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Effects Of Sunflower Oil Infusions Of *Asparagopsis taxiformis* On *In Vitro* Rumen Methane Production

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Introduction: Supplementation with the red macroalga *Asparagopsis taxiformis* (*AT*) of ruminant diets is a promising strategy to reduce methane (CH_4) emissions from rumen. This effect is attributed to halogenated compounds, particularly bromoform ($CHBr_3$), a volatile compound. Immersion in *AT* biomass oil is effective in stabilising $CHBr_3$. The main objective of this study was to verify the effectiveness of sunflower oil naturally enriched in *AT* halogenated compounds in reducing CH_4 emissions.

Material & Methods: Six levels of $CHBr_3$ (0, 25, 50, 75, 100 and 150 ⌈g $CHBr_3$/g feed dry matter (DM)), included in 60 ⌈L of Bromoil were evaluated *in vitro*, using an ANKOM^{RF} gas production system, through 5 runs, with two replicates in each run. To perform the 48-hour incubations, rumen inocula were collected after the slaughter of young-bulls reared on the same farm and 1 g DM of a Total Mixed Ration was used as the feed sample. Total gas and CH_4 production, organic matter (OM) degradability and volatile fatty acids (VFA) proportion were determined.

Results: Total gas production was not affected by treatments but CH_4 emissions decreased in 50 % and 86 % with the treatments 100 and 150, respectively. The degradability of OM and Total VFA were not affected by treatments but the acetate to propionate ratio was 20 % and 25 % lower for treatments 100 and 150, respectively. Discussion: These results demonstrate that oil immersions of *AT* can be effective in reducing CH_4 emissions and need to be confirmed in *in vivo* trial.

Support/interest disclosure:Work funded by PRR-C05-i03-I-000027-LA3.1, GEEBovMit, and by Portuguese Foundation for Science and Technology (FCT) grants UIDB/00276/2020 (CIISA), LA/P/0059/2020(AL4AnimalS) and a PhD studentship to F. Sena (UI/BD/152817/2022).

Keywords: *ASPARAGOPSIS TAXIFORMIS*; OIL; METHANE; *IN VITRO*