REPEATABILITIES OF METHANE PRODUCTION BY DAIRY COWS MEASURED IN AUTOMATIC MILKING SYSTEMS

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Introduction

- Reduction of methane production by dairy cows through breeding requires data on many individual animals.
- Such data can be obtained by measuring methane production in automatic milking systems (AMS).

Aim

Obtain repeatability of methane production measured in automatic milking systems.

Material and methods

- Methane production measured in AMS with Fourier transformed infrared sensor.
- Data of 36,735 AMS visits on 549 cows on 6 commercial farms.
- Methane production calculated per AMS visit as:

- Mean
- Median
- 75% quantile (Q75)
- 90% quantile (Q90)

- Repeatability: $\sigma^2_{animal} / \sigma^2_{animal} + \sigma^2_{error}$
- Variance components were calculated with an animal model in ASReml with date of measurement, AMS, and farm as fixed effects.

Results

Methane production per AMS visit	Repeatability
Mean	0.28
Median	0.22
Q75	0.25
Q90	0.28

Conclusions

- Moderate repeatabilities of methane production measured in automatic milking systems.
- Method can be used to obtain methane production data on many individual cows.

Future

- Extend dataset with more measurements.
- Estimate genetic parameters for methane production.

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