

**Comparison of sheep and goats under stall-feeding conditions :
roughage intake and feed selection**

E. OWEN, R. WAHED

*Department of Agriculture and Horticulture
University of Reading, Earley Gate, Reading, Berks, RG6 2AT, U.K.*

Three experiments, each with 10 near-adult castrated males per species, were conducted to test the hypothesis that goats eat more than sheep and that goats are more selective feeders than sheep.

In Experiment 1 with long lucerne (*Medicago sativa*) hay over 14 days, intake of dry matter (DM) per kg metabolic live weight ($W^{0.75}$) day (d) was 75.9 g for sheep, and 83.7 g for goats, with standard error of difference (sed) 4.7. Hay refusals (21 p. 100 of offered) of goats contained more nitrogen (N) ($23 \text{ v } 16 \pm 2.1 \text{ g/kg DM}$) and less acid detergent fibre (ADF) ($449 \text{ v } 466 \pm 20.0 \text{ g/kg DM}$). Hay offered contained 28 g N and 391 g ADF/kg DM.

In Experiment 2 with ammonia-treated barley straw over 21 days, intake of goats was higher than sheep ($57.7 \text{ v } 45.3 \pm 4.9 \text{ g DM/kg } W^{0.75} \text{ d}$). Straw refusals (25 p. 100 of offered) were not significantly different between species (600 and $612 \pm 6.4 \text{ g ADF/kg DM}$ for goats and sheep respectively). Both sheep and goats showed some selection as straw offered contained 567 g ADF/kg DM. Experiment 3 followed Experiment 2, with the same animals.

In Experiment 3 over 10 days, ammonia-treated straw and stinging nettle (*Urtica dioica* L.) were fed *ad libitum*. Total intake was higher for goats than sheep ($75.2 \text{ v } 65.6 \pm 4.6 \text{ g DM/kg } W^{0.75} \text{ d}$) and goats adapted more rapidly to introduction of the new feed (stinging nettle) than sheep. Refusal compositions showed similar trends to Experiments 1 and 2.

The experiments confirm that for near-adult castrated animals, goats consume more roughage than sheep. The consistent trend for goat feed refusals to contain less acid detergent fibre and more nitrogen than those of sheep confirms popular belief that goats prefer coarse roughage.

Key words : Goat, sheep, roughage, intake, feed selection.

**Use of goats as a way for discriminating
the palatability of concentrate feeds**

P. MORAND-FEHR, J. HERVIEU, A. GUTTER, D. LEGENDRE

*Station de Nutrition et Alimentation (I.N.R.A.) de P.N.A.P.G.
16, rue Claude-Bernard, 75231 Paris Cedex 05*

The ability of goats to select the most nutritive parts of forages or feeds is higher than that of the other ruminants (MORAND-FEHR *et al.*, 1979). It was used in this experiment for discriminating the palatability of concentrate feeds.

Fourteen goats of an experimental flock were selected for cafeteria tests on their acceptability of various feeds.

Several trials were made previously to determine experimental conditions. Each goat was given two feeds simultaneously. Each feed was put in two little cans containing 200 g

feed. The four little cans were presented to goats during a sequence of 4 periods of 20 seconds with breaks of 10 seconds during which the position of cans was modified.

A scale of acceptability was settled from 4 standard feeds containing a mixture of barley-soya oilmeal (4/1) and 6 p. 100 molasses (Feed M), or 10 p. 100 rapeseed oilmeal (Feed R), or 15 p. 100 lucerne meal (Feed L) or 5 p. 100 animal fat (Feed F).

The palatability value of a feed was the ratio between the average level of feed intake and the total amount ingested in all the tests where this feed was tested and noted in a scale from 0 to 10. The palatability values of feeds, M, R, L and F were 7.5, 6.1, 5.4 and 2.6 respectively.

Five commercial fats (acid or non acid animals fats, oils or mixtures) which could decrease the palatability of concentrates for cows were incorporated into the mixture barley-soya oilmeal and they were tested with standard feeds R, L and F. The acceptability values of feeds containing these commercial fats ranged from 2.8 to — 1.1. In this trial, the palatability of standard feeds was relatively high in comparison with fat added feeds. To give palatability values to fat added feeds, it was necessary to do a translation in the palatability scale; which explains negative values of some feeds. Acid fats were generally less accepted than non acid ones.

So, this cafeteria test might allow to classify feeds according to their palatability for goats in a stable palatability scale which could be completed by testing every new feed.

At the present time, it is necessary to test if cows give the same classification of feeds as goats to discriminate concentrate feeds.

Key words : Concentrate feeds, acceptability, goat, fat, cafeteria, acceptability scale.

Body conditions of dairy goats in extensive systems of production : method of estimation

P.M. SANTUCCI, O. MAESTRINI

*Laboratoire de Recherches sur le Développement de l'Élevage
I.N.R.A. - Quartier Grossetti - 20250 Corte*

Continuous recording of performance parameters in three flocks of dairy goats (*Corsican* breeds) for three consecutive years showed that the flocks were composed of four kinds of animals defined by the kidding interval (K.I.). There are two periods of kidding in the year : october-november and february-march. The K.I. is twelve months for most females (65 p. 100); it can be eighteen (16 p. 100), twenty four (14 p. 100) or seven months (5 p. 100) in others. These intervals vary from one year to another. The body condition of goats seem to be the main responsible factor for these variations.

The method used for estimating body conditions was based on RUSSEL's results (1939) in ewes. Recording was made on the sternum and the lumbar vertebrae. Using a grading scale from 0 to 5 we tried to score a fat bulk (importance, thickness) at the level of the sternum and a tissue bulk (grease and muscles) on the lumbar (thickness, recovery).

Otherwise the study of 41 slaughtered goats showed a significant correlation ($r = 0.62$) between the weight of sternum and the notation given to animals before slaughter.

Variations in body conditions were similar in all animals during the reproductive cycle : a distinct decrease after kidding and a quick increase in spring-time. But the extent of these variations was significantly different between various kinds of animals as defined above.

The shorter the K.I. (medium score = 2.5 when K.I. = 7 months and 3.0 when the