

Introduction & Objectives

Background

The “End the Cage Age” campaign has prompted interest in temporary crating (TC) systems.

Traditional farrowing crates (FC) reduce piglet crushing but severely restrict sow movement and natural behaviors.

TC improves sow welfare but may slightly ↑ piglet crushing, especially in the first days postpartum.

Nest covers (NCs) can help ↓ drafts and might keep piglets away from the sow, potentially reducing crushing risk.

Study Aim

To evaluate the effects of NC and TC on:

- Piglet growth and crushing rates.
- Sows' and piglets' behavior.

Hypotheses

1. TC piglets will have ~ growth and mortality to FC piglets.
2. NCs will impact piglet distribution and ↓ crushing.
3. Slightly ↓ ambient temperatures (T) will ↑ NC use and ↓ crushing risk.

Materials & Methods

Farm & Experimental design

Commercial Duroc-line sow farm.

4 farrowing rooms (FR) used:

- FR13 & FR14: FC – 4.24m².
- FR15 & FR16: TC – 5.26m² (3.89m² sow).

Statistical Analysis

Tests: Shapiro–Wilk, ANOVA, Kruskal–Wallis, Pearson's χ^2 , post-hoc analysis.

Significance threshold: $p < 0.05$

Software: R (v2025.05.0)

Ethical Considerations: Intervention was performed to prevent piglet crushing when risk was identified.

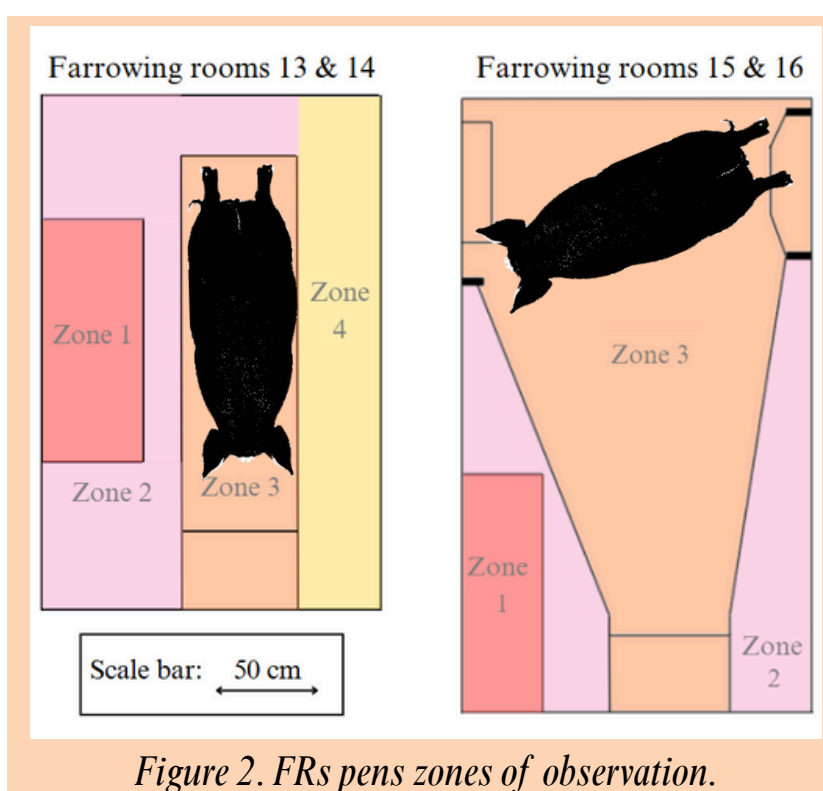


Figure 2. FRS pens zones of observation.

Table 1. Experimental design summary.

