



Behaviour and performance of sows housed with continuous or temporary confinement during lactation

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Background

Commercial farrowing crates

- Limitation of sow movement and nest building behaviour
 - frustration (Baxter et al., 2011)
 - welfare concerns !

Alternative: Loose-housing

- + Increased sow activity (Baumgartner et al., 2007)
- Higher labour and housing costs
- Improved management skills needed
- Labour security
- Increased piglet losses (Baxter et al., 2012; Hales et al., 2014)

- Is there a critical period?
 - First 3 days post partum (pp) (Moustsen et al., 2013)

- Compromise:
Crating only for the first pp days

Objectives

Effects of confinement for different periods during lactation on the sow's behaviour, piglet's performance and losses?



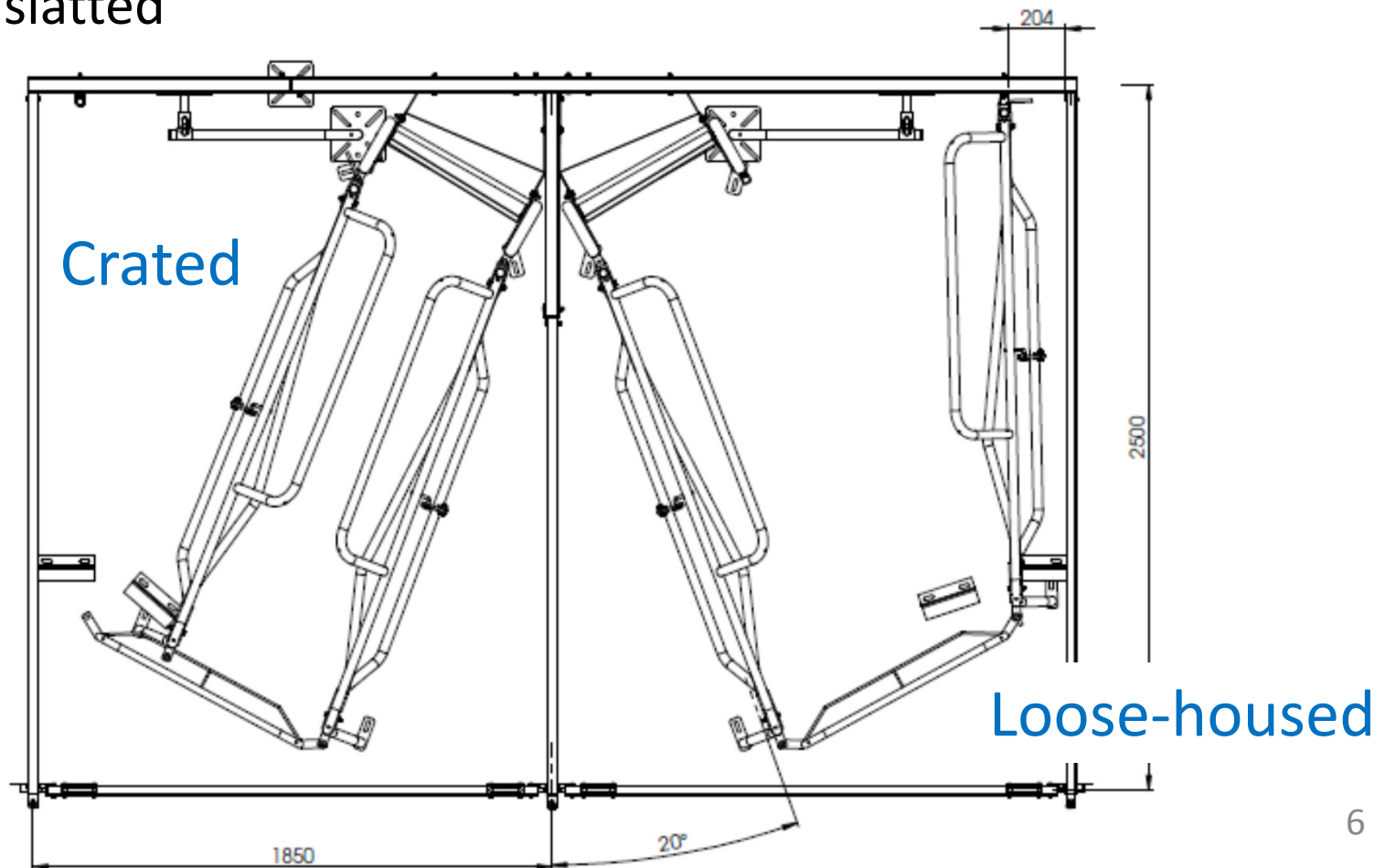
