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## Performance of Crossbred Nelore Steers on Non-Irrigated and Irrigated *Brachiaria brizantha* cv MG5 in Rotational Grazing System

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**Presenter Information**

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## Performance of crossbred Nelore steers on non-irrigated and irrigated *Brachiaria brizantha* cv MG 5 in rotational grazing system

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**Key words** : dry matter yield, weight gain, irrigation, forage

**Introduction** Brazil presents an enormous potential for cattle production on pasture. However, water is one of the main determinative factors of the growth of crops; the irregularities of rainfall regime during the year are restrictive to the agricultural development of tropical countries such as Brazil. Thus, the irrigation has been one of the techniques most widely used in agriculture to obtain high yield (Drumond & Fernandes, 2001). It was aimed, through this work; to evaluate the dry matter yield (DMY) of *Brachiaria brizantha* cv. MG5 and the weight gain of the animals under conditions of irrigated and non-irrigated pastures.

**Materials and methods** The study was carried out on the Experimental Farm of the Higher Learning Institution of Passos, Agricultural College, situated in the southwestern region of Minas Gerais, Brazil. The town of Passos presents 1709.4 of annual average rainfall and average temperature above 18°C, with a maximum of 38°C, and a well defined dry season from April to September. The experiment consisted of the evaluation of *B. brizantha* cv. MG 5 grown in an area of 5 ha, 2.5 ha being irrigated and the other 2.5 ha non-irrigated, divided in 32 enclosures. The rotation of the enclosures occurred every two days occupation and 30 days rest amounting to a grazing cycle of 32 days. The nitrogen fertilization was of 100 kg ha<sup>-1</sup> of nitrogen (N). A rest area was destined for the animals, with mineral salt and water at libitum. The animals were weighed in each grazing cycle and the forage plant was harvested before and after grazing. The study of August of 2006 encompassed the period of March of 2006, amounting to a total of six grazing cycles.

**Results** For DMY, evaluating irrigation in each cycle, differences among the irrigation levels were found, with the highest DMY values for the non-irrigated condition in cycles 1 to 4. Possibly, this occurred owing to a forest fire occurred in the area of this treatment, which can have caused a greater nutrient availability. Moreover, in the area of the irrigated treatment, remaining plants parts from the previous pasture were incorporated with harrowing, which can have also resulted into the temporary N non-availability. When the cycle in each irrigation level was evaluated, there was a significant increase ( $p < 0.05$ ) of cycle 1 to 4. In cycles 5 and 6, there were no differences among irrigation levels. As regards the animals weight gain, till the 4<sup>th</sup> grazing cycle, there were no differences among irrigation levels, which can be accounted for by the highest rainfall in this period. In cycles 5 and 6, when rainfall was low, animals from the irrigated pasture gained more weight. When the cycles in each irrigation level were compared, statistical differences were detected only in the irrigated plot, both cycles 5 and 6 outyielded in excess.

**Table 1** Dry matter yield (DMY) of *Brachiaria brizantha* cv. MG 5 and weight gain of animals submitted to the rotation system under two irrigation levels in six grazing cycles.

	DMY (kg/ha)						Mean
	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	
Irrigated	4780abcB	4880abB	5757aB	4170bcB	3455cA	3817bcA	4477B
Non-irrigated	8436aA	6564bA	8339aA	5591bA	3211cA	4168bcA	6051A
Mean	6608ab	5722bc	7048a	4880cd	3333e	3993de	
	Weight gain (kg/animal/day)						Mean
	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	
Irrigated	0.28bA	0.32bA	0.40bA	0.28bA	1.01aA	1.49aA	0.43A
Non-irrigated	0.38aA	0.35aA	0.32aA	0.16aA	0.34aB	0.28aB	0.50A
Mean	0.32c	0.33c	0.36c	0.22c	0.67b	0.89a	

Means followed by the small letter in the row and capital letter in the column do not differ statistically by Tukey test ( $P > 0.05$ ).

**Conclusions** The total dry matter yield was higher in the non-irrigated treatment. The first four grazing was the one which presented the highest dry matter yield. The animals weight gain did not differ between the irrigated and non-irrigated condition, however, in the 6 grazing cycles, both cycle 5 and irrigation provided the highest gain.

### Reference

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