Ann Zootech (1992) 41, 85

COMPORTEMENT ALIMENTAIRE / *FEEDING BEHAVIOUR*

methode/quantité ingérée/mastication – *method/feed intake/mastication*

Estimation of grass intake by lambs using *n*-alkanes as markers

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To estimate herbage intake by lambs at pasture, we have tested the method described by Mayes *et al* (1986) which employs the natural odd-chain *n*-alkanes (C31 and C33), contained in plant cuticular waxes, as internal markers associated with a dosed adjacent even-chain *n*-alkane (C32) as an external marker.

In July, 9 lambs (5 months old) were housed in digestibility cages for 2 weeks. They received, *ad libitum,* freshly cut grass from a pasture they had previously grazed, and were dosed at 9.00 with a pellet containing 120 mg C32. In the second week, for 7 d, a rectal faeces sample was collected from each animal, daily after dosing and intake was measured. The *n*-alkanes in herbage, faeces and pellet were extracted and measured by gas-chromatography, and intake estimated. The dry matter intake (DMI) measured on day J was compared to the DMI estimated from faces collected on days J + 1 and J + 2.

The mean recovery of *n*-alkanes in faeces is : 66.6% (CV:11.8%) for C31; 83.4% (CV:6.2%) for C32; and 77.5% (CV:12.0%) for C33. These results are similar to those reported by Dove *et al* (1989) for C32, but less for the 2 others. The proportion of C32:C33 recovery (1.08, sd:0.07) is better than C32:C31 (1.26, sd:0.07), and we have used it to estimate intake. The best prediction of dry matter intake measured on day J (Y) is by measuring *n*-alkanes in faeces collected on the morning of day J + 1 (X). The regression equation is : $Y = 1.02\ X + 13.39$ ($r^2 = 0.95$; rsd : 24.6 g) (fig 1).

This method leads to an accurate estimation of grass intake for lambs at pasture. Nevertheless, the recovery of C33 can be improved by careful selection of the diet sample, in which the concentration of C33 is to be measured. This may require oesophageal sampling as recommended by Dove *et al* (1989).

Dove H, Mayes RW, Freer M, Coombe JB, Foot JZ (1989) Proc XVI Int Grassl Congr, Nice, France, 1093-1094

Mayes RW, Lamb CS, Colgrove PM (1986) *J Agric Sci Camb* 107, 161-170

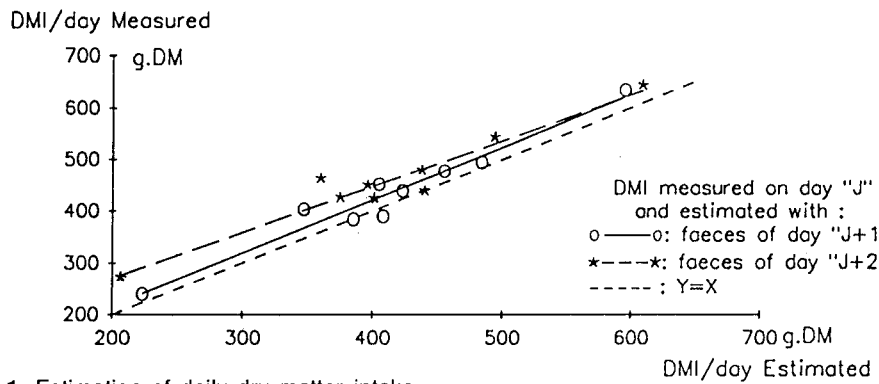

Fig 1. Estimation of daily dry matter intake.