Material and methods

- Commercial 1,280 sow piggery
- 300 modified (free farrowing) pens



Experimental pens

- Big Dutchman Pig Equipment GmbH
- 1.85 x 2.50 m (4.6 m²)
- Fully slatted



Experimental pens

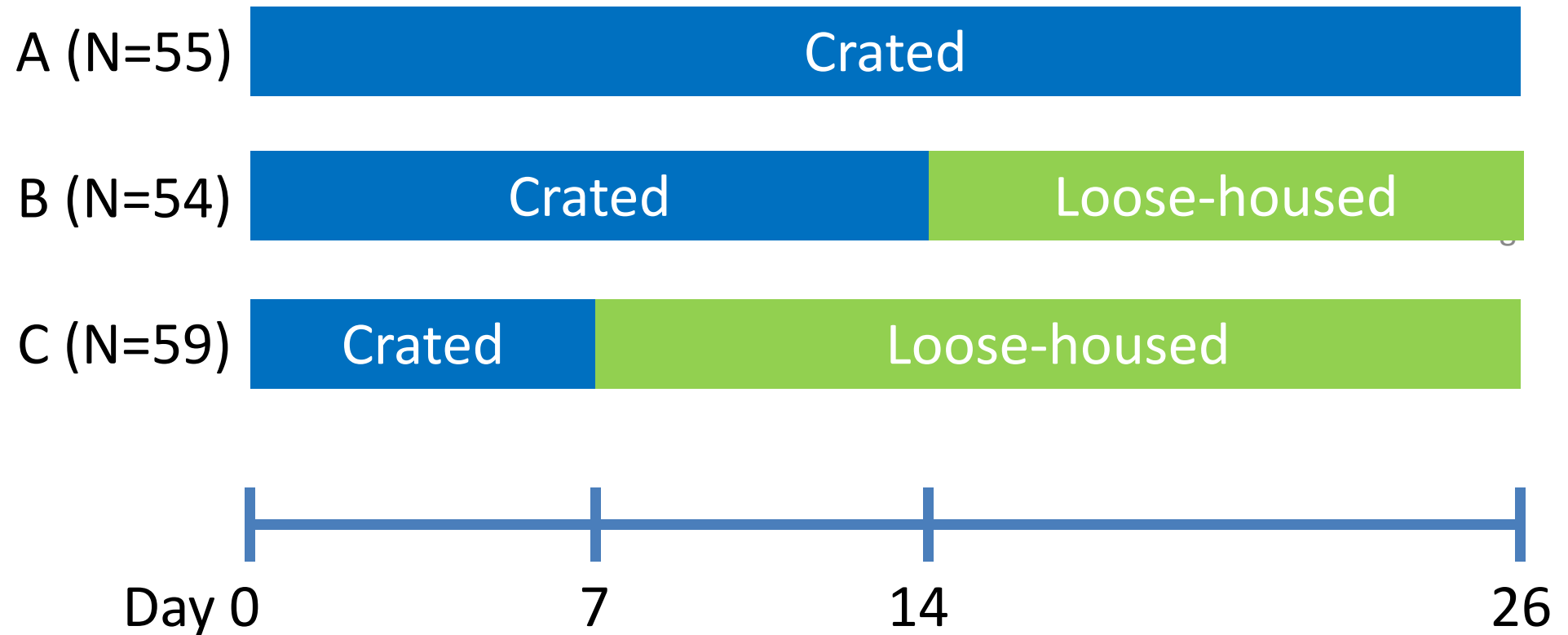
Crated sow - 1.4 m²



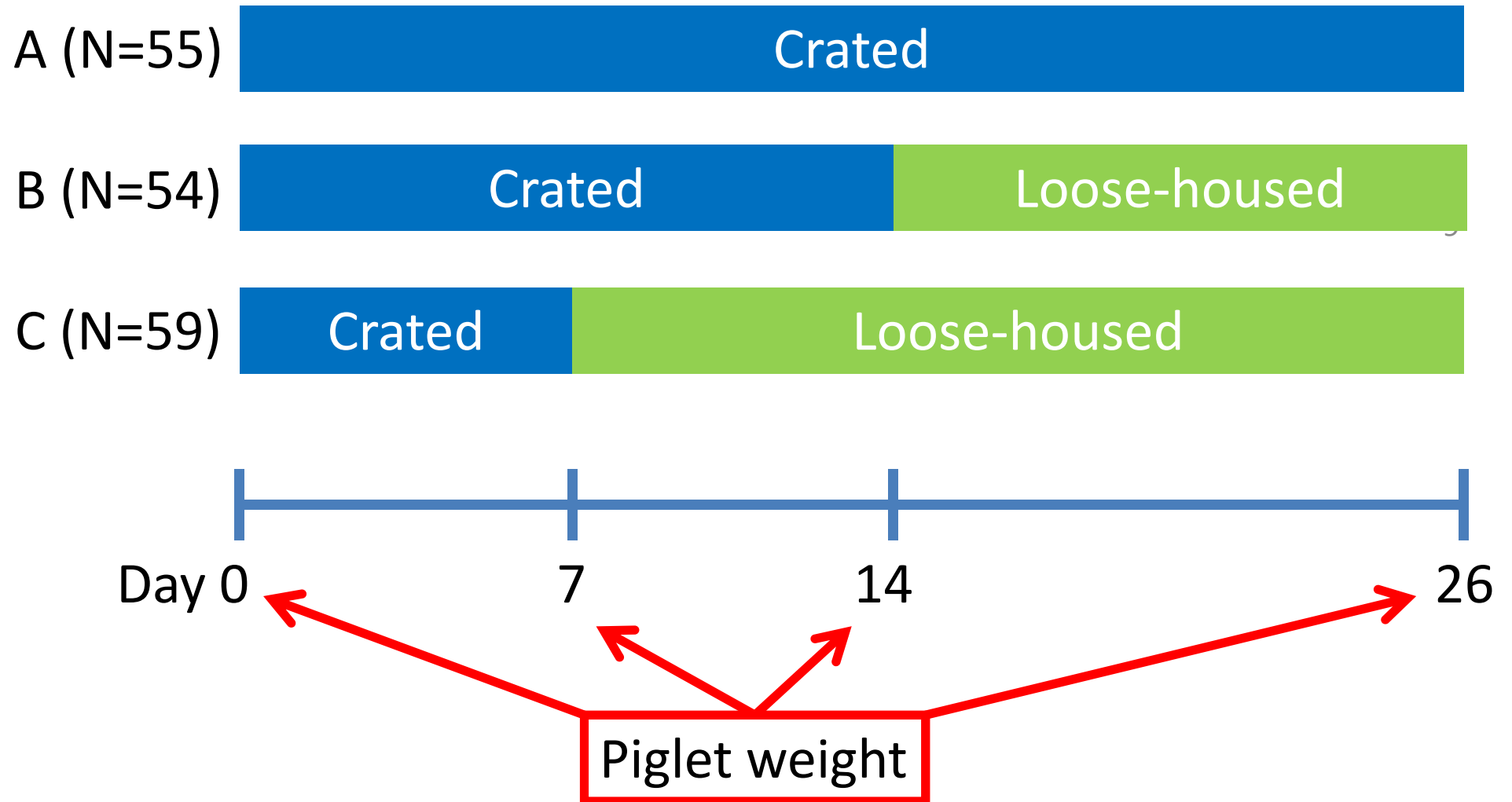
Loose housed sow - 2.8 m²



Treatment groups



Treatment groups



Records

- Piglet losses
 - Crushed
 - Starved
 - Bitten
 - Culled



Behavioural observations

- 18 gilts (6 from each treatment)
- Time sampling with 10-min intervals

Behaviour	Description
Lying in lateral position	Sow lies in side position, all four legs are visible
Lying in abdominal/semi-abdominal position	Sow lies on her sternum or semi-lateral. Not more than two legs are outstretched
Standing	Sow is standing or moving in standing position
Sitting	Sow is sitting on the hindquarters

