



# Faculty of Agricultural and Nutritional Science

C | A | U

Christian-Albrechts-University Kiel  
Institute of Animal Breeding and Husbandry

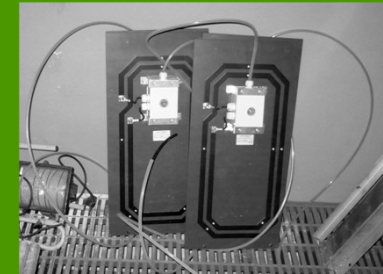
## Reproductive traits, feed intake and condition of group and single housed lactating sows

**Anna-Lena Bohnenkamp<sup>1</sup>, Imke Traulsen<sup>1</sup>,  
Christian Meyer<sup>2</sup>, Karin Müller<sup>2</sup>, Joachim Krieter<sup>1</sup>**

<sup>1</sup>Institute of Animal Breeding and Husbandry  
Christian-Albrechts-University of Kiel, D-24098 Kiel

<sup>2</sup>Chamber of Agriculture Schleswig-Holstein,  
D-24327 Blekendorf

contact: [abohnenkamp@tierzucht.uni-kiel.de](mailto:abohnenkamp@tierzucht.uni-kiel.de)





# Introduction

- **Gestating area: group housing (2013)**
- **Service area & farrowing system:  
single housing favored**
- **Points of discussion in farrowing systems**
  - ⇒ Piglet losses
  - ⇒ Safety at work
  - ⇒ Labor requirement
  - ⇒ Capital costs



# Introduction

- **Animal welfare: public pressure raise up**
  - ⇒ „Consideration of allowing natural behavior in the modern animal housing“
- **Consequences for keeping sows**
  - ⇒ Critic of using crates
  - ⇒ More social contacts
  - ⇒ Expanded free moving space



# Aim of the study

**Comparison of reproductive traits, feed intake and body condition of lactating sows from group or conventional single housing**



# Material and Methods

## Animal and housing

- Data collection on the LVZ Futterkamp
- 124 cross-bred sows in 11 batches
- Kept in the farrowing area 1 week before farrowing
- Length of lactation: 26 days
- Given feeding curve for gilts and sows

