Faculty of Agricultural and Nutritional Science

Christian-Albrechts-Universität
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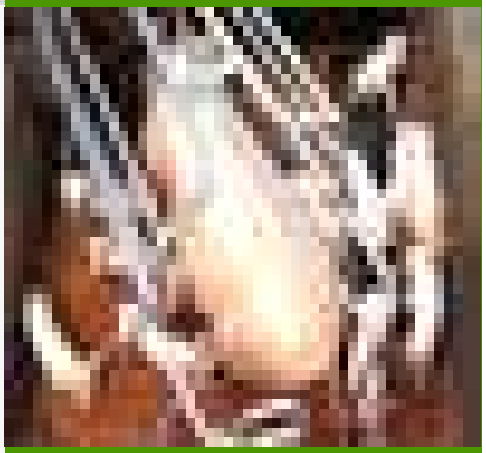
Relationship between behaviour of sows and piglet losses



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Introduction

Pig production:

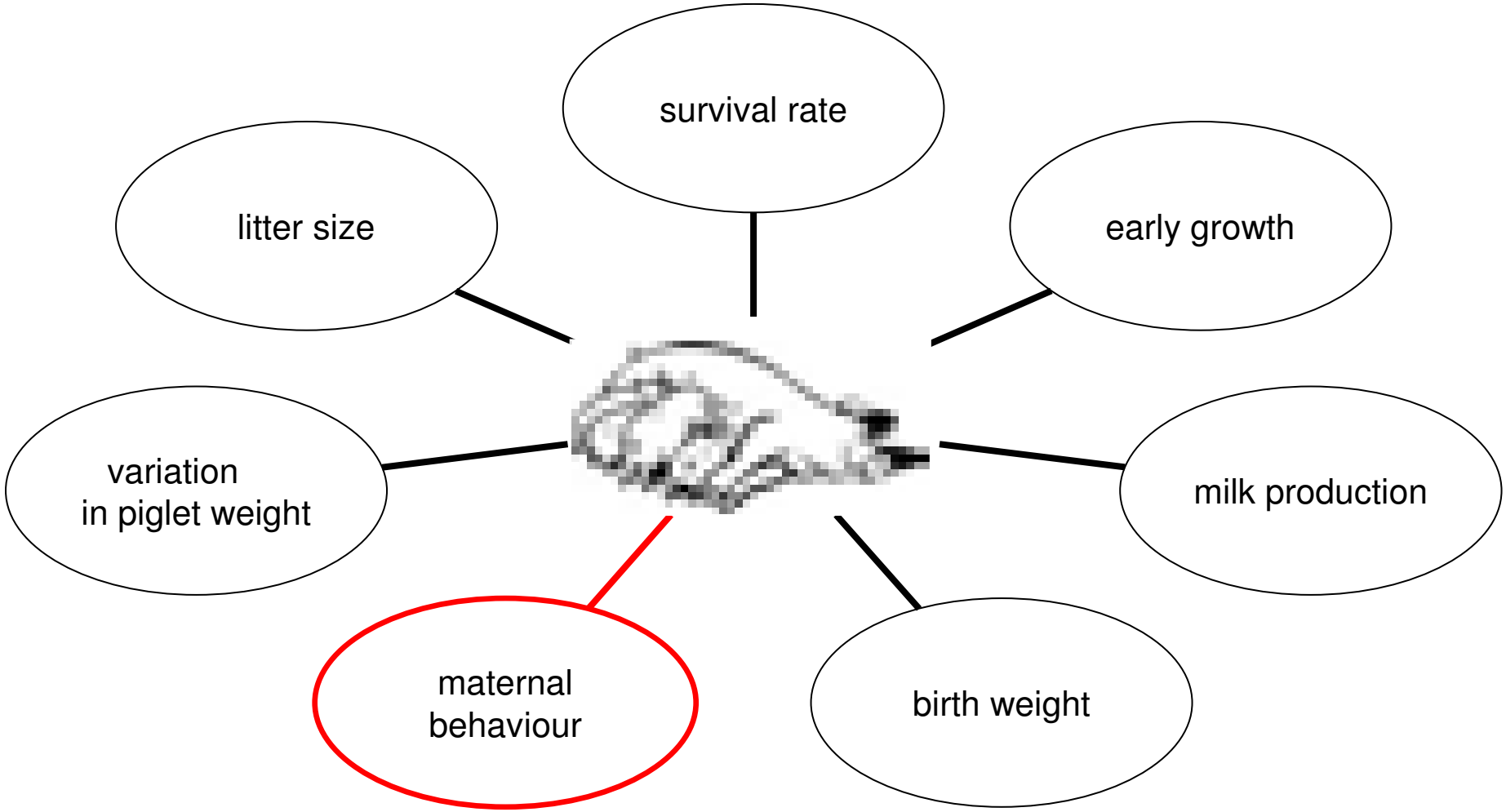
improve reproduction =

number of piglets weaned

↳ minimise piglet losses

