

Influence of ventilation and genetics on pig's biting behavior

V. Van de Perre^a, B. Driessen^b, J. Van Thielen^b, G. Verbeke^c, R. Geers^a

^aLaboratory for Quality Care in Animal Production, K.U.Leuven, Bijzondere weg 12, B-3360 Lovenjoel, Belgium

^bK.H.Kempen, Kleinhoefstraat 4, B-2440 Geel, Belgium

^cInteruniversity Institute for Biostatistics and statistical Bioinformatics, K.U.Leuven, Kapucijnenvoer 35, B-3000 Leuven, Belgium

Introduction

Tail biting is an abnormal and unpredictable behavior in modern pig production which reduces animal welfare and productive performance. A solution for this problem is not unambiguous.

Objectives

Studying the effect of genetics and ventilation on pig's biting behaviour.

Materials and methods

Experiment 1 (Experiment 2)

Animals and housing:

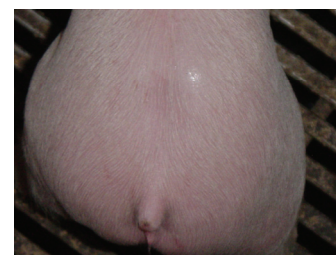
- 355 (314) Piétrain x Belgian Negative piglets
- 2 (1) boar(s)
- 2 identical rooms, 8 pens and fully slatted floors
- 19 pigs/pen
- Door ventilation
- Tail docking (<1 cm)

Experimental design:

- Smoke test
- Adjust ventilation in 1 room last 5 weeks (start):
 - A. Air inlet surface (1 m/s) (1 m³/Kg.h)
 - B. Min ventilation capacity (0.25 m³/kg/h)

Behavioral measurements

- Frequency tail, ear, flank, and/or feet biting
- Every week (2 X 10 min)



Results

Table 1: Biting percentage (Ismeans ± SE) before and after ventilation change

	Room 1	Room 2
<i>First 6 weeks (no ventilation change)</i>		
Boar 1	2.72 ± 0.68ax	3.81 ± 0.76ax
Boar 2	5.86 ± 0.41bx	7.16 ± 0.46by
<i>Last 5 weeks (ventilation change)</i>		
Boar 1	2.39 ± 0.61ax	2.03 ± 0.62bx
Boar 2	4.27 ± 0.36bx	2.79 ± 0.36by

ab Scores in the same column and period with different superscripts differ significantly ($P < 0.05$)
xy Scores in the same row and period with different superscripts differ significantly ($P < 0.05$)

Table 2: Wound percentage (means + SEM) before and after ventilation change

	Room 1	Room 2
<i>First 6 weeks (no ventilation change)</i>		
Boar 1	7.68 ± 5.13ax	17.62 ± 6.23ax
Boar 2	28.27 ± 7.04bx	35.63 ± 4.82bx
<i>Last 5 weeks (ventilation change)</i>		
Boar 1	4.94 ± 1.99ax	18.50 ± 7.39ay
Boar 2	45.15 ± 8.46bx	84.50 ± 3.58by

ab Scores in the same column and period with different superscripts differ significantly ($P < 0.05$)
xy Scores in the same row and period with different superscripts differ significantly ($P < 0.05$)

Table 3: Biting (Ismeans ± SE) and wound percentage (means ± SEM) per room (experiment 2)

	Room 1*	Room 2**
Biting percentage (%)	2.34 ± 0.20 ^a	2.27 ± 0.20 ^a
Wound percentage (%)	14.68 ± 2.08 ^a	2.79 ± 0.88 ^b

ab Scores in the same row with different superscripts differ significantly ($P < 0.05$)

*Room 1: No ventilation adjustments

**Room 2: Ventilation adjustments



Conclusions

- Tail docking was not a good solution to solve biting behavior.
- Biting behavior was redirected to other body parts.
- Genetics, age and ventilation had a significant effect on biting behavior/wounds.

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