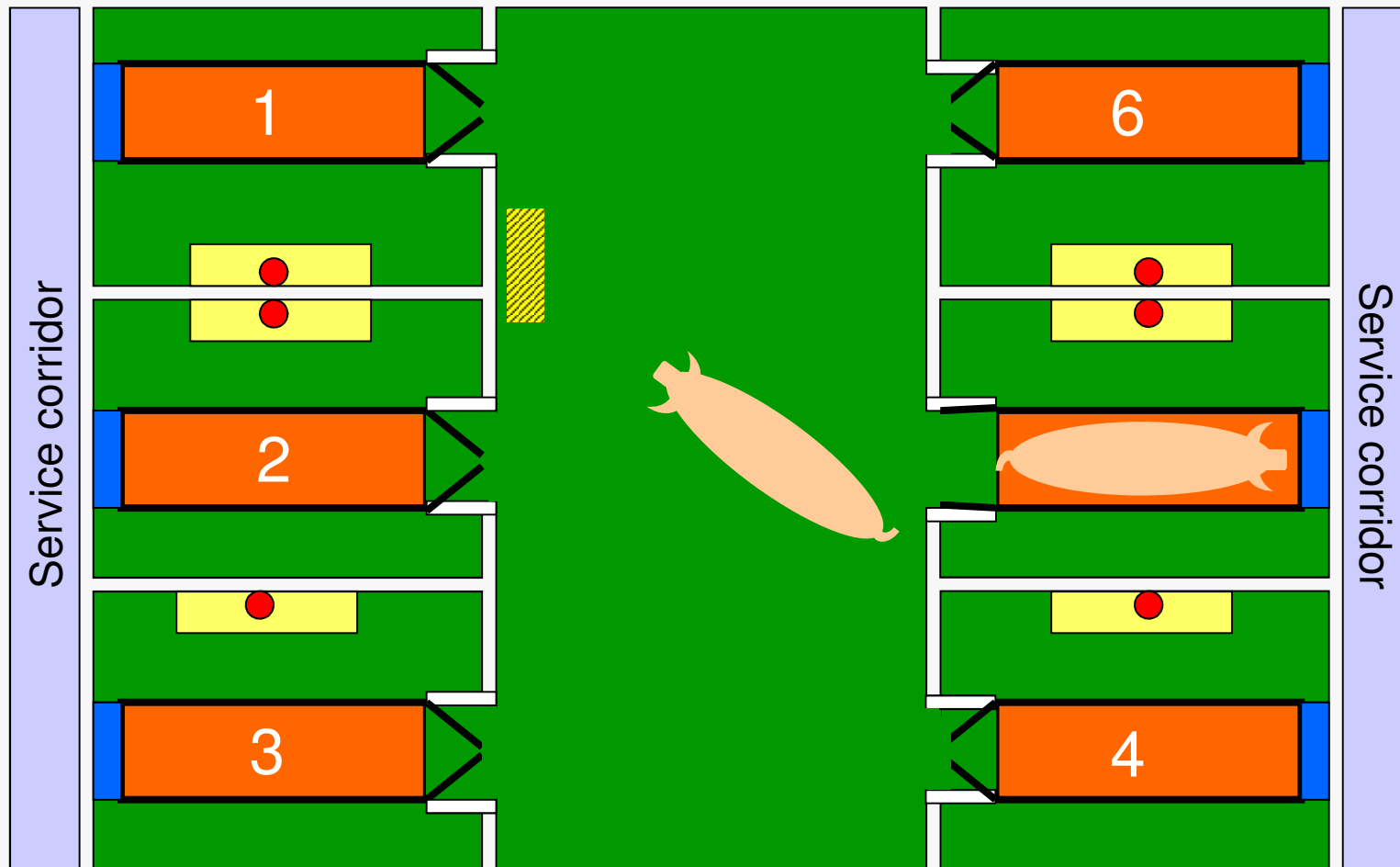


Landwirtschafts-  
kammer  
Schleswig-Holstein



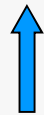
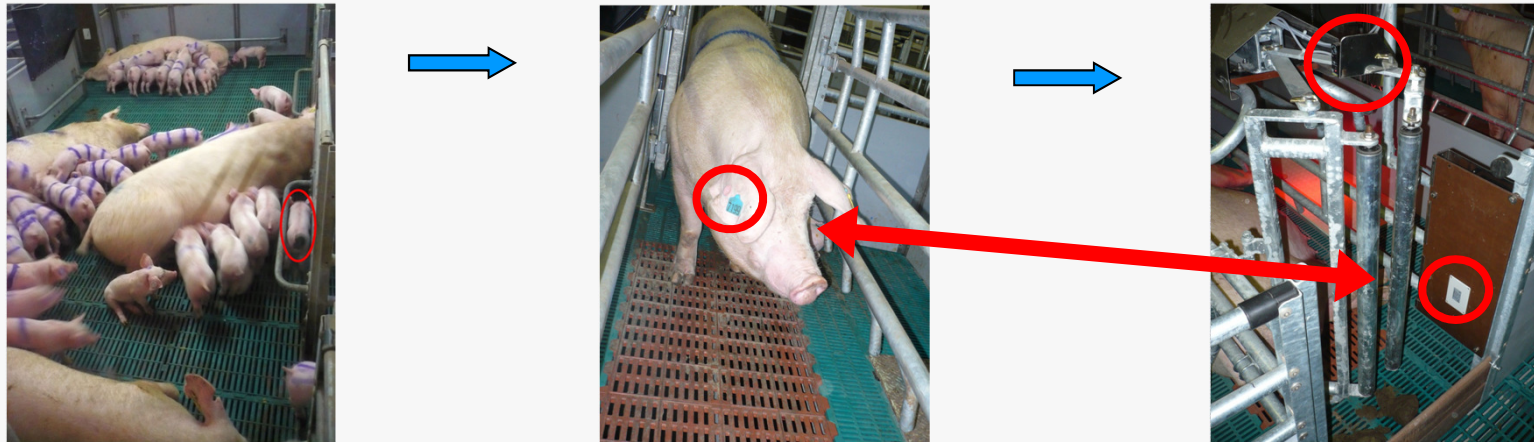
# Material and Methods