↳ improve maternal ability of sows

Maternal ability



Crushing ⟺ Maternal behaviour

Data

- nucleus herd from the breeding company ‚Hülsenberger Zuchtschweine‘
- 386 Landrace sows with 438 pure-bred litters
- conventional farrowing crates
  (2.74 m x 1.75 m)
- feeding one time per day

Data

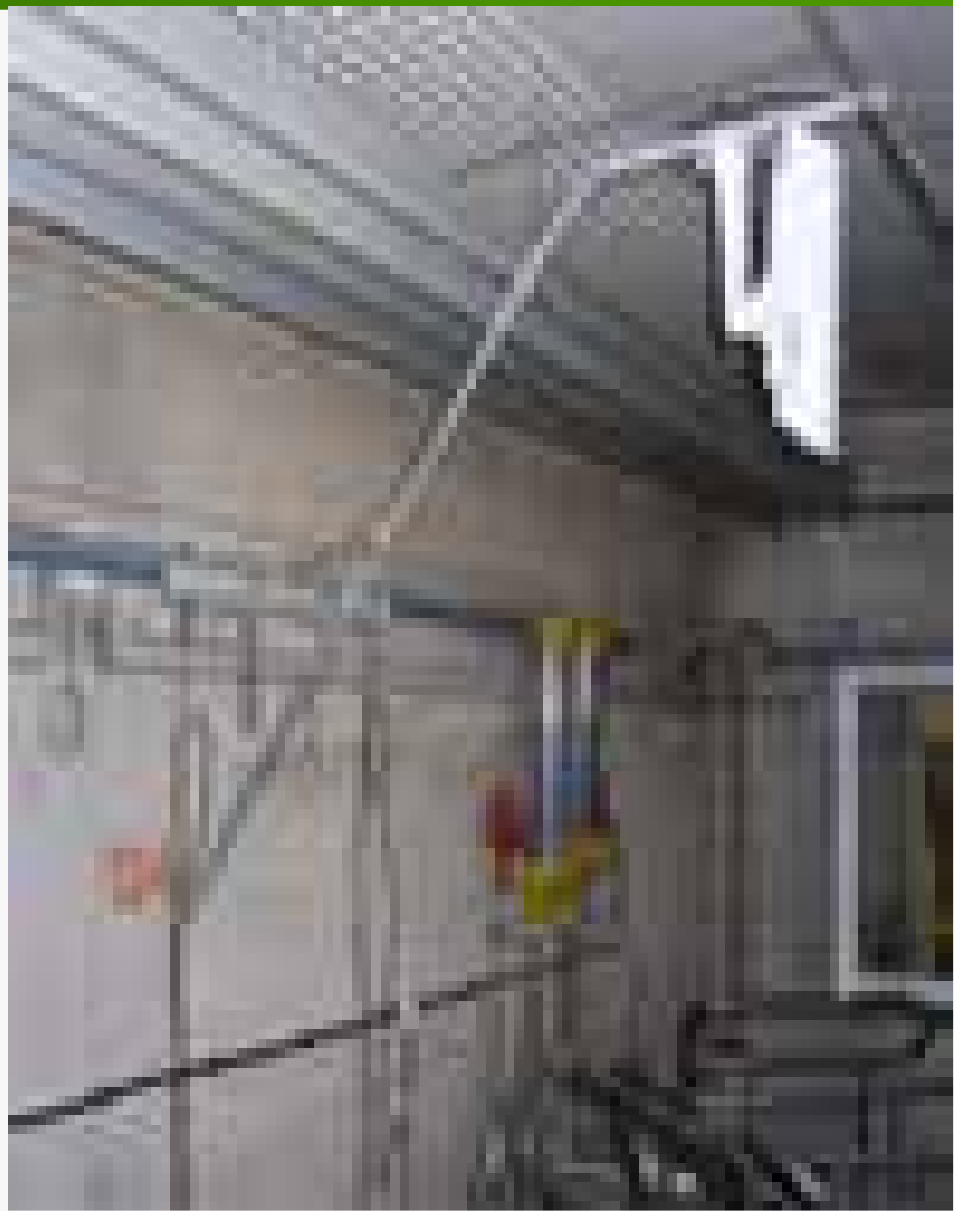
Means, standard deviation (SD), minimum (Min) and maximum (Max) of the reproduction traits

