

Changes in feeding behavior of group-housed calves associated with illness



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Introduction

- Rates of mortality and morbidity in milk-fed calves remain high
- Group-housing increases the risk of disease transmission and makes sickness detection difficult
- Changes in feeding behavior recorded by an automated feeder could be useful for the early detection of sick group-housed calves

Materials & methods

- Recorded feeding behavior of group-housed dairy calves up to 21 d of age, fed either high (12 L/d; n=19 calves) or low (6 L/d; n=13 calves) milk rations in 4 different experiments with an automated milk feeder (De Laval CF 1000 CS, and Lely CALM)
- Healthy calves were paired by age and feed level with calves that were diagnosed as sick by daily health checks according to veterinarian or pre-set criteria (SOP for respiratory and digestive diseases)
- Repeated-measures mixed model to compare average daily milk intake (kg), the total number of visits to the milk feeder and the average duration of each visit to the milk feeder (min) between sick and healthy calves

Results & discussion

Type of disease	High milk level (12 L/d)	Low milk level (6 L/d)
Gastrointestinal	18	11
Respiratory	2	7
Gastrointestinal + Respiratory	8	3
Total	28	21



Table 1. Number of sick calves per type of disease and milk feeding level.

Differences between sick and healthy calves within each level of milk fed * P < 0.05, + P < 0.10

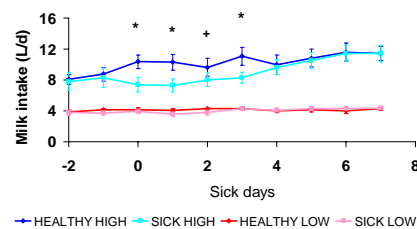


Figure 2. Sick calves fed high levels of milk decreased their milk intake compared to healthy counterparts at the onset of disease while sick calves fed low levels of milk did not differ from low-fed healthy calves.

Differences between sick and healthy calves within each level of milk fed * P < 0.05, + P < 0.10

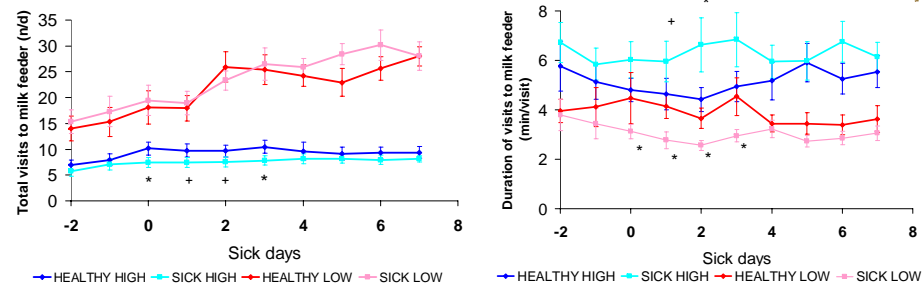


Figure 3. Sick calves fed high levels of milk decreased their frequency of visits to the milk feeder as compared to their healthy counterparts while sick calves fed low levels did not differ from low-fed healthy calves.

Figure 4. Sick calves fed low levels of milk showed a decrease in the duration of each visit to the milk feeder. Sick calves fed high levels of milk showed an increase in the duration of each visit to the milk feeder.

CONCLUSIONS

Changes in feeding behavior recorded by an automated feeder may be useful to identify sick calves and monitor recovery. However, these changes depend on the feeding level of milk:

- 1) Sick high-fed calves show decreases in milk intake and visits to the feeder.
- 2) Sick low-fed calves only show a decrease in the duration of visits to the feeder.
- 3) Sick low-fed calves are more difficult to identify through changes in feeding behavior and their medical treatment may be delayed.

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