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Climate Neutral Farms

ClieNFarms EIP-AGRI Practice Abstracts

Feed efficiency and N use efficiency of the herd are important key indicators on dairy farms

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For most dairy farms, feed efficiency (kg FPCM/kg DM intake) and N use efficiency of the herd (%) can provide useful information on the performance of the herd and as a basis for the gross margin (the market value of milk minus the cost of purchased feed).

Therefore, it is important to include feed efficiency and N use efficiency of the herd in the analysis and discussion of the results with farmers. Milk yield per cow, number of young animals per cow, energy content of grass silage, proportion of maize in the ration and proportion of concentrated feed in the ration explain to a large extent the variation among farms in feed efficiency. These indicators are also important for the N use efficiency of the herd, together with the crude protein content of the feed ration.

A management that supports high N use efficiency of the herd is highly correlated with feed efficiency. Thus, the amount of feed taken up per litre of milk is higher on farms with a high N use efficiency. CH₄ emission not only depends on the characteristics of the feeds taken up but also from the amount of feed taken up by the cattle. The more feed passes the rumen of a cow the more CH₄ emission or the fewer feed is needed to produce a litre of milk the lower the CH₄ emission. Therefore, a management that focusses on an efficient turnover of feed (energy) into milk (products) also contributes to low CH₄ emission.

Improving feed efficiency reduces the methane emissions from enteric fermentation and improving N use efficiency of the herd reduces ammonia emission from stable and storage. In conclusion, feed efficiency and N use efficiencies of the herd are key indicator for the profitability and environmental performance of dairy farms.

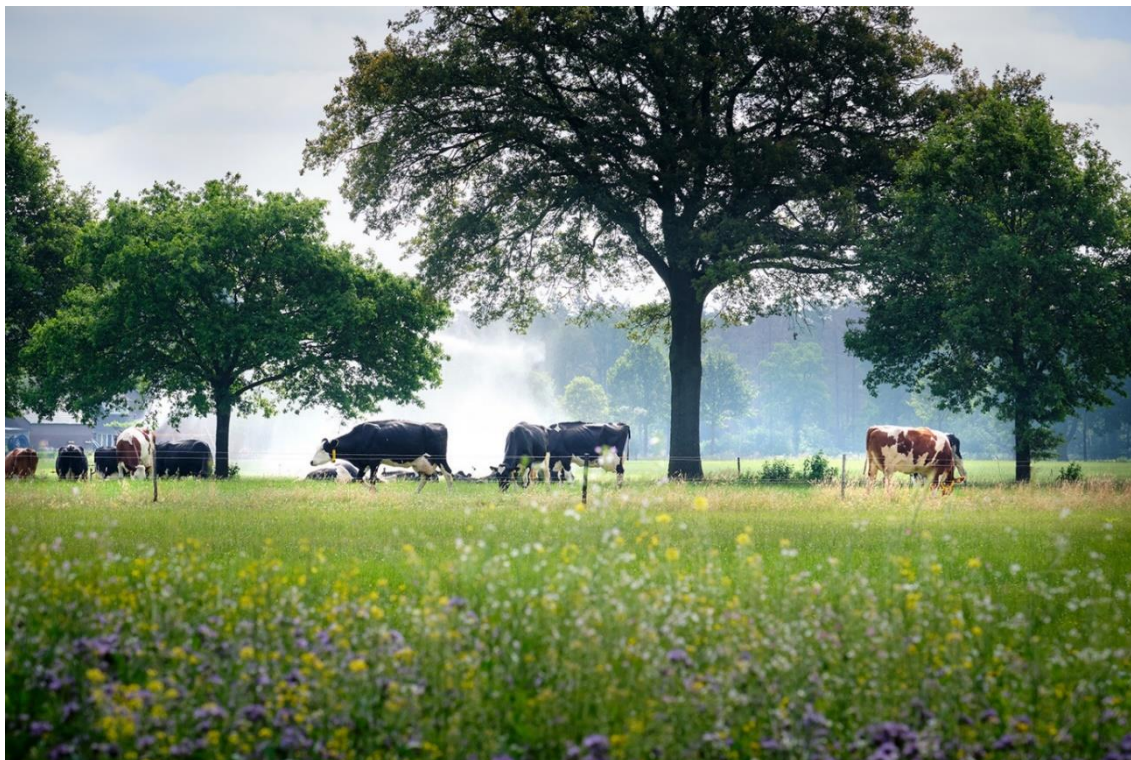


Figure 1: Dairy cows on a pasture.

More information: Oenema J. & Oenema O. (2022). Unraveling feed and nutrient use efficiencies in grassland-based dairy farms. *Front. Sustain. Food Syst.* 6:846561. DOI: 10.3389/fsufs.2022.846561

Link: <https://www.frontiersin.org/articles/10.3389/fsufs.2022.846561/full>



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THIS PROJECT HAS RECEIVED FUNDING FROM
THE EUROPEAN UNION'S HORIZON 2020
RESEARCH AND INNOVATION PROGRAMME
UNDER GRANT AGREEMENT NO 101036822

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