Trait	Unit	Mean	SD	Min	Max
piglets born in total	piglets	11.04	3.44	1.00	20.00
piglets born alive	piglets	10.36	3.27	1.00	18.00
piglets stillborn	piglets	0.68	1.09	0.00	6.00
piglets crushed	piglets	1.07	1.23	0.00	6.00

Data

- video recording continously

  12 hours a. p. until 48 hours p. p.
- 60 hours per sow
- total video documentation of 26,280 hours



Data

base population

↓

randomly sampled

↓

block data design (40 sows)

↓

different matching criteria

- number of piglets born alive
- parities
- farrowing date (season)

↙ ↘

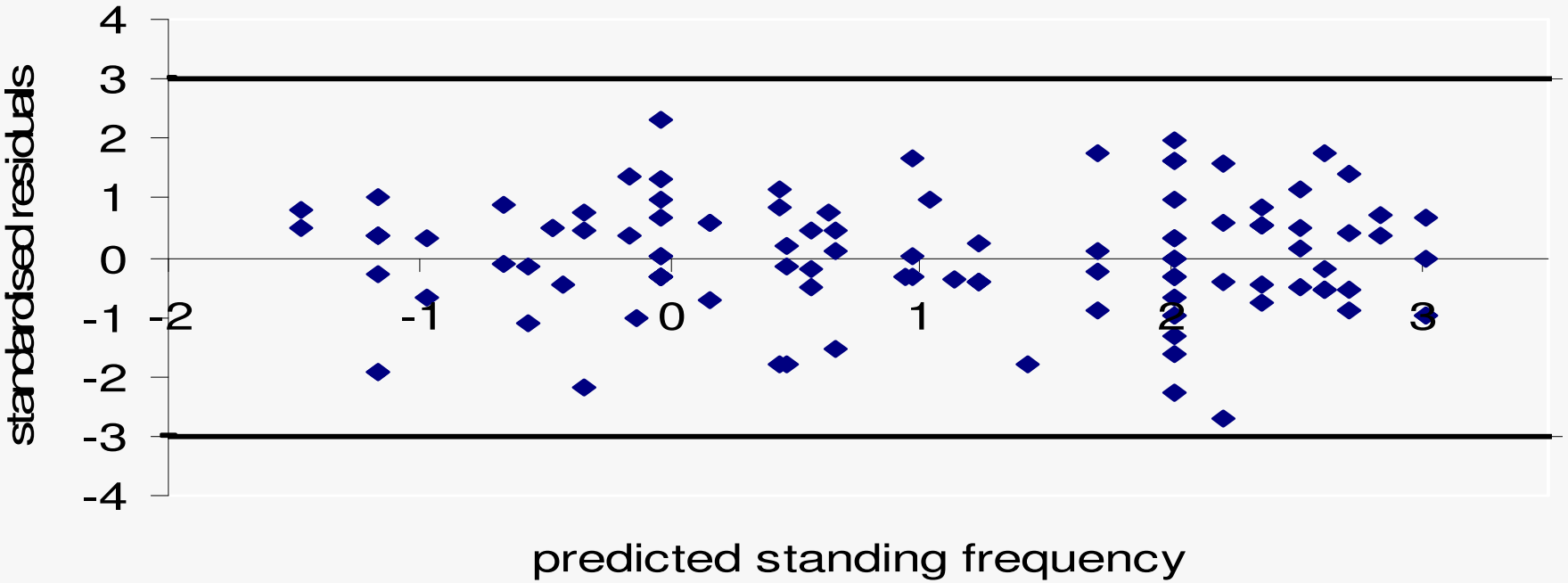
Crusher (C) Non-Crusher (NC)

