

Methane Contrasting Groups In Three Sheep Breeds In Uruguay

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Introduction

Variability of methane (CH₄) emission in sheep and impact of selecting low emitting individuals are investigated as part of greenhouse gas mitigation strategies.

Aim

Explore these associations by comparing the performance of animals classified by CH₄ emission

Material and Methods

Data of CH₄ emissions of 494 animals born between 2018 and 2020, sired by 29 rams was collected using portable accumulation chambers



218 Corriedale
68 Texel
208 Dohne Merino

CH₄ emission groups

Low (<25%)
Medium
High (>25%)

CH₄ (g/d) = sex-pen-trial + animal + date-hour

The effect of CH₄ group on different traits was estimated with a linear model that included age, type of birth and sex-pen-trial as fixed effects.

The analyzed traits in this trial were related to:

Feed Efficiency	Growth	Carcass Quality	Feeding Behavior	Wool
<ul style="list-style-type: none"> Feed Intake Residual Feed Intake (RFI) 	<ul style="list-style-type: none"> Average Daily Gain (ADG) Metabolic Weight (MWT) 	<ul style="list-style-type: none"> Rib-eye area (REA) Fat thickness (FT) 	<ul style="list-style-type: none"> Number of meals 	<ul style="list-style-type: none"> Staple Growth (SG)

Results and Conclusions

- CH₄ group had a significant effect (p<0.05) on **feed intake, ADG and MWT in all breeds.**
- **High emitters were heavier, had higher ADG, and ate more.**
- A significant effect on **number of meals** was reported in Texel (**low CH₄ emitters had lower number of meals** compared to high emitters).
- **Non-significant differences (p>0.05) were observed on RFI, REA, FT and SG in any breed.**

More research will contribute to increase the number of animals tested, leading to more a comprehensive description of associations, including genetic and phenotypic correlations, being also the basis for economic impact studies.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Grant Agreement n°772787

