

Comparison of the hydrolytic activity of microorganisms in the forestomachs of dromedaries and sheep

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Two adult dromedaries (430 and 320 kg) and 2 sheep (44 and 52 kg), fitted with a rumen cannula were fed 2 equal meals per day: wheat straw (475 and 95 g, respectively) and a mixture containing 59% olive hard crust, 40% wheat bran and 1% NaCl (4.2 and 1.5 kg). *In vitro* degradation (table I) of the less digestible substrates was higher in camels than in sheep. *In sacco* degradation, corrected for microbial contamination, confirmed this result. *In sacco* degradation of soya bean meal was lower

in camels than in sheep for the first 36 h (table II), which was the highest retention time of this substrate in the rumen. Microorganisms in the forestomachs of camels are, therefore, more active against roughage rich in lignified cell walls and less able to degrade dietary proteins which are more efficiently used in the small intestine. These new findings might explain the specific aptitude of dromedaries to live under the extremely difficult feeding conditions of the desert.

Table I. Dry matter degradation (%) in camel and sheep rumens: (a) Tilley and Terry method ($n = 6$); (b) *in sacco* method (48 h) ($n = 8$).

Substrates	Sheep		Camel	
	a	b	a	b
Wheat straw	36.8	(26.0)	43.7*	(34.2)*
Oat-vesce hay	56.0	(50.1)	64.8*	(60.0)*
Ensiléd sugar beet pulp	78.1	(86.0)	82.0	(89.1)
Green berseen	71.0		67.0	
Green ray-grass	77.2		80.5	

* Differences obtained with the same method are significant ($P < 0.05$).

Table II. *In sacco* dry matter disappearance of soya bean meal (%).

	Times (h)				
	6	12	24	36	48
Sheep	23.3	48.0	79.7	89.1	90.9
Camel	14.2*	24.3*	62.5*	85.2*	91.2

* Differences between data obtained at the same time are significant ($P < 0.05$).