INFLUENCE OF STARCH CONTENT OF THE RATION ON ADAPTATION OF YOUNG RAMS TO PELLETED DIETS.

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The demand from the Middle East market for younger sheep including young rams is increasing (Dixon 1987). Rations designed to meet the maintenance requirements of adult wethers are unlikely to satisfy the energy demands of young rams particularly if the feed must be restricted to 1 kg/hd/d. The problem of providing high digestible energy yet 'rumen friendly' diets was investigated by replacing wheat in part with lupins which contain little starch.

One hundred Corriedale x Dorset Horn rams seven months old and previously grazing dry annual pasture residues were allotted by stratified randomisation on fasted (24h) liveweight (34.1 ± 0.8kg) to one of 5 diets and to one of 4 replicates each of 5 animals in a fully randomised design. The base components of the commercially prepared ration consisted of approximately 70% wheat, 14% pasture hay, 14% oat hulls and 2% minerals. The wheat was partially replaced with lupins to give 5 levels of starch; 44, 42, 36, 33 and 28% of the dry matter. Starch content was determined by the glucoamylase method and digestibility with 4 rams per diet. The rams were offered the diets ad libitum for 20 days without prior conditioning. The animals were fasted for 24h at the beginning and end of the period and fasted liveweight change (FLWC) calculated as the difference between the initial and final weight. All statistical inference used the between pen variation within treatments as residual error.

The results (Table 1) suggest that both the voluntary intake of digestible dry matter (DDMI) and the FLWC of weaner rams during rapid adaptation to high energy diets increase'as starch levels of the diet fall from 44 to 28%. If the anomalous 33% starch diet is excluded from the response, statistical analysis shows that the response to diet can reasonably be explained as linear with DDMI increasing by 0.024 (S.E. = 0.004) kg/hd/d and liveweight increasing by 0.25 (S.E. = 0.08) kg/hd/20d for each % decrease in the level of starch. The anomalous result for DDMI with the 33% starch diet is unlikely to be due to random variation but might be due to some unknown difficulty with ration preparation.

Table 1. Digestible dry matter intake (DDMI) and fasted liveweight change (FLWC) of the rams.

	Percent Starch					
Attribute	44	42	36	33	28	SED
DDMI (kg/hd/d)	0.52	0.60	0.78	0.61	0.90	0.06
FLWC (kg/hd/20d)	-2.9	-1.1	1.4	-1.6	1.3	1.4

Our results suggest that high energy diets containing wheat and lupins and 36% or less starch can ensure maintenance or a small gain in FLW of ram weaners (34 kg FLW) provided the diets are offered ad libitum (as fed = 1.2-1.4 kg/hd/d) during the three week voyage to the Middle East.

DIXON, B. (1987). In, Ram Lambs - Their Future in The Sheep Industry. Proc. of a Seminar ASAP (South Aust.Branch).

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