## Schematic view: group housing





# Material and Methods



**Principle of function**





# Material and Methods

## Record traits

- Number of piglets born alive, stillborn, mumified, fostered and weaned
- Piglet losses
- Individual weights (birth, weaning)
- Daily feed intake of the sows
- Body condition & back fat (before farrowing/ at weaning)
  - BCS: 1 (thin), 1.25, ..., 4.75, 5 (fat)





# Results

## Least-Square Means (LSM) of reproductive traits from sows in group-/ single housing (GH, SH)

	GH (N=51) LSM*	SH (N=52) LSM*
Number of piglets born alive/ litter	14.4	14.6
Individual birth weight (kg)	1.46	1.40
Number of piglet losses/ litter	2.2	2.4
Number of weaned piglets / litter	11.4	11.4
Individual weaning weight (kg)	7.6 <sup>a</sup>	8.1 <sup>b</sup>

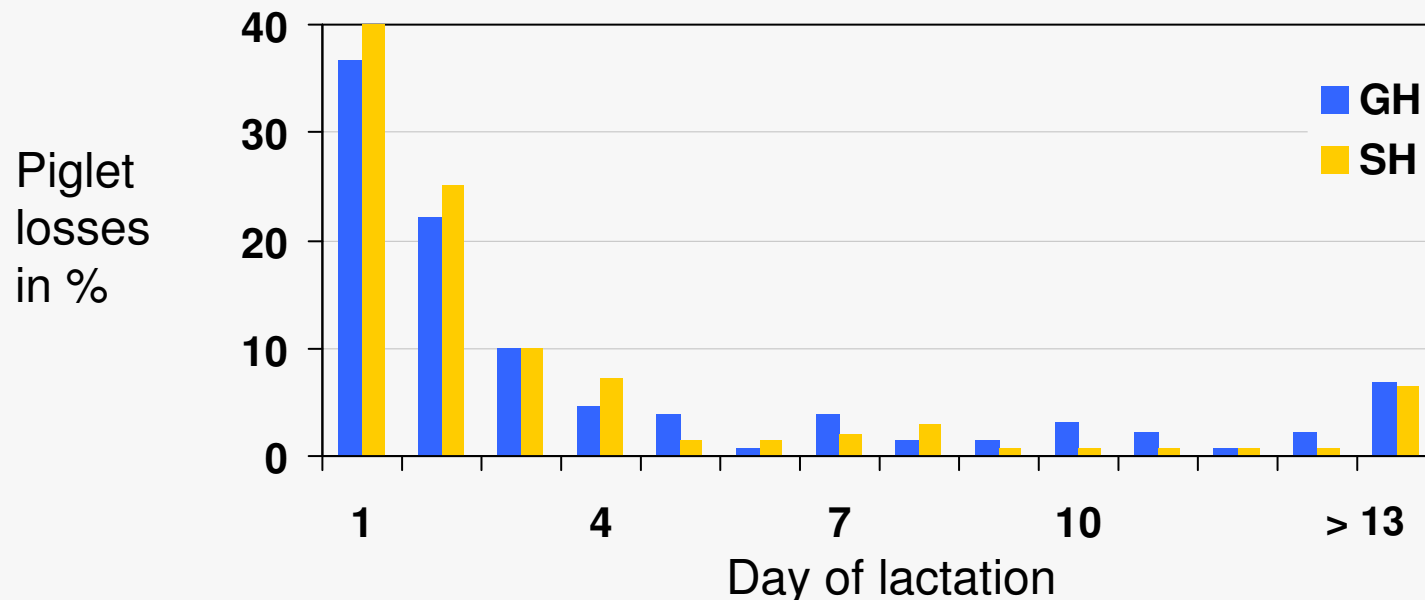
\* Values with different characters are significant different ( $p < 0.05$ )



