



SCIENCE AND
EDUCATION **FOR**
SUSTAINABLE
LIFE

Cow and calf together – a possibility for modern dairy farming?

Sigrid Agenäs

Professor in management of dairy cows

Swedish University of Agricultural Sciences



Cow and calf together – a possibility for modern dairy farming?

Sigrid Agenäs

Professor in management of dairy cows

Swedish University of Agricultural Sciences

Hanna Eriksson, Daiana De Oliveira

Carlos Hernandez, Anders Herlin

Emma Ternman (Denmark)

Sabine Ferneborg (Norway)

Rupert Bruckmaier (Switzerland)

Peter Krawczel (USA)



Early separation has low support among consumers

- For example Robbins et al., 2016; Vanhonacker et al., 2014; Kendall et al., 2006; Busch et al., 2017; Hötzel et al., 2017



What Difference Does a Visit Make? Changes in Animal Welfare Perceptions after Interested Citizens Tour a Dairy Farm

Beth Ann Ventura¹, Marina A. G. von Keyserlingk¹, Hannah Wittman², Daniel M. Weary^{1*}

PLOS ONE | DOI:10.1371/journal.pone.0154733 May 31, 2016

Food geeks made a one day visit to a dairy farm. Knowledge and attitude were tested before and after the visit.



What Difference Does a Visit Make? Changes in Animal Welfare Perceptions after Interested Citizens Tour a Dairy Farm

Beth Ann Ventura¹, Marina A. G. von Keyserlingk¹, Hannah Wittman², Daniel M. Weary^{1*}

PLOS ONE | DOI:10.1371/journal.pone.0154733 May 31, 2016

Food geeks made a one day visit to a dairy farm. Knowledge and attitude were tested before and after the visit.

- 1 in 4 had their opinion that cows live a good life confirmed
- 1 in 3 felt that the conditions for the animals was worse than they thought
- Concerns for feed, water and harsh handling were dismissed
- Visitors were made aware of zero grazing and the early separation between cow and calf



Early separation has low support among consumers

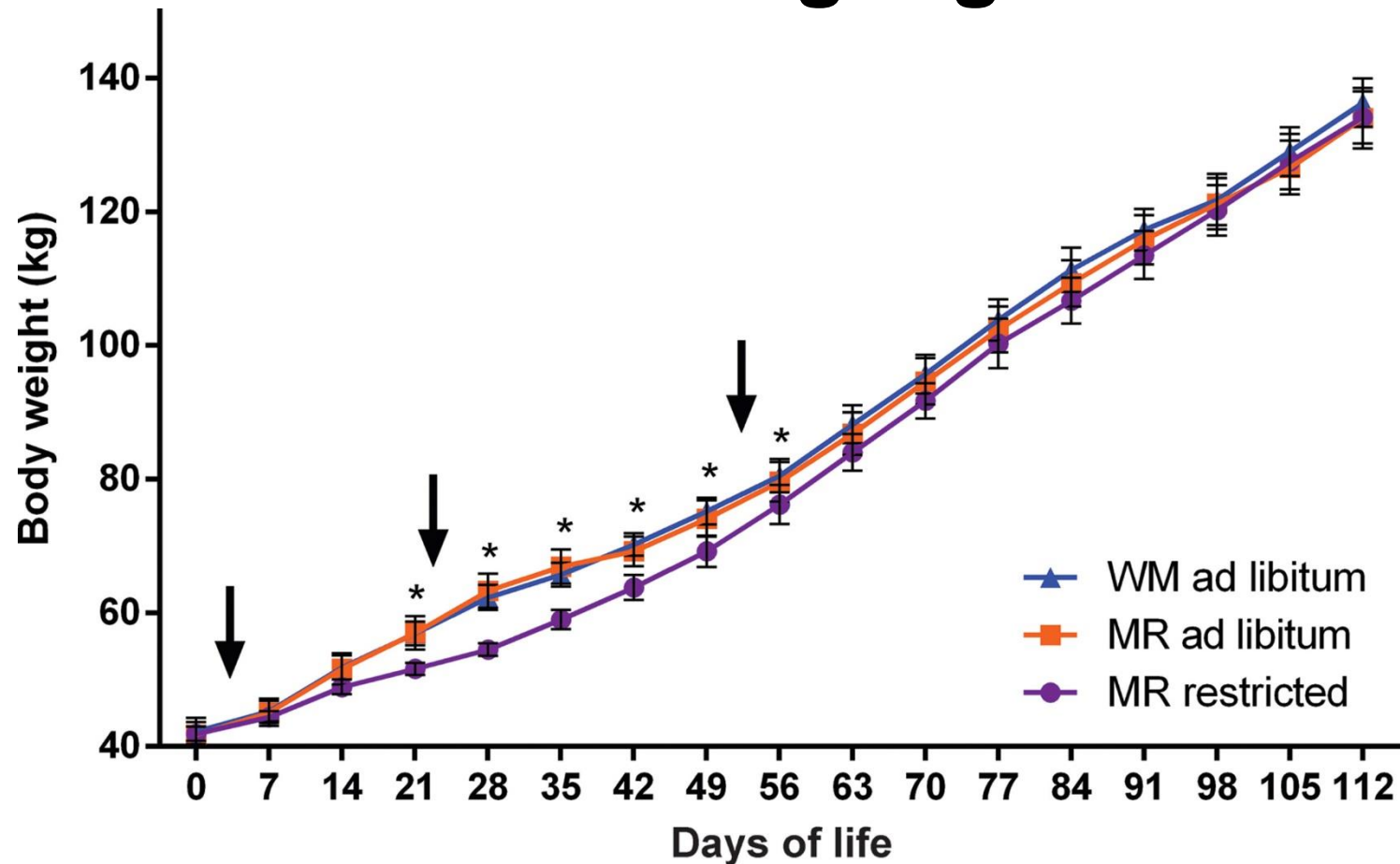
- For example Robbins et al., 2016; Vanhonacker et al., 2014; Kendall et al., 2006; Busch et al., 2017; Hötzel et al., 2017

