Cow health and welfare in bedded pack dairy barns

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Why search for new housing?

- Research 2003

- Restrictions of many cubicle barns:
  - Alley floors: hard, slippery, wet
  - Cubicle dimensions, lying comfort
Lying down

At pasture:

[Image of a cow grazing on pasture]
Lying down

In the barn (cubicle)
Lying down

In the barn (cubicle)
No obstacles: bedded pack

- Different options to keep top layer dry & clean
Farmers motivations for bedded pack

- Improved cow comfort
- Better longevity (longer productive life)

But: other aspect of sustainability also taken into account

- Environment
- Economy
- Milk quality
  ..
Data collection

- 10 farms with new barn (between 2009 and 2012)
- Impact of heat production on thermoregulation (1 farm)
- Welfare assessments on 3/9 farms: selected parameters
  - Time needed to lie down (seconds)
  - Collisions with housing equipment
  - Integument alterations (hairless patches, swellings, wounds)
- Health, management and culling info from farmers (represent 2013)
Composting bedding: thermoregulation?

- Temperature in composting bedding can become 55°C!
  - Respiration frequency
  - Lying bout lengths
  - Skin temperatures

Conclusion:
No increased risk for heat stress!
Results time needed to lie down

- Quicker lying down (comparable with straw yard)
- For cubicles: large variation between farms
Results integument alterations

observations 2011 (3 farms)

= straw yard
= bedded pack
Collisions with equipment

- In bedded pack no collisions, in cubicle regularly
- → cause of longer duration of lying down?
Udder health

- Mastitis incidence:
  - Large variation
  - Similar to old barn

- Bulk milk SCC:
  - Comparable to cubicle
Antibiotics usage

- Obligatory record keeping in the Netherlands (since 2012)
- Dairy cows: mainly used for dry cow therapy
- Units: Animal Defined Daily Dosage/Year:
  - Target: ≤3 ADDD/Y
  - Only 3 farms apply standard dry cow therapy
Claw health

- Only few farms record lesions ("digiklauw")
- They reported: improvements (less lesions)
- Moreover: minor reason for culling
- Preventive trimming: only 1 farm (with part of herd in cubicle barn) >1*/year
- Footbaths: only one of the farms
- Locomotion scoring in bedded pack difficult
Longevity
Conclusions for bedded pack barns

- Absence of obstacles in lying area contributes to welfare:
  - Quicker getting down and up
  - No collisions
  - Few integument alterations
- Similar udder health with low a.b. usage
- Eased claw care
- Improved longevity?? (needs more time)
Acknowledgements

- Project team members
- Gidi Smolders & Evie Vinken (welfare assessments)
- The participating farmers