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Comparative study of the cellulolytic activity of caecum microbes in ponies and donkeys

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In the context of comparative research on the digestive physiology of donkeys and ponies we have compared the *in sacco* degradation of fodder in the caeca of donkeys and ponies.

Three adult ponies and 3 adult donkeys with permanent caecum cannulas (225 and 248 kg live weight, respectively) were given a pelleted feed made up of wheat straw, maize grain and soya cake (crude protein CP in dry matter DM = 12.1%; NDF = 64.2%; ADF = 33.4%) at the maintenance level. After a 15 d adaptation period, the straw degradation in the caecum (CP = 3.5% DM; NDF = 77.1%; ADF = 46.5%; CF = 42.4%) was assessed by the nylon-bag technique (Miraglia *et al*, 1988) as follows: 1) degradation after 24 h; 2) degradation after 48 h; 3) degradation after 24 h in one species and 24 h in the other; with 3 repetitions per animal, ie 9 results per treatment.

Determination of the cell-wall content was according to Van Soest (1963).

Figure 1 shows that after 24 and 48 h the straw NDF and ADF DM degradation is higher in the donkeys than in the ponies. These results are statistically significant for a 48 h degradation period. The increase in DM, NDF and ADF degradation is higher in donkeys after a period of 24 h in ponies than in ponies after a 24 h period in donkeys.

These results show that the capacity of the caecum to degrade cell walls is higher in donkeys than in ponies.

Miraglia N, Martin-Rosset W, Tisserand JL (1988) *Ann Zootech* 37, 13-20

Van Soest PJ (1963) *J Am Off Agric Chim* 46, 829-835

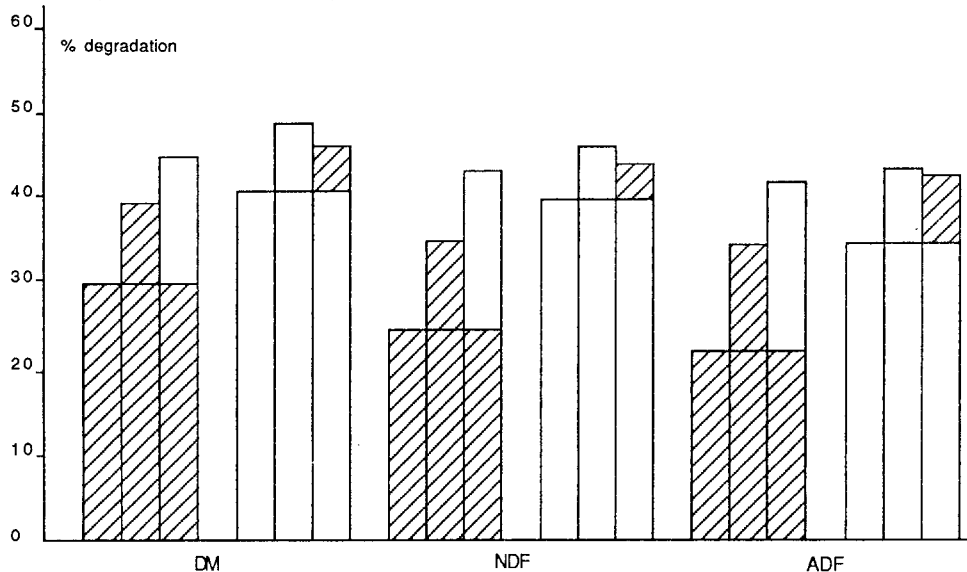


Fig 1. *In sacco* degradation in the caecum of ponies (▨) and donkeys (□, 48 h top, 24 h bottom).