
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:



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
- ..

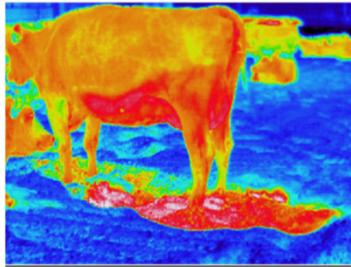
Data collection

- 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)

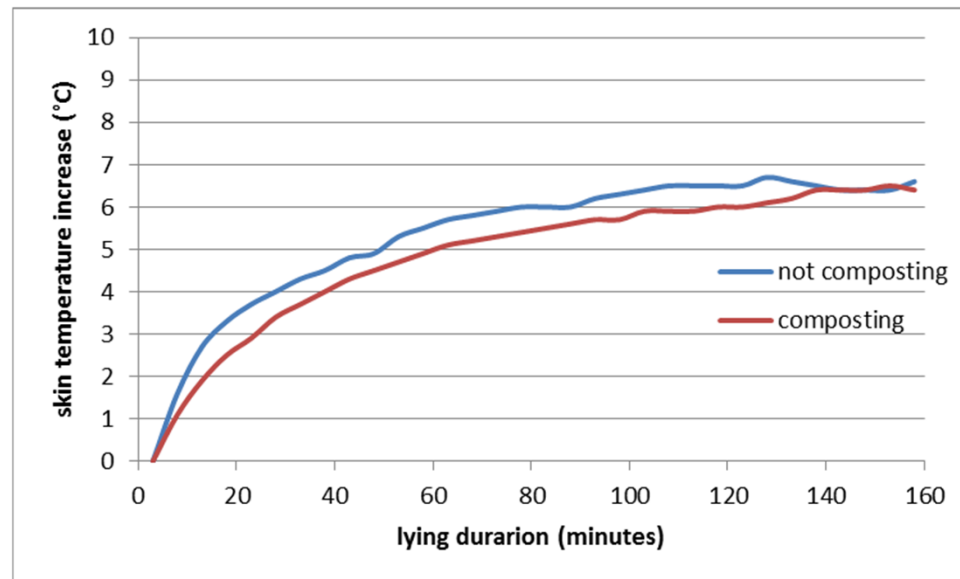


Composting bedding: thermoregulation?

- Temperature in composting bedding can become 55°C!



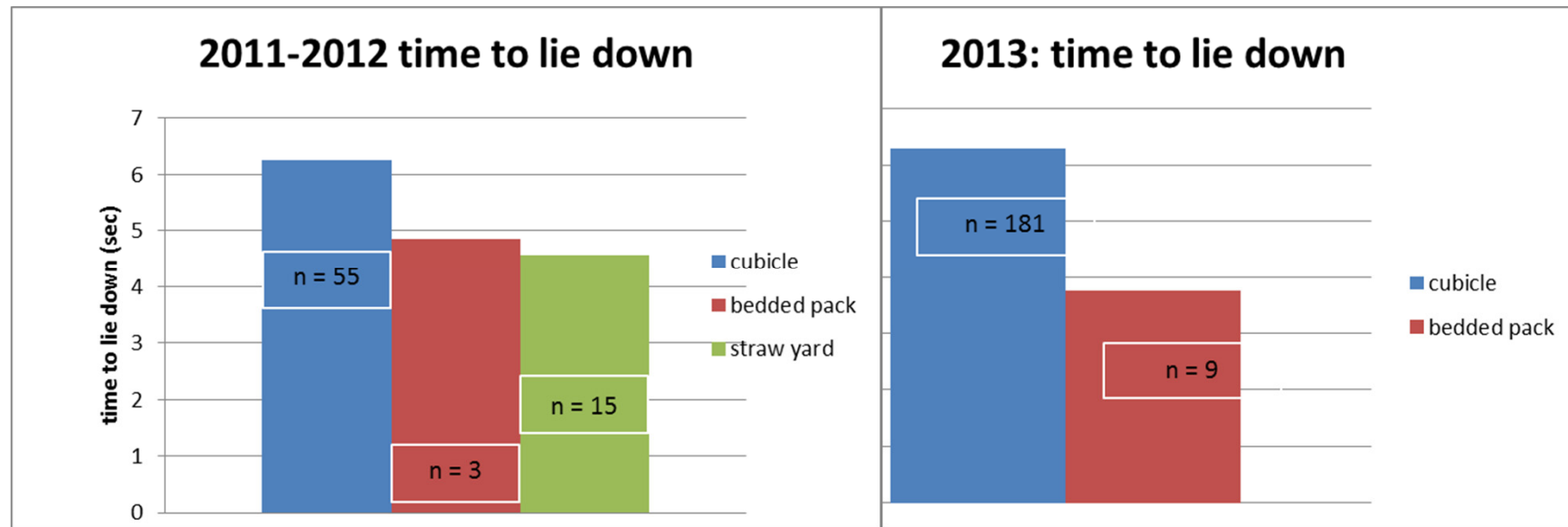
- Respiration frequency
- Lying bout lengths
- Skin temperatures