# Results

## Piglet losses in group- and single housing (GH, SH)

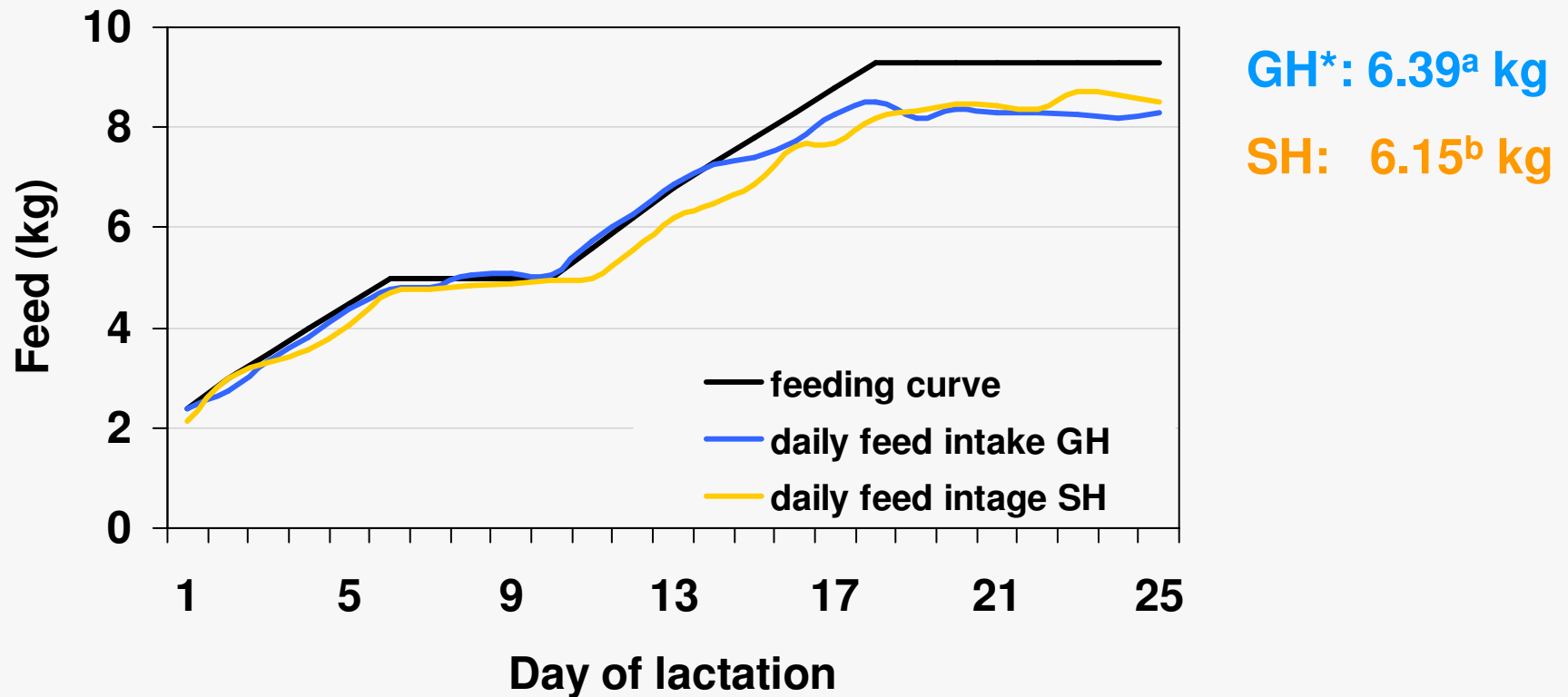
- 72 % of all piglet losses during the first 3 days p.p.
- GH: 14.7 % (half crushed); SH:15.7 % (third crushed)
- 12 piglets of 62 litters crushed in the running area
- Pens in single housing wider: 20 cm