EG	FR N° batch 1	FR N° batch 2	Ear tag color	Housing	NC availability
1 (TC-NC)	15-right; 16-left	15	Red	TC	NC
2 (TC-NNC)	15-left; 16-right	16	Yellow	TC	No NC
3 (FC-NC)	13-right; 14-right	13-right; 14-right	Blue	FC	NC
4 (FC-NNC)	13-left; 14-left	13-left; 14-left	Green	FC	No NC

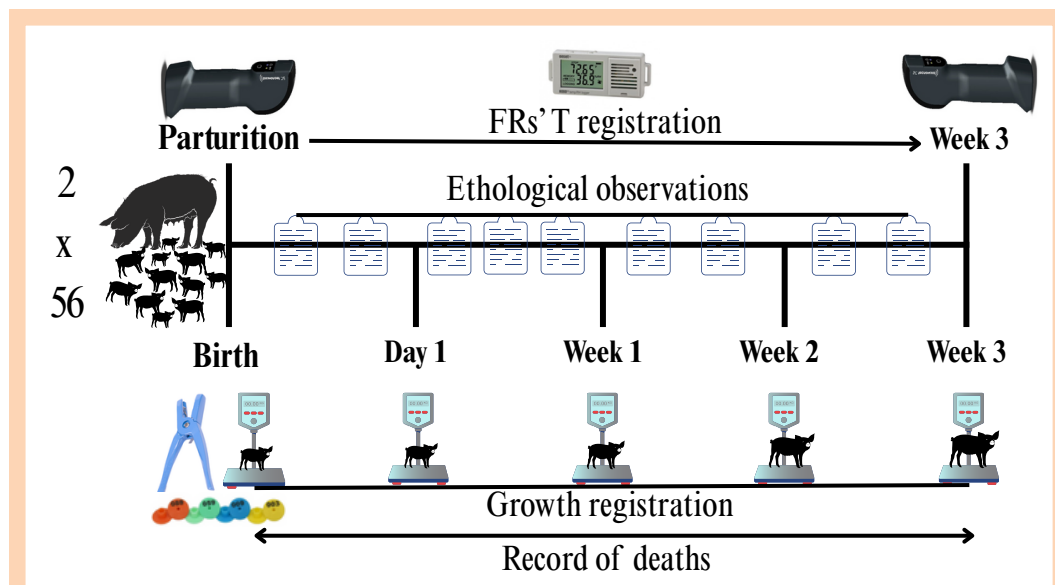


Figure 1. Data collection.

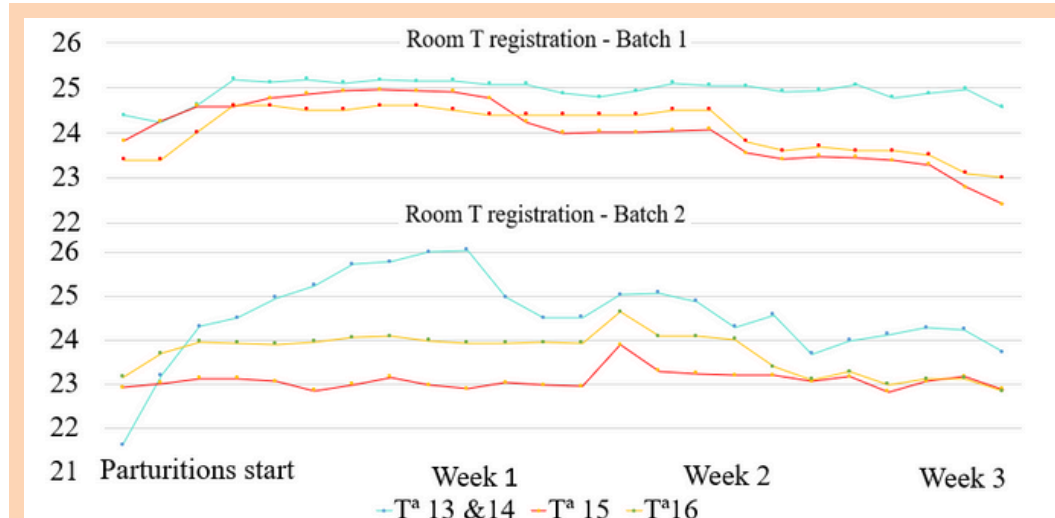


Figure 3. FRS' T registration.

