

The relationship between the behaviour of sows and their histories of piglet crushing

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Introduction

- The crushing of piglets by the sow is the main cause of preweaning mortality and has been reported to be responsible for up to 80 per cent of piglet deaths (Weary et al., 1998)
- Both economic and welfare implications
- Previous studies in both environmental and animal factors
- Studies have identified that sows maintain some stable behavioural traits over parities, for example response to a piglet scream test (Grandinson et al., 2003)



Material and methods

- 28 sows, 14 crushers (C) and 14 non-crushers (NC)
 - Records used for selection of sows
 - Crusher crushed at least one piglet during previous parities (mean piglets crushed per litter = 0.9 ± 0.29)
- Standard farrowing crates
 - With piglet creep area
 - Bedding provided during farrowing
- Time-lapse video recorders



Material and Methods *cont.*

- Behaviour Factors
 - Frequency/duration postures
 - Lying: Ventrally and On side
 - Sitting
 - Standing
 - Sow behaviour directed at piglets
 - Reactions before and after posture changes
 - Danger area for piglets
 - Area where piglets are in danger of getting trapped



Material and Methods *cont.*

- Measurements
 - 4 hours after the birth of first piglet
 - Analysis with the Observer
 - Comparisons between groups with Independent sample T-test, after testing for normality with a Kolmogorov-Smirnov Test.



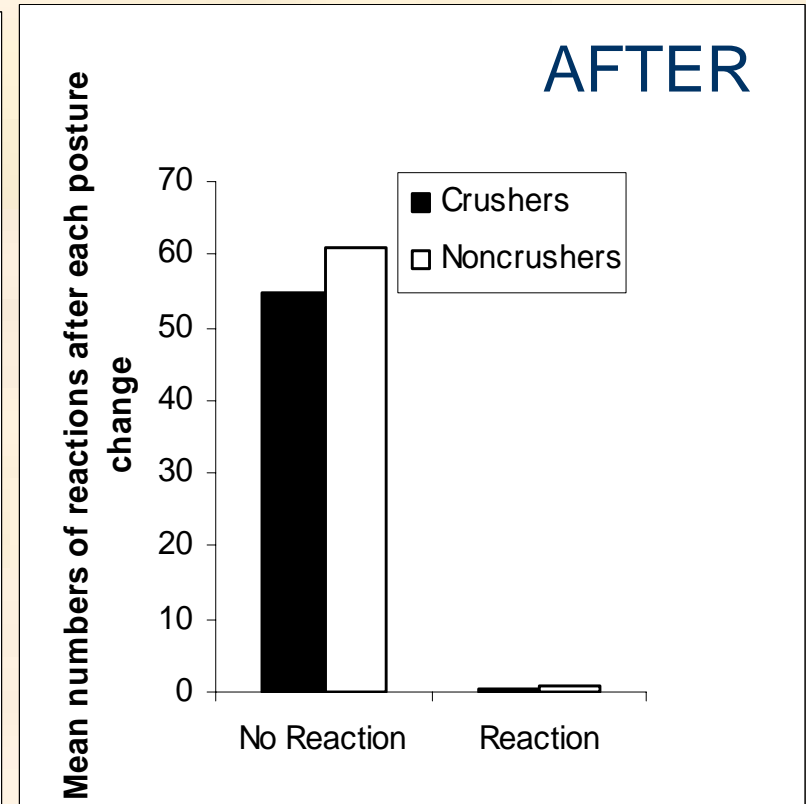
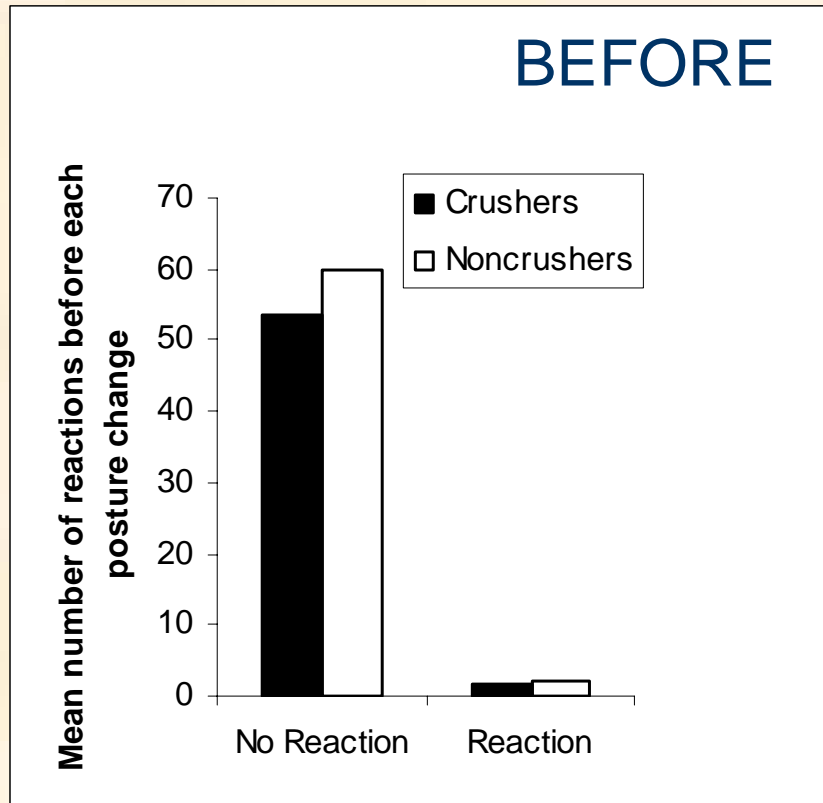
Results: Postures

