Maternal behaviour in gilts

The effect of genotype, social rearing environment and mixing after weaning

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Supervision

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Practical work

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Introduction

Group housing

EU Council Directive 2008/120/EC

Stress

Maternal behaviour

References: Andersen and Bøe, 1999; Anil et al., 2005; Jarvis et al. 2006; Engblom et al., 2007; Leng et al., 2008

Introduction

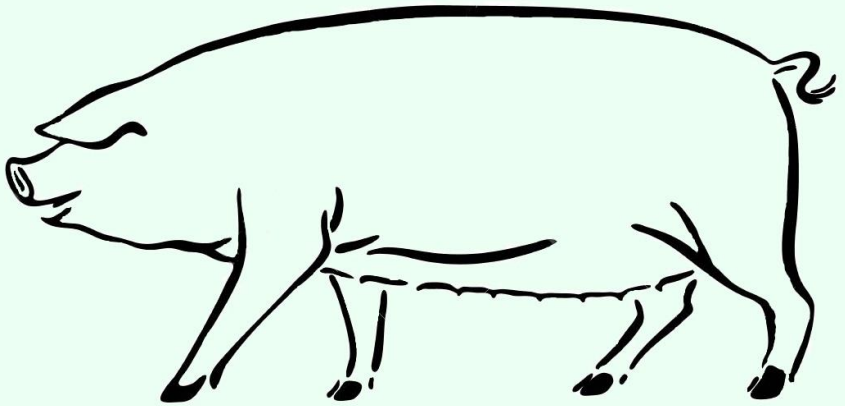
- Genotype
  - Swedish Landrace kept in group housing since 1980-ies
  - Dutch Landrace transitioned to group housing more recently
- Rearing environment
  - Socialisation between litters before weaning
- Group mixing
  - Mixing of unfamiliar pigs after weaning

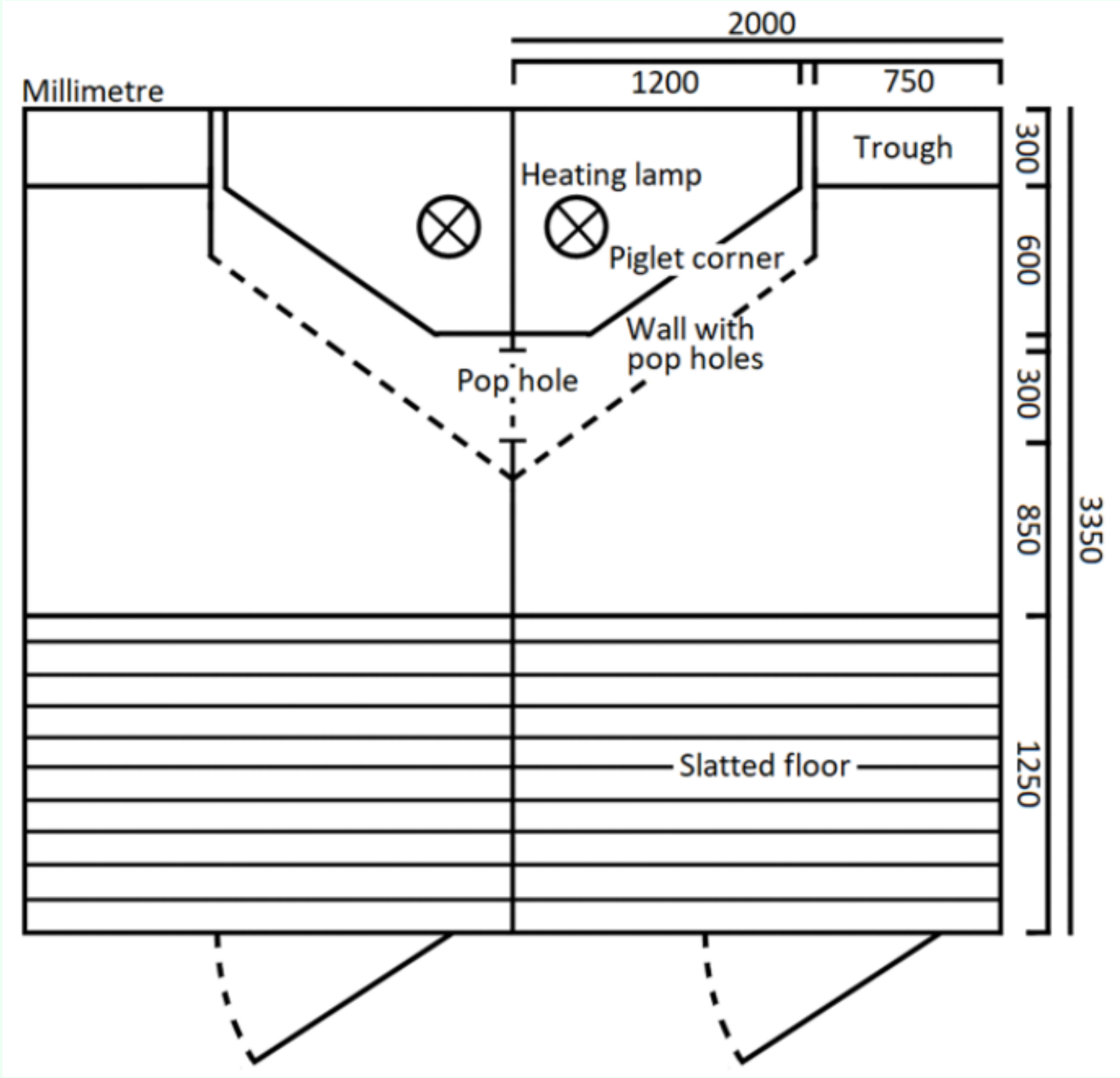
References: Van Putten and Buré, 1997; D'Eath 2005

