

Register of Australian Herbage Plant Cultivars

A. Grasses

17. *Bothriochloa*

Bothriochloa insculpta (Hochst. ex A. Rich.) A. Camus (creeping bluegrass) cv. Hatch

Reg. No. A-17a-1

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Origin

When the CSIRO Plant Introduction Station at Fitzroyvale near Rockhampton, Qld, closed down in 1946 a number of grasses were distributed to local landholders as vegetative material. Among these was a line of *Bothriochloa insculpta* which subsequently attracted attention on the property of Mr G. Hatch at The Caves, north of Rockhampton.

Over the years Mr Hatch planted this grass on his own property and distributed seed to neighbours who harvested further seed. By 1976 at least 2000 ha had been planted in the Rossmoya - The Caves area. It had also attracted attention at Emerald and on the Darling Downs for its ability to establish on heavy self-mulching black soils.

Two other stands of the grass have been in existence since 1938. One of these was a former dairy farm at Hervey Bay, Qld, where it was used commercially for over 30 years. The other is a hobby plot at Crows Nest near Toowoomba, Qld. Material from all three sources is indistinguishable morphologically (7). This, together with historical evidence (2) shows that it originated as CPI 2695. This accession was introduced in 1931 from Miss S.M. Stent of Salisbury, Southern Rhodesia, as *Amphiliphis* (syn. *Bothriochloa*) *glabra*. It was later determined as *B. insculpta* (2). CPI 2695 was grown by CSIRO at Lawes and Fitzroyvale, and by the Queensland Department of Agriculture and Stock at Brisbane, Toowoomba, Rockhampton and Biloela. The grass was an impressive grower but was finally discarded by both organizations in favour of more palatable species (*Panicum* spp., *Cenchrus ciliaris* and *Chloris gayana*) (6).

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Morphological description (8)

Weakly to strongly tufted glaucous perennial with erect culms up to 1.4 m high and sometimes also producing prostrate to ascending culms up to more than 2m long. Both culms channeled on one side with exposed portions often pigmented reddish pink to mauve. Erect culms often branched at nodes. Prostrate culms producing ascending culms at nodes and occasionally rooting down. Nodes yellowish with conspicuous white hairs to 6 mm long. Leaf sheaths glabrous, sometimes flushed with purple; often with small elliptic glands on the keel and nerves in the apical portion. Ligule a papery membrane up to 2 mm long and 5 mm broad. Leaf blade to 33 cm long, to 1 cm wide at the base, tapering to a long fine point; light green to bluish-green sometimes with purple margins; a narrow yellow transverse band, sometimes with a few short (c. 1 mm) marginal hairs, at the leaf-sheath junction. Inflorescence of 4-20 racemes on a central axis 1-3.5 cm long, racemes 3.5-7 cm long on a single or branched peduncle. Spikelets in pairs, the sessile fertile and the pedicelled sterile. Sessile spikelet 4-5 mm long with a ring of white hairs at the base. Lower glume 11-13-nerved, slightly hairy in the lower half, light green flushed with purple, with a row of distinct bristles on the marginal keels in the apical 1/4 and with a single deep pit 1/4 of the glume length from the apex. Upper glume 4 mm long, with a row of small bristles on the keels in the apical 1/4. Awn 20-24 mm long, minutely scabrid, dark brown in the lower half, light brown in the upper half, twisted and 2-3-kneed. Pedicelled spikelet usually

slightly longer than the sessile spikelet. Lower glume with a row of distinct bristles on the margins, becoming smaller towards the base; usually with two shallow pits at 1/2 and 1/4 the spikelet length from the apex, although occasionally the lower pit does not develop. Pedicel and rhachis internodes with distinctive white hairs, longer towards the apices, and both with a translucent longitudinal groove.

Three other lines currently being grown at Samford (CSIRO), another at Mareeba (Queensland Department of Primary Industries) and eight African specimens in the Queensland Herbarium, can all be readily distinguished from cv. Hatch by the presence of hairs (visible without magnification) at the extreme base of the leaf blade on the adaxial surface, and sometimes also on the abaxial surface.

A seed consists of the sessile spikelet plus the pedicel, the rhachis internode, and often the awn. A kilogram of pure seed contains c. 1.4 million seeds (4).

Agronomic characters (1,2,3,5,7,9)

Hatch is a summer-growing perennial that continues growth into early winter and so has superior autumn greenness to most of the native pasture grasses. It is, however, slow in coming away in the spring compared to Pioneer Rhodes grass and Petrie green panic. Whilst it is strongly stoloniferous, the runners do not root down readily even when lying on bare soil. Prolonged wet weather, trampling by stock or coverage by soil, however, do facilitate rooting and the grass has some value for soil conservation purposes.

Particular interest in Hatch has been generated by its superior establishment on open downs black basaltic soils. Establishment of most small-seeded grasses on these soils is difficult, but at Toowoomba establishment of Hatch has been superior to Pioneer Rhodes grass and either Bambatsi or Burnett makarikari grass on 10 and 9 occasions respectively out of 11 when sown as equal numbers of pure live seed (7). It has also established much better than a range of other grasses at Emerald (9). It grows better on loams and clays than on sandy soils and will not thrive under waterlogged conditions.

Under cutting on black soil at Toowoomba Hatch has maintained dry matter yield better than other grasses over 4 years with various rates of nitrogen (5). Hatch is considered to be more robust than east African forms of *B. insculpta* (2). When planted in black spear grass (*Heteropogon contortus*) country on a solodic soil, Hatch has persisted for 13 years, resisting the return of the spear grass without maintenance inputs of nitrogen or phosphorus fertilizers. In commercial pastures on various soil types near Rockhampton Hatch has combined well with Siratro *Macroptilium atropurpureum*. Presence of this legume has resulted in improved colour and palatability to stock. Beef cattle do well on Hatch and whilst it has been consistently used for dairy cattle it is not regarded as a good milking grass.

B. insculpta is native to areas of tropical and subtropical Africa with 650-1300 mm rainfall where, under grazing, it forms a close sward. This is especially the case on the heavy black clays on which it is often the disclimax plant (3). It is showing promise for similar situations in Queensland.

Hatch has two flowering periods per year. The main one commences in late April with a second, on new season's growth, in November. Seed yields equivalent to 80 kg ha⁻¹ per crop have been obtained using nitrogen fertilizer and strategic irrigation. Cleaning and handling the light fluffy seed can prove difficult. Hatch is generally free from disease but some stands have, on occasions, been attacked by rust (*Puccinia duthiae*). Leaves, stems and seedheads are aromatic and the aroma persists in stored hay.

Breeders' seed was obtained from Mr G.L. Tidcombe of Hervey Bay and has been grown by the Queensland Department of Primary Industries at Beerburrum since 1969. It will be maintained by the Department.

References

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