

# Longitudinal Slope of the Cubicle for the Dairy Cow

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## Introduction

- Improving hygiene is a major concern in intensive dairy production.
- By altering the longitudinal slopes of the cubicle floors the drainage could be improved and the bedding turnover be increased.
- Cows' position further back in the cubicle due to the increased slope
- This may result in cleaner lying surfaces.
- If the increased slope imply cows lying more diagonal in the cubicles, the effect could be reduced.
- The increased slope could also alter the animals lying behaviour.

## Objectives

To study how an increased longitudinal slope in cubicles, from about 2% to about 7%, influences

- the hygiene of the cubicles,
- the diagonal lying positions of the cows and
- the lying behaviour.



More or less diagonal positions of 2 cows

## Methods

- 13 Swedish Friesian cows in a change- over experiment
- 2 weeks of experimental periods for each slope (2 % and 7 %). Registrations in the 2nd week
- Hygiene: subjective scoring of amount of excreta in cubicle
- Position: determined the x and y position (accuracy 0.1 m) of the top of the withers and where the top of tail connected to the body.
- Behaviour: occupancy rates of lying cows in the cubicles during two 24 hour periods for each treatment

## Results

Increased longitudinal slope (7%) resulted in:

- a better hygiene on the cubicle surface
- that cows were positioned about 5% further to the back of the cubicle
- the diagonal positioning of the body depended on the height at the withers of the cows. Smaller cows lying more diagonally
- that the total resting time did not differ between treatments
- cows seemed to slide backwards in the cubicles

## Conclusions

- Longitudinal slope is important in the design of the cubicle
- The optimal longitudinal slope of cubicles, considering hygiene, position of cows and welfare is suggested to be about 4-5%.