Beef cattle in a mobile outdoor system during winter – general and excretory behaviour

Lotten Wahlund, K. Lindgren, L. Lidfors & E. Salomon
Background

Grazing cattle is needed to preserve the semi-natural grassland

Weather shelter must be offered to cattle during winter

Traditional systems for winter keeping has become expensive
“Animal-driven sustainable beef cattle production systems”

The objective of the project was to work out a full-scale sustainable beef cattle production system adapted to Swedish winter climate

With potential to

• get full cost coverage including buildings and labour
• promote good animal welfare
• reduce nutrient losses
• promote good working environment
The aim was to...

- Investigate behaviour of 17 heifers in relation to their use of resources
- Investigate where manure and urine were dropped
The mobile system

The idea

• Part of crop rotation

• Mobile weather shelter

• Mobile feed & living area
Material

This study

• Arable grassland

• 17 pregnant beef cattle heifers

• 4 weeks per pen

• 750-2250 m²
Method

• Commercial farm in Sweden, February – March

• Behaviour studies during day-time (7am – 5pm)

• 10 h per week for 6 weeks

• Every 15 minutes
  – Number of heifers in each visually sub-area
  – Type of behavior

• All defecation and urinations was recorded on a map over the pen (7am -5pm)
How was the behaviour divided?

- Lie: 27%
- Stand: 25%
- Eat: 39%
- Drink: 1%
- Move: 3%
- Other: 5%
Visually classification of pen (sub-area)
What behaviour in what sub-area?

![Bar graph showing percentage share of behaviour in different sub-areas.](image-url)
Heifers per sub-area

- Feed & living area: 51%
- Tent: 42%
- Water: 4%
- Entrance: 2%
- Synthetic mat: 1%
Spreading of manure & urine

18% in Tent

66% in Feed & living area
Heifers per sub-area vs. spreading of manure and urine

- Tent
- Entrance
- Water
- Feed & living area
- Synthetic mat

Heifers in sub-area vs. Manure & Urine
Conclusion

• The results indicate that in this case-study all heifers in this system had unrestrained access to weather shelter and feed

• By moving feed-racks weekly defecation and urination were spread reasonable evenly over pasture, without point-loads and decreased risk of plant nutrient losses
Thank you!

Lotten.wahlund@jti.se