

Diet selection in a pasture of *Panicum maximum* cv. Mombaça with different sward heights

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Introduction The *n*-alkane method allows to measure dry matter (DM) intake and to determine the proportion of grass and legume ingested by ruminants grazing mixed pastures. Dove & Mayes (1996) pointed out that using this method, beyond estimating intake of individual plant species, it may also be possible to determine intake of anatomical components of the plant. The aim of this work was to use the non-negative least squares procedure to estimate diet selection based on plant alkanes and animal faeces.

Materials and methods The experiment was conducted at the Embrapa Beef Cattle Centre, Campo Grande, MS to study intensive beef production based on tropical grasses under rotational grazing throughout the year. The grazing system included 16 paddocks, a 2-day grazing period followed by a 30-day resting period. In this study, samples of stem+sheath and leaf blade were collected in 20 cm stratified layers of a pasture of *Panicum maximum* cv. Mombaça during three periods of the year: in the middle of the dry season (Period 1), at the beginning (Period 2) and at the end of the wet season (Period 3). Before grazing, three representative areas of the paddock were selected for sampling. Six Nelore steers dosed during 12 days, twice a day, with alkane C₃₂ were used to estimate DM intake (DMI). The determination of *n*-alkanes within the range of C-chain between 27 and 35 was performed according to Mayes *et al.* (1986). *N*-alkane profiles were corrected by faecal recoveries using mean values found in literature (Dove & Mayes, 1996). The diet selection was calculated by the "Eatwhat" program described by Dove & Moore (1995), using the non-negative least squares algorithm.

Results The percentage of diet selected within the strata of Mombaça grass pasture and the DMI expressed as percent of live weight for the three periods studied are given in Table 1. In the first period, the program estimated that DMI was divided among three strata: stem+sheath 0-20 cm, leaf blade 0-20 cm above ground level, and leaf blade 40-60 cm. In the other two periods, the stratum preferred was stem+sheath > 20 cm. According to these results, the steers ingested over 60 % from this layer, in stead of the leaves from higher strata. These data, however, are not supported by the literature, where it was established that bovines prefer eating leaves from the top of the pasture. This may be due to problems in the alkanes determination, or perhaps, another possibility is that the programme was designed to work with diet selection between different plant species, but not within parts of the same plant, particularly of tall tropical plants such as *Panicum* spp..

Table 1 Diet selected (%) within the strata of Mombaça pasture and the dry matter intake (DMI, % LW)

Period	Stratum height (cm)							DMI (%)
	Stem 0-20	Stem >20	Leaf 0-20	Leaf 20-40	Leaf 40-60	Leaf 60-80	Leaf >80	
	Diet selected, % of intake							
1	35.6	0	30.6	0	33.8	NE*	NE	2.26
2	0	60.5	NE	0	39.5	0	NE	2.72
3	0	84.0	0	0	.5	4.3	11.2	1.93

*NE= Stratum not existent

Conclusions The use of non-negative least squares procedure to determine diet composition based on the plant alkanes does not seem to adequately estimate plant part selection within the plant profile.

References

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