

EFFECT OF ALKALAGE AND ALKALAGE PLUS GRAIN SUPPLEMENTS
UPON BODY WEIGHT CHANGES OF SHEEP

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Analysis of crop residue samples collected from a large number of sites throughout Western Australia has shown widely differing in vitro digestibilities depending upon the location. (Purser et al. unpublished.) It may be expected that chemically treated residues from different locations may be of varying value as feed for sheep. The work reported here was done in cooperation with a group of farmers who had obtained the rights to the use of "alkalage" (Kellaway et al. 1978) in Western Australia.

Twelve feed lot pens were established in the Bruce Rock Shire and feeding trials were carried out in the late summer and autumn of 1982 and 1983. One hundred and twenty 18 mo old merino wethers (43.4 ± 5.5 kg, 1982 and 45.5 ± 5.5 kg, 1983) were allocated to groups of 10 sheep per pen. Trials were conducted over the period February 11th to March 27th in 1982 and March 3rd to June 6th in 1983. Grain was fed to supplemented groups in open troughs on a daily basis in 1982, and every second day in 1983. Chemical treatment was carried out according to the method of Kellaway et al. (1978).

TABLE 1 Body weight changes of sheep fed crop residues, either untreated or chemically treated and with or without grain supplements.

Treatment	Soil Type	Supplement	1982		1983	
			Days on Treatment	Body Weight Change g/d	Days on Treatment	Body Weight Change g/d
Untreated	Loam	-	44 ³	-102	44	-192±14
Untreated	Sand	-	29 ³	-241	40	-194±6
Untreated	Loam	Wheat ¹	44 ³	-68	-	-
Untreated	Sand	Wheat ¹	29 ³	-192	-	-
Treated	Loam	-	44	-29±29	95	-33±4
Treated	Loam	Wheat ¹	66	-19±14	95	-22±5
Treated	Loam	Lupin ¹	53	34±11	95	-13±13
Treated	Sand	Lupin ¹	-	-	95	-13±5
Treated	Loam	Lupin ²	44	49±12	-	-

1 Supplements provided 100g/hd/day

2 Supplements provided 200g/hd/day

3 Single plots only, all other values are means of replicates

An effect of soil type on residue quality was discernible from body weight losses only for untreated residues in 1982, with no apparent effect in 1983. Sheep consuming untreated stubble lost weight at 100-200 g/d and had to be removed from the trial before their feed stacks were fully consumed. Other treatments were terminated because of inadequate feed supplies. Supplementing untreated stubble with wheat reduced the body weight loss by 30-50 g/hd/day. Chemical treatment reduced the body weight loss to only about 30 g/hd/day and the provision of wheat grain reduced weight loss by only a further 10 g/hd/day. In 1982 lupin grain supplements resulted in body weight gains of 40 g/hd/day but in 1983 weight losses of 13 g/hd/day over 95 days occurred. It is possible that daily feeding versus feeding once every second day contributed to this difference.

The results are consistent with previous observations that chemical treatment alone will provide a feed for sheep that will not quite maintain body weight. The provision of a small quantity of lupin grain may provide a feed capable of sustaining modest body weight gains, but further work is required to confirm this,

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