

Effect of time spent on pasture on grazing behaviour in Latxa dairy sheep

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Keywords: dairy ewes, grazing behaviour

Introduction In the Basque country the dairy ewe production system is based on a high pasture utilisation by means of partial time grazing where ewes spend a limited number of hours outdoors (Oregui *et al.*, 1997). This production system, which is also typical of other Mediterranean areas, is different from that in northern Europe where continuous grazing is the usual management. There is a lack of knowledge concerning grazing behaviour under these conditions. This research investigated the effect of time spent on pasture on grazing behaviour.

Materials and methods The experiment was conducted over four weeks during the spring of four consecutive grazing seasons (2000-2003). In each year 48 multiparous Latxa dairy ewes were blocked into homogeneous groups of 12 on the basis of lactation number, days in lactation, milk yield and body weight. Initial mean values for milk yield, body weight and days in milk for the different years were respectively 1333, 1307, 1583 and 1818 ml/d, 62.5, 68.4, 62.2 and 58.3 kg, and 28, 40, 42 and 44 d. Four resulting groups were randomly assigned to one of the following experimental treatments: i) 4 hour-access to pasture (4H), two groups, or ii) 7 hour-access to pasture (7H), two groups. Each group of ewes was allocated to a different paddock. Sward heights were measured twice a week and were kept between 6 and 8 cm. As indoor supplements each ewe received 260 g dry matter (DM) of a concentrate, at milking time, and 250 g DM of lucerne hay, after the evening milking. Animal behaviour was recorded once a week with assessments of ewe activity (grazing, resting or moving) made by two observers every five minutes during the time on pasture.

Results The total time spent grazing was longer in 7H than 4H (246 vs. 196 min d⁻¹, P<0.001). Although these differences are statistically significant, from a quantitative point of view the utilisation of the 180 supplementary minutes on pasture of 7H was limited as only 50 min/d (28%) of this time was spent grazing. As a consequence less efficient utilisation of the time spent on pasture is observed in 7H compared with 4H groups (36 vs. 49 min/h, P<0.001 respectively).

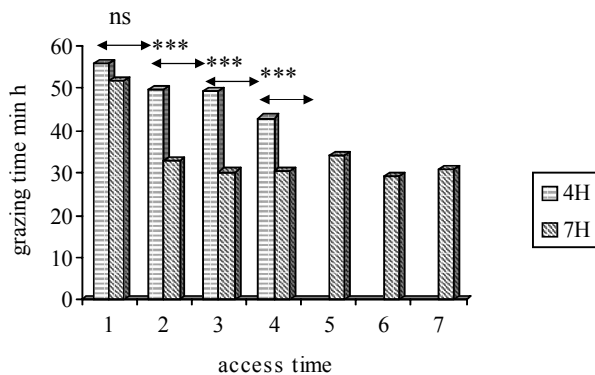


Figure 2 Grazing behaviour of ewes with limited access time (4H or 7H) to pasture.
*: P<0.05; **: P<0.01; ***: P<0.001

In terms of grazing distribution throughout the period on pasture (Figure 1), the grazing activity was similar in both groups, with the maximum being in the first hour (56 vs. 52 min/h, P>0.05, for 7H and 4H respectively). However, during the rest of the time, 4H maintained higher grazing times compared with 7H, that showed rapid decrease in the time spent grazing after the first hour to reach a constant grazing time at the third hour.

It appears that animals learn that they will stay a limited number of hours on pasture and adjust their grazing behaviour. As a consequence, whereas 7H took longer resting times resulting in a more constant

grazing pattern along the day, 4H grazed more intensively and efficiently, but not enough as to compensate for all the difference on access time. However, this grazing behaviour can only be achieved if ewes are managed in a very constant way.

Conclusion Under the dairy Latxa production system, time spent on pasture causes a significant modification in grazing behaviour resulting in a higher efficiency of time use by those ewes with less time at pasture, but this does not completely compensate for the differences in access time.

Reference

Oregui, L.M., J. Garro, M.S. Vicente & M.V. Bravo (1997). Estudio del sistema de alimentación en las razas ovinas Latxa y Carranzana: utilización de los pastos comunales y suplementación en pesebre. *Información Técnica Económica Agraria*, 93, 173-182.