

USING DRYLAND LUCERNE TO FINISH OUT-OF-SEASON PRIME LAMBS

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A grazing experiment was conducted with lucerne (*Medicago sativa*) sown on a red chromosol in 1998, at a site near Corowa NSW, which has an average annual rainfall of 506 mm. Second-cross wether lambs, born in July or August in each year, were weaned onto the lucerne in the late spring of 1999, 2000 and 2001.

The lambs were split into 3 groups and grazed 0.27 ha subplots as follows: 1) 7 lambs per plot were moved onto fresh lucerne every 2½ weeks in a 3 paddock rotation (RT), to represent the traditional time-based grazing practice for lucerne; 2) 7 lambs per plot were moved onto fresh lucerne in a 3 paddock rotation when lucerne had been grazed to a residual of 800 kg DM/ha (RF), to optimise lamb growth rates; and 3) in a 2 paddock rotation, 7-28 lambs per plot were moved onto annual pasture whenever lucerne DM had been grazed to a residual of 500 kg DM/ha (FG/AP), and returned when lucerne regrowth had reached 800 kg DM/ha. This represented a likely rotation on cropping farms with large paddocks. All treatments were replicated 4 times. No supplementary feed, was supplied and lambs were weighed each time they were moved. When lucerne regrowth had ceased, all lambs were removed from the plots and slaughtered; carcass data were collected in 2000 and 2001.

Table 1. Lucerne and prime lamb performance over the 1999, 2000 and 2001 summers (see text for treatment details).

Grazing Period (days on plots)	Rainfall ^A (mm)	Grazing treatment	Lucerne yield ^B (kg DM/ha)	Liveweight (kg) ± s.d.		Lamb growth rate (g/day) ± s.d.
				Start	Finish	
5/11/99-22/2/00 (109 days)	145	RT	1124 ± 162	29.0 ± 0.0	55.0 ± 0.9	239 ± 7
		RF	1069 ± 281	29.1 ± 0.3	54.4 ± 1.3	233 ± 13
l.s.d. (P=0.05)				n.s.	n.s.	n.s.
6/11/00-13/3/01 (127 days)	221	RT	2022 ± 881	24.5 ± 0.8	49.9 ± 2.1	202 ± 12
		RF	1954 ± 833	24.5 ± 0.3	49.8 ± 4.3	197 ± 29
		FG/AP	850 ± 471	25.0 ± 0.6	43.8 ± 2.0	148 ± 20
l.s.d. (P=0.05)				n.s.	4.5	30
23/10/01-15/1/02 (84 days)	91	RT	1000 ± 414	25.9 ± 1.9	44.4 ± 4.0	220 ± 31
		RF	980 ± 458	25.9 ± 1.9	45.8 ± 4.4	237 ± 19
		FG/AP	971 ± 241	26.4 ± 1.7	44.1 ± 3.7	211 ± 21
l.s.d. (P=0.05)				n.s.	n.s.	n.s.

^A Rainfall total from 1st October until when lambs were removed.

^B Mean (± s.d.) dry matter available when lambs were rotated onto fresh lucerne.

Target lamb growth rates were 250 g/day, with target carcass specifications of 22-24 kg, and fat scores (FS) of 2-3. In 2000, only 29% of lamb carcasses achieved 22-24 kg (43% with FS of 2-3), while 6% were <22 kg (67% with FS of 2-3) and 65% were >24 kg (25% with FS of 2-3), reflecting their heavier live-weights at weaning. In contrast, lambs slaughtered in 2001 were younger (August born) and lighter at both weaning and slaughter, and 53% of carcasses were <22 kg (93% with FS of 2-3), while 20% were 22-24 kg carcasses (100% with FS of 2-3) and 27% were >24 kg carcasses (70% with FS of 2-3). The data show lambs that rotationally grazed lucerne (RT, RF) gained 197-239 g/day (Table 1), with no differences between the 2 rotational grazing treatments. Lambs that rotationally grazed lucerne and annual pasture (FG/AP) gained 148-211 g/day and spent, on average, 21.4 and 18.4 days of a rotation, respectively, on the lucerne and annual pasture. In 2000/01, these lambs gained an average of 219 g/day on lucerne, and lost 59 g/day on annual pasture, which presumably reflected differences in feed quality and possibly rumen function. Although the success of finishing out-of-season prime lambs on dryland lucerne in this environment depends on late spring and summer rainfall, the data show that lambs finished on lucerne alone outperformed those finished on lucerne-dry annual pasture rotations.

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