ANIMAL NUTRITION  [N]

Nylon bag degradability and mobile nylon bag digestibility of crude protein in rapeseed, barley and maize
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Samples of rapeseed, barley and maize were incubated in situ to evaluate rumen effective degradability of crude protein (CP). The diet of the fistulated animals was composed of maize silage (10 kg), clover silage (7 kg), meadow hay (5 kg) and mixture. Nylon bags containing tested samples were suspended in the rumen of three cannulated steers for 2, 4, 8, 16, 24 and 48 h. In each steer, two repetitions were done in each time interval (the nylon bags were made of nylon with pore size 42 μm). The rumen effective degradability was calculated at rumen outflow rate 5 % and no correction for microbial contamination was included. The contents of CP in samples of rapeseed, barley and maize were as follows: 213.6, 111.9 and 100.5 g per kg DM, respectively. Effective degradability values for these feeds were 73.9, 83.6 and 56.6 %, respectively.

The mobile bag technique with dry cows fitted with the large ruminal cannulas and the T-piece cannulas in the proximal duodenum was used to measure the intestinal digestibility.

Intestinal digestibility of rumen undegraded protein was 30.0 % for rapeseed, 72.8 % for barley and 94.7 % for maize. The study was supported by the the Ministry of Agriculture of the Czech Republic (NAZV, project No. QD 0211).

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Effect of malate on digestibility and rumen microbial protein synthesis in growing lambs fed a high-concentrate diet
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Twenty-four Merino lambs (initial weight 15.3±1.27 kg) were divided into three homogenous groups. Each group was randomly allocated to three malate (disodium malate:calcium malate; 0.16:0.84) levels: 0 (C), 4 g/kg concentrate (M4) and 8 g/kg concentrate (M8). Lambs were fed concentrate (based on barley, corn and soybean meal) and barley straw ad libitum. After a period of 19 days, digestibility was determined by total faecel collection and microbial nitrogen flow at the duodenum (MNDF) was estimated from the urinary excretion of purine derivatives. There were no effects (P>0.05) of malate either on diet intake or on organic matter digestibility, and consequently digestible organic matter intake (DOMI) did not differ (P>0.05) among treatments (1024, 1102 and 1014 g DOMI/d for C, M4 and M8, respectively). Malate treatment did not affect (P>0.05) the daily urinary excretion of total purine derivatives (9844, 9711 and 10500 μmol/d for C, M4 and M8, respectively). As a consequence, both the estimated MNDF and the efficiency of microbial yield were not affected (P>0.05) by malate supplementation (9.85, 9.99 and 10.62 g microbial N/d, and 9.68, 9.12 and 10.61 g microbial N/kg DOMI for C, M4 and M8, respectively).