Data

Trait	Definition
nosing	nose-to-nose contact of sows with or close to piglets
standing	upright position on extended legs
rolling movements	moving from lying on one site to lying on the other site
nest building	continously touching floor with snout

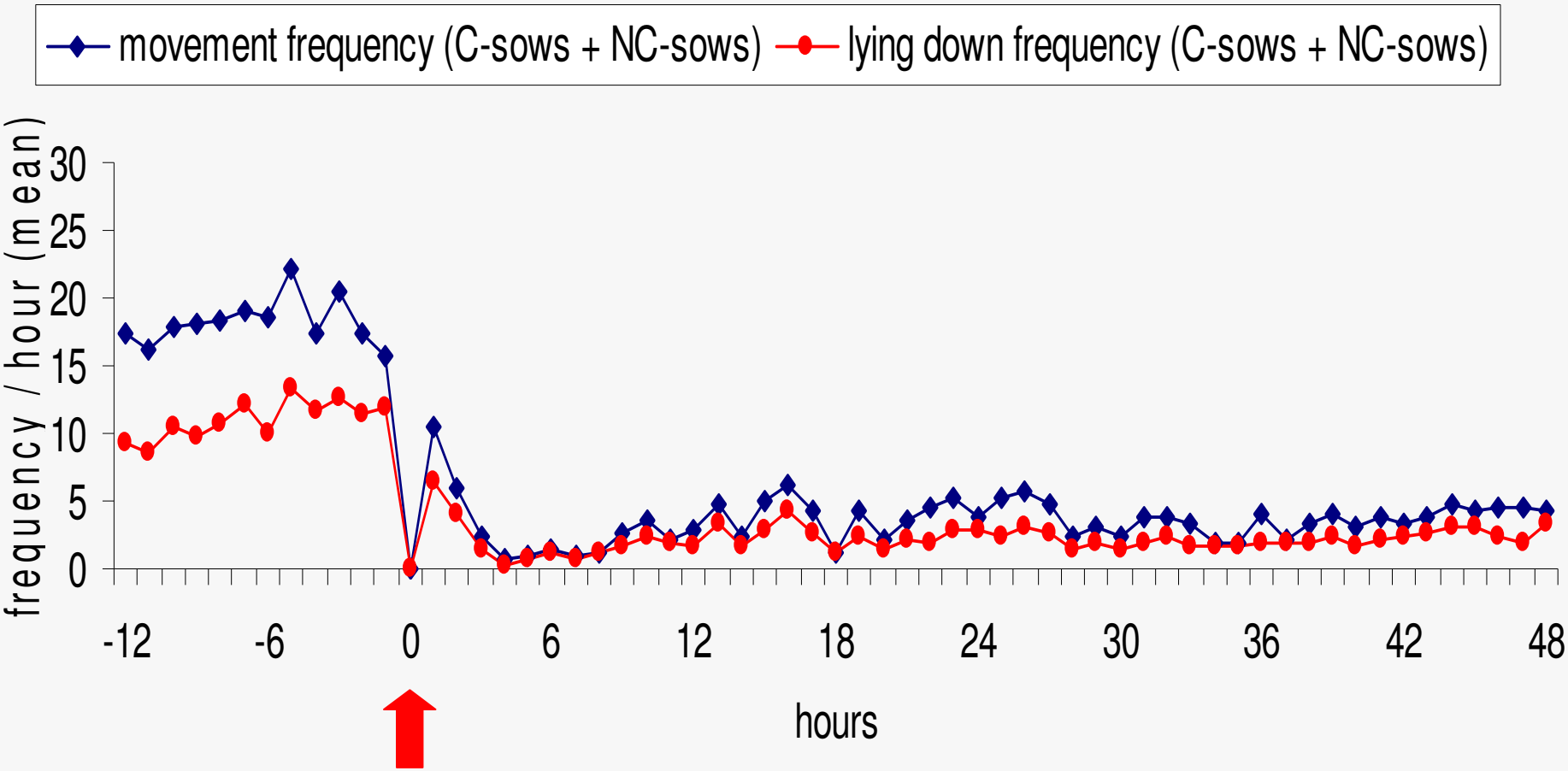
Methods