Calf growth and health improves with high milk intake

- For example Rosenberger et al., 2017; Kenéz et al., 2018



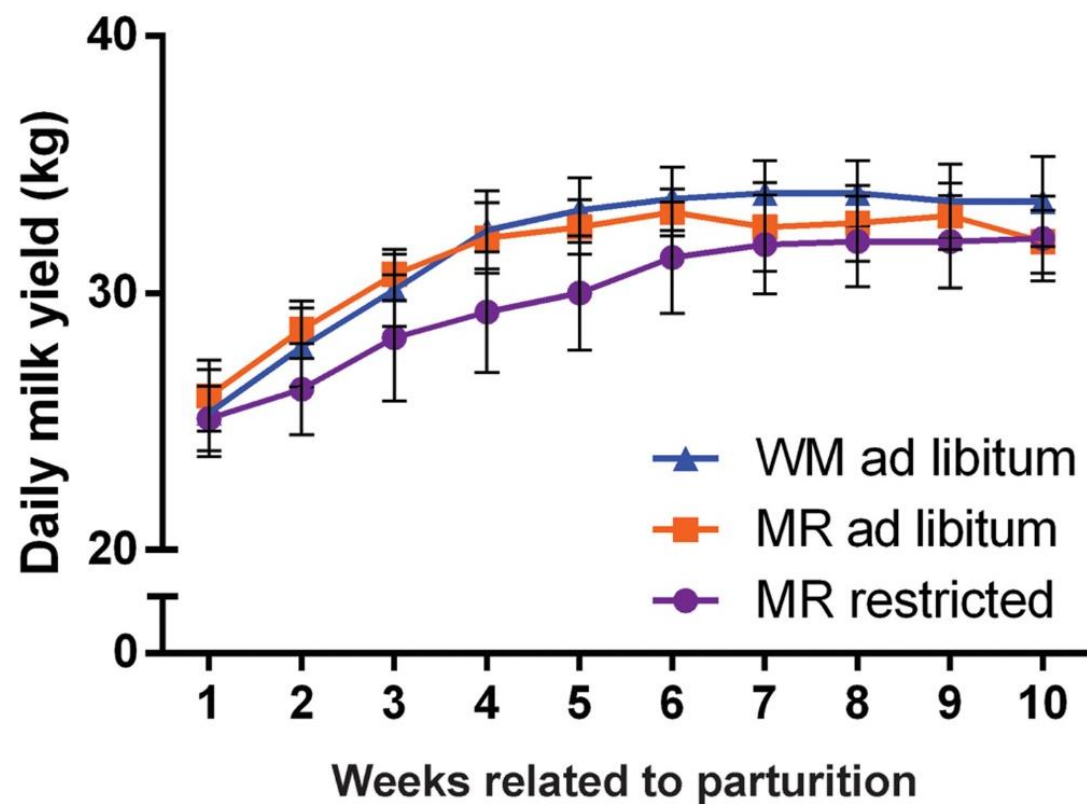
Effects on weight gain in early life



Kenéz et al 2018 JDS



Effects of early nutrition on milk yield in 1st lactation



Kenéz et al 2018 JDS



Outdoor calving
2-3 days in individual pen

Indoor and outdoor
wk 1-6

"Calf creep"
and "contact area"

