

Detailed work plan

Time: 03.10.2016 – 08.12.2016

Activity measurement gives farmers information about their cows on a daily basis. Detecting any changes from norms will give current information about animals' health and wellbeing.

The hypotheses are that heifers' and cows' activity scores will change after a change of feeding system; and that the more dominant cows will show more agonistic behaviour toward their herdmates after the change in the feeding system. Eight dominant and eight submissive heifers, and eight dominant and eight submissive older cows will be selected by visually observing them two days consecutively for one hour after feed is delivered. Heifers' and cows' behaviour will be manually video recorded two hours after feed is delivered for three days prior to and three days after the group feeding system change.

Video records will be analysed by observing and measuring the length of each behaviour listed (Table 1). Ice Tag activity sensors will be attached to each of the cows' right hind legs. Moreover, social interactions between selected cows and their herdmates will also be recorded and assessed.

Expected outcomes are that older cows will be more dominant and better accustomed to group feed change than heifers. Activities' scores will change after group feeding change, but for older cows this change in activity will last for a shorter period than for the heifers.

Based on conclusions a paper will be written to describe how feed groups and feed group changes affect cows' welfare, based on activity and social interaction measuring.

Adding the results of this study together with my experiment already completed in Estonia will give better insight into cows' behaviour, and appending social interaction to our data will give better understanding of their welfare. This research will be a part of my PhD work.

Table 1. Observed behaviours

Behaviour	Description
Feeding	The cow is stationary with mouth moving chewing food
Standing	The cow is stationary
Walking	
Autogrooming	The cow grooms herself
Allogrooming	The cow grooms another cow
Grooming with brush	The cow is using brush to groom herself
Scaring	The cow is walking or turning her head towards another cow in an aggressive way but not touching the other cow
Nudging	The cow is gently pushing another cow away
Pushing	The cow uses more force to push another cow away