

## Rumen contents of charolais cows during the grazing period

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Six to 9 Charolais rumen-fistulated cows were used during 3 successive years to measure the weight of rumen content by total emptying: 1) before turnout to grass, on limited hay diets (10 kg), 5 h after morning feeding (V1); 2) 2 or 3 wk after turnout, when cows were grazing the first grass growth (V2); 3) 2 months after turnout (August) at the third cycle of grass growth, in a rotational system (V3); 4) in autumn on aftermaths (6–7 wk old) after a late cut for hay (V4). These measurements were carried out during the third d after a paddock change between 2 and 4 pm. Samples were taken approximately every 10 handfuls to determine the DM content of the rumen digesta.

After turnout, between V1 and V2, rumen content rapidly dropped by 28 kg, then increased steadily from V2 (76 kg) to V3 (82 kg) and V4 (92 kg) ( $p < 0.05$  between V2 and V4). This was mainly the result of the increase in the dry content of the rumen (7.9 to 10.4 kg  $p < 0.05$ ) while the DM percentage did not change significantly and remained around 10.5%.

This increase in the weight of rumen content may result from: 1) a reduction in grass digestibility (not measured), although the grass available was always leafy; 2) the reduction in time elapsed between the large meal in the morning and rumen emptying (Beaumont, 1989): in september the large meal was taken at 7am vs 5am in June.

Live weight did not change between V1 and V2 (610 kg), but increased from V2 to

V3 (650 kg) then V4 (691kg). On the hypothesis of a constant proportion of rumen content in total gut content (80%, Béranger and Robelin, 1978), the empty body mass recovered during these 3 periods reached 31, 32 and 31 kg. The daily gain reached 1.8 kg during the 2 first wk at grass then decreased to 0.55 kg in autumn.

In cows at grass, rumen contents accounted for 15% (V2, V3) then 25% (V3, V4) of total liveweight gain. This should be taken into account to calculate the body reserves recovered.

Béranger C, Robelin J (1978) *Ann Zootech* 27, 639-645

Beaumont R (1989) Thèse Doct Ing INA-PG Paris, 159 pp

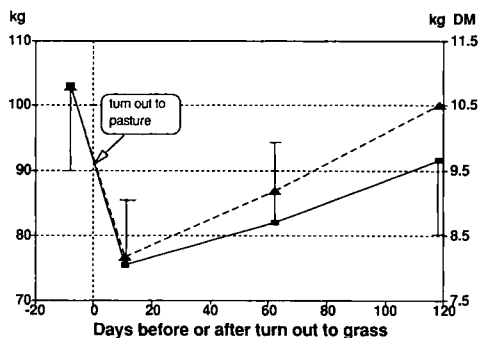


Fig 1. Evolution in weight of wet (—■—) and dry (—▲—) rumen content.