

THE PALATABILITY OF SEAL MEAL IN SHEEP DIETS

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ABSTRACT

A study was conducted to determine the palatability of seal meal in sheep rations. Different levels of seal meal, ranging from 0 to 14 % were included in finishing rations. The effect of seal meal palatability on feed intake was investigated. No significant difference between the different levels of seal meal on feed intake was found in this investigation. Seal meal levels up to 14 % have no effect on the palatability of the feed.

'n Studie is onderneem om die smaaklikheid van robmeel in skaaprantsoene te bepaal. Verskillende vlakke van robmeel, wat varieer het van 0 - 14 %, is in afrondingsrantsoene ingesluit. Geen betekenisvolle verskille kon gevind word met die insluiting van die verskillende vlakke van robmeel op die inname van die rantsoen nie. Die insluiting van robmeel tot op 'n vlak van 14 % het geen invloed op die smaaklikheid van die rantsoen gehad nie.

INTRODUCTION

Seal meal is a relative unknown ingredient in sheep diets. Although administered by a number of farmers, no research was done on the inclusion of seal meal in sheep rations to investigate its effect on intake.

Protein supplements are usually the more expensive component of a diet and all over the world the problem of providing enough protein is raising concern. Compared to fish meal, seal meal is a relative cheap source of protein (Table 1).

Table 1 Chemical composition, availability and cost of protein sources in Namibia

Source:	%CP	%P	%Ca	%Fibre	%Fat	ME Mj/kg	Cost N\$/t
Marine:							
Fish meal	60	2.6	4.7	0.5	6.9	10.7	2980
*Crayferine	44	1.7	15.3	12.5	4.4	4.2	----
Seal meal	52	0.7	4.2	0.2	10.9	9.4	900
Animal:							
Carcass meal	55	4.0	8.0	1.4	7.7	9.8	1698
*Blood meal	80	0.3	0.3	2.0	5.0	9.0	----
Plant:							
Lupin seed	37	0.5	0.3	10.7	8.9	12.5	975
Oilcake:							
*Peanut-	45	0.5	0.2	9.4	8.9	12.1	1000
*Sunflower-	40	1.0	0.4	6.0	5.5	11.1	750
*Cotton-	42	1.0	0.2	10.0	6.4	12.1	950

* Not commercially available in Namibia.

The price of urea is N\$ 1524 / ton and that of poultry litter is N\$ 540 / ton. 1 Kg of crude protein from fish meal cost N\$ 4.97; from carcass meal, N\$ 3.09; from poultry litter, N\$ 2.00; from urea N\$ 1.52 and from seal meal, N\$ 1.73.

With the inclusion of fish meal in balanced diets, it is recommended that no more than 7 - 9 % should be included because of the effect it has on palatability. The trial was thus conducted to determine whether the inclusion of seal meal in balanced rations could affect palatability.

MATERIAL AND METHODS

The trial was conducted in 1995 at Gellap-Ost Research Station. Six groups of eight Karakul lambs were used in the trial. Each group received the same basic ration with different levels of seal meal (Table 2). These rations were provided ad lib. for 42 days after an adaptation period of eight days. Ram as well as ewe lambs of the same age were used. The weights of the different groups were the same.

Table 2 Experimental design and composition of diets

Treatment	Composition of diets		
A*	Lucerne, maize,	Lotmix 85,	0% seal meal.
B	Lucerne, maize,	Lotmix 85,	3% seal meal.
C	Lucerne, maize,	Lotmix 85,	5% seal meal.
D	Lucerne, maize,	Lotmix 85,	8% seal meal.
E	Lucerne, maize,	Lotmix 85,	11% seal meal.
F	Lucerne, maize,	Lotmix 85,	14% seal meal.

* Control

STATISTICAL ANALYSIS

Statgraphics were used to analyse the data. A Two Sample Analysis have been implemented and Student's T-test.

RESULTS AND DISCUSSION

The average daily feed intake of each group was presented in Table 3 and Figure 1.