# Results

## Daily feed intake of sows during lactation in dependence of a given feeding curve

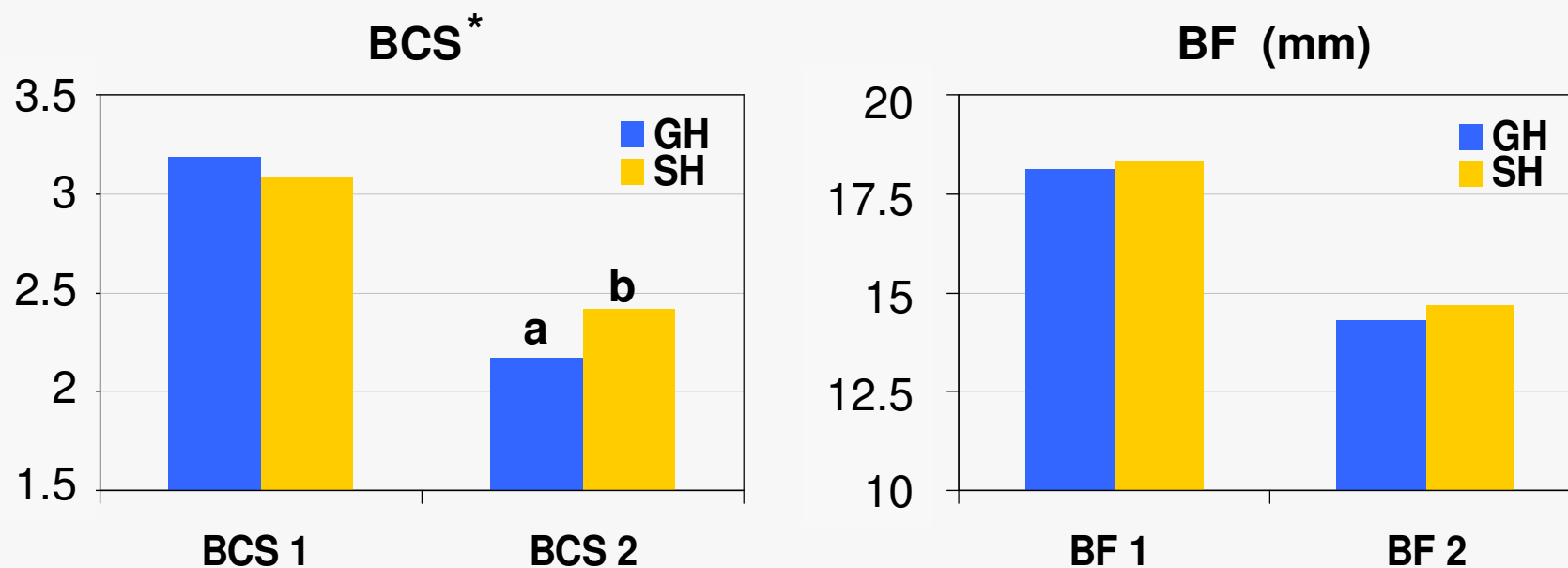


\* Values with different characters are significant different ( $p < 0.05$ )



# Results

**Body condition (BCS) and back fat (BF) of sows in group and single housing (GH, SH) before farrowing and at weaning (1, 2)**



\* Values with different characters are significant different ( $p < 0.05$ )



# Conclusion

- **Reproductive traits: no significant advantages in the group housing**
  - 500 g lower weaning weights ( $p < 0.05$ )
- **Very low frequency of crushed piglets in the running area**
- **Higher energy requirement for sows in group housing**
- **Group housing less appropriate for gilts**



# Thank you



## for your attention!

**This work was financially supported by the German Federal Ministry of Food, Agriculture and Consumer Protection (BMELV) through the Federal Agency for Agriculture and Nutrition (BLE), grant number 2807UM005**