- traits = differences between NC-sows and C-sows
- fixed effects (parity, season, interval before and after farrowing)
- covariance structure AR(1) between residual effects



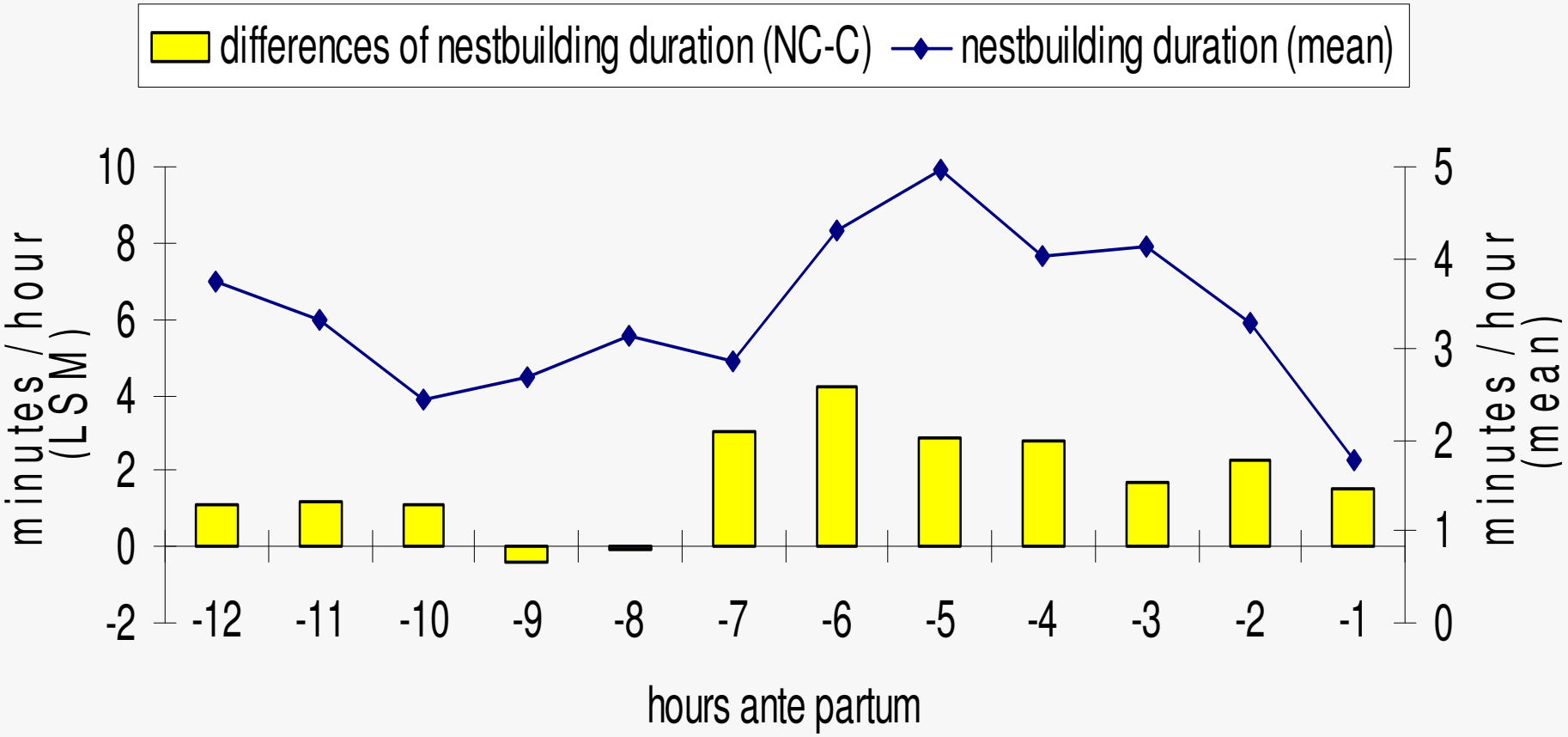
Results

Differences of movement frequency (mean) and lying down frequency (mean) of sows while parturition (n = 12,566)



