Question to EURCAW-Pigs: Nest building materials for sows
20 April 2023

Question
Received: 14 November 2022

"EURCAW-Pigs recommends jute sacks and ropes at the front end in farrowing crates as nest building material. Pig farmers often declare that these materials are complicated to use because there is a risk of clogging the pits and it requires significant additional work to farmers in conventional farms.
That's why we wondered if EURCAW-Pigs could know precisely what are the different nest building materials currently used in the conventional pig farms of the different EU member states and how efficient they are.
Farmers are using wood as a nest building material according to the following criteria: the material must reach the ground and be mobile (see example in attached photo). We doubt its interest as nesting material, i.e. allowing the sow to carry out actions of raking (forward/backward movement of the head, on the ground or the material), scratching/kicking paw, arranging or transporting the material. Do you have any scientific data, size or other criteria, benefits and disadvantages about using wood as nest building material for sows in farrowing crates?"

Experts from EURCAW-Pigs wrote the reply. The EURCAW secretariat did the final editing. For queries: info.pigs@eurcaw.eu.

So far, no representative data are available on nest-building materials used on farms in the different EU member states. However, based on our expert knowledge we can give an overview on the suitability of different materials to meet the sows' motivation for nest building. The answer is not a result of a complete literature survey, but an expert opinion.

Answers

In short, the answers are:

- *Which nest building materials are currently used?*
  When nesting materials are being used it is mainly straw, sawdust and jute sacks. Materials like ropes, metal chains or plastic objects cannot be regarded as nesting material.
- *Is wood suitable as nest building material in farrowing crates?*
  Wood as a block connected to a chain is not suitable as nesting material; because it does not fulfil the characteristics of a suitable nest-building material. It does not allow rooting and can't be carried in the mouth of the sows. Only small branches (twigs) can serve as nesting material, however in a farrowing crate they are not very feasible.

Background
Sows have the intrinsic motivation to find a suitable nest site 36-16 h before farrowing and to build a nest 16-2 h before farrowing. If possible, they will dig a hole by scraping the soil, collect branches, raw and fine fibres, and build a nest of these materials shortly before giving birth. Depending on the climatic conditions the sow will collect more or less fine fibrous materials (grass, ferns) for insulation and may also cover the nest with branches and other materials.

Referring to the natural behaviour of sows, suitable nest building material should allow rooting, digging, pawing, and carrying in the mouth.


(©requestor)

The example of the woodblocks (left photo) is certainly **not suitable as nest building material**, but the example of a jute sack (right photo) connected to the lower bar of the crate is.


(©WUR)

Practical implications

Farrowing sows should be provided with organic fibres within their reach to serve as nest-building material. However, the supply of suitable nesting material depends on the housing environment.

In organic farms and similar, where free farrowing pens have a large proportion of solid floor and the facilities to handle straw manure are available, the provision of suitable nesting material (e.g. in form of straw) is not a problem. A nest of fibrous materials like straw provides thermal comfort and dries up the newborn piglets, preventing hypothermia and promoting weight gain of the piglets. In addition, a soft floor surface made of nest materials (such as straw or similar) also prevents front-knee and sole lesions and at the same time provides piglets with exploratory materials.

However, in conventional slatted housing systems, the provision of large amounts of nest-building material is limited. The majority of conventional farrowing sows is housed in crates with largely slatted floors. In such systems, the use of loose materials like straw, hay and sawdust are not very feasible because it will come out of reach of the sow shortly after application. In addition, it can block the slots and/or the slurry removal system. In contrast, jute sacks of firm and natural fabric can be connected to the front of the farrowing crate without the risk of clotting slats or blocking the slurry system. Since it is made of natural fibres and can be manipulated (e.g. rooting, pawing) and carried in the mouth it can be considered as nest-building material. Attaching the jute sack on a low level where it partly touches the floor is crucial to prevent the sow from tearing it in pieces. A rack for straw or similar materials is another possibility to provide wood shavings, straw or paper as nest-building materials. The construction of the rack should allow the sow to take a sufficient amount of nest-building material with her snout. After birth, all the mentioned materials can also serve as exploration material for piglets for a limited time. However, the benefits for the sow in terms of reducing stress and providing stimulation of farrowing and the initiation of maternal behaviour will increase if the sow is not crated around farrowing and time of nest building.

Finally, pieces of hard material (wood, metal, plastic) cannot be regarded as nest building materials, because they do not provide all requirements of suitable nest-building material.

EURCAW-Pigs was designated by the European Union on 5 March 2018 through Regulation (EU) 2018/329,
in accordance with Articles 95 and 96 of Regulation (EU) 2017/625.

Further remarks
An existing EURCAW-Pigs review on "Farrowing housing and management" can be found on https://edepot.wur.nl/517902 and later in 2023 a review on nesting materials will be produced by EURCAW-Pigs and will be uploaded to https://eurcaw-pigs.eu/scientific-output

Relevant references
EURCAW-Pigs (2020) Farrowing housing and management, Review
https://edepot.wur.nl/517902

Bolhuis, J.E., Raats-van den Boogaard, A.M.E., Hoofs, A.I.J., Soede, N.M. (2018). Effects of loose housing and the provision of alternative nesting material on peri-partum sow behaviour and piglet survival. Appl Anim Behav Sci 202:28-33
https://doi.org/10.1016/j.applanim.2018.01.004

Yun, J., Swan, K.M., Farmer, C., Oliviero, C., Peltoniemi, O., Valros, A. (2014). Prepartum nest-building has an impact on postpartum nursing performance and maternal behaviour in early lactating sows. Appl Anim Behav Sci, 160, 31-37
https://doi.org/10.1016/j.applanim.2014.08.011