1 comprising 35 days adaptation and 21 days test, refusal rates of 20 and 50 % of straw offered were compared with 18 goats per treatment. Mean intakes of straw (g DM per kg $W^{0.75}$ daily, ± s.e.) for the low and high refusal-rates were 33.1 and 43.7 ± 1.60. DOMD of straw offered (g per kg DM) was 405 ± 2.3. DOMD of straw refused for the low and high refusal-rates were 320 and 347, ± 8.0. The calculated DOMD's of ingested straw were 441 and 479 ± 8.6 for the low and high refusal-rate treatments. In experiment 2 (35 days adaptation, 42 days test), 12 goats per treatment were offered 18, 54 or 90 g straw DM per kg W daily. Straw intakes for increasing amounts on offer were 36.0, 54.2 and 62.3, ± 1.73. These corresponded to refusal rates of 12.5, 56.6 and 70.3 % of straw offered. DOMD of straw offered was 443 ± 4.5. DOMD of refusals also increased with increasing offering-rates ; 354, 370, 403 ± 10.2. The calculated DOMD's of ingested straw were 463, 541, 537 ± 7.07. Since the *in vitro* digestibility technique may lead to overestimation of straw digestibility and the negative effect of increased intake on digestibility, the results need to be confirmed by *in vivo* digestibility trials. If these prove positive, the experiments indicate a strategy for stall-feeding goats on straw, namely to feed generously and accept wastage. Refusals could be chemically upgraded and re-fed or be given to less selective animals.

Key words : Feeding behaviour, barley straw, goat.

Retention time of small feed particles and of water in the gut of dairy goats fed at different levels of intake

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The effect of feed intake on the mean retention time (MRT), in the entire gastrointestinal tract, and the rumen retention time (RRT) of water (Li-CoEDTA) and of small feed particles (Cr-labelled milled oat hulls) was studied in dairy goats. A total of six goats of the Swedish Landrace breed were used with a mean live weight of 48 kg. The goats were fed a diet composed of 400 g dry matter (DM) · kg^{-1} DM of chopped grass hay and 600 g DM · kg^{-1} DM of a concentrate mixture. They were fed three times a day. Feed intake was ad lib. in collection periods I and II, while in collection periods III et IV feed intake was reduced to a lower level. The experiment started at the beginning of lactation (week 6) and the subsequent collections were made in lactation weeks 11, 20 and 22, respectively.

A pulse dose of Cr-labelled oat hulls (30 g) and LI-CoEDTA (3.0 g) suspended in 250 ml of water was given orally to each animal. Faeces were collected every 4th or 8th h from 12 h up to 104 h after labelling MRT and RRT were calculated from the decline in marker concentration in the faeces.

Feed intake ranged from 19.6 g DM · kg^{-1} live weight (LW) to 45.2 g DM · kg^{-1} LW (48 g OM per kg $LW^{0.75}$ to 109 g OM per $LW^{0.75}$).

On average only minor differences were found between the MRT of water (Co) and small feed particles (Cr) and also between the RRT of water and small feed particles. The mean and standard deviation (SD) was 30.6 (5.2), 28.8 (5.9), 13.2 (2.3) and 14.3 (2.8) h for MRT_{Cr}, MRT_{Co}, RRT_{Cr} and RRT_{Co} respectively.

MRT and RRT of water and of small feed particles were all linearly ($P < 0.001$) related to feed intake (g DM · kg^{-1} LW).

Rumen outflow rate of small feed particles (Cr) was linearly ($P < 0.001$) related to rumen outflow rate of water (Co).

Key words : Retention time, level of intake, goat.