

A. Grasses

26. *Danthonia*

(b) *Danthonia linkii* Kunth (wallaby grass) cv. Bunderra

Reg. No. A-26a-1

Registered 9 November 1992

Originator: G. M. Lodge

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Registrar: R. N. Oram

CSIRO Division of Plant Industry, GPO Box 1600, Canberra, ACT 2601, Australia.

Released by Head Licensee, Lachlan Valley Seeds Pty Ltd, Forbes, NSW 2871, Australia.

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Origin

Bunderra was selected from a single plant of a natural ecotype collected by Dr G. M. Lodge from a grassed laneway near Tamworth (31°09'S., 150°59'E.; 434 m elevation; average annual rainfall 670 mm) in northern New South Wales. The parent plant of Bunderra was 1 of 844 *Danthonia linkii* plants collected throughout New South Wales in 1985–86. Plants were grown in nursery rows at the Agricultural Research Centre, Tamworth, and selected for dry matter production and seed retention and yield over 4 generations.

Bunderra was submitted by NSW Agriculture and recommended for registration in the Standing Committee on Agriculture Scheme by the New South Wales Herbage Plant Liaison Committee. NSW Agriculture will maintain breeder's seed. Pre-basic, basic, and certified seed will be produced by growers under contract to the Head Licensee. Bunderra has been granted Plant Variety Rights (Anon. 1992; Certificate No. 206).

Morphological description

All *D. linkii* plants have a chromosome number $2n = 24, 48$, or 72 (Brock and Brown 1961) and are self-pollinating. Bunderra is a functional diploid $n = 24$ (Lodge 1993). It is an erect, densely caespitose, leafy, subglabrous perennial, up to 105 cm tall, but more generally 85 cm. The culms are moderately stout, about 1 mm in diameter and 4-noded. The ligule is shortly ciliate with 0.5-mm hairs, with a few long hairs at the sides. Leaf blades are 120–290 mm long by 2.2–5.3 mm wide. The panicle is lanceolate, 4–8 cm long. Spikelets are usually pale green when young and straw-coloured when mature, 10–15 mm long, and about 6-flowered with the florets slightly shorter than the glumes, except for the very short central awn. The glumes are subequal narrow and boat-shaped. The body of the lemma has abundant hairs scattered over the back with short hairs above the callus gradually lengthening to longer hairs below the sinus. Palea are

lanceolate and narrowed acutely in the upper part. Florets of Bunderra have pale yellow to orange anthers about 1–2 mm long. Caryopsis is straw-coloured to medium brown, obovate, and about 1.7 by 0.8 mm, with the embryo up to 1.0 mm. Caryopsis weight averages 4.71 mg (2.12×10^6 seeds per kg).

When grown as spaced plants in comparative growing trials (Lodge and Schipp 1993), Bunderra was morphologically distinguishable from other ecotypes by its wider and longer flag and tiller leaves. It also produced significantly more reproductive tillers than the other ecotypes and, so, had a higher number of inflorescences.

Agronomic characteristics

Bunderra is a long-lived, frost-tolerant, yearlong green perennial grass native to Australia. *Danthonia linkii* occurs mainly on heavier textured soils in all coastal, tablelands, and slopes environments of New South Wales (Vickery 1956; Jacobs and Pickard 1981; Wheeler *et al.* 1982). It is also commonly found in the northern and southern western plains (Wheeler *et al.* 1982) areas as well as in Queensland, Victoria, and South Australia. It is widely regarded for drought resistance and ability to grow and persist in areas of low fertility. However, unselected *D. linkii* plants have also been shown to be responsive to fertiliser input (Lodge 1979; Scott and Whalley 1982) and to persist under heavy grazing (Scott and Whalley 1982, 1984). Bunderra is moderately tolerant of acid soils (K. Helyar unpublished data).

In field studies, unselected *D. linkii* plants (Lodge and Whalley 1983; Robinson and Archer 1988) had more green leaf than other native grasses, but lower dry matter production than fescue and phalaris (Robinson and Archer 1988). For green leaf, crude protein contents of 12–18% were recorded (Lodge and Whalley 1983; Archer and Robinson 1988), with digestibilities of 60–70%. Similar crude protein data were recorded for the early generation selections of Bunderra (Lodge 1992). Bunderra exhibits a high number of vegetative and flowering tillers and produces green leaf throughout the year. Compared with unselected native ecotypes of *D. linkii*, Bunderra has good herbage production and seed yield (Lodge and Schipp 1993).

Danthonia linkii is encouraged by soil disturbance and cultivation (Scott and Whalley 1982) and Bunderra has high emergence on the soil surface (G. M. Lodge unpublished data), indicating it may also have a role in the restoration of degraded cropping lands. It should be suitable for surface sowing and aerial establishment and may have some potential as an amenity grass. There are presently no other cultivars of this species commercially available.

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