

# Lifetime net GHG emissions and contribution to the food system from dairy cows fed best practice diets

## Background

Animal production affects the environment, both negatively and positively. It can e.g. contribute to eutrophication and increased global warming, but at the same time, it can contribute to ecosystem services as well as biodiversity and be an efficient and sustainable way of producing high-quality protein from non-human edible resources

Project aim:

- Investigate lifetime greenhouse gas emissions from high-producing dairy cows and replacement heifers fed diets based on feeds that are associated with low negative environmental impact.
- Estimate net food production and emissions intensity

## Materials and Methods

Experiment 1: Lantmännen's experimental dairy farm "Nötcenter Viken". Spring 2022.

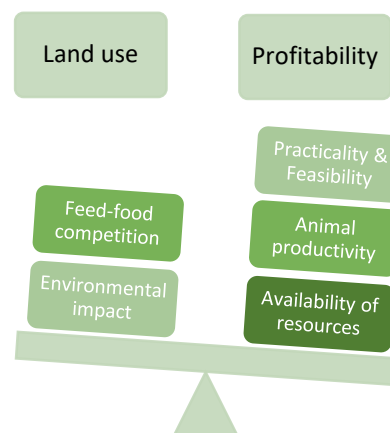
48 dairy cows in peak lactation will be fed best practice diets for 8 weeks.

Measurements:

- Feed intake & digestibility
- Milk yield
- Enteric methane emissions measurements (GreenFeed, C-Lock)
- Estimations of the environmental impact of feed production

## "Best practice diets"

Selecting feed ingredients and formulating dairy rations that are in line with the concept of Sustainability is a complex problem that requires trade-offs.



## Experimental diets:

1. Control diet
  - A commonly used diet aiming to maximize milk production
2. By-products based diet
  - Limit feed-food competition
  - Prioritize resources with low environmental impact
3. Home-grown diet
  - Locally grown feeds on a regional level

## Conclusions

Feed intake, milk production and methane emission will be used to calculate the net food contribution and the emission intensity from the system.

The results from this project will allow for:

- the comparison of different production options
- investigate and quantify the role and contribution of animal production in the food system.

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