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An Improved technique for cecal cannulation in the rabbit. Effect of sampling time after feeding on cecal VFA pattern

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The *in vivo* study of cecal fermentation in the rabbit required repetitive digesta sampling. Instead of a traditional plastic cannula (Carman and Waynforth, 1984), a glass cannula was used to reduce accidental damage by the rabbit and facilitate cecal digesta outflow during sampling.

A glass cannula (diameter 10 mm, length 45 mm) was inserted between the *4th* and the *5th* caecum whorl and secured to the cecal wall with a purse-string suture. Ten d after surgery, rabbits had returned to their pre-surgery feed intake and live weight. Cecal digesta collection (10 – 20 g each) was carried out at 7.30, 13.00, 15.00, and 17.00 h for 4 consecutive d (1 collection/day), on 4 adult rabbits (3 010 ± 200 g) receiving a standard diet (CP 17%, NDF 30%) given in 2 meals (8– 11 h and 17–19 h).

Five h after feeding (13.00 h) the volatile fatty acid level was 4 times greater than at 7.30 h (starvation state), whereas ammonia and pH decreased sharply (table I). VFA molar proportions were close to the classic rabbit VFA profile (butyrate > propionate) except before feeding, when the propionate level was higher than that of butyrate. The glass cannula remained functional and allowed repetitive digesta sampling over a period of 4–6 months without significant disturbance to the animal.

In conclusion, this technique may be useful for the elaboration of an *in vivo* experimental model to study cecal fermentation under different nutritional status.

Carman RJ, Waynforth HB (1984) *Lab Anim* 18, 258-260

Table I. Post-feeding changes of caecal fermentation in the adult rabbit.

Time (h)	*pH*	*Ammonia*	*VFA (mM/l)*	*Acetate (%)*	*Propionate (%)*	*Butyrate (%)*
7.30	6.56^{a}	18.0^{a}	22.8^{c}	84.5	8.4^{a}	4.7^{a}
13.00	6.02^{a}	5.7^{b}	96.4^{a}	84.2	4.1^{b}	10.0^{b}
15.00	6.27^{ab}	5.0^{b}	70.1^{b}	83.5	4.4^{b}	10.1^{b}
17.00	6.47^{a}	9.6^{b}	55.2^{b}	83.2	4.8^{b}	10.1^{b}
Root MSE	0.20	1.8	8.1	1.3	1.0	0.4
Time (*P* level)	0.09	0.004	0.001	0.07	0.02	0.001
Indiv (*P* level)	0.28	0.17	0.97	0.003	0.08	0.001

In the same column, means with a different letter differ at the level $P < 0.05$ according to time effect.