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## Diet Selection and Ingestive Behaviour of Lambs Fed Diets with Increasing Levels of Whey Permeate

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### Abstract

The selection of feed by ruminants may have an impact in their productivity due to the nutritional value of the different diets, changing the time spent in feeding and rumination, and the size of ingested particles. The aim of this study was to evaluate the diet selection and ingestive behaviour of lambs fed diets with levels of dry whey permeate (WP) during different times along the feedlot. Twenty four crossbred  $\frac{1}{2}$  Dorper  $\times$   $\frac{1}{2}$  Santa Inês non-castrated male lambs with four months of age and  $24.1 \pm 3.2$  kg body weight were used. A completely randomised design with six replicates was used. The WP replaced ground corn in the diet (0.0, 5.0, 12.5 and 25.0 % of dry matter — DM). Lambs were fed ad libitum for 90 days with diets composed of *Cynodon dactylon* hay (64 % DM) and concentrate feed (36 % DM). It was measured the time of feeding, rumination and idle, and the average particle size (APS) of leftovers, at 9, 37, 71 and 86 days of feedlot. Data were analysed in a mixed model with the fixed effects of WP, feedlot time and their interactions (5 % significance). There was no interaction between WP and time. Comparing the days 9 and 86, there was an increase in large particles (37.11 vs. 55.87 %) and decreasing of small particles (16.32 vs. 4.90 %) in the leftovers with time. It's likely that selection is related to higher energetic demand of finishing lambs comparing with the ongoing rumen development of young lambs. Intake of large particles is usually a natural way to stimulate the rumen motility. Feeding was higher at 9 d (342 min) than at 37 d (289 min), reflecting that time demand for large particles. It supports the higher rumination at 9 d (587 min) than at 37 and 86 d (533 min on average), which is in line with the lower APS at 9 d (8.98 mm) compared to 86 d (14.67 mm). The behaviour and the diet selection demonstrate how lambs change their patterns, and that the substitution of corn by WP does not affect this process in feedlot conditions.

**Keywords:** Feeding, leftover, particle size, rumination