INGESTIVE BEHAVIOR OF GRAZING LACTATING COWS SUPPLEMENTED WITH BYPRODUCTS OF BIODIESEL INDUSTRY

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INTRODUCTION

Many factors affect the performance of lactating cows in pasture based systems, where the amount and quality of concentrate and, therefore, the ingestive behavior of the animals play a significant role. The main behavioral variables studied are those related to feeding activities, rumination, leisure, and search for water (Ray & Roubicek, 1971).

Fischer et al.,(2002) related that milking system can modify the animal behavior according to with the type, the amount and accessibility of the food ,and handling practices.

To attend their demands of ingestion of dry matter, the herbivores alter the time of grazing, the rate and size of bite rate. Therefore, the study of the ingestive behavior of grazing animals may help us to understand the relationship between plant and animal (Glienke et al., 2008).

Additionally, biodiesel byproducts may be used to feed ruminants as alternative food source with lower costs, yet helping the sustainability of biofuel industry. The aim of this work was to evaluate the ingestive behavior of grazing lactating cows supplemented with byproducts of biodiesel industry.




MATERIAL AND METHODS

The experiment was carried out at the experimental farm of the Federal University of Bahia, São Gonçalo dos Campos, Bahia state, Brazil. The diurnal ingestive behavior of lactating cows grazing Panicum maximum cv. Tanzania and supplemented with by-products of biodiesel industry was studied. Sixteen Holstein x Zebu cows, averaging 544 kg of BW and 60 days in milk, were used in a 4x4 Latin Square design with 15-day periods, with 11 days for adaptation to experimental diets and 4 days for the collection period.

The pasture was handled in a rotational system, and the animals were supplemented with: 1) control with soybean meal, 2) peanut pie (Arachis hypogaea), 3) sunflower pie (Helianthus annuus), and 4) palm kernel pie (Elaeais guineensis). The treatment means were compared by Tukey's test. The cows were fed 3 kg of supplements twice daily. At the eleventh day of each period, the ingestive behavior was evaluated every 30 min for 12 h to determine the time spend with grazing, rumination, and resting.

RESULTS AND DISCUSSION

Variable	Tretaments				CV (%)
	soybean meal	peanut pie	sunflower pie	palm kernel pie	
Feeding	425.625	435	423.75	420	11.18
Rumination	121.875	103.125	121.875	118.125	31.32
Leisure	52.5	61.875	54.375	61.875	63.17

The supplements did not affect the ingestive behavior of the animals. The diurnal average time spend with grazing, rumination, and resting were 426, 116, and 58 min, respectively.


CONCLUSION

Supplementation of lactating cows in a pasture based system with byproducts of biodiesel industry can be used without adverse effects on the ingestive behavior and appear to be an alternative to improve the sustainability of biofuel production.