

RESPONSE TO BYPASS PROTEIN AND STARCH IN MERINOS AND ANGORAS

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In this study comparisons were made between Angoras and Merinos in terms of live weight gain and response to bypass protein and-starch.

Merino (24) and Angora (24) wethers initially weighing 20 kg were offered one of three diets. Diet 1 (35% oat chaff, 25% cornflour, 15% each molasses and sugar, 5% barley, 4.5% urea and 0.5% vitamin-minerals) was formulated to be rapidly fermented in the rumen with a minimum of bypass nutrients. Diet 2 consisted of 5% formaldehyde treated casein added to the complete diet 1 (7% water added w/w), and diet 3 contained additions of 5% formal casein and 10% cracked-polished rice on a w/w basis. Animals were adapted to diet 1 for 30 days. Diets were fed individually once-daily to appetite based on daily refusals. Live weight gain was determined by regression over 49 days. Rumen degradability of supplements was measured with nylon bags and in both sheep and goats, formal-casein was 99% undegraded in the rumen and rice only 50% degraded after 20 hrs.

Overall, lambs consumed 14% more feed and gained 30% faster ($P < 0.05$) than goats with feed conversion tending to favor lambs (Table 1).

TABLE 1 Overall performance of diets and species

Item	Sheep	Goats	Diet 1	Diet 2 (casein)	Diet 3 (rice)
Daily gain (g)	92a*	64b	50a	80b	104b
Feed intake (g/d)	630a	540b	530	590	630
Feed conversion ratio	9.0	13.2	15.9	7.7	9.7

*Different superscripts (a-b) indicate significant difference ($P < 0.05$)

In both species, the most marked response was to addition of formal-casein only, although addition of rice further stimulated dry matter intake in goats and live weight gain in both species (Table 2). Results suggest that growth response to bypass protein and starch is greater in Merinos than Angoras.

TABLE 2 Response of Angoras and Merinos to bypass supplements

Diet	Feed intake (g/day)		Live weight gain (g/day)		Feed conversion ratio	
	Sheep	Goat	Sheep	Goat	Sheep	Goat
1 Rumen (soluble)	570	490	51a	49	11.8	19.9
2 Diet 1 (+ 5% casein)	660	530	94b	67	7.3	8.1
3 Diet 2 (+ 10% rice)	660	600	130b	77	7.8	11.6

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