

Variations in grazing behaviour of Salers and Limousin heifers during time spent in the paddock in a rotational system

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Part of the variations in grass intake between different cattle breeds may result from differences in grazing behaviour (Funston *et al*, 1991). The daily grazing time and bite rate were studied in Salers and Limousin heifers, the latter being known to have the lowest growth rate in pasture.

Eight heifers of each breed, all 18-month-old, were grazing together on good quality hilly pastures (the main grasses were *Agrostis stolonifera* and *Avena pubescens*) in a rotational system. The study site (elevation 1 150 m) was located in the north of the Massif Central (France). The Salers and Limousin heifers weighed 380 ± 35 kg and 372 ± 32 kg, respectively. They were simultaneously observed for 3 d, during the first (D1: 19/06), seventh (D7: 25/06) and eleventh (D11: 30/06) days of the total time (12 d) spent in one of the paddocks. They entered the paddock at 5 pm the previous evening. Herbage mass decreased from 4.7 t (D1) to 2.0 t (D11) of dry matter per ha, and average grass height decreased from 39 to 10 cm. The activities of each heifer were noted every 5 min from dawn to dusk (4 am–11 pm). Individual bite rates were measured 4–6 times a day, non-grazing animals excluded. Each time the number of bites taken in 2 min was recorded, and then divided by the real grazing time.

The daily pattern of grazing was similar in both breeds for all 3 d, with 4 (D1) then 3 (D7 and D11) grazing periods per day. The Limousin heifers tended to graze for longer than the Salers on D1 (414 vs 377 min/*d, NS). However Salers tended to further increase their daily grazing time

with the decrease in herbage mass (+43 vs +2 min from D1 to D7, NS; +66 vs +27 min from D1 to D11, NS). The Salers heifers' grazing times during D1 and D11 were negatively related ($P < 0.05$). Bite rate was different between breeds ($P < 0.01$) and days ($P < 0.001$) and the variations with day were different for each breed ($P < 0.05$). Bite rate was higher in Salers heifers than in Limousin for D1 (32.3 vs 26.7 bites/min) and D11 (40.2 vs 33.8 bites/min) but not for D7 (38.1 vs 39.4 bites/min). There were no significant relationships between bite rates and grazing times.

Estimates of the total number of bites per day (grazing time x bite rate) were different between breeds (Salers: 15 230, Limousin: 13 275 bites/d; $P < 0.05$) and days ($P < 0.001$), but variations with day were not statistically different between breeds ($P = 0.1$). If the mean bite size was the same for each breed, the difference in the daily number of bites would lead to a 14% difference in grass intake, which is slightly higher than the differences observed in dry matter intake of harvested forages (Agabriel *et al*, 1987).

The Salers heifers seem to be less sensitive than Limousin heifers to the decrease in available herbage during the time spent in a paddock, by maintaining a higher bite rate.

Agabriel J, D'Hour P, Petit M (1987) *Reprod Nutr Dev* 27 (1b), 211-212

Funston RN, Kress DD, Havstad KM, Doornbos DE (1991) *J Anim Sci* 69, 1435-1442