24 → 12 h access to
contact area

Separation at 16 weeks

Holstein and
Swedish Red



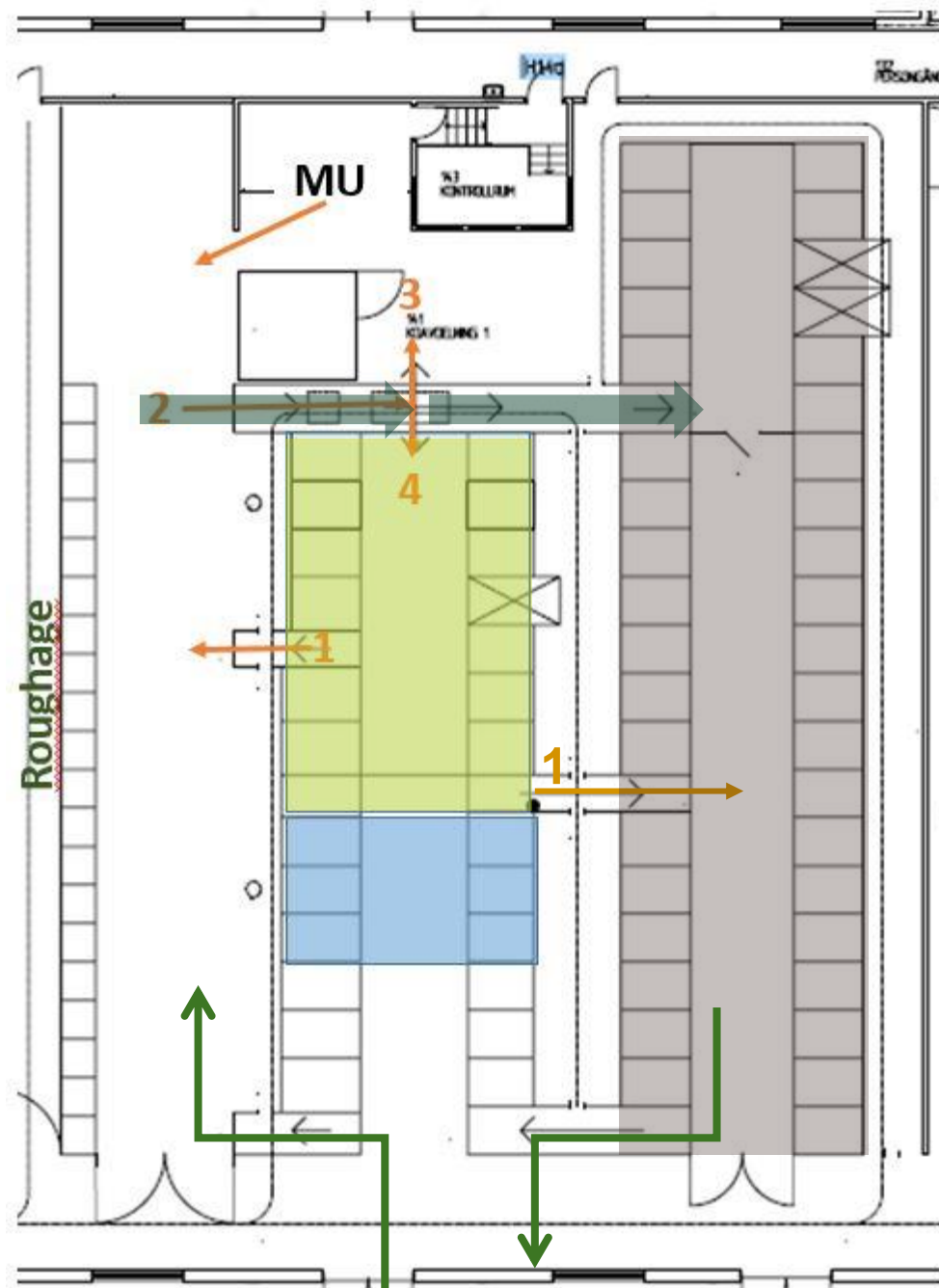






←100 meters to the VMS-unit





Milkings/day wk 1-3

Outdoor: 1.8 ± 0.7

