

# Register of Australian Herbage Plant Cultivars

## A. Grasses

### 6. Panic

#### *Panicum maximum* Jacq. (Panic or Guinea grass) cv. Riversdale

Reg. No. A-6b-4

Registered January 1976

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#### Origin

*Panicum maximum* is a highly productive species which has had a major influence on the development of pastures in the higher rainfall tropical and subtropical areas of northern Australia. Indigenous to east and central Africa it is now widely distributed in subtropical U.S.A., Central and South America, the Caribbean, India, Ceylon, Malaya and the East Indies (3,9).

The common guinea of commerce was introduced into Australia late last century (1,3) but its exact origin is not known. Most of the seed available commercially has been harvested from pasture and volunteer roadside stands and is usually contaminated by a range of material including recognized cultivars and coarse weedy forms (10).

Riversdale was derived by selection from within the population of an existing, highly productive, experimental pasture of common guinea grass on the South Johnstone Research Station of the Queensland Department of Primary Industries (6). In 1973, 530 clones were established as spaced plants. Over two seasons plants which showed characteristics of the weedy coarse form or of described cultivars or which lacked vigour or seeded excessively early or late were discarded. Seed from the remaining 280 plants, which represented a stable and defined population, was bulked as breeders' seed of Riversdale (6).

Submitted for registration by the Queensland Department of Primary Industries and recommended by the Queensland Herbage Plant Liaison Committee. Registered, January 1976.

Breeders' seed will be maintained by the Queensland Department of Primary Industries.

#### Morphological description (6,7)

This cultivar is a tall, erect, tufted perennial with occasional short creeping rhizomes. It roots freely from stem nodes when these come in contact with moist soil.

It may reach 1.8-2.0 m in height, but is not as robust and coarse in appearance as the giant types Hamil and Coloniao. The leaf canopy is held more erect than that of Makueni. Leaves are green in colour, darker than those of Makueni, but lighter than Hamil and Coloniao; about the same length as those of Hamil (70-80 cm in mature plants) but shorter than those of Makueni and Coloniao. Leaves of Riversdale are 15-18 mm wide compared with those of Makueni (18-22 mm), Hamil (24-26 mm) and Coloniao (25-30 mm); broad, flat and tapering to a fine point and with slightly scabrid margins; blades are softly hairy on the adaxial surface, being slightly more hairy than Hamil, but much less hairy than Makueni; occasional hairs on abaxial leaf surface. The sheath is moderately hairy being more hairy than Hamil, but much less hairy than Makueni. Ligule consists of a ring of short hairs and no auricles are present. The inflorescence (25-40 cm in length) is a large open panicle with the lower branches whorled; about similar in size to Makueni, but smaller than Hamil and Coloniao. The spikelet morphology is similar to that of Hamil and differs from that of Makueni in that the outer glumes of Riversdale are glabrous; spikelets 3.0-3.5 mm long, two-flowered with the upper floret fertile; lower glume 5-nerved and 1/4-1/3 length of spikelet; upper glume 5-nerved and same length as sterile lemma; the fertile lemma is hard and distinctly transversely ridged or wrinkled; palea is similar to lemma but less distinctly ridged: seeds about 2.3-2.5 mm long, ellipsoidal, straw coloured, about 1,200,000 to 1,500,000 seeds per kg. Commercial seed consists of the whole spikelet including the outer glumes.

### **Agronomic characters (2,3,5,6)**

It is summer growing, adapted to high temperatures and an annual rainfall in excess of 1300 mm (3). It is sensitive to frost (9), more so than Makueni (2). Winter growth rates are 1/3-1/6 of mid-summer growth rates in the frost-free, wet tropical lowlands of north Queensland (8). Performance in tropical and subtropical areas receiving less than 1300 mm and/or when frosts occur is less satisfactory than other grass species. Like other cultivars of guinea grass Riversdale is adapted to high fertility soils and is less tolerant of poor drainage than Hamil (3).

Dry matter yields are high and comparable to those of other cultivars of this grass. It yields less in winter, but more in summer than Makueni (4,7). It is leafy and the plant nitrogen content ranges from 2.7-3.0% for 3-week regrowth to 1.0-1.3% for 12-week regrowth (6). Compatibility with tropical legumes is similar to that of other guinea grasses and it is readily accepted by stock.

While there are no data available on animal performance of Riversdale, the material from which it was selected has, over many years, consistently produced in excess of 600 kg liveweight gain/ha when grown in association with legumes (2,4,5). This level of production is superior to that obtained from Hamil and Coloniao (5).

Like other guinea grasses, seed set is fairly poor, but adequate as two seed crops per year (December-January and April-May) are possible. It is probably predominantly apomictic as are most other types (11).

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