Conclusion:

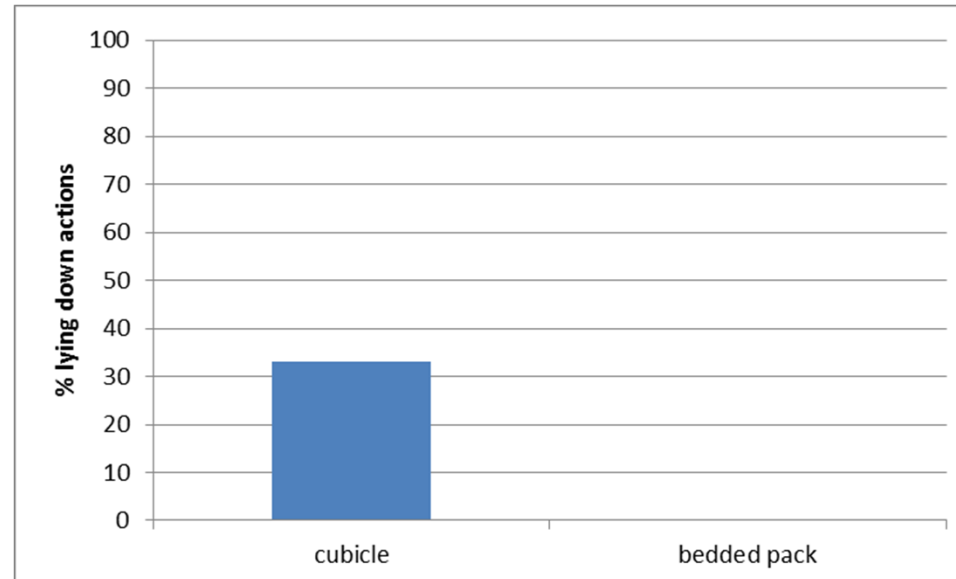
**No increased risk
for heat stress!**

Results time needed to lie down



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

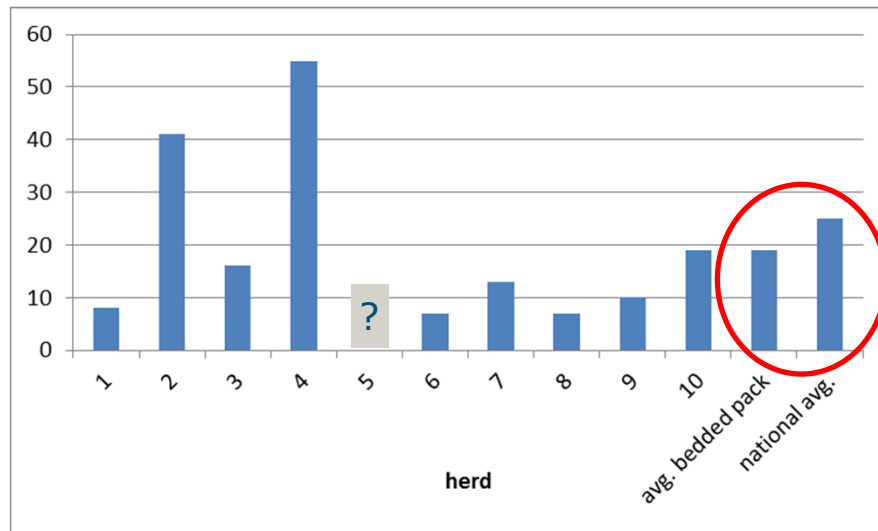
Collisions with equipment



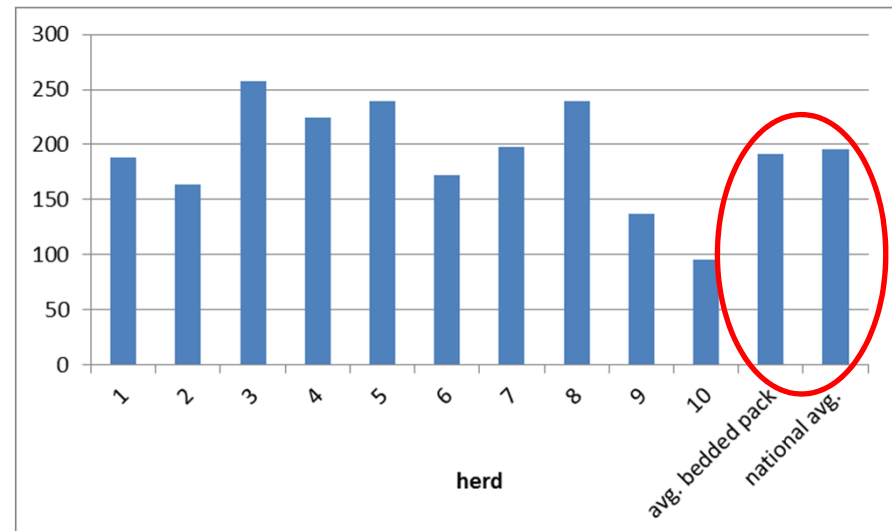
- In bedded pack no collisions, in cubicle regularly
- → cause of longer duration of lying down?

Udder health

■ Mastitis incidence:



■ Bulk milk scc



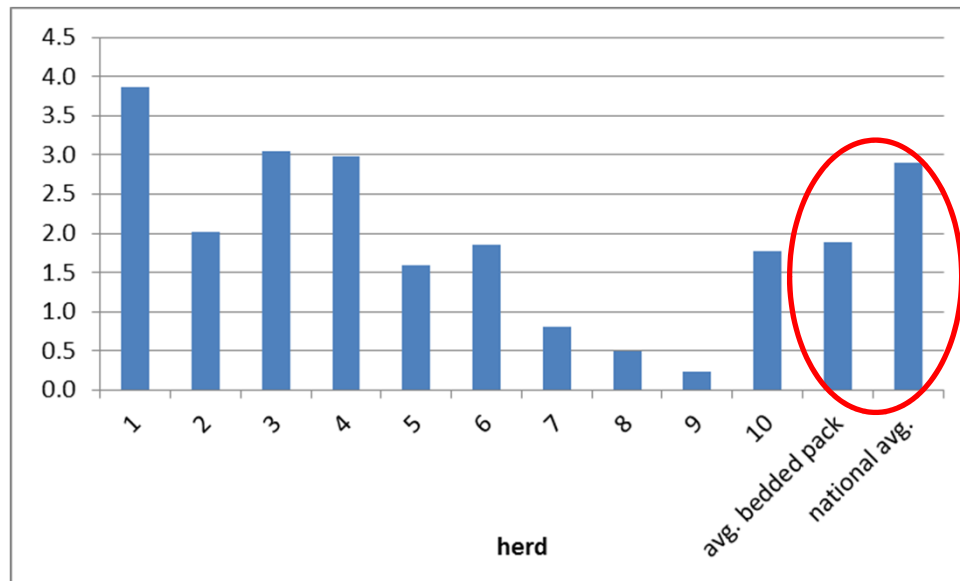
■ Large variation

■ Similar to old barn

■ 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:

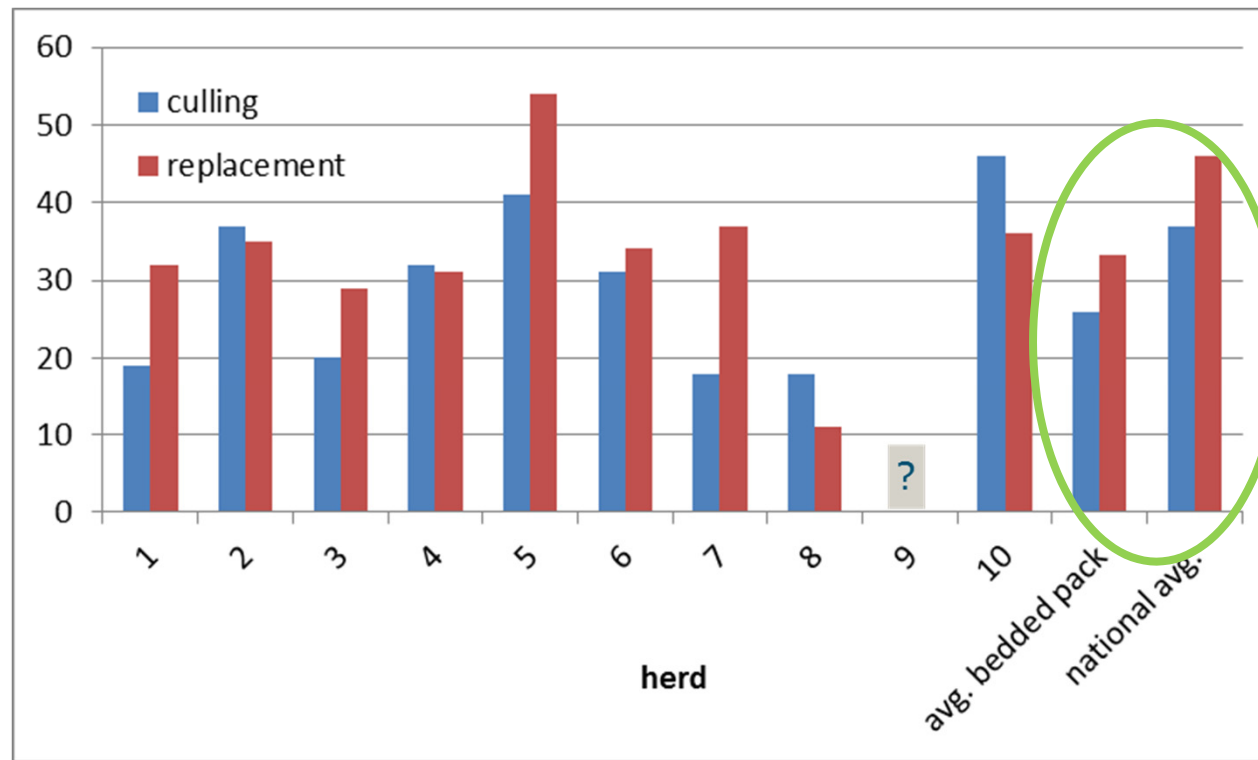


- Target: ≤ 3 ADDD/Y
- Only 3 farms apply standard dry cow therapy

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



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