

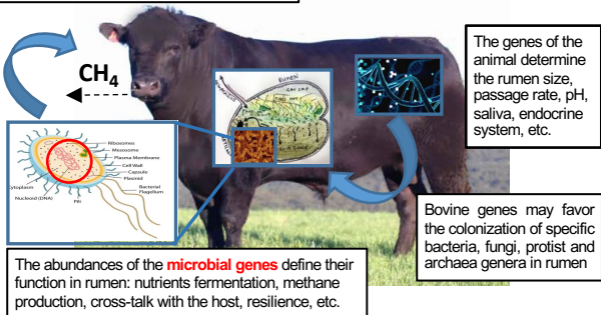


# BOVINE GENOME INFLUENCES ITS RUMINAL MICROBIOME FUNCTION

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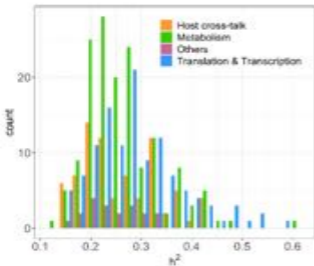
The microbiome function affects performance and environmental traits: CH<sub>4</sub> emissions, feed efficiency or health.

**Question:** do the genes of the bovine affect the microbiome function?



**Results:** % of observed variation in microbial gene abundances explained by host genome variation amongst animals ( $h^2$ )

**Take home message:** the genes of the bovine determine 13 to 61% of the total observed variability in the rumen microbiome function



**Implications:** These results open opportunities to develop microbiome-based breeding strategies that will accelerate the reduction of CH<sub>4</sub> emissions, increase feed efficiency, and optimize quality product and health of the animal.

- 369 out of 1,141 tested microbial genes are heritable ( $h^2$  13-61%).
- $h^2$  of microbial genes implicated in CH<sub>4</sub> metabolism 20 - 27%
- Microbial genes involved in ribosomal biosynthesis are the most heritable

Acknowledgements:

