

Dry matter intake from beef cattle grazing natural grassland with different intensification levels

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Estimating dry matter intake from grazing animals remains a challenge. Among the indicators currently used, n-alkanes have been shown to be a good alternative, especially in heterogeneous environments such as natural grasslands. The aim of this study was to evaluate the intake and average daily gain of steers on natural grassland with different levels of intensification. The work was conducted in an area belonging to Embrapa South Livestock, Bagé, RS, Brazil. Three treatments were tested: natural grassland (NG), natural grassland fertilized (NGF) and natural grassland fertilized and overseeding with Italian ryegrass and red clover (NGFS), with three replications. 100 kg ha⁻¹ of urea was applied in the fall and spring, starting in 2005. The intended herbage allowance was 12 kg of dry matter per 100 kg live weight. For the dry matter intake (DMI) evaluation, the n-alkanes technique was used. The evaluations were conducted in the summer (01/27 to 02/05/14) and fall (05/29 to 06/07/14). Three steers per paddock were dosed with dotriacontane pellets, twice daily, for 10 days. On the fifth day of dosage, feces samples were collected twice. Hand plucking (forage) and feces samples were dried in an oven and ground. Crude protein (CP) and neutral detergent fiber (NDF) were analyzed in the forage, and the n-alkanes profile was analyzed in the forage and feces samples. The animals were weighed every 28 days to determine the average daily gain (ADG). The evaluated parameters were submitted to analysis of variance and means and were compared by Tukey test. The ADG was higher in the summer (0.714 kg) than in the fall (0.171 kg). Higher ADG is expected in the summer and spring, since climate conditions are favorable for plant growth, resulting in increased availability of green forage with better nutritional value for animals. There was no an interaction between treatments and periods for DMI. In the summer, there was no DMI difference among treatments (2.32% LW). However, in the fall the animals of the NG had higher DMI than animals of other treatments. Higher DMI in NG in the fall may be due to the animal consuming more forage to meet their daily nutritional requirement, since the value of CP in the NG was the lowest (9.18%) as compared to the NGF and NGFS (11.5%), which did not differ. The fact that the NG had lower values of NDF in the fall (64.3%) supports this assumption. Tools to increase production and quality of native grassland, such as fertilization and overseeding, allow the animals to have greater feed efficiency, with the same live weight gain, but with less intake than animals grazing natural grassland.

Keywords: daily gain average, fertilization, Italian ryegrass, n-alkane, overseeding, red clover