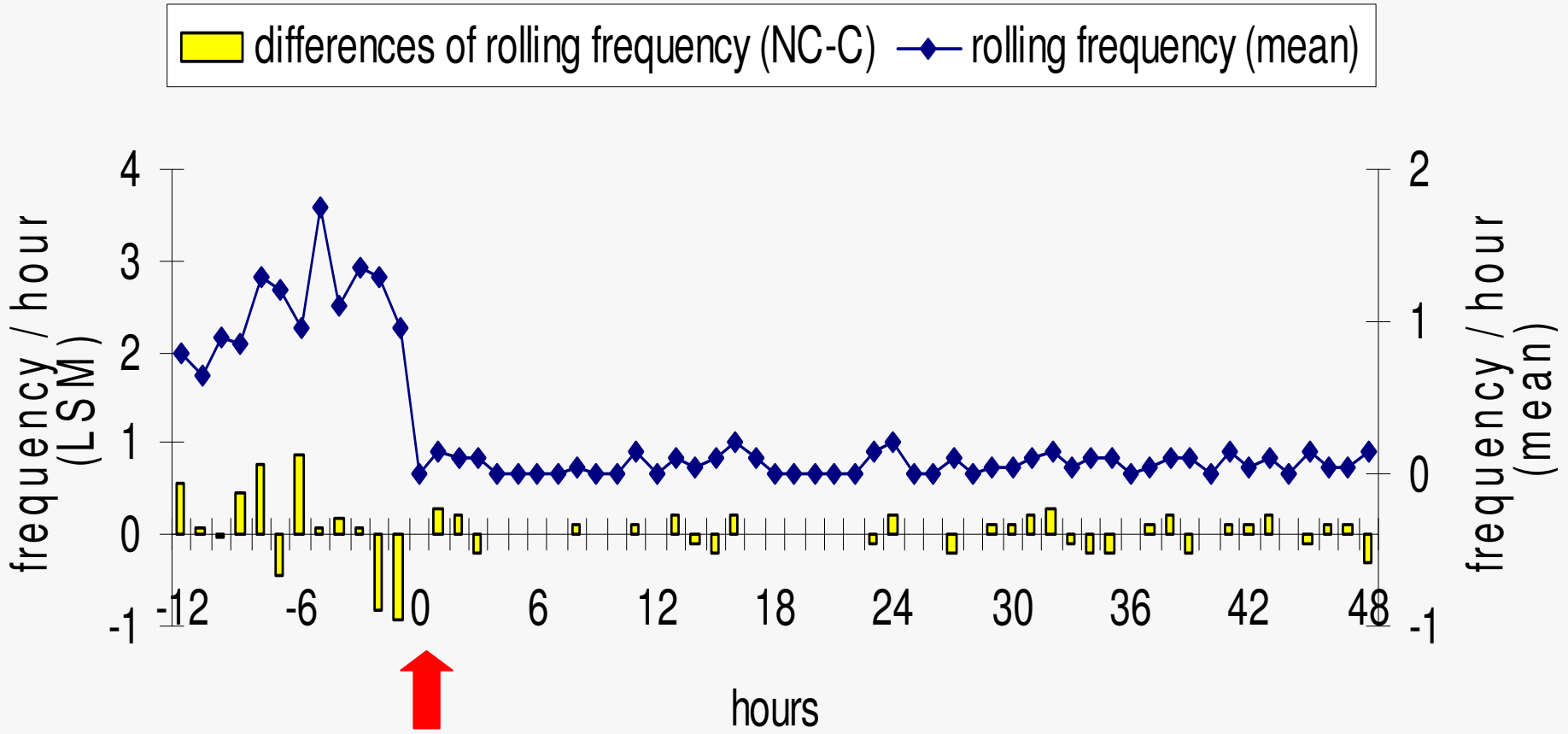
Results

Nestbuilding duration (LSM) a. p. related to crushing
(n = 1,344)



