



A collaboration between AWI, GRDC, MLA, RIRDC and Dairy Australia

Creeping bluegrass

Scientific name(s)

Bothriochloa insculpta

Strengths

- Palatable when young and leafy.
- Drought tolerant.
- Tolerant of heavy grazing.
- Needs only moderately fertile soil.
- Effective ground cover to combat erosion.

Limitations

- Not adapted to acid, infertile soils.
- Slow regrowth after dry/cool season.
- Flowers late in autumn so seed-set may be interrupted by early frost.
- Can invade and compete with native pastures.

Plant description

Plant: A perennial tussock grass, 30 - 80 cm tall, and up to 1.5m when flowering, spreading by runners (cf. rhodes grass). Seeds and leaves have a characteristic aromatic odour when crushed.

Stems: Runner stems (stolons) are waxy and reddish pink to mauve in colour, and 1.5 - 2.5 mm diameter. Seed stems are finer and yellow in colour, with a ring of spreading white hairs at the nodes.

Leaves: Leaves have a powdery, waxy coating, and are grey-green in colour, mostly hairless to 30cm long and 8mm wide.

Seedhead: Similar to that of forest bluegrass, olive green to purplish in colour, with 3 to >20 branches (racemes) 4 - 9 cm long along a short central axis.

Seeds: 650,000 to 1.2 million seeds/kg.

Pasture type and use

Used as permanent pasture on better quality forest soils and scrub soils in low to moderate rainfall areas, mostly for beef production. Surplus growth makes excellent hay provided it is leafy and succulent when cut.

Where it grows

Rainfall

Creeping bluegrass is very drought tolerant, although it can be killed by prolonged dry conditions. While it may be successful in areas with average annual rainfall as low as 550mm, it is usually sown in areas receiving 700 - 1200 mm/yr.

Soils

It is adapted to well-structured, well-drained, red and black clays, loams and clay loams, of at least moderate fertility, but is not suited to sands or to very heavy black clays. While it is one of the few introduced warm season grasses that will grow on black self-mulching clays, establishment is difficult. It does not tolerate waterlogging.

Temperature

Tops are burnt by frost, although stands recover from crowns along the stolons.

Establishment

Companion species

Grasses: rhodes grass

Legumes: leucaena, lucerne, annual medics, stylo (caatinga, caribbean, shrubby), clover (subterranean, white).

Companion species (grasses or legumes) may be difficult to maintain in creeping bluegrass, since it can survive at fairly low soil nitrogen levels, and forms a dense cover that prevents re-establishment of associated species.

Sowing/planting rates as single species

2 - 3 kg/ha. It is a light and fluffy seed that does not flow readily and may require special sowing equipment or pelleting to improve flow. The small seed should be sown no deeper than 1cm.

Sowing/planting rates in mixtures

1 - 2 kg/ha

Sowing time

Creeping bluegrass may be planted from October to late February, providing there is a good chance of follow-up rain to germinating moisture.

Inoculation

Not applicable.

Fertiliser

A good fallow before planting should release enough nitrogen to allow the grass to establish. Phosphorus may also be required if soil analysis or previous experience has indicated a deficiency.

Management

Maintenance fertiliser

It is tolerant of low soil nitrogen levels, competing well with native grasses in forest country, where other improved pasture grasses may fail. It responds to added nitrogen, but it is usually uneconomic to apply nitrogen fertiliser to large areas of dryland pasture. Renovation of mature pasture that is showing signs of decline will release nitrogen to rejuvenate the stand for a period.

Grazing/cutting

Young stands should not be grazed until follow-up rainfall stimulates strong root systems in developing seedlings. Initially grazing should be light to encourage runners to develop and spread, but then adjusted to prevent the grass getting tall and rank. Trampling by stock encourages the runners to take root.

Seed production

Without nitrogen, seed yields may be as low as 20 kg/ha, but normally range from 100 - 150 kg/ha, and up to 200 kg/ha under ideal conditions. As with most grasses, an application of 100 kg/ha N following a clearing cut about 2 months before flowering helps to ensure a high density of well-filled heads. Crops can be direct headed or brush harvested. Harvest timing is important as the seed can fall very quickly when ripe. Both cultivars flower late in the season, and low temperatures may delay seed ripening, leading to the possibility that frosts may destroy immature seed crops.

Ability to spread

Creeping bluegrass can spread in undisturbed situations, because of its adaptation to low fertility soils and heavy grazing. It also spreads by runners (stolons) and seed, with the fluffy seeds sticking to livestock or blown by the wind.

Weed potential

It has the potential to replace native grasses on some better forest soils.

Major pests

Other than the possibility of nematodes in lighter soils, creeping bluegrass does not seem subject to pest attack.

Major diseases

While disease problems are rare, the cultivar 'Hatch' can suffer from leaf rust in more humid environments.

Herbicide susceptibility

It is killed by glyphosate, but is tolerant of atrazine.

Animal production

Feeding value

Quality declines with age, and more rapidly with the onset of flowering. Crude protein levels in young leaf may be of the order of 10%, declining to about 5% in mature growth at the end of the season

Palatability

It is readily eaten by stock in the leafy stage, and can tolerate heavy grazing. The strongly scented herbage does not taint milk or meat. 'Bisset' is more readily eaten than 'Hatch'.

Production potential

Annual pasture yields of about 10 t/ha of dry matter (DM) are achievable, and 15 - 20 t/ha DM in seed crops, where nitrogen fertiliser and possibly irrigation are used. Cattle can gain an average of 0.5 kg/hd/day, with a peak of 1.25 kg/day in early autumn, and a low of -0.4 kg/day in winter.

Livestock disorders/toxicity

It is low in oxalate, so will not cause big head in horses. No other problems have been recorded.

Cultivars

Cultivar	Seed source/Information
Bisset 	Australian Herbage Plant Cultivars
Hatch	Australian Herbage Plant Cultivars

 Denotes that this variety is protected by Plant Breeder's Rights Australia

Further information

Tropical Forages database (SoFT) - Creeping bluegrass
NSW Department of Primary Industries - Creeping bluegrass Agnote DPI-300
Qld Department of Primary Industries and Fisheries - Creeping bluegrass

Acknowledgements

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Author and date

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