

The effect of artificial rearing on the development of sucking behavior, performance and stress reactivity in dairy calves

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Key words

Cattle, dairy calf, cross-sucking, mother-bonded rearing, stress, rumen development, health

Aim of the study

The aim of this thesis was to compare two different artificial and mother-bonded rearing of dairy calves considering sucking behaviour, health, rumen development and stress reactivity.

Material and methods

In three experiments, dairy calves were reared either artificially using either age-dependent or concentrate intake dependent weaning schedules or with restricted or unrestricted contact to the mother, respectively. Sucking behaviour, performance, stress reactivity and rumen development were analysed by behavioural observations, recording of health state and weight gain, a separation as well as a social confrontation test.

Results and significance

Abnormal oral behaviour, e.g. cross-sucking was regularly observed in calves fed via automatic milk feeder but was almost totally eliminated by mother-bonded rearing. Weaning based on concentrate intake reduced cross-sucking in one but not in the other experiment. Cross-sucking was observed to correlate with energy balance of the calves. Calves without contact to their mothers had worse health scores due to a high incidence of diarrhea. However, health status was poor in all experiments revealing need for action in health management in general. Before weaning, weight gain was considerably higher in mother-fed calves.

Artificial rearing does not meet the animals' needs since cross-sucking could not be eliminated and we found evidence for chronic stress in artificially reared calves. Feeding plans should be adapted to calves individually to account for the huge spread of individual development. Irrespective of weaning method, the focus should be the health state of the calf. Systematic health monitoring is needed.

Publications, posters and presentations

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Project 2.05.03

Project duration January 2005 – April 2008