Indoor: 2.7 ± 0.3









Indoor calf creep



Data collection

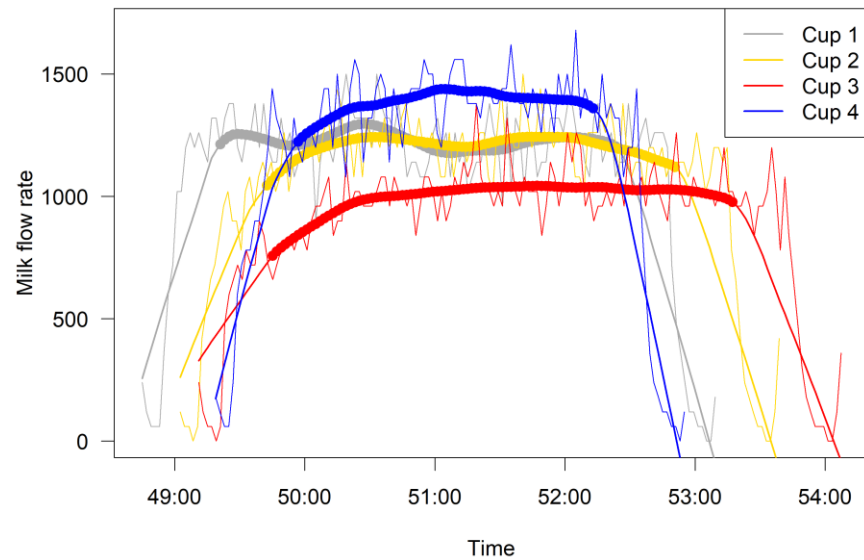
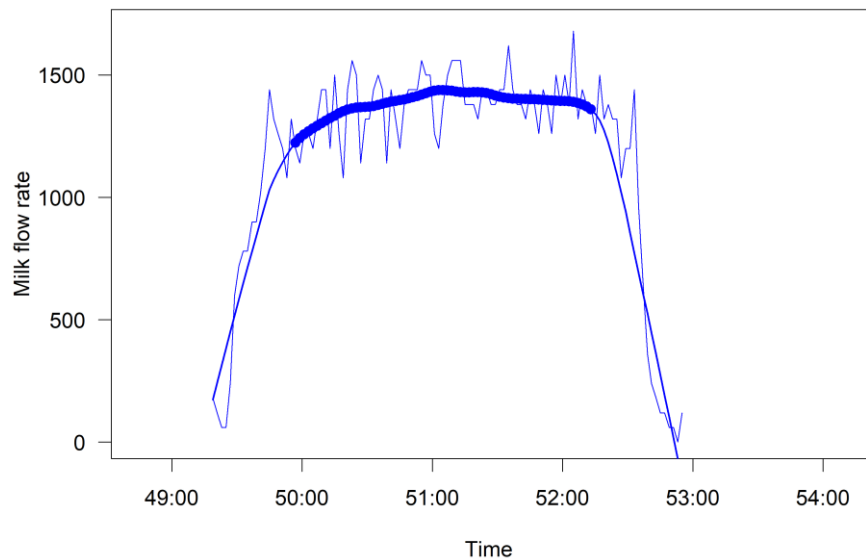
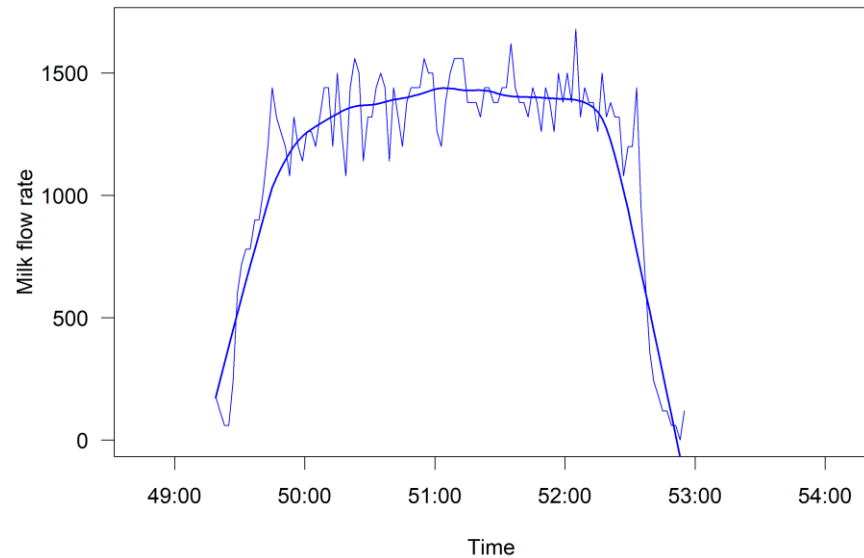
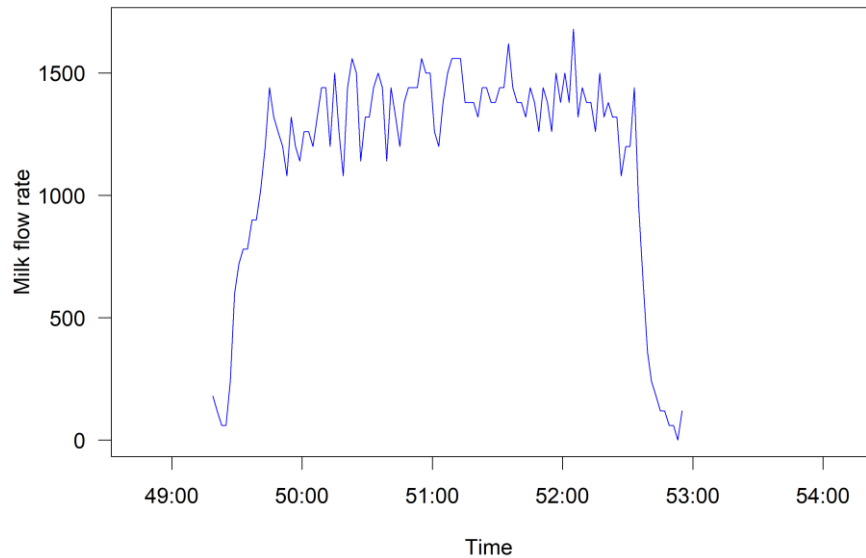
- Growth rate, milk yield, health
- Energy balance
- Activity (IceQubes and Heatime Pro+)
- Oestrus (Heatime Pro+ and milk progesteron)
- Behaviour (video and direct observations)
- Telomer length
- Milk flow



