Improved health, welfare and viability in young pigs: how to encourage piglets to use their nest

Description

The piglet nest is the warm, safe area of a free farrowing pen where piglets are protected against cold and being crushed by the sow. Therefore improving its use can help to improve the chances of survival. In an experiment, piglet nests with floor or lid heating, with and without lighting and temporary confinement of the piglets were compared to assess how frequently the piglets used the nest within their first three days of life.

Applicability box

Theme
Pigs
Farm type
Indoor housing with outdoor run
Production stage
Sows + piglets

Welfare Environment Cost

Legislation

- Following the EU organic Regulations 2018/848 and EU 2020/464, the suckling period should be 40 days or more. EU regulations don´t give specific rules for the design and management of the piglet nest. Only the indoor pen size is regulated and has to be at least 7.5 m^2.
- German Regulation for Productive Livestock (both organic and conventional, TierSchNutztV 2006): The floor in the lying area of suckling piglets must be solid. It must be either insulated and heated or covered with bedding. Within the first 10 days of life, the temperature in the lying area of the piglets must be 30° C or more.
- The Swiss technical directive on the welfare of pigs ("Tierschutz-Kontrollhandbuch") stipulates that the piglet nest must be heated to >30 °C in the first 3 days of life and piglets must have permanent access to the nest.

Relevance for animal welfare

- As restriction of movement is only allowed for short periods, organic sow management allows the animals to move freely and perform species-specific behaviour. Piglet losses can still occur because free farrowing can be associated with an increased risk of piglets being kicked or crushed by the sow. Due to both ethical and economic considerations, one of the aims of organic pig husbandry is to reduce piglet losses as much as possible. Early and frequent use of the piglet nest can improve piglet survival because it reduces the risk of cooling and being kicked or crushed by the sow.

A heated, bedded and insulated piglet nest provides a suitable resting area for suckling piglets.

Relevance for environmental impact

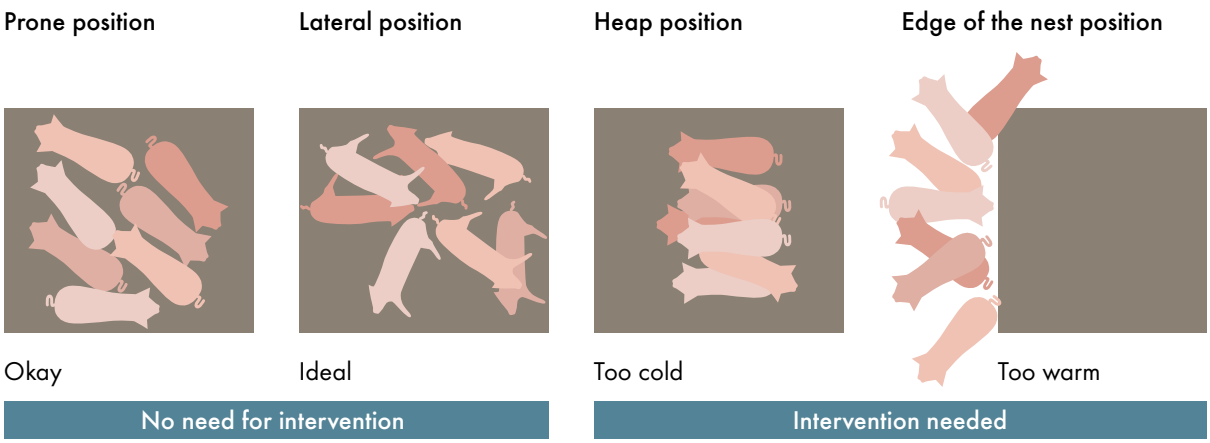
- Providing a warm microclimate only in the piglet nest instead of heating the whole barn reduces the total energy consumption for heating.
- An insulated piglet nest further decreases energy requirements.
- In our study, energy consumption was lower with underfloor heating than with lid heating. However, lower temperatures were also present; this did not show any directly discernible effects on piglet nest utilisation.
- Energy consumption for lighting in the piglet nest is very low when LEDs are used.

Cost and labour

- Over its lifetime, the cost of operating a piglet nest, i.e. the energy for heating, generally surpasses its acquisition cost. Therefore, energy efficiency of the piglet nest pays off long-term.
- The acquisition costs for electric floor- or lid-heating don't differ (€ 200 in Germany 2020).
- Locking the piglets inside their nest during the feeding times of the sow took only two minutes on average in our study.

