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Live weight gain of beef cattle steers on *Panicum maximum* cv. Tanzania subjected to intensities of rotational grazing

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Key words: Grazing frequency, grazing intensity, sward light interception, morphogenesis

Introduction Herbage intake and animal performance increase with increasing sward height, herbage mass, post-grazing residue and herbage allowance to a certain limit. This increase tends to a maximum which is specific for a given animal species and category and defined by the ability of animals to process and, or digest the consumed herbage. Identification of the sward condition at which that response happens allows its comparison with ideal sward targets for efficient harvest of the produced herbage, resulting in the definition of sward target based management strategies that take into account plant and animal requirements.

Material and methods Treatments corresponded to intensities of rotational grazing characterized by two post-grazing heights, 25 and 50 cm, both associated to a common pre-grazing condition of 95% canopy light interception (LI) by the sward during regrowth. Treatments were designated as: **25** = 25 cm post-grazing height and 95% LI pre-grazing; **50** = 50 cm post-grazing height and 95% LI pre-grazing. A group of 60 Nelore steers from the EMBRAPA-Gado de Corte herd, with approximately 12 months of age and initial weight 221 kg, were used for estimating live weight gain. From these, 24 test-animals were selected, with an initial weight of 232 kg, and assigned to four groups containing 6 animals each, which were randomly distributed to four experimental units (two treatments and two replications). These experimental units comprise 6 paddocks of 0.25 ha each and were conceived to function as a self-contained unit (farmlet).

Table 1 Sward height and herbage mass of Tanzania guineagrass subjected to intensities of rotational stocking.

Variables	Treatments	
	25	50
Sward height pre-grazing (cm)	65.0	68.4
Sward height post-grazing (cm)	26.5	47.8
Herbage mass pre-grazing (kg/ha of DM)	7130 a	8600 a
Herbage mass post-grazing (kg/ha of DM)	3810 b	5080 a
ADG (g/day)	664 b	801 a
LWG/ha	560	600
Feed conversion efficiency (kg DM/kg weight gain)	10.3 a	8.9 b
SR (animals of 300 kg/ha)	6.1 a	4.9 b

Means followed by the same letter in lines are not different ($P > 0.05$)

Results Sward height and herbage mass pre and post-grazing are shown in Table 1. Targets of LI pre-grazing and post-grazing heights were adequately maintained throughout the experimental period. The post-grazing height of 25 cm was relatively harder to maintain than the 50 cm one, a result of the resistance animals had to graze the bottom stratum of the swards, which contained only 11.5% of leaves. The amount of live weight produced per hectare is a function of the individual weight gain per steer and of the stocking rate used. Swards grazed to 50 cm resulted in higher daily weight gain and lower stocking rate than swards grazed to 25 cm of post-grazing height, with no difference in weight gain per hectare. Feed conversion efficiency, however, was better for the 50 cm than the 25 cm post-grazing height treatment.

Conclusions Grazing intensity influences individual performance and weight gain per unit area, affecting feed conversion efficiency. Definition of post-grazing height targets when planning rotational grazing strategies must be a function of targets of animal performance and productivity set according to the specific objectives of each system of production.

Reference

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