Results & Discussion

Piglets' Growth

- Batch 2 TC piglets showed significantly ↑ ADG and weaning weight (Figure 5).
- Early growth highly influenced survival (Figure 4).

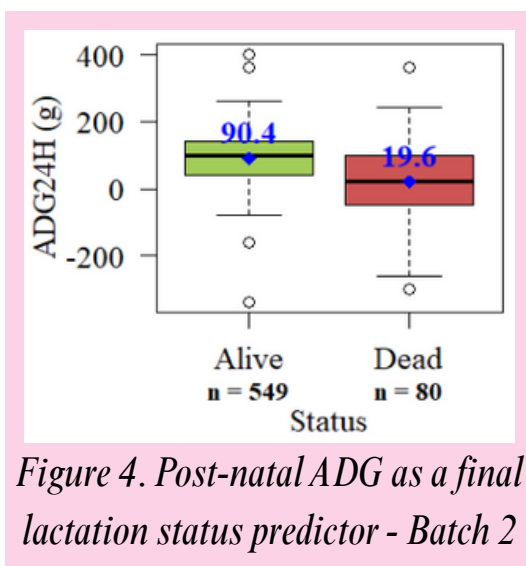


Figure 4. Post-natal ADG as a final lactation status predictor - Batch 2

Piglets' Crushing Rate

- No significant difference.

Piglets' Behavior

- TC piglets showed ↑ interactions with the sow and broader pen use.
- NCs promoted piglet resting in warm zones away from the sow, especially under ↓ room T, altering resting distribution in TC pens (Figure 6).

Limitations

Batch 1: 77 missing piglets.

Batch 2:

- Different initial mean DF between EGs' sows.
- Different mean birth weight between EGs' piglets
- FC sows had ↑ parity, possibly affecting piglet performance.

Both: Small sample size, specially for mortality interpretation.

Farm Workers' Opinion on TC and NC

Despite handling challenges and initial concerns about crushing, TC was positively perceived.