	Crushers	NonCrushers	SEM (Pooled)	<i>P</i> -value
Lying on side	142.12	147.26	17.29	ns
Lying	6.74	5.94	2.29	ns
Lying	9.97	16.80	6.26	ns
Sitting	6.43	8.95	3.42	ns
Kneeling	0.46	0.85	0.40	ns
Standing	6.38	18.80	8.15	ns
Moving	64.61	36.73	-1.36	0.06

Total duration of postures per group
64.61 minutes of a total of 240 minutes versus 36.73 minutes of a
total of 240 minutes; independent samples t-test, $P = 0.06$

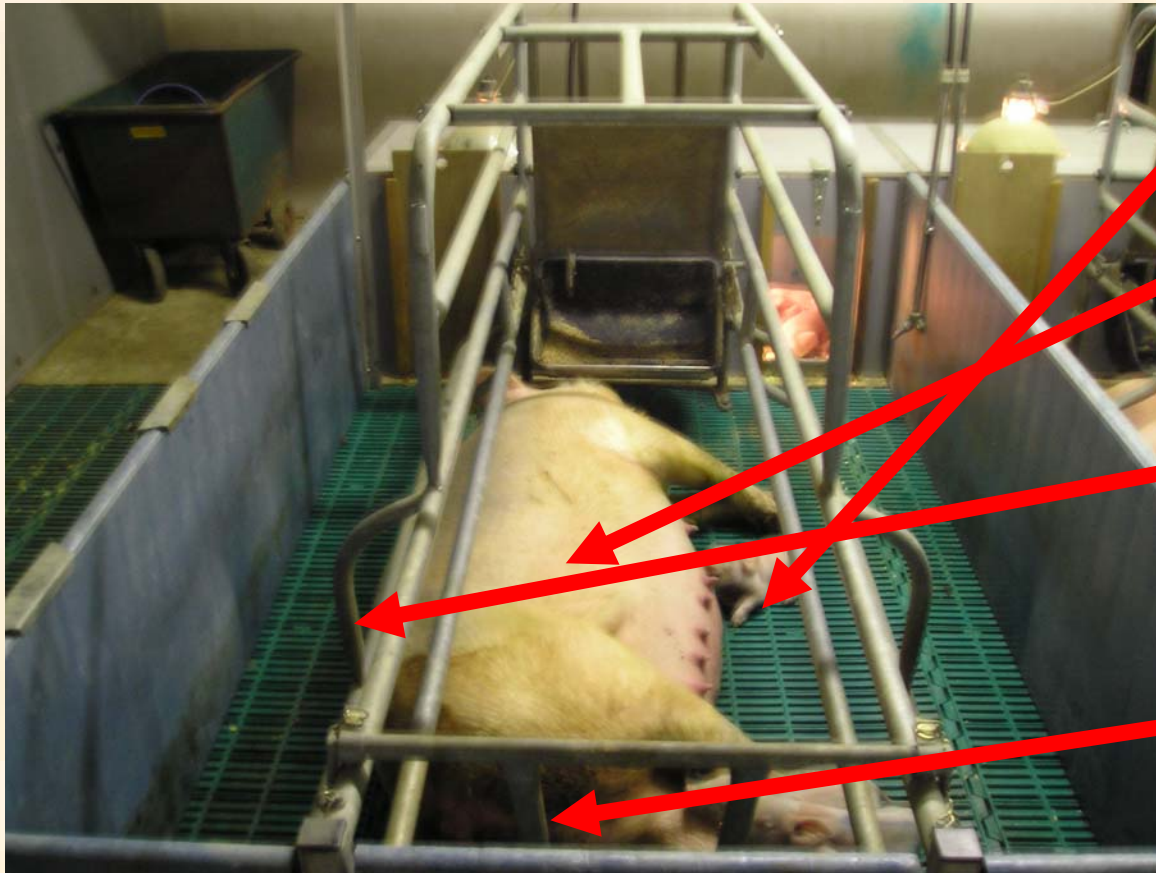


Results: Reactions



Mean number of Reactions Before and After each posture change

Results: Danger area



7% occurred during suckling

17% occurred when under sow

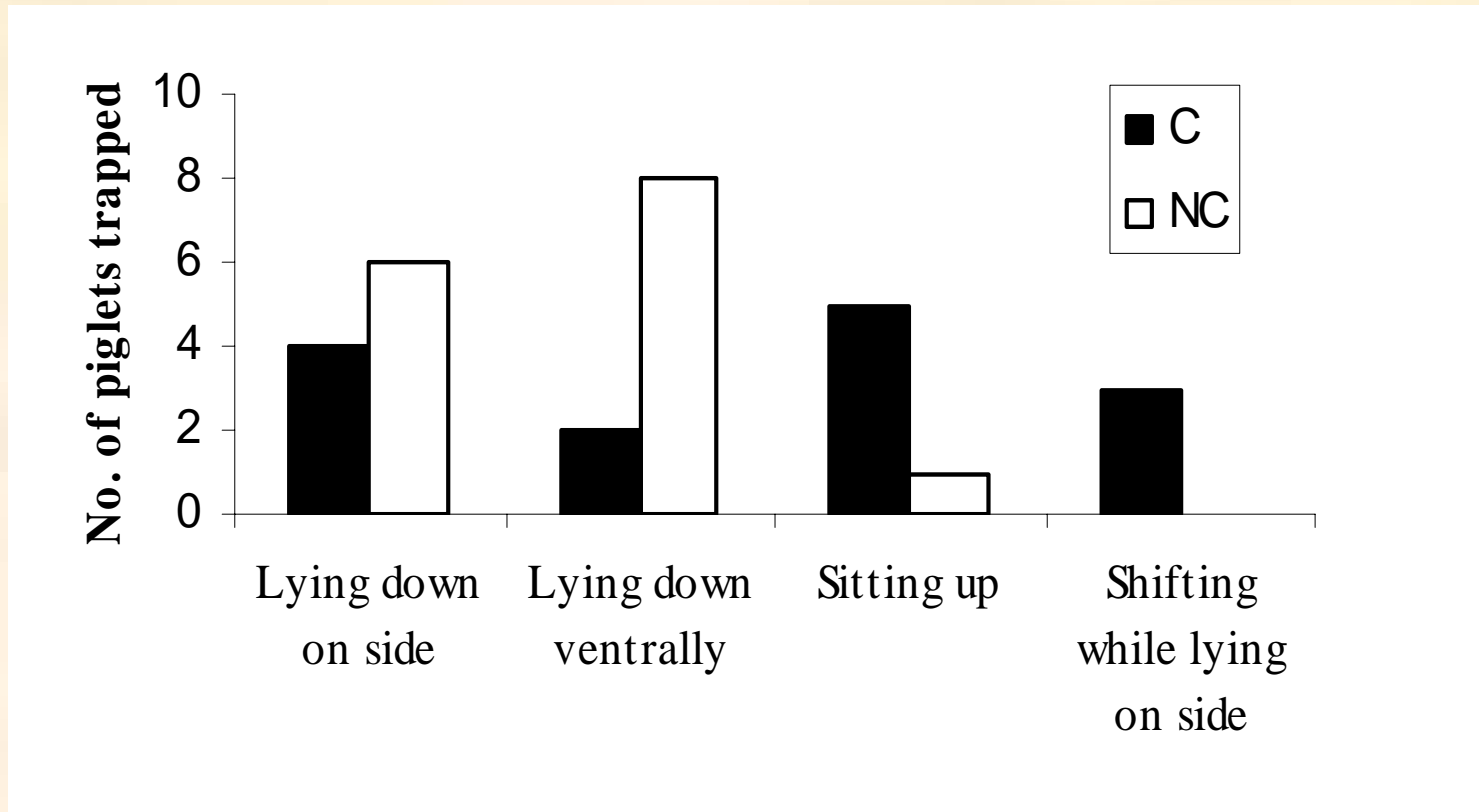
21% occurred when lying at back of the sow

55% occurred when lying at the rear of the sow

Number of piglet trappings (N=29) per area defined by postures before and after change combined with speed factors



Results: Piglet trappings



Number of piglets trapped after changes in posture of Crushers (C) and Non-Crushers (NC)

Conclusion

- C sows were more restless, while lying down.
- No attention paid to piglets by both C and NC sows.
- Sitting up just as dangerous to piglets as lying down, which contradicts previous studies (eg. Weary et al., 1998).
- Rear and back of the sow turns out to be the most dangerous place to be for the piglet.
- No sows with major histories of crushing, therefore no major differences between C and NC sows.



Any questions?

- References

- Grandinson, K., Rydhmer, L., Strandberg, L. and Thodberg, K. 2003. *Livestock Production Science* 83, 141-151.
- Weary, D.M., Phillips, P.A., Pajor, E.A., Fraser, D. and Thompson, B.K. 1998. *Applied Animal Behaviour Science* 61, 103-111.