The aim of this study was to determine if factors that are expected to improve social skills also improve maternal behaviour.

Material and methods

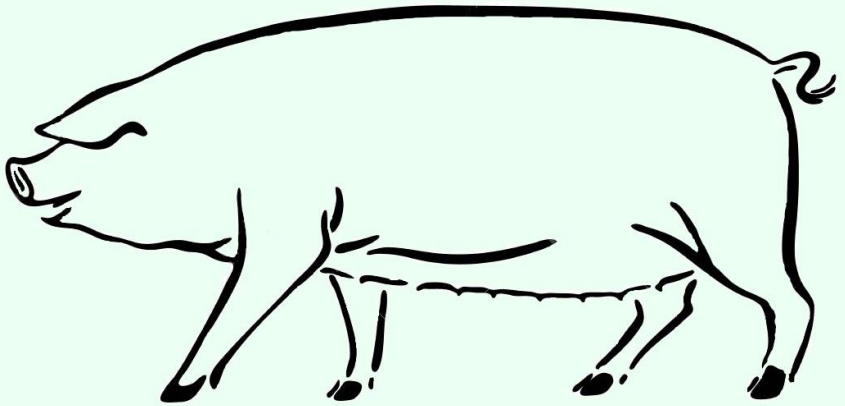
- Genotype
  - Swedish Landrace (N=25) versus Dutch Landrace (N=35)
- Rearing environment
  - Access Pen (N=26) versus Control Pen (N=34)




2000
1200
750
Millimetre
Trough
Heating lamp
Piglet corner
Wall with
pop holes
Pop hole
Slatted floor
300
600
300
850
1250
3350