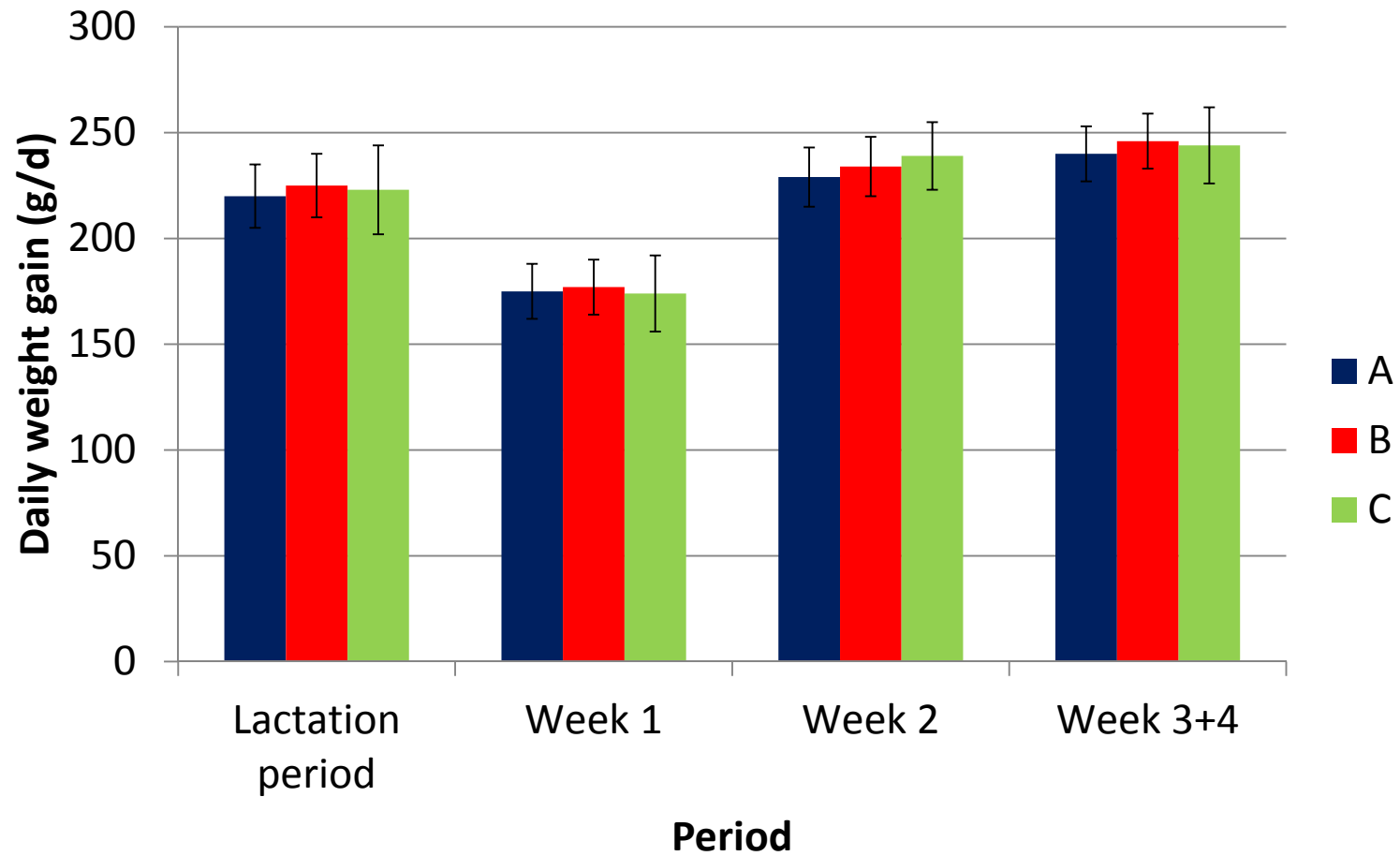
Results and discussion



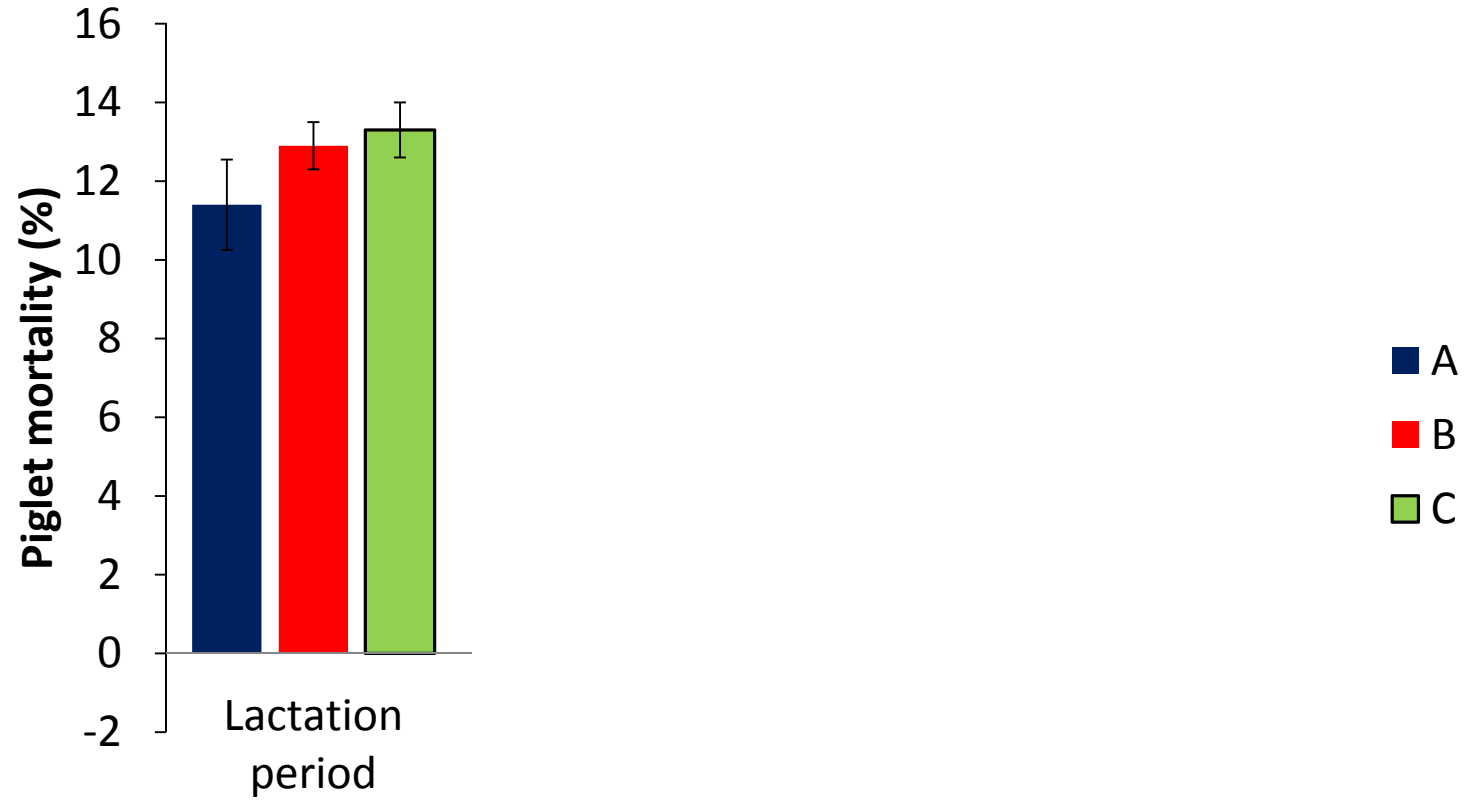
Gilt performance

Variable	N	Mean	SD
Live-born piglets (n)	168	12.76	3.57
Stillborn (n)	168	0.83	1.17
Weaned (n)	167	11.21	1.09
Birth weight (kg)	2144	1.15	0.35

