

## Animal production from summer forage crops in cool environments

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Large areas of southern N.S.W. rely on lucerne to provide green grazing throughout the summer and autumn, and with the advent of the spotted alfalfa and blue-green aphids in 1977, lucerne yields have been seriously affected. Summer crops could be an alternative for green feed, and with sheep on the Northern Tablelands of N.S.W. Wheeler and Hedges (1972) found that Japanese millet showed more potential than other crops.

Sudax hybrid and Japanese millet were sown in October 1977 and 1978 near Canberra to obtain summer-autumn production data for both sheep and cattle, and to compare gains with those of animals on mixed lucerne-grass-subterranean clover pastures. These pastures were closed in October when the crops were sown. Sheep (weaned Dorset lambs ca. 5 months old) and cattle (Angus cross weaners ca. 7 months old and yearlings ca. 19 months old) were allocated at random to separate replicated plots at two stocking intensities. In each year tester animals were grazed on each treatment for the whole time. More animals were added to crops if growth was excessive. Grazing periods were 84 and 103 days for sheep and cattle respectively in the first year, and 87 and 79 days in the second year, and grazing commenced on Jan. 20, 1978 and Dec. 21, 1978. Green herbage dry matter available on the crops (1280 kg ha<sup>-1</sup>) was approximately double that on pasture in January of each year. In *vitro* digestibility and nitrogen percentages gradually decreased as the crops became more starchy. In *vitro* digestibility compared well with pasture, but crops were much lower in nitrogen than was green lucerne.

**Table 1. Sheep and cattle stocking rates (SR) and liveweight gain ha<sup>-1</sup> (kg) - means of 2 years**

	Pasture		Sudax		Japanese millet	
Sheep SR ha <sup>-1</sup>	18.5	26.2	23.1	35.2	26.6	35.7
Gain ha <sup>-1</sup>	211	199	145	102	268	207
Cattle SR ha <sup>-1</sup>	3.9	4.8	4.4	5.3	4.7	5.7
Gain ha <sup>-1</sup>	111	155	202	149	226	226

Sheep gains were higher at low than high SR. and higher on lucerne-based pasture than on Sudax and Japanese millet (1187, 159 and 154 g head day respectively in the first 6 weeks). Gain ha was higher on Japanese millet

(Table 1) because of the higher SR. Yearling cattle gains were similar on pasture and Sudax, but higher on Japanese millet (0.4, 0.43 and 0.66 kg head<sup>-1</sup>day<sup>-1</sup> respectively in the first 6 weeks), and gain ha was also higher. Weaner cattle gains were lower throughout. All gains were less as the crops matured.

In both years rainfall was well below average during important growth periods, and more herbage could be expected in summers with better rainfall distribution. Gains indicated that Japanese millet could be useful as an alternative to lucerne, but the requirement for annual sowing and the period during which land is out of production must be taken into account when considering summer crops in place of established pastures.

Wheeler, J.L., and Hedges, D.A. (1972). *Aust. J. agric. Res.* 23: 825.