

Early growth pattern and sod-sowing of temperate pasture grasses

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Sod-sown annual grasses (oats or ryegrass) boost winter pasture production on the naturalised paspalum and kikuyu pastures of dairy farms in the County of Cumberland in N.S.W. This paper looks at possibilities of establishing perennial grasses, either self-regenerating or long-lived, by autumn sod-sowing into these subtropical pastures.

Methods

Bromus unioloides Kunth cv. Grasslands Matua, *Festuca arundinacea* Schreb. AF5 (breeders line, Alabama) and *Lolium multiflorum* Lam. cv. Tama were sown on 18 March 1980 into three ground preparation treatments; grazed, grazed plus Gramoxone² spray, and grazed plus Roundup² spray, using a Duncan triple disc sod-seeder at the University Farms, Camden. Plant counts and post-grazing harvests were taken through to October 1980.

The same lines were sown in pots in temperature-controlled glasshouses at 15/10, 18/13, 21/16, 24/19 and 30/25°C (day/night) under 4 and 8 week cutting regimes on 1 March 1980. Leaf and stem dry weight, tiller number and leaf number were measured at each cut.

Results and Discussion

In the field Tama and Matua established slowly in a drought-affected paspalum sod but regrew vigorously after grazing. After a second grazing, 15 weeks from sowing, they comprised 50 per cent of the sward. Yields (t ha⁻¹) on 18 October (five weeks after grazing on 12 September) of sown species and, in brackets, of the sum of sown and other species, were:

	Grazed only	Grazed Plus Gramoxone	Grazed Plus Roundup
Matua (flowering)	1.08 (1.99)	1.41 (2.21)	2.29 (2.82)
Tama	1.92 (2.57)	2.03 (2.72)	1.79 (2.20)

Tall fescue had poor establishment of 12 plants m² in plots grazed only or plus Gramoxone, and 32 plants m² in plots grazed plus Roundup. Fescue proved susceptible to competition from other species; its growth was slow and it contributed an insignificant proportion of the sward after the second grazing.

In the glasshouse, yields of Matua and Tama (g m²) were similar at 21/16°C over 3 cuts at 11, 15 and 19 weeks, or 2 cuts at 11 and 19 weeks from sowing (Matua 192,250, Tama 184,260). Tall fescue was slow to establish but yields improved after the first cut, particularly with the eight week interval (AF5 110,170). Dry weight accumulation in primary growth was highest at 24/19°C whereas regrowth was better at lower temperatures.

It was concluded that the growth patterns observed in potted plants were modified by strong competition in the field. The slow establishment of fescue appeared to rule out its use in field sod-sowing.