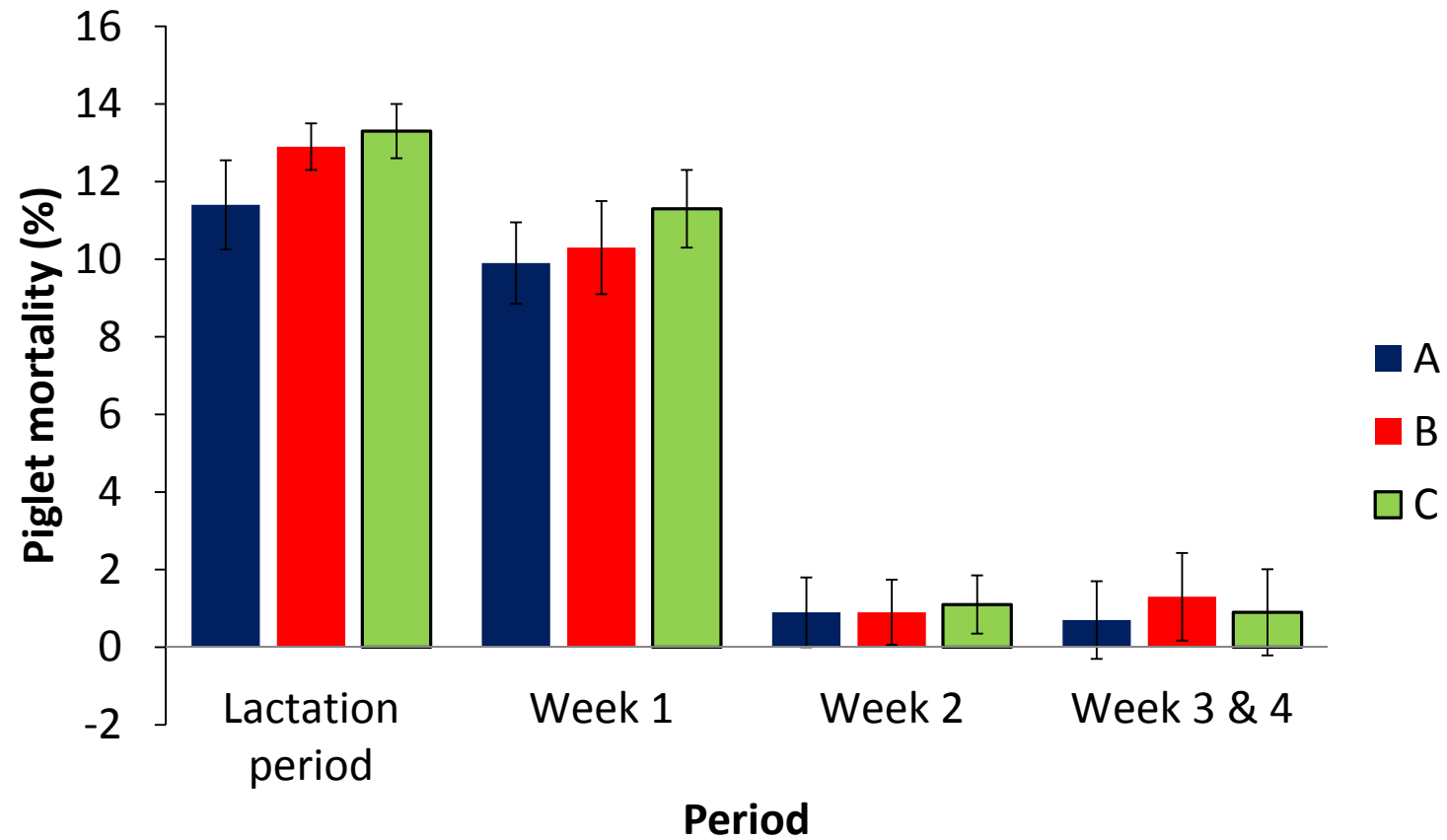
Piglet performance



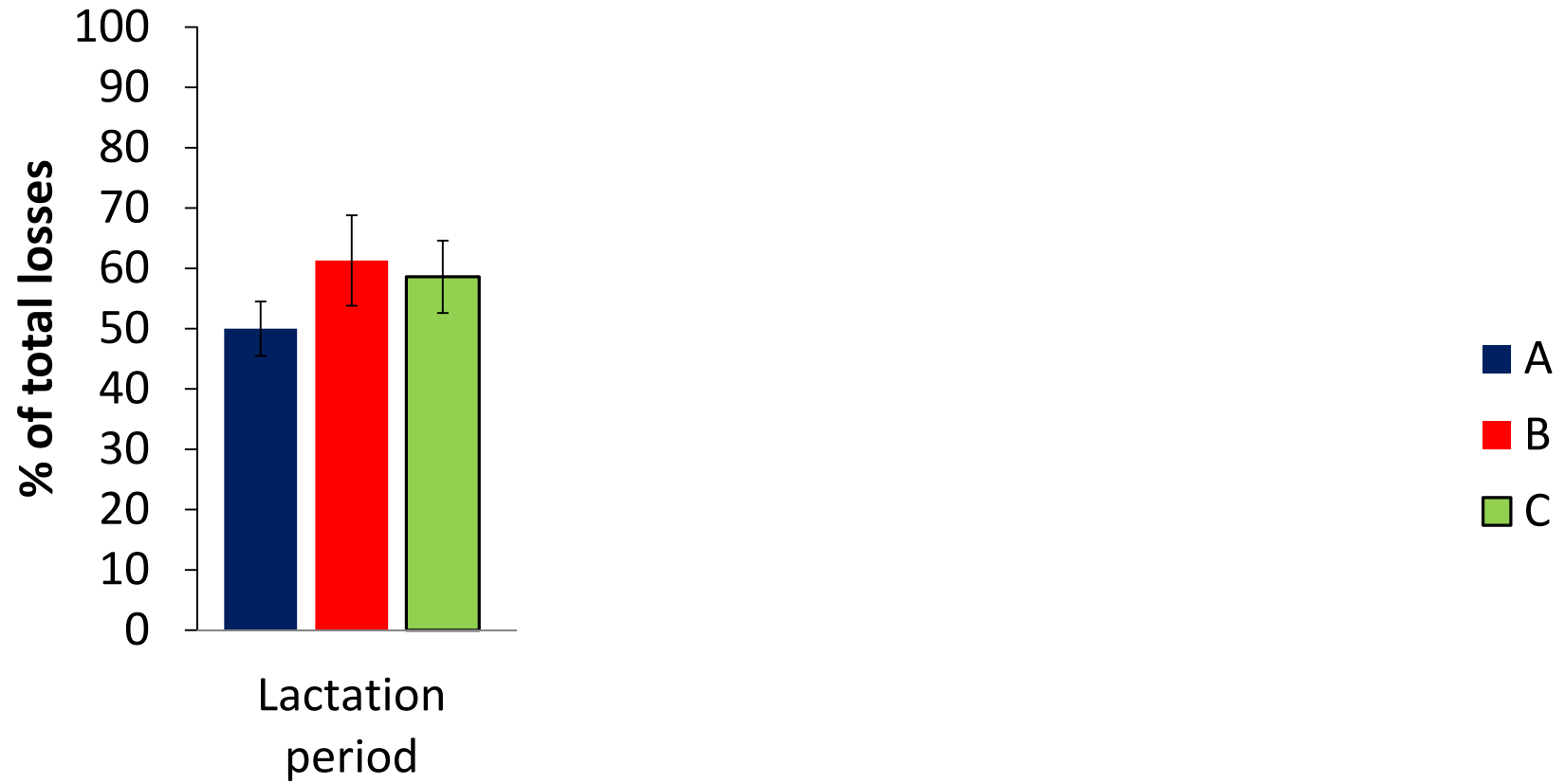
Piglet mortality



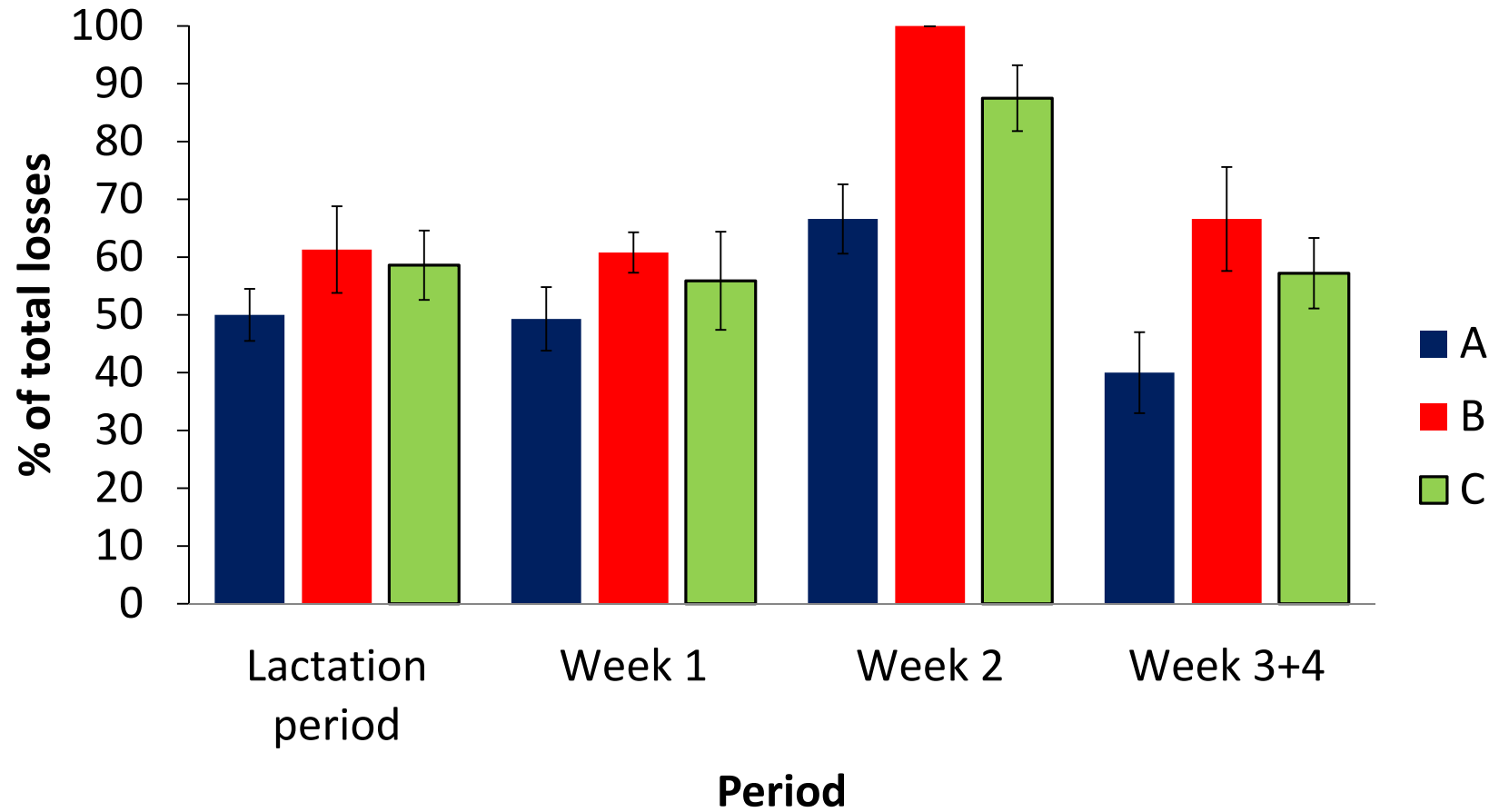
Piglet mortality



