Bachelor or Master thesis BIOVIT 2021/22

Topic/Title

1. Ete- og drøvtyggeradferd og endringer i vomfermenteringsmønster hos mjølkeku tildelt kraftfôr med ulikt innhold av norske råvarer (30 ECTS; Experiment: January to May 2022)
2. Fôropptak, mjølkeytelse og mjølkesammensetning hos NRF-kyr tildelt kraftfôr med ulikt innhold av norske råvarer (30 ECTS, Experiment: January to May 2022)
3. Produksjon av enterisk metan og fôreffektivitet hos NRF-kyr tildelt kraftfôr med ulikt innhold av norske råvarer (30 ECTS, Experiment: January to May 2022)
4. Fôropptak og mjølkeproduksjon hos NRF-kyr tildelt to kraftfôrtyper med ulikt innhold av norske råvarer og to ulike kvaliteter av gras/kløver-surfôr (30 ECTS¸ Experiment: October to December 2022)
5. Vomfermenteringsmønster, produksjon av enterisk metan og ete- og drøvtyggeradferd hos mjølkeku tildelt to kraftfôrtyper og to ulike kvaliteter av gras/kløver-surfôr (30 ECTS¸ Experiment: October to December 2022)

Topic/Title

1. Eating-rumination behaviour and postprandial changes in ruminal fermentation products in Norwegian red (NRF) cows fed concentrate feeds differing in the level of local ingredients (30 ECTS; Experiment: January to May 2022)
2. Feed intake, milk yield and composition of NRF cows given access to concentrate feeds differing in the level of local ingredients (30 ECTS, Experiment: January to May 2022)
3. Enteric methane emission and dietary nutrient use efficiency by NRF cows fed concentrate feeds varying in the level of local ingredients (30 ECTS, Experiment: January to May 2022)
4. Interactive effects of concentrate feed type and grass/clover silage quality on feed intake and milk production with NRF cows (30 ECTS¸ Experiment: October to December 2022)
5. Rumen postprandial parameters, enteric methane emission and eating-rumination behaviour in NRF cows fed contrasting qualities of concentrate feeds and grass/clover silages (30 ECTS¸ Experiment: October to December 2022)

Summary

Milk and meat production from ruminants has been and will be an essential part of the Norwegian agricultural sector. However, ruminants are also responsible for a substantial part of greenhouse gas (GHG) emission from the sector. Current production system largely relies on imported protein ingredients; and deemed unsustainable. Efficient use of, especially locally produced, feed resources will help reduce GHG emission. Norway has limited agricultural land area with a limited opportunity to produce protein ingredeints. Thus, improving protein values in the basal diet (i.e., roughage feed) and concentrate feeds (based on local grains), will contribute to sustainable dairy production.

Objective

To assess the effects of different formulations of concentrate feeds, varying in the level of local ingredients, on animal behaviour, GHG emission, milk yield, milk composition and nutrient utilization efficiency when fed along with grass/clover silages of contrasting qualities.

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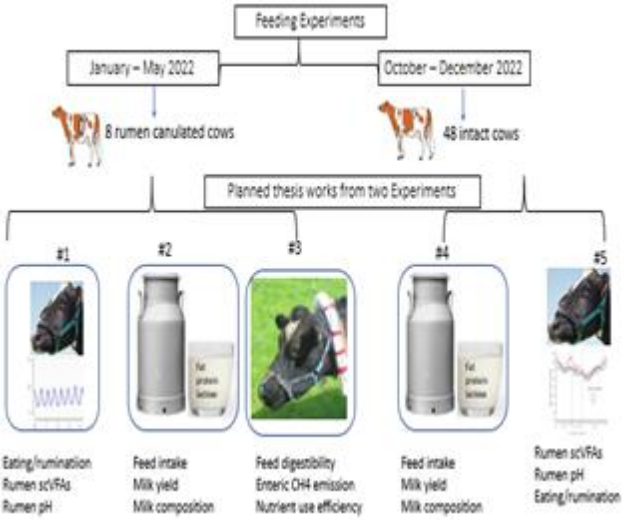

Materials and methods

Two experiments are planned (Fig 1). Expt. 1 (early 2022) involves 8 rumen-cannulated early lactation NRF cows to test the effects of four formulations of concentrate feeds on the parameters detailed in the objective. The Expt will produce data for thesis #1, #2 and #3. Expt. 2 (late 2022) will involve 48 early-lactation NRF cows to test the interactive effects of two concentrate feeds and two contrasting grass/clover silages again on the parameters described earlier. Data will be used for thesis #4 and #5. **Expected thesis submission time points:** Dec 2023, or May 2023)

Subject area

local ingredients, enteric methane, nutrient use, milk yield, milk composition

Language thesis

Norwegian and/or English: by choice

Bachelor or Master thesis

Master thesis

Credits

30 ECTs each

Project/company

AlkaNor project (funded by the Norwegian Research Council; RCN # 302341)

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