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Seasonal Behaviour of Criollo-Chaqueño Compared to Crossbreds Kept in the Chaco Dry Forests of Bolivia

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Abstract

In the Bolivian Chaco local cattle breeds such as Criollo Chaqueño (*Bos taurus*) are kept extensively in the dry forests throughout the year. However, crossbreeding of local cattle with exotics like Brahman (*B. indicus*) is increasingly common. Local cattle are assumed to better cope with the challenging conditions of rainy seasons with good and dry seasons with marginal forage on offer. This hypothesis was tested in a behaviour study where Criollo Chaqueño (C) were compared with Brahman × Criollo Chaqueño (B×C) within three periods (dry (D) and rainy season (R) and transition period (T)). The animals (n=12 per genotype, bodyweight 328±22 and 399±52 kg in C and BxC, respectively) were kept on two fenced Chaco rangelands of 175 ha each. Their behaviour in terms of eating (grazing, browsing, gleaning), resting (standing or lying) and walking was recorded during 24 days per season using direct observations and scan sampling with 1 min of data recording every 3–4 min. One animal per day was observed during daytime hours. There was a daily switching between genotypes. The time between 10 am and 3 pm (6000 s) was used for statistical analysis by SAS 9.3., resulting in n=6 to 8 replicates per period and genotype. Data were analysed separately per period with genotype as fixed effect using either ANOVA or the non-parametric Kruskal-Wallis Test. Overall resting was the main activity. No statistical differences were found in the behaviour of the two genotypes during T. In D, C spent more time (s) browsing as compared to B×C (176 vs. 20, respectively, $p < 0.01$). Also the walking time was increased in C compared to BxC ($p < 0.01$). Resting time did not differ between the genotypes in D, but C spent more of this time standing and BxC were lying more (both $p < 0.001$). The same resting patterns were found in R. It is an indication for a better adaptation of C to the Chaco dry forests that they spent more time browsing during D and thus partially switched to woody forages during feed scarcity. The differences in the resting behaviour between the two genotypes need further analysis.

Keywords: Activity pattern, browsing, extensive system, grazing

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