

Register of Australian Herbage Plant Cultivars

A. Grasses

21. Couch Grass

***Cynodon* × Burton Pearson (= *Cynodon nlemfuensis* Vanderyst var. *robustus* Clayton and Harlan × *C. dactylon* (L.) Pers. var. *dactylon*) (Bermuda grass) cv. Burton**

Reg. No. A-21a-1

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Origin

Burton was selected from 569 single plants of crosses between Kenya 61, a tetraploid line of *Cynodon nlemfuensis* var. *robustus* (8) from Kitale, Kenya, and *C. dactylon* var. *dactylon* cv. Coastal from Tifton, Georgia, U.S.A. (5).

The crosses were made by G.W. Burton (geneticist, USDA) at Tifton, Georgia at the request of the University of Sydney for genotypes having greater cold tolerance than cv. Coastal. Seed from the crosses was sent to the University of Sydney, Castle Hill Research Station in 1969 and single plant selections were made by Dr. Burton in April 1970. Burton and other selections were evaluated in clipped swards at field sites from lat. 29°S to 34°S from 1970 to 1980 and Burton has been grown in small grazed fields since 1976.

Submitted by the Department of Agronomy and Horticultural Science, University of Sydney, which will be responsible for maintaining breeders' stock of vegetative material. Recommended for registration by the N.S.W. Herbage Plant Liaison Committee. Registered September 1983.

Morphological description (4,12)

Cynodon nlemfuensis is a stoloniferous perennial without rhizomes, stolons stout and woody, culms 30 – 60cm high, soft. Leaf blades flat, 5 – 16cm long, 2 – 6mm wide, ligule a scarious rim 0.3mm long. Racemes in 1 sometimes 2 whorls, slender, spikelets 2 – 3mm long, green or pigmented red or purple, glumes narrowly lanceolate in side view, the upper 0.5 to 0.75 the length of the spikelet, lemma silky pubescent on keel, palea glabrous. *Cynodon nlemfuensis* var. *robustus* has stout culms 2 – 3mm in diameter. Leaf blades mostly thin, green, 5 – 6mm wide. Racemes 6 – 13, each 6 – 10cm long. *Cynodon nlemfuensis* var. *dactylon* has slender stolons and slender rhizomes, culms slender, 8 – 40cm high, 0.5 – 1mm in diameter. Leaf blades often short and narrow, 1 – 12cm long, 2 – 4mm wide, glaucous; ligule a membranous rim 0.2 – 0.3mm long, in single whorl. Spikelets 2 – 2.5mm long, glumes 1-nerved.

Burton is stoloniferous but without rhizomes. Leafy shoots are commonly 1.6mm in diameter at the basal internode, 25 – 55cm high, leaves are deep green to blue-green in colour 4 (3 – 5mm) wide and 11 (5 – 17)cm long; 50 – 60% of above ground dry matter is leaf compared to 70% in kikuyu (12). The ligule is concave, ciliate, the cilia at margins being 2- 3mm long. Flowering stems are erect 10 (5 – 30)cm tall; the inflorescence is digitate with 4 – 5 (rarely 11) racemes 40 – 67mm long; flowers are sterile, as in Coast cross 1, the US cultivar bred from the same parents (4). Burton is taller and broader leaved and forms a more dense canopy than common couch grass.

Agronomic characters

Cuttings of Burton establish more rigorously than common couch (1,2,7). It outyields other couch, kikuyu and pangola grasses at coastal locations from 29° to 32°S lat. Seasonal yields are 19t dry matter/ha when highly fertilised (1,2). On the north coast of New South Wales it outyields the previously mentioned perennial grasses most markedly in spring and early autumn (March) (2). At Sydney (34°S) it yields the same as common kikuyu (2) but substantially less than Crofts kikuyu (10,11,13); it retains relatively broad seasonality of production but its open canopy permits weed invasion (9). This open canopy allows successful oversowing with legumes e.g. red and white clover (12) and lucerne (9,11) although the proportion of Barton in couch-lucerne mixtures may be low (34%)

by the third season after oversowing (11). At Sydney, seasonal yields of grazed pastures are 8-18t dry matter/ha for Burton (containing as much as 53% other species in the sward) (12), compared to 11 – 15t/ha for common paspalum and 15 – 20t/ha for Crofts kikuyu (containing 10% weeds) (10,13). The composition of Burton-based swards has not changed after 5 years of rotational grazing (12).

Crude proteon concentrations range from 10% (3) to 16 – 20% when fertilised with 80kg N/ha every 5 weeks (1). Organic matter digestibility is about 58% (3); dry matter digestibility (IVDMD) of leaf is 50 – 60% and stem 42 – 50% when harvested every 6 weeks, although IVDMD falls to 38% for 16 week old carryover feed in mid-winter (7,11,12). At Sydney, P, K and Mg concentrations are essentially the same as in paspalum and kikuyu although Ca is higher than in kikuyu (e.g. 0.5 compared with 0.3% of dry weight) (12).

Burton is considered to have potential on light textured soils of moderate fertility in sub-tropical coastal locations, such as northern New South Wales.

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