



Animal welfare

Housing and management

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Influence of ad libitum feeding and management on feeding and social behaviour of dairy goats and dairy sheep

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Key words

Dairy goat, dairy sheep, feeding behaviour, social behaviour, feed selection, mixed ration

Aim of the study

To ensure optimal milk production of high quality, all animals of a herd need access to feed of constant quality at any time. Aim of the study was to answer under which conditions (composition of the ration or delivery schedule) this can be achieved with mixed rations and how this influences feeding behaviour, social behaviour, and synchrony of dairy goats and sheep.

Material and methods

The project consisted of three work packages (Wp1-3). In Wp1, an online-survey was distributed to professional Swiss dairy goat/sheep farmers to get an overview of the feeding management in practice. Following, on 12 sheep and 12 goats farms with mixed rations, direct observations were carried out to investigate the feeding and social behavior in relation to time after feed delivery. In Wp2, three experiments were carried out with 24 dairy goats and sheep each to investigate 1) the acceptance of the mixed ration compared to their single components; 2) the influence of cutting length and 3) feed quality on feed sorting in different mixed rations. For these feeding experiments, a device for automatic monitoring of feeding behavior was validated for sheep and goats. In Wp3, it was evaluated on 8 dairy sheep farms with mixed rations, if an increased frequency of feed distribution would decrease synchrony in the herd and agonistic interactions at the feedline.

Results and significance

The feedbacks (n=172) of the online survey revealed that feeding management and the feed rations used vary widely among farms and mixed rations were applied not very often. From the observations on farm, it could be seen that, both for sheep and goats, the occurrence of agonistic interactions between animals during feeding decreased with higher numbers of feeding places per animal and longer periods of time since the feed distribution. Sheep fed more synchronously than goats. The results of the feeding experiments showed that small ruminants clearly prefer feeding on the single components instead on their mixture. They are able to substantially sort mixed feed rations for particle size and protein content within short time after feed delivery even on rations with a short cutting length. Feed sorting varied between mixed rations in relation to their components, time after feed distribution and nutritional value. The monitoring device measured feeding behavior reliably and was applicable on pasture and in the barn for our research purposes. In farming practice, increasing the frequency of feed distribution decreased feed competition but not the number of simultaneously feeding animals in dairy sheep. In conclusion, maintaining the feed quality of a mixed ration throughout the day seems to be a major challenge for the feeding management in dairy sheep and goats.

Publications, posters and presentations

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