

Register of Australian Herbage Plant Cultivars

A. Grasses

23. Digitaria

Digitaria eriantha Steudel (digit grass) cv. Premier

Reg. No. A-23a-1

Registered April 1987

Published in the Journal of the Australian Institute of Agricultural Science 53(4): 311-12 (1987).

Origin

Derived from material introduced as CPI 38869 from A.Ford and Co. Pty. Ltd., Johannesburg, South Africa, in 1965. Although the exact origin of the material introduced as CPI 38869 is not known, *D. eriantha* is represented in the Upper Karoo region of South Africa (Chippindall, L.K.A. 1955 in *The Grasses and Pastures of South Africa*. Ed. D. Meredith. Part 1, p.403. Central News Agency: Parow). The species is generally restricted to more fertile soils in summer rainfall areas receiving 400 – 1000mm average annual rainfall. Following evaluation in a number of environments by CSIRO Division of Tropical Crops and Pastures and the Queensland Department of Primary Industries, it was recommended for registration by the Queensland Herbage Plant Liaison Committee in 1986. Registered April 1987.

Morphological description

Digitaria eriantha is a robust, tufted perennial with an oblique rhizome; lowest leaf sheaths densely hairy at the base, upper ones glabrous or with a few scattered, tubercle-based hairs; culms erect to 150cm or more tall, many-noded, usually branched, nodes and internodes glabrous; ligule 2 – 3.5mm long, membranous, rounded; leaves expanded, up to 60cm long, 6-12mm wide, glabrous, shortly setaceously acuminate, culm leaves shorter, those of the innovations longer and narrower. Racemes 4 – 10, sessile, solitary, digitate or the lower ones sub-digitate, often spreading, up to 15cm long, the lowermost often shortly compound at the base, arranged in whorls on the central axis up to 7cm long, axils of the lower racemes shortly pubescent, rachis triquetrous, narrowly winged.. Spikelets binate, appressed, somewhat congested, narrowly ovate-lanceolate to lanceolate-elliptic, about 3.5mm long; lower glume very short, membranous; upper glume 2mm long, lanceolate, 3-nerved, hairy, hairs protruding; sterile lemma alternately glabrous and hairy between the 7 equidistant, smooth nerves, the marginal hairs protruding, fruit gradually acute upwards, greyish-brown to brownish purple (Henrard, J. Th. 1950. *Monograph of the Genus Digitaria*. 999pp. Univeritaire Pers: Leiden; Chiipindall, L.K.A. *loc. cit.*)

Premier digit grass grown at Samford, Queensland, differed in the following morphological characters. Culms to 130cm with 5 nodes; ligule length 3mm; culm leaves up to 30cm long and 11mm wide, basal leaves up to 45cm long and 7mm wide, often with a few hairs in the axils and glaucous on the underside; racemes 9 – 14 (usually 10) from 7 to 17 (usually 11)cm long in 3 or more whorls on a common axis up to 4cm long. Spikelets 3 – 3.5mm long, lower glume up to 0.5mm long; 3.3 million seeds/kg.

Agronomic characters

Many accessions of *D. eriantha* have been evaluated in Queensland and northern New South Wales over the past 30 years. An accession was released in the Inverell district in the mid-1950's and by 1969 was regarded as one of the best summer grasses in the region (V.N. Gidley, personal communication). It was outstanding in the 1965 drought, performing well on trap soils of the Ashford area (solodized soils derived from mudstone), red-brown earths of the Bingara district, and deep sandy soil at Gravesend.

In Queensland, *D. eriantha* has performed well on soils ranging from sandy loams to cracking clays in environments as diverse as those found in Augathella, Beerwah, Gatton, Leyburn, Meandarra,

Narayan, Samford and Southbrook, (Strickland, R.W. 1974. Performance of southern African *Digitaria* spp. in southern Queensland. *Aust. J. Exp. Agric. Anim. Husb.* **14**, 186-96; Strickland, R.W., and Haydock, K.P. 1978. A comparison of 20 *Digitaria* accessions at four sites in south-east Queensland. *Aust. J. Exp. Agric. Anim. Husb.* **18**, 817-24; W.J. Scattini, personal communication). Comparison of the better accessions of *D. eriantha* with other *Digitaria* species and other genera in the 1960s and 1970s led to the release of cv. Premier. It had the best overall performance in a cutting trial at 4 sites (Narayan, clay loam, Narayan, sandy loam podzolic, Samford, sandy loam meadow podzolic, and Beerwah, sandy gleyed podzolic), acceptable quality and good fire, frost and insect resistance. It is also low in soluble oxalate content (Jones, R.J., and Ford, C.W. 1972. The soluble oxalate content of some tropical pasture grasses grown in south-east Queensland. *Tropical Grasslands* **6**, 201-4.).

It is particularly well adapted to inland environments with lower rainfall and severe winter frosts, where production of green leaf in winter is a feature of its performance. Although Premier leaves are damaged by frost, it will continue to produce new leaf in the winter if moisture is available. This has been reflected in the performance of crossbred lambs grazing Premier digit grass in winter on a shallow, sandy-surfaced duplex soil at Leyburn, Queensland. The lambs on Premier gained an average of 3.5 kg/head more than their counterparts on native pastures over the period May to July (W.J. Scattini, personal communication). Beef production from Premier digit grass and from Biloela and Molopa buffel grass sown with siratro or *Stylosanthes fruticosa* CPI 40615 in 0.4ha unreplicated plots at Narayan was compared by grazing one or two beasts per paddock over the summer months (t'Mannetje, L.J. 1977. Unpublished data). The mean liveweight gain over 4 years did not differ significantly between treatments even though the digit grass plots contained less legume. A subsequent investigation at Mt. Cotton showed that Premier was compatible with a range of commercial legumes and more compatible with siratro than Nandi setaria, Basilisk signal grass, Rodd's Bay plicatum and pangola grass (Filet, P.G. 1979. A comparison of the compatibility of *Digitaria smutsii* and *Macroptilium atropurpureum* in mixed swards with other tropical grasses and legumes. Report to Dep. Agric., University of Queensland. pp. 33).

The foliage of Premier digit grass is generally disease-free, but seed heads may be infected by a false-smut (*Ephelis* sp.), particularly in periods of prolonged wet weather. Benomyl fungicide, applied as a spray to the plants or soil, reduces the incidence of diseased heads but it is not fully effective (Jones, R.J. 1973. Unpublished.). Potential seed yields exceed 200kg/ha but there is a spread of flowering and seed drop over a period of 3 to 4 weeks in November and March. Header yields at Gatton have exceeded 90kg/ha in each period.

Selector

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