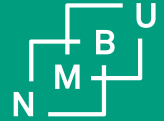


Norwegian University
of Life Sciences



Use of milk infrared spectra as animal health and welfare indicators

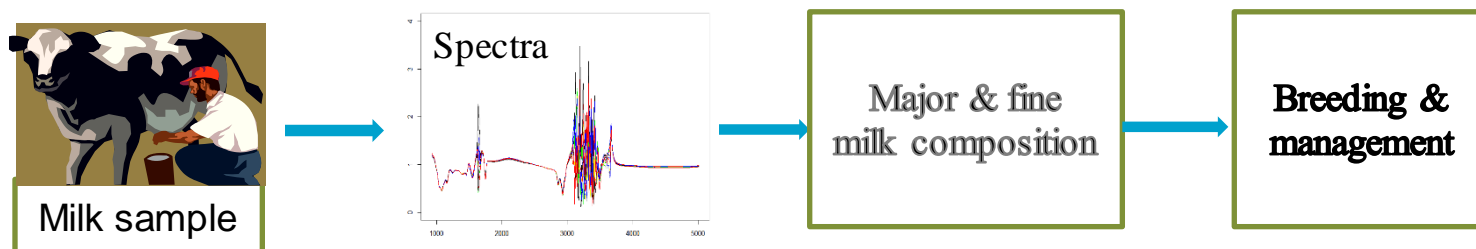
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*First DairyCare Conference 2014
August 22nd & 23rd 2014, Copenhagen, Denmark*

Background

- Some health and feeding problems of cow can be seen in milk.
 - E.g. milk fat content change with feeding and health of cows.
- Few major milk components used in breeding and feeding guidance:
 - High cost, time and labour intensive
- Milk samples routinely analysed by **infrared spectroscopy** -potential for more info

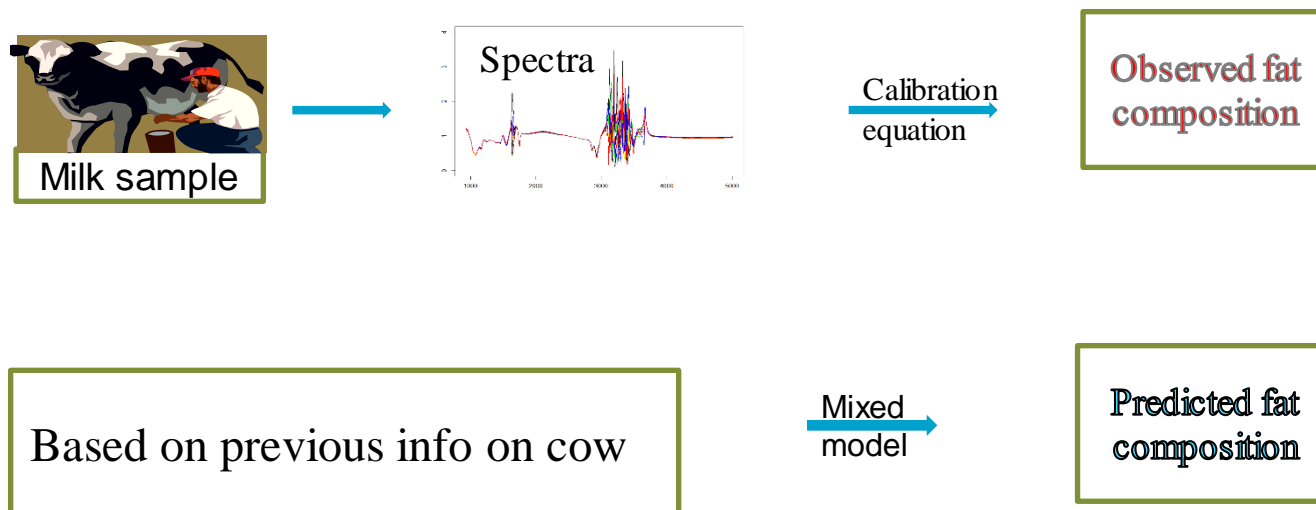


Objective

- To investigate potential use of milk spectra to detect cows with deviating milk fat composition

Materials and methods (1)

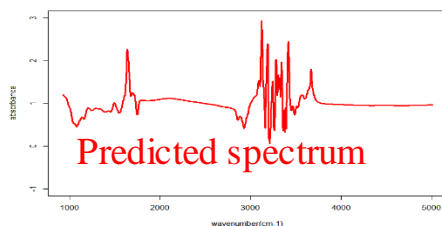
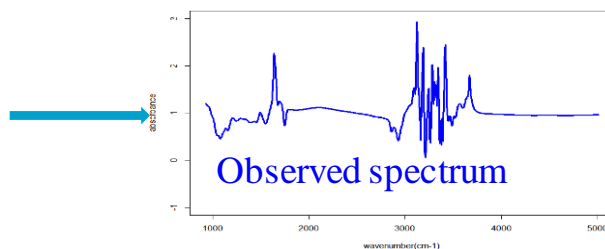
- Phenotypes, e.g. fat composition and raw spectra used



Observed – **Predicted** = residual fat composition

Materials and methods (2)

Spectra have more info than fat (possibly related to wellbeing)



-obtained from solution of mixed model

$$\text{Residual spectrum} = \text{Observed spectrum} - \text{Predicted spectrum}$$

Prediction more reliable:-benefit from multivariate info of spectra

Materials and methods (3)

- Predicted fat composition and predicted spectrum modeled based on:
 - Animal, days in milk, farm*test-day, parity,
- If extra information on health or welfare and FTIR spectra become available in other parts of the DairyCare COST, they may be considered in my work

Thank you for your attention!

