

# Register of Australian Herbage Plant Cultivars

## A. Grasses

### 8. *Setaria*

#### *Setaria incrassata* Stapf (purple pigeon grass) cv. Inverell

Reg. No. A-8b-1

Registered April 1977

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#### Origin

Derived from seed (CPI 24582) received at Inverell Soil Conservation Research Centre in August 1958. The seed was a line selected at Matopos Research Centre, Bulawayo, Southern Rhodesia.

*Setaria* was tested over several years from 1959 in the Inverell district by both the Soil Conservation Service of New South Wales and the NSW Department of Agriculture and was observed to establish more readily on black earths than other introduced summer grasses (1,2,3).

More intensive testing of material derived from CPI 24582 was undertaken by the Soil Conservation Service of New South Wales at Inverell after 1972 (4) and subsequently by the Queensland Department of Primary Industries at Toowoomba (5). Submitted by the Soil Conservation Service of New South Wales and recommended for registration by the New South Wales Herbage Plant Liaison Committee. Breeder's seed held by the Soil Conservation Research Centre at Inverell. Registered, April 1977.

#### Morphological description

Perennial 0.6 to 1.5 m high, tufted on a short praemorse rhizome. Culms geniculately ascending, few to 5 noded, simple, somewhat stout below, terete, smooth and glabrous except for a ring of short silvery hairs at the insertion of the sheaths and the top of the peduncle which is slightly rough and sometimes finely downy close to the inflorescence. Leaf-sheaths light, striate, glabrous except along the ciliate margins, the basal tough, papery often violet or purple, persistent but not breaking up into fibres; ligule a narrow densely and long ciliate rim; leaf blade linear tapering to a very long fine point, flat or involute, up to c. 0.5 m long by 49 mm wide, flexuose, very glaucous. Inflorescence a dense continuous false spike 6-18 cm long, 8 mm wide (exclusive of the bristles); axis indistinctly angular, densely and minutely puberulous or here and there with longer hairs; branches reduced to subsessile clusters of 2-4 spikelets of which the lowest one or two may be quite rudimentary; bristles 6-9 to a cluster, slender slightly flexuose, antrorsely scabrous, up to 15 mm long, oblique in profile smooth and glabrous, tinged with purple or dull purple all over. Glumes membranous; lower broadly ovate, very shortly acute to subobtuse, one third to almost half the length of the spikelet, 5-7 nerved; upper broadly oblong, very concave, subapiculate, up to over four-fifths the length of the upper floret, 7-9 nerved. Lower floret male; lemma similar to the upper glume, but more or less flattened on the back and as long as the spikelet, 5 nerved; palea as long as the lemma, elliptic-oblong, acute or acuminate; anthers 2-2.5 mm long. Upper floret perfect, as long or almost as long as the lower; lemma elliptic-oblong, obliquely apiculate, very complex, finely punctuate or obscurely regulose, pale, with or without a dark spot near the tip. Seed is elliptical 1 mm in diameter, 2 mm in length and olive to yellow in colour. There are c. 560,000 seeds per kg with lemma and palea intact, but glumes removed.

#### Agronomic characters (1,4,5,6,7,8)

A warm season perennial, native to Rhodesia, where it is common on cracking black earths with 500-700 mm annual average rainfall (6). It is palatable to stock (7) but is of minor value as a forage species in Rhodesia (6).

Drought tolerance and general persistence in established swards is similar to *Panicum coloratum* L. var *makarikariense* Goosens cv. Bambatsi on the black earths of north-western New South Wales; mid summer growth is very rapid but growth in spring and autumn and overall production appears to be

slightly inferior to cv. Bambatsi (4). It is very susceptible to frost damage but recovers readily in spring (4).

Inverell established more readily than eleven other introduced warm season perennial grasses from dryland sowings on the black earths of north-western New South Wales and southern Queensland (4,5). Under conditions of average rainfall it has established approximately eight times as many plants as cv. Bambatsi, c. 30 times as many as *Panicum maximum* Jacq. var. *trichoglume* Eyles, and c. 50-100 times as many as *Chloris gayana* Kunth. cv. Pioneer. Under conditions of more severe moisture stress cv. Inverell established well when the other species failed completely.

Productivity in the first and second year of establishment was superior to all the other species with yields per plant more than twice that of cv. Pioneer and almost five times that of cv. Bambatsi in the first year.

Under conditions of high soil moisture cv. Inverell shows no advantage over other warm season perennial grass species and has proven susceptible to competition from naturalized annual grasses.

Primarily suited to cattle production, the cultivar has also been grazed by sheep (1). It seeds prolifically (300 kg ha<sup>-1</sup> has been recorded (8)) but seed shatters readily.

Inverell is considered to have potential for pasture use and for erosion control on the black earths of north-western New South Wales and southern Queensland where other exotic perennials are of limited value because of establishment difficulties.

### References

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