Eating quality of sheep is not compromised when fed a saltbush and barley ration

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Forage halophytes such as saltbush (*Atriplex* spp.) are being widely used to revegetate saline land and can also provide a medium quality fodder source. Little work has been done to determine the effects of grazing saline pastures on the eating quality of sheep meat. There is widespread anecdotal evidence to suggest that saltbush improves eating quality and Hopkins *et al*. (1999) has shown an increased aroma strength of meat from animals fed a saltbush/lucerne or saltbush/grain diet vs lucerne alone.

Thirty–nine Merino hoggets (3 groups of 13) were fed diets consisting of (i) 60:40 saltbush (*Atriplex nummularia*):barley, (ii) 33:25:42 lupins:barley:oaten hay (control diet), or (iii) 30:22:42 lupins:barley:oaten hay control diet with added salt to the equivalent composition of diet 1 (control plus salt). Added salts included NaCl (5%), KCl (2%), $MgCO_3$ (1%) and $CaSO_4$ (1.5%). The three diets were calculated (using GrazFeed®) to achieve 60 g/d liveweight gain. After 10 weeks all sheep were commercially slaughtered and a single loin (from 12th rib to chump) was collected from each animal.

From each loin six (6 x 2.5 cm) samples were cut from the 12th rib end with muscle fibres running longitudinally (36 x 6 = 216 samples). Each sample was cooked on a silex flat top grill set at 180ºC for 2 minutes and served within 5 minutes to individual taste panellists. The 36 panellists were: (a) randomly allocated one meat sample per run, (b) completed 6 runs to evaluate the 216 samples, and (c) not informed of the origin of the specific sample evaluated. The panellists assessed attributes (Table 1) on a continuous 10 point scale. Data were analysed using a general linear model accounting for differences due to animals, run, panellist, steak position and diet.

Treatment had no significant effect on the liking and strength of the flavour and aroma (Table 1). However there is a trend for higher odour and flavour strength from meat from the saltbush group and this is consistent with findings by Hopkins *et al*. (1999). There was no overall effect of treatment on tenderness, residual palate–feel juiciness or overall acceptability. No significant difference occurred between the diets for any of the attributes.

In conclusion, there was no detectable improvement or decline in eating quality resulting from feeding saltbush.

Hopkins, D.L. and Nicholson, A. (1999). Meat quality of weather lambs grazed on either saltbush (*Atriplex nummularia*) plus supplements or lucerne (*Medicago sativa*). *Meat Science* 51, 91–95.

Table 1 Eating quality attributes on a score out of ten.

	Saltbush	Control + salt	Control	*P* value
Odour strength	5.4 ± 0.7	4.9 ± 1.0	4.5 ± 0.7	0.13
Liking of odour	5.9 ± 0.8	6.2 ± 0.6	5.5 ± 0.6	0.88
Flavour strength	6.4 ± 1.0	6.1 ± 0.7	6.7 ± 0.7	0.51
Liking of flavour	5.9 ± 0.8	5.6 ± 1.1	5.6 ± 0.8	0.40
Tenderness	5.2 ± 0.9	5.3 ± 0.6	5.4 ± 0.6	0.59
Juiciness	6.3 ± 0.1	6.9 ± 0.7	5.6 ± 07	0.92
Residual mouth feel	4.7 ± 0.7	4.4 ± 0.1	4.2 ± 0.7	0.59
Overall acceptance	6.3 ± 0.1	6.1 ± 0.7	6.5 ± 0.7	0.92