

ClieNFarms Practice Abstracts

Perspectives of reducing methane emissions from enteric fermentation on dairy farms

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Methane emission from enteric fermentation is a major contributor to greenhouse gas (GHG) emissions on dairy farms. The first step to reduce mission per kg of fat and protein corrected milk yield (FPCM) is by improving 'general' animal, nutrient and feed management, by:

- Increasing feed efficiency (more milk (FPCM) per kg dry matter (DM) intake)
- Optimizing feed ration according to animal requirements
- More milk per cow
- Less young stock
- Reducing crude protein content of the diet

As an example, Figure 11 shows the relation between the feed efficiency of the whole herd (cows + young stock) and the enteric methane emission per kg of FPCM.

Further reductions in methane can be achieved by lowering the emission factor (EF; g CH₄/kg DM intake) of the feed. Measures are:

- Using (external) concentrates and by-products with a low EF
- Increasing starch content in the feed ration by:
 - Late harvest of silage maize
 - More maize silage in feed ration (and less grass silage)
- Increase lipid content in feed ration
- Supplementing methanogenic inhibitors to the diet
- Improve quality and digestibility of grass silage (e.g. increase cutting frequency)

Essential for implementation of measures is an integrative approach. Measures can work positively for one aspect and at the same time negatively for other targets like reducing ammonia emissions and/or farm economic results (higher costs).

For example, increasing corn silage or using palm oil may reduce CH₄ emissions but increase ethical or environmental concerns. Balancing climate impact, economic viability, and sustainability is essential when selecting mitigation options.

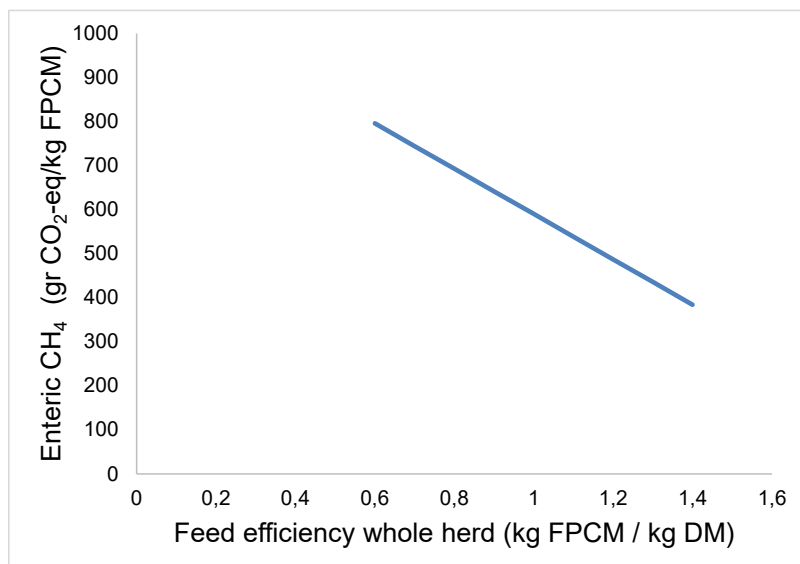


Figure 1 : The relation between feed efficiency of the whole herd (cows + young stock) and the enteric methane emission per kg of FPCM.



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