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Presenter Information

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Influence of sprinkler irrigation on the chemical composition of *Brachiaria brizantha* cv. MG 5 grazed by crossbred Nelore steers under rotational grazing system

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Key words: acid detergent fiber, hemicellulose, neutral detergent fiber

Introduction Brazil lies in the tropical range, presenting an elevated potential of forage yield in grazing lands. However, this yield is often limited by the availability of manageable factors, basically water and nutrients. In the period of April to September (Fall/Winter, dry season), the lowest yields took place owing to the low rainfall and temperature, characteristic do Central Brazil (Corsi e Martha Junior 1998). It was intended, through this work, to evaluate the bromatologic quality of *Brachiaria brizantha* cv. MG 5 under two irrigation levels submitted to rotational grazing.

Materials and methods The experiment was conducted on the Experimental Farm of (Higher Teaching Institution of Passos, Agricultural College), situated in the Southwestern region of Minas Gerais, Brazil. The town of Passos presents annual average rainfall of 1709.4 mm and average temperature above 18°C, with the maximum of 38°C and a well defined dry season in the months of April to September. The experiment was conducted in an area of *B. brizantha* cv. MG 5 of 5 ha, 2.5 ha being irrigated and 2.5 ha non-irrigated, divided into 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 of Nitrogen (N). A rest area was destined for the animals, with both mineral salt and water at libitum.

Results The contents of NDF of the forage in cycles 1 and 4 were similar, at the two levels of irrigation. Probably, this is due to the increased rainfall occurred in this period. In cycles 2 and 3, the irrigated forage presented lower contents of NDF. These results demonstrate the viability of irrigation in periods of shortage of rainfall. In general, when difference among the levels of irrigation was observed within the grazing cycles, in the irrigated forage, the contents of NDF, ADF and hemicellulose were lower. This can be accounted for by the visual observation of a greater leaf yield relative to the stems. When the grazing cycles were evaluated within each irrigation level, a trend towards increase of the contents of NDF, ADF and hemicellulose of cycle 1 to 4 was found, specially for the non-irrigated condition within a higher DM yield, therefore, with a greater vegetative growth and, possibly, reduction in the leaf/stem ratio.

Table 1 Contents of neutral detergent fiber (NDF), acid detergent fiber (ADF) and hemicellulose of *Brachiaria brizantha* cv. MG 5 under two levels of irrigation in four grazing cycles.

Level of irrigation	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Mean
NDF (% in DM)					
Irrigated	78.56bA	78.07bB	81.63aB	82.84aA	80.27B
Non-irrigated	79.35bA	81.52bA	84.39aA	81.13bA	81.59A
Mean	78.95b	79.80b	83.01a	81.96a	80.93
ADF (% in DM)					
Irrigated	46.30bB	47.46abA	48.20abB	50.12aA	48.02B
Non-irrigated	50.19aA	48.69aA	51.14aA	49.94aA	49.99A
Mean	48.24a	48.07a	49.67a	50.03a	49.00
Hemicellulose (% in DM)					
Irrigated	32.23aA	30.68aA	33.42aA	32.72aA	32.25A
Non-irrigated	29.15bB	32.82aA	33.25aA	31.19abA	31.60A
Mean	30.70b	31.72ab	33.33a	31.95ab	31.93

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

Conclusion Irrigation improves the quality of forage plant from presenting smaller fractions of NDF and ADF. The animals consumed less fibrous forage in grazing cycles 1 and 2.

Reference

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