

**Topic/Title**

Investigating sustainable production of animals by optimizing the feed-microbiome-host-axis

Summary

Human population growth is driving a rise in cattle production for food, which necessitates more efficient and sustainable practices. One promising route to achieve this, is to unravel the connection between the feed cows eat, their bodily function and the microbes in their gut, not only to optimize nutrition but also to reduce the emission of greenhouse gases (methane). Our new strategy to collectively study the animal, its diet and all its microbes as one unit (the holobiont), is known as holo-omics. This strategy, enabled by recent biotechnological developments, can improve our understanding of how animals digest their feed and sustain their growth. These projects combines novel methane-inhibiting feed ingredients, animal experiments and holo-omics to jointly analyze animals, their feed and their microbes. The outcome will be optimization of feeding strategies tailored to specific types of animals, to ultimately improve their growth and production whilst reducing their carbon footprint.

Subject area

microbiome, meta-omics, methane emissions

Language thesis

Bachelor thesis: Norwegian or English; Master thesis: English

Bachelor or Master thesis

Both

Credits

Bachelor thesis: 15, Master thesis: 60

Project/company

[SuPAcow](#), [HoloRuminant](#)

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