

W2 Foraging behavior of beef cows grazing native grassland: Effect of herbage allowance on temporal and spatial grazing patterns. S. Scarlato*¹, M. Carriquiry¹, M. Do Carmo¹, A. Faber¹, C. Genro³, E. Laca², and P. Soca¹, ¹Unviersidad de la República, Paysandu Uruguay, ²University of California, Davis, ³Embrapa, Bage, Bage, RS, Brazil.

A 2-year study was conducted on a native grassland located in South America, to quantify grazing and ruminating times and patterns of spatial use in beef cows grazing at 2 herbage allowances (HA; 4 and 2.5 kg DM kg⁻¹ BW, for high and low, respectively) in a completely randomized block design (Block 1: Hereford and Angus purebred cows and Block 2: their F1 crossbred cows). Sixteen cows (n = 4 for HA and block) were assigned to 4 plots, remaining there in a continuous grazing system. The Put-and-take method was used monthly to adjust HA. Grazing and ruminating times were recorded over 24-h period using IGER recorders

for 3 consecutive days. Location (bottom, toe slope and shoulder slope zones) of cows within the plot during grazing activity was recorded by direct observation during daylight hours, and a relative preference index (RPI) was used to quantify preference for each zone. Recording periods were: spring 2007, 2008, and 2009, autumn 2008, and winter 2008 and 2009. Mean daily grazing and ruminating times were 738 ± 27 and 453 ± 26 min, respectively. Grazing activity was largely diurnal with 2 main sessions, one in the morning and another in the afternoon. Daily grazing time was greater ($P \leq 0.047$) for low than high HA cows in spring and autumn, which could indicate a compensatory mechanism for reduced HA but also for the less forage mass and height. Daily ruminating time decreased ($P \leq 0.044$) for low than high HA cows in spring, autumn and winter, suggesting a reduced DM intake; and showing constraints to compensate for limitations imposed by pasture in low HA. In general, the RPI for plot zones were not affected by HA ($P > 0.05$) but were affected by session ($P \leq 0.005$). During the afternoon grazing session, cows grazed in the shoulder slope zone ($P \leq 0.002$), with greater forage mass availability, while during morning grazing session, the bottom zone, close to the water source, was preferred ($P \leq 0.005$). This spatio-temporal behavior pattern may indicate an attempt to maximize intake before dusk, through increasing intake rate, minimizing the risk of predation. Quantifying spatio-temporal behavior of grazing ruminants in heterogeneous environments may help to improve livestock systems by integrating behavioral principles and processes into management practices.

Key Words: beef cow, grazing behavior, native pasture

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