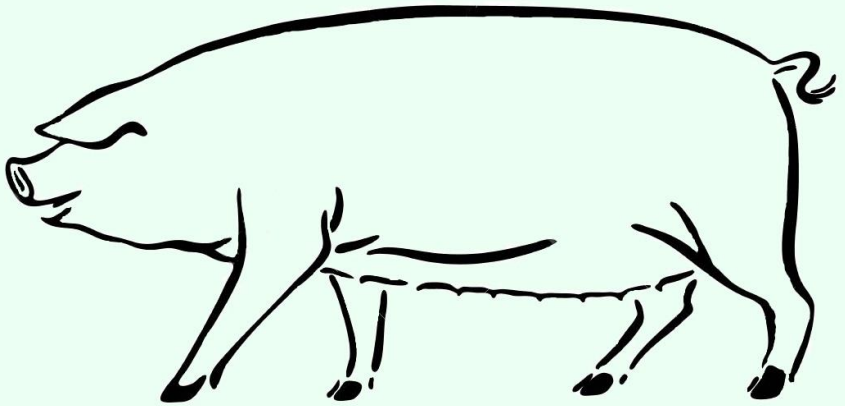
Material and methods

- Genotype
  - Swedish Landrace (N=25) versus Dutch Landrace (N=35)
- Rearing environment
  - Access Pen (N=26) versus Control Pen (N=34)
- Group mixing
  - Mixed Group (N=28) versus Intact Group (N=32)



Material and methods

- Video recording during separation
- Qualitative Behaviour Assessment from the Welfare Quality® Assessment protocol for pigs



Page:

Qualitative Behaviour Assessment for sows, piglets and growing pigs

Please observe the animals in the unit for 10-20 minutes, and then assess their behavioural expression ('body language') by scoring the following terms:

Visual Analogue Scale VAS for Qualitative Behaviour Assessment (please be sure that the lines of the QBA measures are 125 mm)

Please observe the animals in the unit for 10-20 minutes, and then assess their behavioural expression ('body language') by scoring the following terms:

Active — Min. — Max.

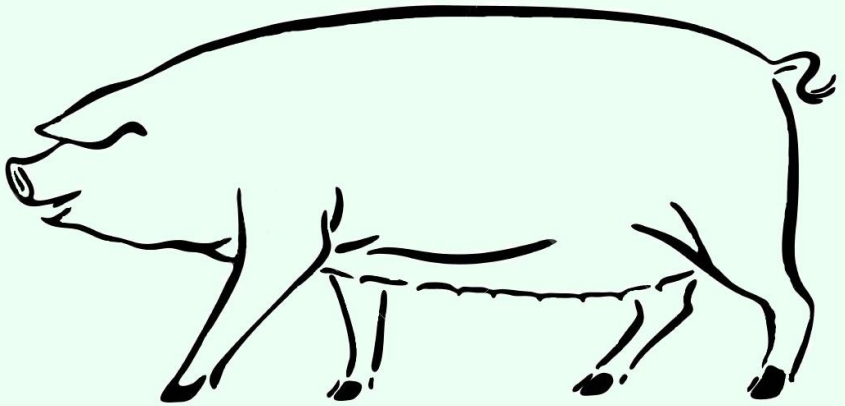
Relaxed — Min. — Max.

Fearful — Min. — Max.

Agitated — Min. — Max.

Material and methods

- Video recording during separation
- Qualitative Behaviour Assessment from the Welfare Quality® Assessment protocol for pigs (QBA)
- Occurrence of nursing
- Responsiveness
- Piglet growth data



Statistical approach and results

- Principle Component Analysis (PCA) for QBA elements
  - Two component scores for both alone time and reunion time
- Four separate Analyses of Variance (ANOVA)
  - Dependent variable – PCA component scores
  - Independent variables – genotype, rearing environment and group mixing
- No significant results

Statistical approach and results

- Analysis of Covariance (ANCOVA) for piglet growth
  - Dependent variable – average growth per piglet
  - Independent variables – genotype, rearing environment and group mixing
  - Covariates – number of piglets and age at weaning

- No significant results

Statistical approach and results

- Chi square frequency test for association between responsiveness and the likelihood of nursing ($\chi 2=11.19$, $P=0.001$, $df=1$, $N=60$)

	No nursing		*Nursing*		*Total*
Low responsiveness	16	(-3.3)	12	(3.3)	*28*
High responsiveness	30	(3.3)	2	(-3.3)	*32*
Total	*46*		*14*		*60*

- Low responsiveness associated with a more positive emotional state during reunion time ($P<0.001$) → low responsive = less distressed

Discussion and conclusions

- Significant findings unrelated to treatment factors
- What is good maternal behaviour?
- Is it maternal behaviour that was measured?

Take home message…