



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

Cloncurry buffel grass

Scientific name(s)

Cenchrus pennisetiformis

Strengths

- Low rainfall and drought tolerant
- Responds to spring-early summer rainfall and remains green into the dry season
- Responsive to increased soil fertility, especially phosphorus
- Very persistent and tolerates heavy grazing once established
- Maintains good ground cover and erosion protection
- Spreads naturally and grows well on alkaline loam soil types
- Few pests and diseases.

Limitations

- Less competitive than main buffel grass (*Cenchrus ciliaris*) cultivars in medium rainfall environments
- Intolerant of infertile soils
- Doesn't grow well on heavy clay soils.

Plant description

Plant: erect, tussocky, leafy, perennial grass; shortly rhizomatous, and tussocks grow up to 50 cm in diameter.

Stems: slender, branching and from 0.2 - 0.7 m tall.

Leaves: flat, green, glabrous, 10-20 cm long, 0.3 to 0.5 cm wide.

Seedhead: cylindrical, a single spikelet 3 - 7 cm long and 1 - 2 cm wide, surrounding by protruding seed awns.

Seeds: light, fluffy, to 1.2 cm awns/bristles, vary from a green to straw (when mature) in colour, 400,000 pure seeds/kg.

Plant and seedhead are similar to *Cenchrus ciliaris*, except the inner-bristles of Cloncurry buffel are united for 1-3mm above the base, while bristles of other buffel grass cultivars are united only at the base.

Pasture type and use

Summer growing perennial, permanent grass pasture for low rainfall tropics; it is widely adapted to north-west Queensland; a dominant grass on fertile river frontages soils; responds to spring-early summer rainfall; used for cattle grazing; palatable plant with good forage quality.

Where it grows

Rainfall

370 - 800 mm/annum.

Soils

Prefers neutral to alkaline loams and alluvial silts; Well adapted to river and water course frontage, fertile loamy soils and alkaline medium phosphorus, medium textured soils in Isa Uplands of north-west Queensland. Not adapted to heavy clay soils. The species tolerates

short-term seasonal river flooding.

Temperature

Tolerates high summer temperatures >45°C; Spring and summer growing grass with production occurring in the warmer months. Plants dry off and become dormant in winter but shoot in early spring when moisture is available. Moderate frost tolerance, but frosts are rare in areas where the plant is well adapted.

Establishment

Companion species

Grasses: *Chrysopogon fallax* (golden beard), *Aristida* spp. (wire grasses); *Enneapogon* spp. (bottle washer grasses); Introduced *Cenchrus setiger* (Birdwood grass).

Legumes: no sown legumes; seasonal native species.

On well suited soil types plants are very competitive.

Sowing/planting rates as single species

2 kg/ha (commercial seed not commonly available).

Sowing/planting rates in mixtures

Not usually sown in a mixture; most seed spread has been by water and wind.

Sowing time

On early summer rainfall or mid-January to February to avoid heat wave periods.

Inoculation

Not applicable

Fertiliser

Sow on fertile loam soils, with adequate phosphorus and neutral to alkaline pH. Responds to nitrogen (growth and seeding) and to phosphorus (seedling establishment) on low to medium fertility soils.

Management

Maintenance fertiliser

Not usually fertilised for grazing; Depending on soil -responds to nitrogen (to 100 kg/ha) for growth and seed production.

Grazing/cutting

Well grazed by cattle and sheep.

Seed production

Heavy seeder in good conditions; responds to nitrogen on medium fertility red earth soils.

Ability to spread

Spreads from seed easily on suitable soils; wind and water spreads seed.

Weed potential

Will displace less vigorous native pastures on well adapted environments; Not considered a weed in cattle pastures, however can dominate disturbed and ungrazed lands such as in towns and along roadways in suitable environments.

Major pests

No major pests; seed heads can be destroyed by the buffel grass seed caterpillar (*Mamestra rhodoneura*) that feeds on the seeds.

Major diseases

No major diseases.

Herbicide susceptibility

Not usually treated with herbicides; Glyphosate with repeated spraying of young leaf growth most likely effective.

Animal production

Feeding value

High feed quality and generally higher than associated native species, holds quality into dry season.

Palatability

Palatable and well grazed.

Production potential

Average yields of over 2t dry matter/ha; Yields vary with soil type, fertility and proximity to trees in NW Queensland. Over 6 t/ha DM have been recorded under trees compared with up to 3.5 t/ha DM away from trees under good growing conditions; Breeding and fattening cattle are possible.

Livestock disorders/toxicity

Cattle growing and fattening are possible with no issues; Horses have potential big-head Ca/P disease disorder.

Cultivars

Group	Cultivar	Seed source/Information
Perennial grass	No formal cultivar; Naturalised Australian (Cloncurry buffel) ecotype/strain	Public strain/'cultivar' (opportunistic harvesting)

Further information

Hall, T.J. (1978) Cloncurry buffel grass (*Cenchrus pennisetiformis*) in north-western Queensland. *Tropical Grasslands*, 12, 10-19.

Bogdan, A.V. (1977) *Tropical Pasture and Fodder Plants (Grasses and Legumes)*. p. 74. (Longman: London and New York).

Acknowledgements

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Author and date

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