

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

## **CRUDE GLYCERIN IN SUPPLEMENTS FOR BEEF CATTLE AT PASTURE DURING THE DRY SEASON: INTAKE AND DIGESTIBILITY**

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Glycerin can be included in ruminant diets as an alternative energy source to corn. However, most of the studies available in the literature were performed in vitro, with dairy cattle or in confinement animals. Thus, there is still a shortage of information on the use of GB for supplementation of beef cattle grazing, mainly regarding the ideal level of replacement of corn by GB in concentrated supplements. The objective of this work was to evaluate the effect of the replacement of corn by crude glycerin (CG) on the intake and digestibility of beef cattle grazing *Urochloa brizantha* Marandu during the dry season. Five non-fistulated Nelore steers were used, with average initial body weight (BW) of 331.7 kg, allotted to a 5x5 Latin square. Concentrated supplements (20% crude protein - CP) with 0, 33, 66, and 100% CG replacing corn were evaluated and provided in the amount of 4.0 kg per animal per day. Intake of supplement, total, and pasture dry matter (DM), as well as of digestible organic matter (DOM), presented quadratic behavior to the replacement levels. The apparent digestibility of DM, OM, neutral detergent fiber, and digestible OM, as well as average daily gain, also showed quadratic behavior. It was observed that the animals that received supplements containing 100% of CG replacing corn had lower DM intakes, both: pasture and supplement. Consequently, there was lower energy (DOM) intake. Supplement DM and DOM intakes were, 3.60 and 5.37; 3.58 and 6.05; 3.51 and 6.25; 2.26 and 4.61, respectively, for levels 0, 33, 66, and 100% CG replacing corn. Salts with high ionic capacity, such as sodium chloride, effectively contribute to the increase in molality (or molarity) in the rumen, with a negative relation with intake; this may have led to the lowest supplement intake by animals when there was total corn replacement by CG. The averages for the apparent digestibilities of DM, OM, PB, NDF decrease with total corn replacement by CG. This behavior may be due to inhibition of growth and activity of cellulolytic bacteria. In concentrated supplements provided in the amount of 10 g kg<sup>-1</sup> body weight, the total replacement of corn by crude glycerin reduces supplement and digestible organic matter intake of grazing beef cattle.

**Keywords:** biodiesel, glycerol, supplements

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