Milk flow

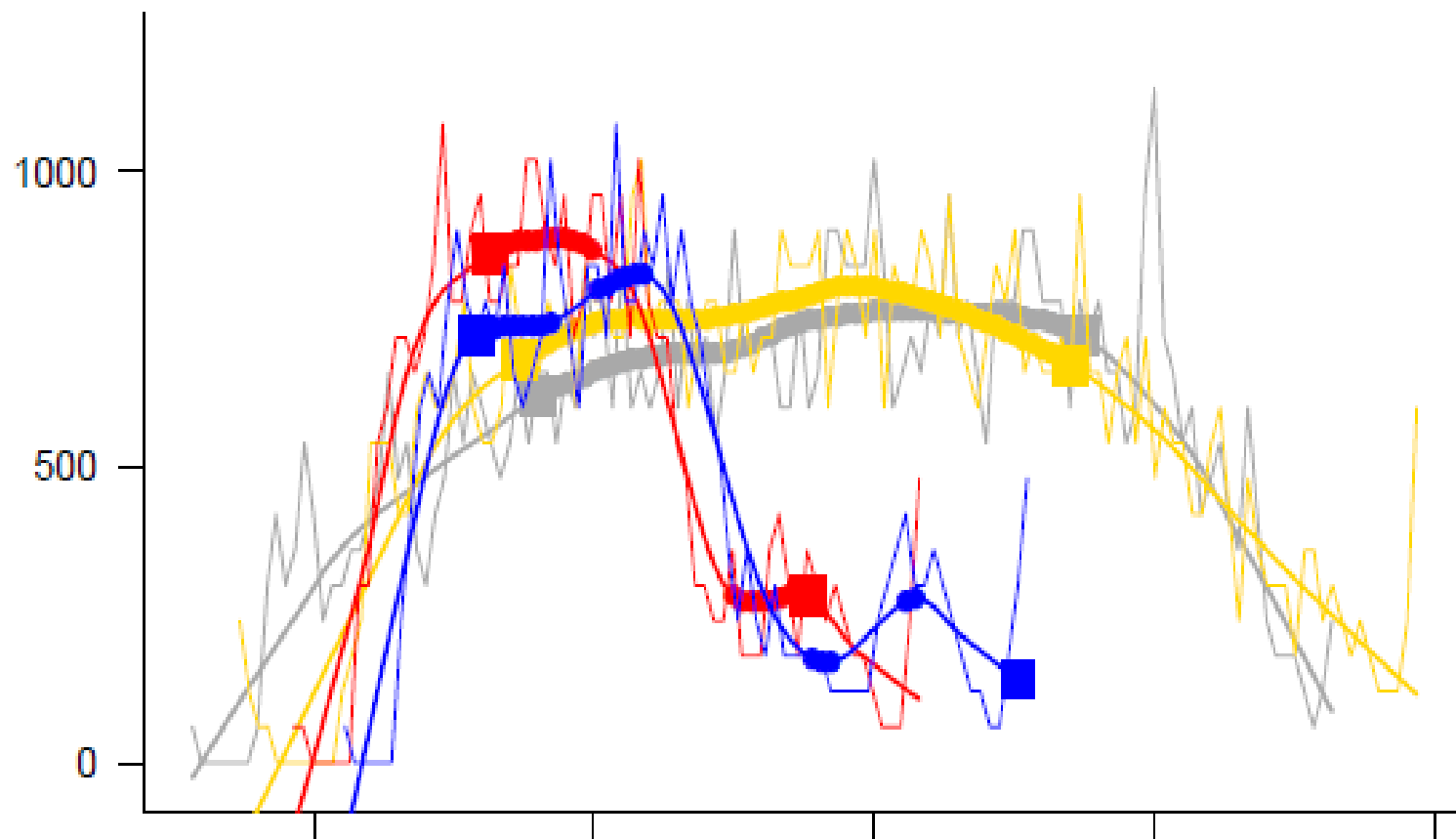


Milk flow



Mikhail Churakov

Milk flow



Results in week 7

	Treatment	Control
Calf growth	1.3±0.9 kg	0.9±0.2 kg
Milk yield	16±8 kg	32±10 kg

Calf and udder health – good so far
Work safety – one risk situation
Calf behaviour – very social





Acknowledgement

Formas (Swedish research council)

The **Seydlitz MP bolagen** foundation

Kjell and Märta Beijer's Foundation

The Beijer Lab for Animal Science at SLU

Contact

Sigrid Agenäs

+46(0)18-671633

sigrid.agenas@slu.se

www.slu.se/cv/sigrid-agenas



Acknowledgement

Formas (Swedish research council)

The **Seydlitz MP bolagen** foundation

Kjell and Märta Beijer's Foundation

The Beijer Lab for Animal Science at SLU

David and Wilma Finlay

Contact

Sigrid Agenäs

+46(0)18-671633

sigrid.agenas@slu.se

www.slu.se/cv/sigrid-agenas

Time – Routines - Patience



SCIENCE AND EDUCATION **SUSTAINABLE FOR LIFE**

IceQube by IceRobotics

Standing time
= vertical sensor

Lying bouts
= time between sensor
changing from vertical
to horizontal and back



Step count
= number of times the
cow lifts her leg

Lying time
= horizontal sensor



SCR Heatime® Pro+



SCR Heatime® Pro+

- Produced by SCR/Allflex
- Rumination time and heat detection
- Tags send data to antenna by WiFi
- Calibrates to the individual
- Tags can store data for 24 hrs
- Tags last for 3 years
- Smartphone login
- Raw data available for us

