MILK COMPOSITION OF EWES AND MILK INTAKE OF LAMBS BORN ON SALTBUSH OR PASTURE IN THE WHEATBELT OF WESTERN AUSTRALIA

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In a previous study of ewes lambing down on saltbush *(Atriplex* spp.) or pasture in late autumn, the lambs born on saltbush grew at a slower rate than those born on pasture (Morcombe *et al. 1991).* In this study we investigated the effect of milk composition of ewes and milk intake of lambs grazed on saltbush or pasture on the rate of growth of lambs.

The 2 treatment groups consisted of 13 late pregnant ewes grazed on saltbush at 14/ha and supplemented with 0.5 kg hay/hd.day for 34 days prior to lambing, and 13 late pregnant ewes grazed on pasture at 2.8/ha for 13 days prior to lambing. Ewes and lambs were weighed within a few days of parturition and again 9 days later. On both occasions 20 mL of milk was collected from each animal by hand milking, after an intramuscular injection of 1mL oxytocin. Each milk sample was analysed for fat, protein, total solids and lactose using standard techniques. Injections of tritiated water (TOH) at 10 Ci/kg liveweight were used to measure the water turnover of the lambs from which the apparent milk intake was calculated (Dove and Freer 1979).

The mean liveweight of the ewes grazing pasture declined from 42.5 kg to 38.0 kg and the saltbush ewes from 50.0 kg to 46.6 kg during the 9 day trial period. The growth rate of lambs born on saltbush (120 g/day) during the trial period was less than that by lambs born on pasture (260 g/day) ($P < 0.01$). The mean composition of milk from the 2 groups at the first and second milking did not differ and was pooled for the comparison (Table 1).

Table 1. The mean %(± sd) milk composition of ewes grazing saltbush or pasture

	Fat	Protein	Total solids	Lactose
Saltbush	5.49 (1.02)	4.42 (0.55)	16.74 (1.36)	6.83 (0.35)
Pasture	5.70 (1.96)	3.80 (0.20)	16.40 (1.76)	6.89 (0.23)
Significance	P > 0.05	P > 0.05	P > (0.05)	P > 0.05

Milk intake data for 4 lambs from each treatment group were considered invalid due to probable leakage of TOH from the injection site. The mean (±s.d.) milk intake during the 9 days of lactation of lambs born on saltbush (918 ± 91.6 mL/day) was lower than that of lambs born on pasture (1126 ± 127.1 mL/day) ($P < 0.05$).

The growth of the lambs reared on saltbush was only 46% of that by lambs reared on pasture. This poor growth was not due to a change in milk composition but to a lowered milk intake. We conclude that milk production in ewes grazing saltbush was reduced because of inadequate metabolisable energy content of saltbush (67% IVD) and/or high water turnover resulting from a high salt intake. Therefore, saltbush is not an appropriate forage for lactating ewes.

DOVE, H. and FREER, M. (1979). *Aust. J. Agric. Res.* 30: 725-39.

MORCOMBE, P.W., YOUNG, G.E. and BOASE, K. (1991). *In* "Productive Use of Saline Land", (Eds N.Davidson and R. Galloway) pp.79-84 (Australian Centre for International Agricultural Research: Canberra).