern USA to northern Argentina and is much used for animal forage especially in Brazil (Bogdan, A. V. [1977]. Tropical Pasture and Fodder Plants (Grasses and Legumes), pp. 129-130. Longmans: London.). CPI 61147 aleman grass derives from the Orinoco Delta and 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. & P. Olive, on Amity Creek near St. Lawrence.

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#### *Morphological description*

*Echinochloa polystachya* is an aquatic or sub-aquatic perennial, with coarse stems 1-2.5 m high, thick in the lower parts, from long rhizomes, internodes glabrous, nodes glabrous or obscurely pubescent. Ligule a rim of stiff, yellow hairs to 4 mm long. Leaf blades 20-60 cm long, 10-25 mm wide, scabrous on the margin. Panicles mostly 15-25 cm long, dense, the short thick branches ascending. Spikelets 5-7 mm long, lanceolate. Upper floret hermaphrodite, 5-6 mm long, with awn 5-7 mm long, or mucronate; lower floret staminate with awn on lemma 7-17 mm long (Bogdan, *loc. cit.*, Hitchcock, A. S. [1950]. Manual of the Grasses of the United States, p. 771. USDA Misc. Pub. no. 200, U.S. Govt. Printing Office: Washington.)