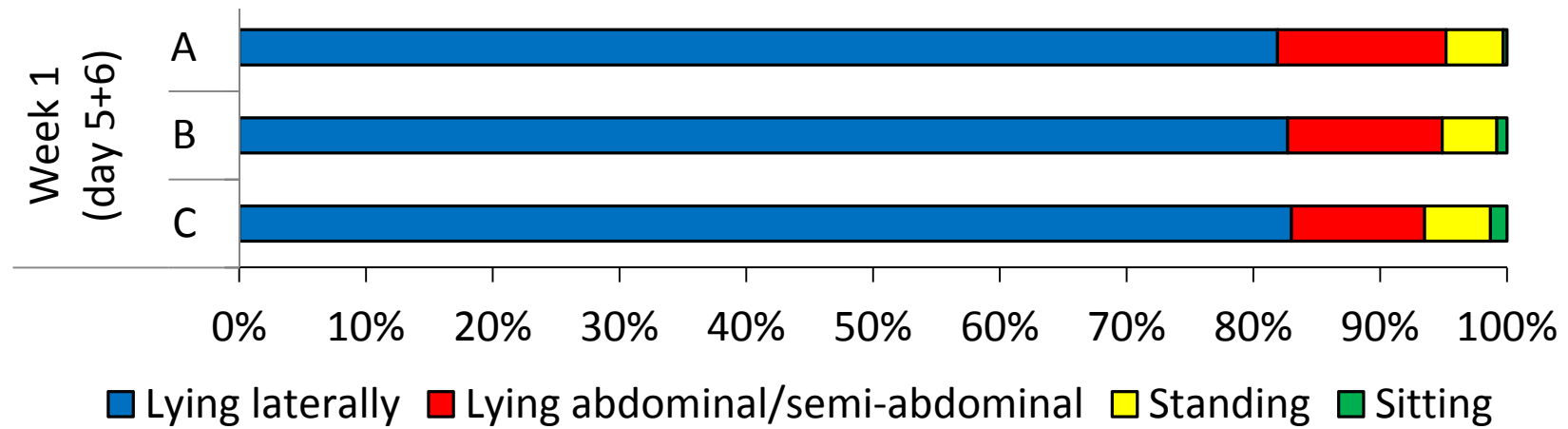
Crushed piglets



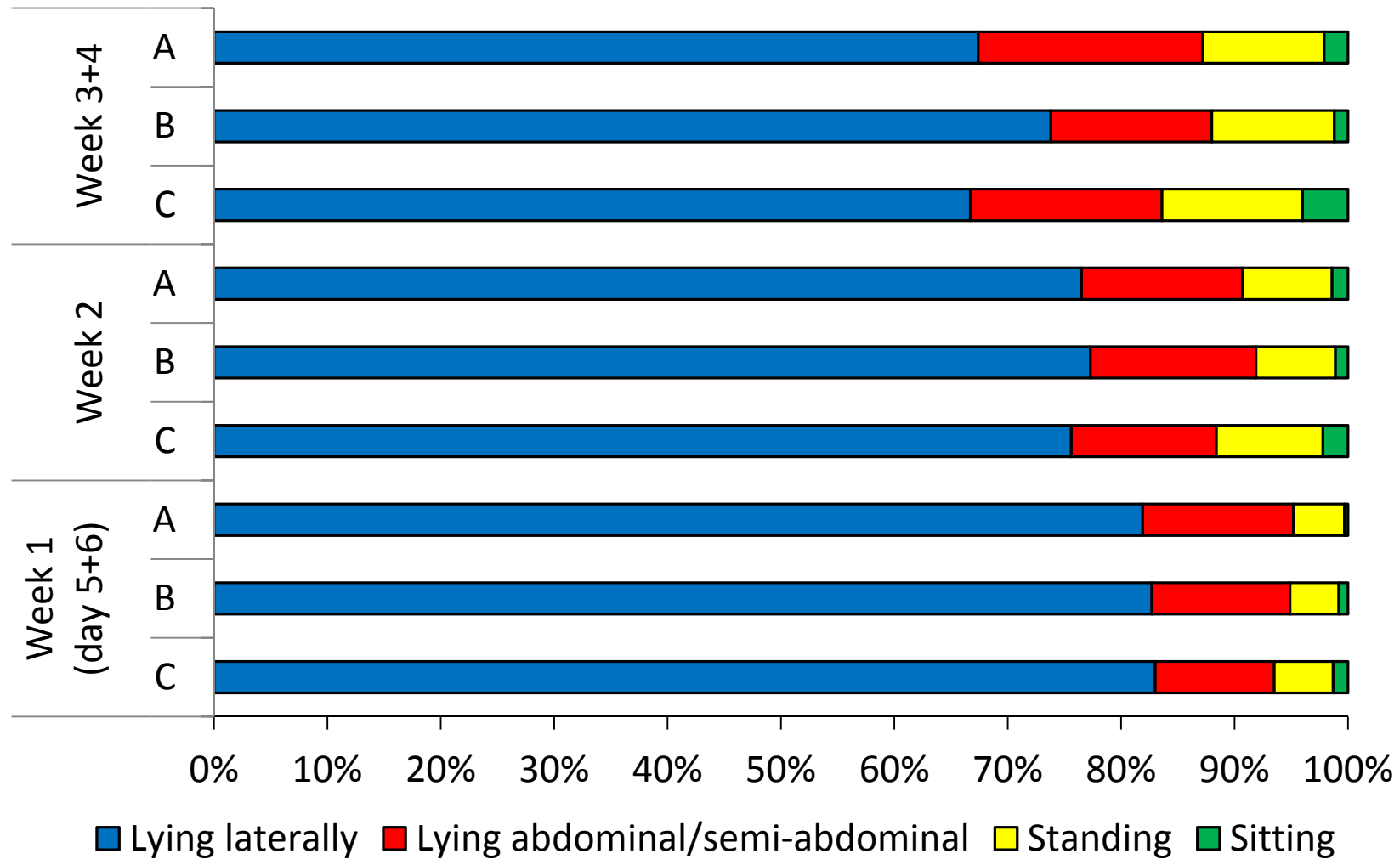
Crushed piglets



Postural behaviour



Postural behaviour



Conclusions