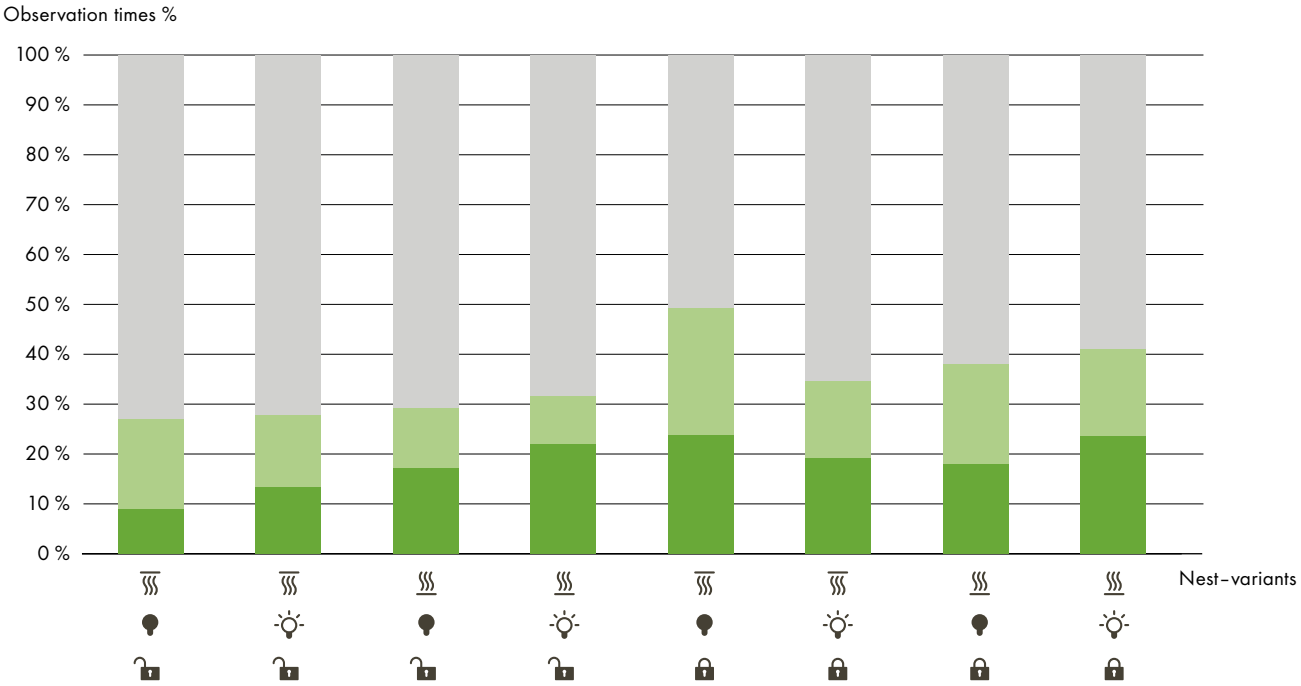
Recommendations

- **Size of the nest:** The piglet nest should be large enough to provide space for all piglets of the litter at the same time. Usually 0.8–1.0 m^2 should suffice.
- **Location of the nest:** A piglet nest close to the lying area of the sow ensures quick and easy access after birth. It is recommended to install the piglet nest adjacent to the service aisle, to allow comfortable control by the farmer.
- **Curtains:** To avoid drafts, curtains should be installed to close the nest. After farrowing, the curtain should be opened to allow easier access for the newborn piglets.
- **Temperature:** The temperature in the nest should be 30 °C or more, during the first days after birth. It is recommended to check them regularly.
- **Lying position:** The use of the piglet nest and the lying positions of the piglets allow conclusions to be drawn about the design's quality and the temperatures. However, these correlations are not yet as reliable in the first days of life, as the young animals naturally lie in a heap and with the mother sow a lot and have to get to know the nest first.



Within the first days of life, piglets tend to lie in a heap position with their mother, regardless of the ambient temperature. Therefore, it is only recommended to use the lying position of the piglets to estimate the temperature conditions when the piglets are already some days old. In principle, however, the pile position can indicate too low temperatures, which should then be increased. If the piglets are lying in a litter position at the edge of the nest or in front of it, the temperature in the nest seems to be too high and should be checked. There is no need to change the temperature in the piglet nest if the piglets are lying in a prone or side position in the nest.

Figure 1: Comparison of different piglet nest designs



In the POWER project 6 measures regarding piglet nest design and management were combined to 8 nest-variants. These were compared in terms of piglet nest use by video analysis. In nest-variants, where piglets were confined during the sow's first 4 feeding times after farrowing, the nest was empty less often, than nest-variants without confinement. Thus, piglets of the nest-variants with confinement seemed to use the nest better. The time piglets were confined was not added to the observation time. The different nest designs in terms of heating and lighting do not seem to affect nest use.

Further information

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- **Swiss Federal Council (2008):** Animal Protection Ordinance (AniPO, SR 455.1): www.fedlex.admin.ch [Link].

A piglet nest made of plastic and metal can be cleaned especially well.

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Research Institute of Organic Agriculture FiBL, Switzerland
Ackerstrasse 113, Postfach 219, CH-5070 Frick
Phone +41 62 865 72 72, info.suisse@fibl.org, www.fibl.org

Author: Katharina Heidbüchel (TI-OL, DE)
Contact: lisa.baldinger@thuenen.de
Revision: Lisa Baldinger (TI-OL, DE), Sophie Thanner (FiBL, CH)
Proofread: Andreas Basler, Lauren Dietemann (both FiBL, CH)
Editors: Rennie Eppenstein, Sophie Thanner (both FiBL, CH)
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