

Seedling Vigour of Perennial Grass Cultivars

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Establishment of perennial grass pastures is enhanced by rapid early seedling growth (Bellotti and Blair, 1989). An estimate of seedling vigour in available cultivars assists in the choice of cultivars for new sowings. Seedling vigour of 32 cultivars of 7 species of perennial grass was evaluated at Shannon Vale Field Station (151°52' E, 29°43' S) on the northern tablelands of NSW. Species included perennial ryegrass (*Lolium perenne*), tall fescue (*Festuca arundinacea*), cocksfoot (*Dactylis glomerata*), phalaris (*Phalaris aquatica*), grazing brome (*Bromus stamineus*), wallaby grass (*Danthonia richardsonii*) and canary grass (*Phalaris canariensis*).

Methods

Seed of recommended and newly-released cultivars was sown by hand in June 1993 at approximately 2 cm

intervals in 1m rows on a sandy loam soil, with 4 rep-

Table 1. Seedling growth of perennial pasture grasses showing the range (H=highest, L=lowest) for each species. Cultivar names are shown in parenthesis.

Species		Leaves/plant	Plant weight (g)
Ryegrass	H	12.8 (Roper)	0.22 (Kangaroo Valley)
	L	6.1 (Supernui)	0.07 (Supernui)
Tall fescue	H	6.8 (South'n Cross)	0.09 (Phyter)
	L	5.2 (Roa)	0.06 (Advance)
Cocksfoot	H	6.0 (Currie)	0.05 (Porto)
	L	4.1 (Kara)	0.03 (Wana)
Phalaris	H	5.5 (Sirosa)	0.06 (Sirosa)
	L	4.8 (Holdfast)	0.05 (Holdfast)
Grazing brome		10.4 (Gala)	0.15 (Gala)
Wallaby grass		5.5 (Taranna)	0.06 (Taranna)
Canary grass		4.4 (Palaton)	0.02 (Palaton)
LSD		3.4	0.05

lications. Fertiliser (Starter 15 at 500 kg/ha) was applied in a band below the seed prior to sowing. Plants were sampled on 7 September 1993 at the 7 leaf stage, dissected into tops and roots, and dried and weighed.

Results and Discussion

Perennial ryegrass and grazing brome achieved the most rapid early growth, having almost twice the leaf number (10.7 and 10.4) and twice the plant dry weight (0.14 and 0.15 g) of other species (Table 1). Cultivars

of ryegrass varied significantly but the range of performance of cultivars within the other species was not significant. New cultivars did not show greater seedling growth than the current standard cultivars.

Reference

Bellotti, W.D. and G.J. Blair (1989). The influence of sowing method on perennial grass establishment. III Survival and growth of emerged seedlings. *Australian Journal of Agricultural Research*, **40**: 323-331.