Loose-housing from 7 or 14 days pp did ...

... not increase piglet losses,

... not affect weight gains of piglets,

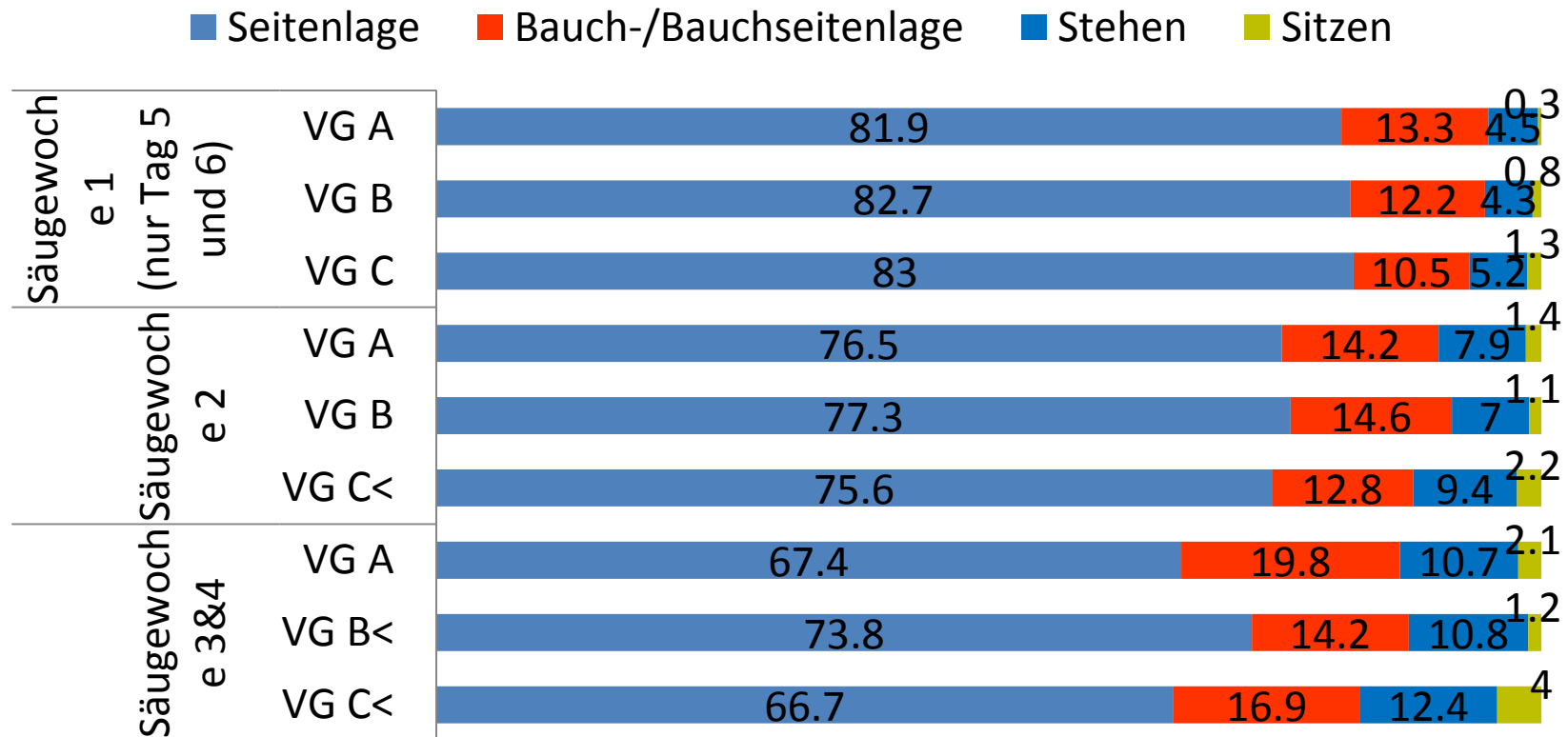
... not alter behaviour of the gilts.