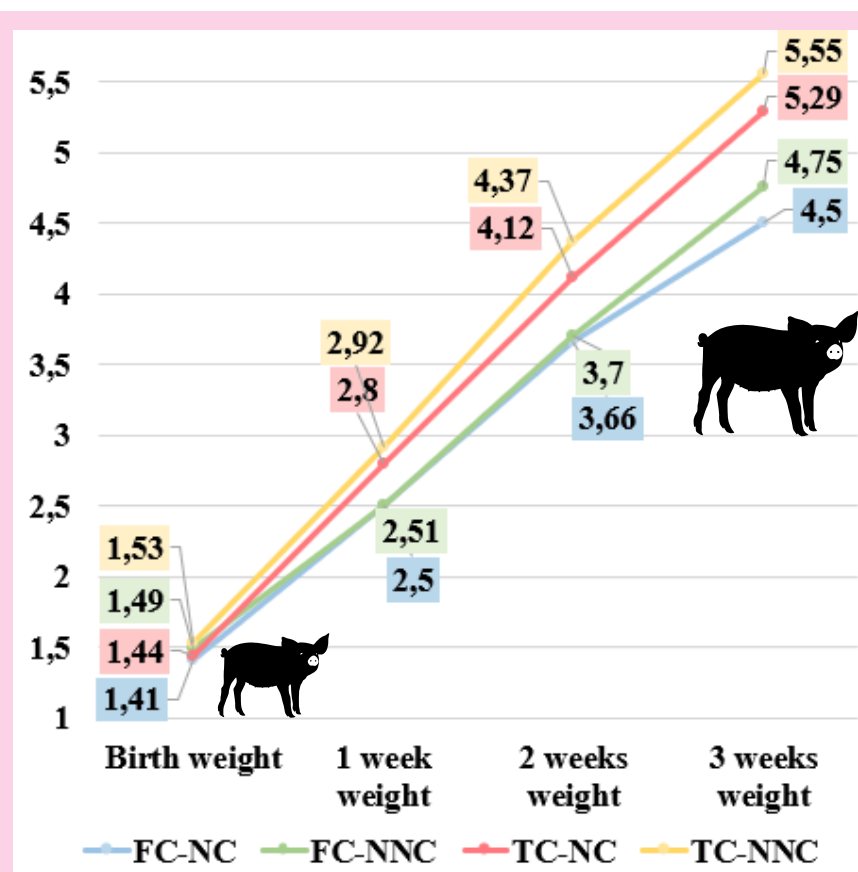


Figure 5. Piglets' growth (mean weight per EG) - Batch 2

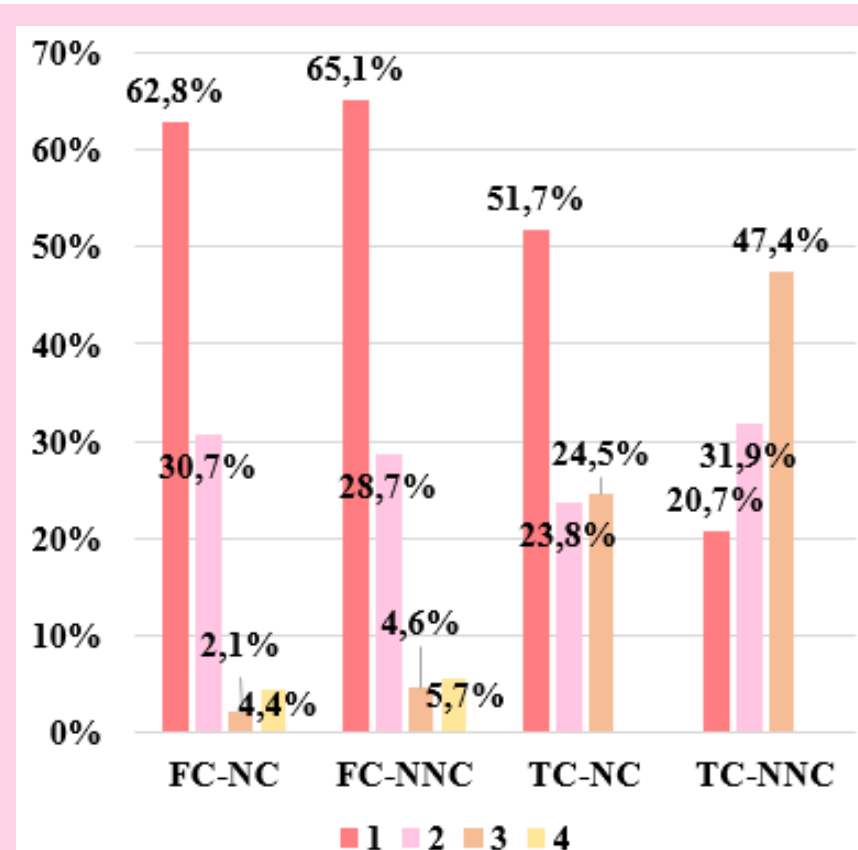


Figure 6. Piglets' resting zone preference per EG - Batch 2

Conclusion

Despite the limitations discussed, the results indicate that TC might support early piglet development and welfare without compromising productivity, while NCs may enhance nest use in cooler conditions and encourage safer piglet behavior, though without clearly reducing crushing rates.



Figure 5. TC-NC EG

References

Goumon, S., Illmann, G., Moustsen, V. A., Baxter, E. M., & Edwards, S. A. (2022). Review of temporary crating of farrowing and lactating sows. *Frontiers in Veterinary Science*, 9, 811810.

EFSA AHAW Panel (EFSA Panel on Animal Health and Welfare). (2022). Welfare of pigs on farm. *EFSA Journal*, 20(8), e07421.