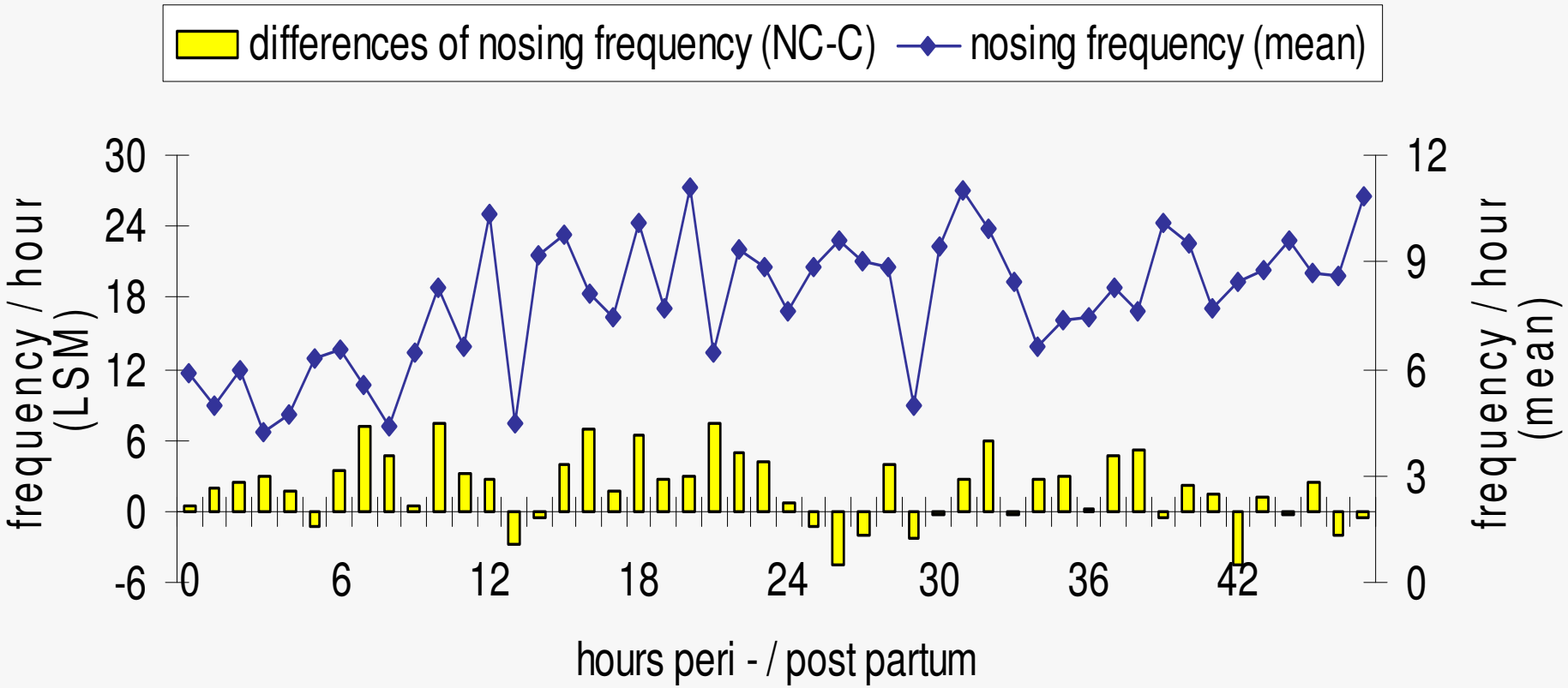
Results

Rolling frequency (LSM) related to crushing (n = 322)



Results

Nosing frequency (LSM) p. p. related to crushing
(n = 7,453)



Conclusions

- NC-sows are more active than C-sows
- NC-sows perform more nestbuilding behaviour than C-sows (frequency, duration)
- NC-sows have more often nosing contact to their piglets than C-sows
- Rolling movements do not differ


Thanks for your interest!