Confinement only in the first week pp
might be an acceptable compromise !

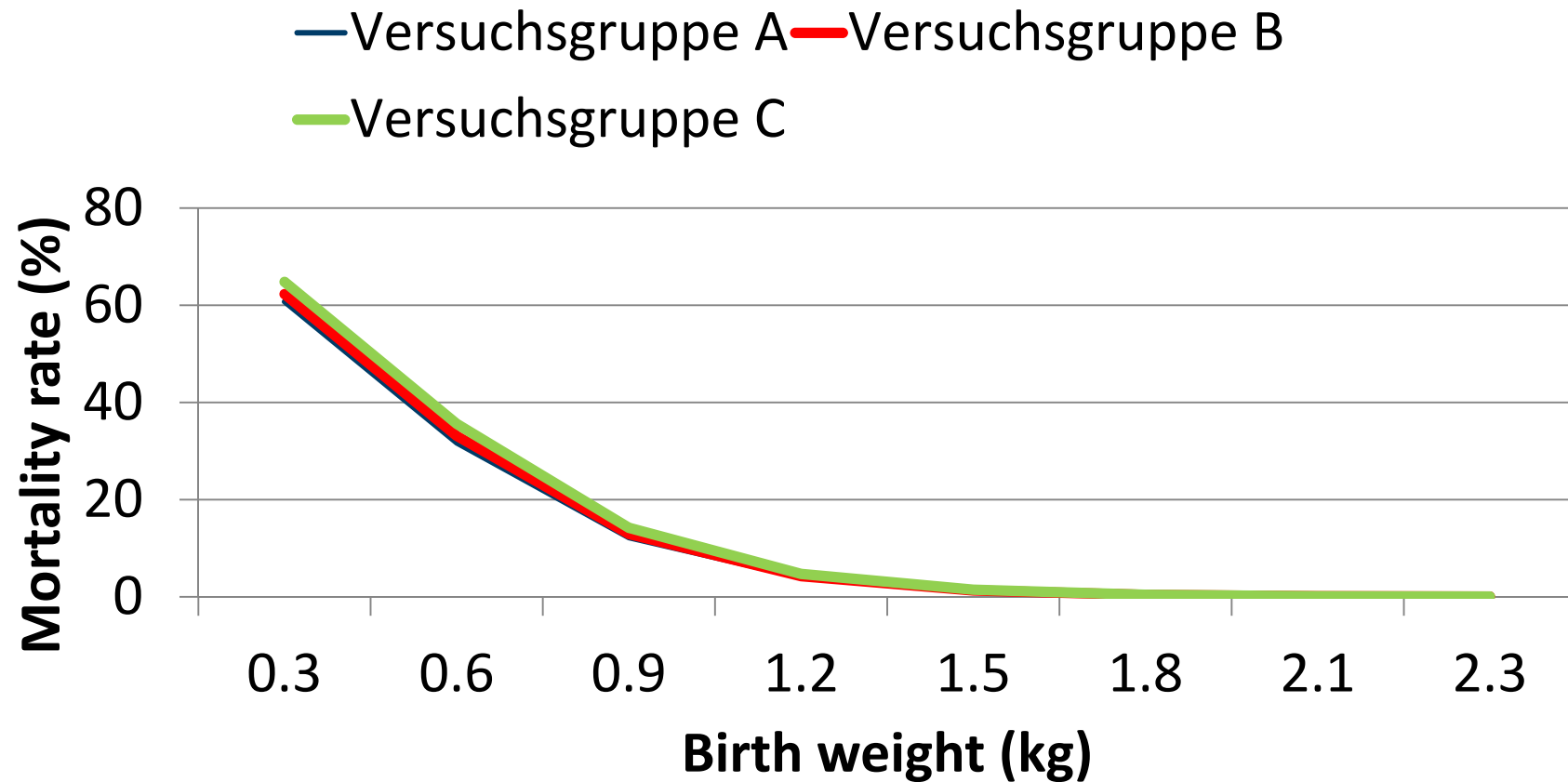
Thanks for your attention !