Table 3 Average daily feed intake (kg) of each group on a weekly basis and for the whole period

Group	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Total
A	1.409	1.321	1.590	1.634	1.781	2.076	1.635
B	0.669	1.059	1.481	1.821	1.960	1.946	1.492
C	0.607	1.254	1.381	1.907	1.987	1.911	1.508
D	0.710	1.219	1.210	1.723	1.853	1.889	1.434
E	0.590	1.179	1.304	1.607	1.977	2.080	1.456
F	0.611	1.183	1.246	2.000	1.937	2.099	1.513

During week one and two, the feed intake of group A was significantly higher than any of the other groups. From week three to six, the differences between the groups were not significant.

Figure 1 illustrates the fact that the palatability of seal meal did have an effect on feed intake in the early stages of the trial, but towards the end of the trial, the taste of seal meal grew acceptable to the animals. The difference in feed intake between the groups was not significant for the whole period ($p > 0.05$).

Problems with acidosis did occur, because of the high DMD-value (dry matter digestibility) of the diet. An interesting observation was that with higher levels of seal meal, it appeared that the incidence of acidosis decreased.

CONCLUSIONS

From this data it can be concluded that the palatability of seal meal does not effect intake when it is included in a balanced rations for sheep. It is however important to investigate the possibility of a combination with urea to obtain better results.

The incidence of oxidation and its influence on the palatability of seal meal should also be investigated.

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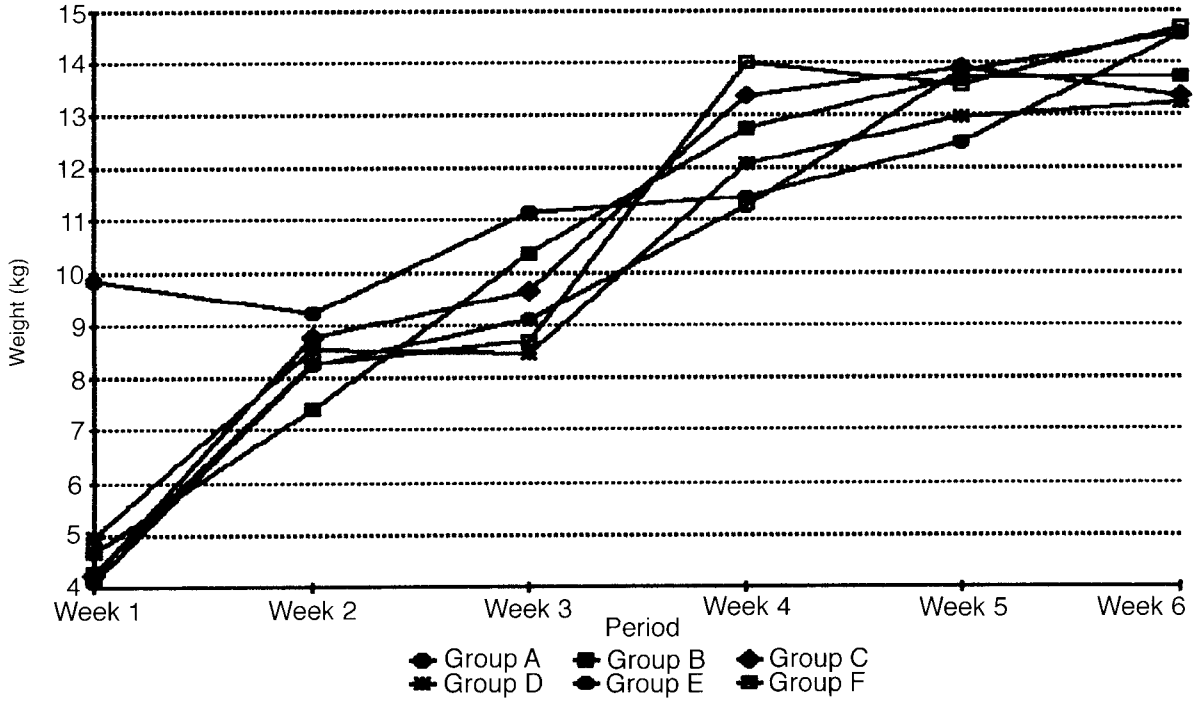


Figure 1 The average weekly feed intake of the different groups.