



Fiber intake and digestibility of silages produced from five new Brazilian sorghum cultivars

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Influence of fiber fractions on dry matter yield/hectare and “*in situ*” digestibility of forage sorghum whole plant have been studied in the last years as these variables contribute to the selection of new cultivars. However, it has been reported that selecting new genotypes based only on dry matter production/hectare should be revised, possibly because the great diversity of forage sorghum varieties and their different agronomic characteristics have great impact on intake and *in vivo* digestibility of cell wall fractions, factors that are directly linked to voluntary consumption, forage degradability in the reticulo-rumen, and absorption of nutrients in the total gastro-intestinal tract. The objective of the current study was to evaluate intake and digestibility of neutral detergent fiber (NDF) and acid detergent fiber (ADF) of forage sorghum silages in rams. Treatments consisted of five new cultivars of forage sorghum recommended for the Brazilian northeastern semi-arid region (BRS Ponta Negra, BRS 655, BR 601, BRS 506 and BRS 610). Plants were harvested as grain exhibited dough stage of plant maturity and chopped in a stationary silage harvester to a length of 2 cm. Twenty-five rams (average body weight of 21.7 kg ± 1.7) were used in this experiment. During the first 25 days animals were adapted to the diets in metabolic cages, with total collection of feces being conducted over a 5 day period by using individual bags. A completely randomized design with five treatments and five replications was used, with variables being tested to check if data had normal distribution before carrying out the analysis of variance. Means were compared by Tukey test at 5% probability (P<0.05). Chemical analysis of the five silages revealed the following properties: DM, NDF and ADF were on average of 32.4%, 61.2% and 34.2%, respectively. No difference (P>0.05) in DM intake (in g day⁻¹ and g per unit of metabolic size - g UMS⁻¹) and DM apparent digestibility were observed. DM intake (in g day⁻¹) ranged from 604.0 to 700.0, while intake by UMS ranged from 63.4 to 68.4 g UMS⁻¹. DM apparent digestibility was on average of 59.6%. NDF intake (in g day⁻¹) was similar among treatments and ranged from 362.1 to 454.1 g day⁻¹. However, it was observed difference (P<0.05) in intake in g UMS⁻¹, with BRS 610 silages resulting in a higher consumption (44.5 g UMS⁻¹) than BR 601 (35.3 g UMS⁻¹), which, in turn, did not differ from the other cultivars. Treatments did not alter NDF apparent digestibility, which was on average of 56.3%. ADF intake (in g day⁻¹) and (in g UMS⁻¹) was similar among treatments, with mean values of 229.8 g day⁻¹ and 22.7 g UMS⁻¹, respectively. However, it was detected differences (P<0.05) in ADF apparent digestibility, with BR 601, BRS 610 and BRS 506 having a higher ADF apparent digestibility than BRS 655, which was similar to BRS Ponta Negra. These results suggest that the examined forage sorghum silages had intake and digestibility of fiber fractions comparable to well known Brazilian cultivars (i.e. BR 700), and, therefore, can be used for feeding lambs under Brazilian semi-arid conditions.

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