Time budgets



Piglet mortality vs. Birth weight

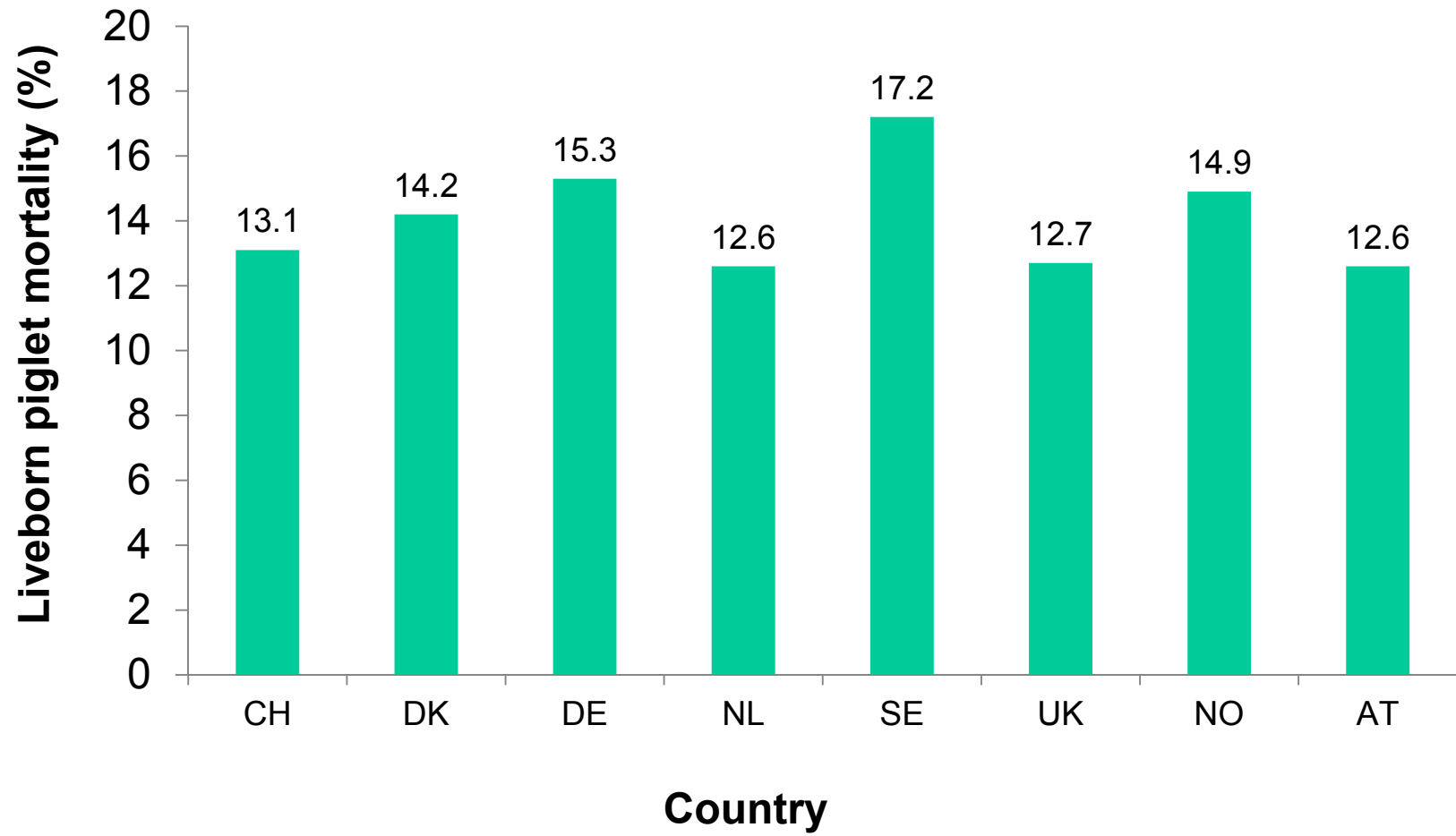


Gilt and piglet performance

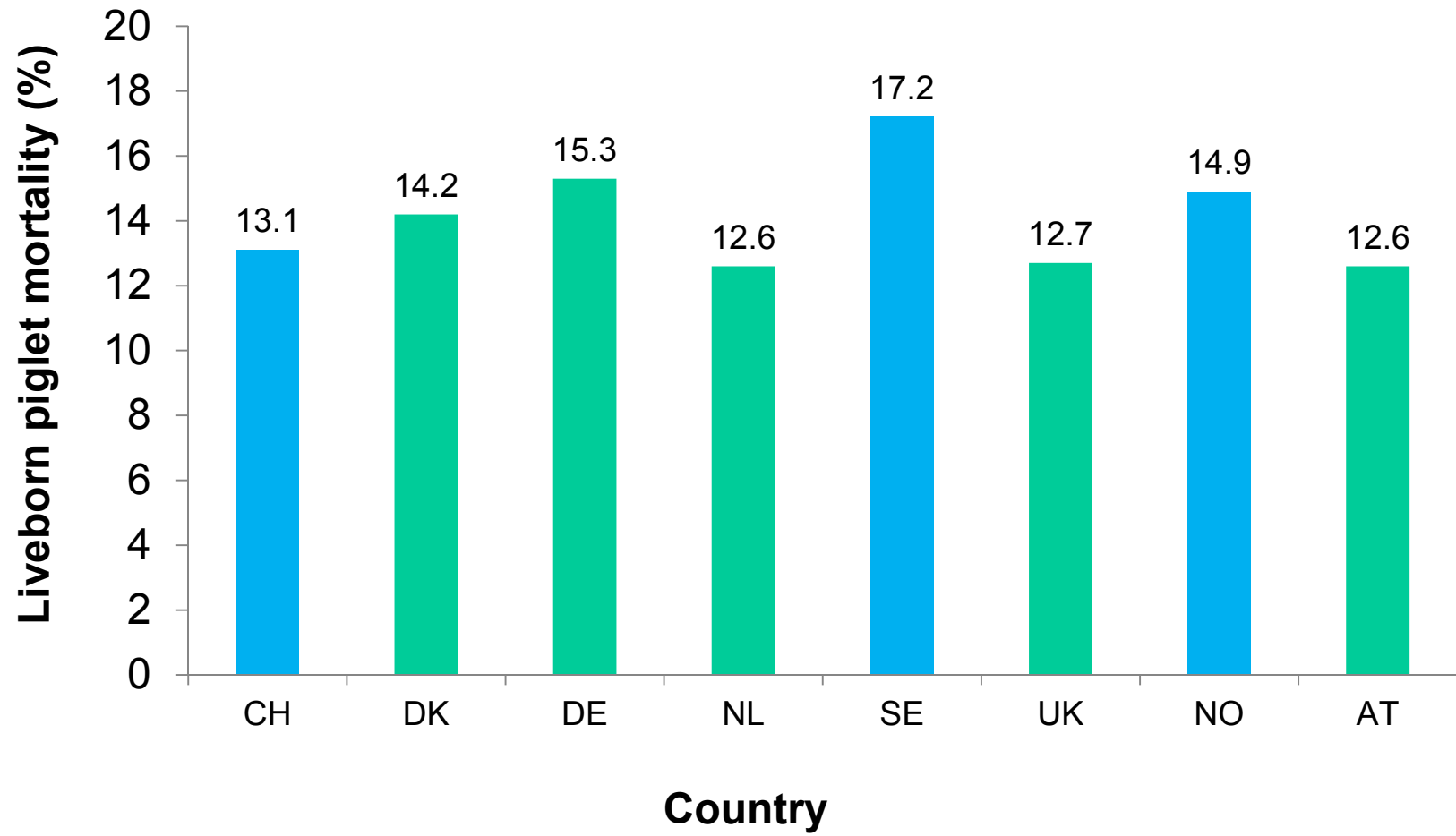
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Stillborn (n)	168	0.83	1.17
Weaned (n)	167	11.21	1.09
Birth weight (kg)	2144	1.15	0.35
Weight on day 7 (kg)	1903	2.41	0.57
Weight on day 14 (kg)	1879	4.05	0.88
Weaning weight (kg)	1857	6.93	1.41

Statistics

- Proc MIXED in SAS, 9.3



Baumgartner, 2011



Baumgartner, 2011

Gilt performance

Variable	N	Mittelwert	SD	V (%)	Minimum	Maximum
Lebendgeborene	168	12,76	3,57	28,1	3	23
Totgeborene	168	0,83	1,17	141	0	5
Mumien	168	0,46	0,83	180,4	0	4
Abgesetzte	167	11,21	1,09	9,7	7	14
Verluste						
Gesamt	167	1,62	1,76	108,6	0	8

Piglet performance

Variable	N	Mittelwert	SD	V (%)	Minimum	Maximum
Geburtsgewicht (kg)	2144	1,15	0,35	30,4	0,2	2,3
Gewicht am Tag 7 (kg)	1903	2,41	0,57	23,7	1	4,4
Gewicht am Tag 14 (kg)	1879	4,05	0,88	21,7	1,3	7
Absetzgewicht (kg)	1857	6,93	1,41	20,3	2	11