

# Swine Welfare Fact Sheet



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## Welfare of Sows and Piglets at Farrowing

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**Background:** Over the last decade, there has been a steady move away from confinement housing systems for sows during gestation in many parts of the world, due to concerns surrounding the effects of close confinement on the welfare of the sow. The farrowing crate confers similar degrees of confinement to the gestation crate, and has also become a focus of attention for welfare lobby groups looking to initiate change. However, assessing welfare of swine in farrowing accommodation presents unique challenges. Welfare assessment within all other phases of swine production involves pigs at a single stage of their productive life. Within the farrowing environment, the sow and her piglets are at two very different stages of their life and have different requirements in regards to their thermal, social and physical environments. Moreover, the natural behavioral context surrounding the farrowing period has a major impact on sow and piglet welfare within any given system. Consequently, a system that may be ideal for the welfare needs and requirements of the sow may be far from optimal for her piglets and *vice versa*. Additionally, the caretaker's needs and skills have to be factored into the design and management of any alternative system to the farrowing crate. A system that theoretically will improve or safeguard sow and piglet welfare may not do so in practice, if the caretaker's role becomes unreasonably difficult.

**Behavior around farrowing:** Under natural conditions, there is a complex series of behaviors carried out, with sows and piglets undergoing various phases of isolation and community integration and living. The phases can be divided into six distinct parts: (i) isolation and nest site seeking, (ii) nest building, (iii) farrowing, (iv) nest occupation, (v) social integration, and (vi) weaning.

Between 48-24 hours before farrowing, sows will isolate themselves from the social group and seek a nest site, maybe walking between 1 and 4 miles to do so. Once a nest site is selected, the sow will spend many hours gathering and arranging vegetation to construct a nest into which she can burrow, finishing nesting a few hours before farrowing. Once farrowing begins, the sow is usually passive, lying still to prevent crushing her vulnerable

newborns and allowing them to access colostrum safely. During the first 48 hours after farrowing, the sow is inactive for 90-95% of the time. The sow and litter occupy the nest for around 7-10 days, during which time, behavior revolves around suckling. Unlike most mammals, milk is only available for around 15 seconds every 45 minutes which, not surprisingly, makes each suckling event very important for the piglets.

A few days after farrowing, the sow begins to leave the litter in the nest and spend some time out foraging for food. By about 7 days, she rejoins her social group for foraging, but spends the rest of the day with or near her litter. By 9-10 days, the litter abandons the nest and begins to forage with the sow. By the end of the second week after farrowing, the sow begins to gradually integrate the piglets with the larger social group. Finally, the process of weaning is initiated, with the piglets gradually increasing solid food intake and decreasing milk intake until fully weaned at between 8 and 19 weeks of age.

**Farrowing system possibilities:** By far the most common system in use is the farrowing crate, with an estimated 85% of all sows in the U.S. being housed in this type of system at farrowing. Although there are a wide variety of other options available for farrowing systems, it is essentially impossible to design a commercially-viable system that does not come into conflict with one or more aspects of the natural behavior described above. For commercial production, the options range from the standard farrowing crate to the farrowing ark in an outdoor paddock. The different systems give different amounts of freedom of movement and social contact to both the sow and her litter (see Figure 1) but also impact welfare differently. Importantly for the producer, alternative systems also come with an increased economic cost.

**Major challenges at farrowing:** The natural behavior clearly shows that within the different phases, the sow and, after farrowing, her litter, have different sets of requirements. This presents a number of challenges, including, but not limited to:

- Isolation and nest site seeking. Sow wants almost unlimited space and nest-site options, away from other sows.
- Nest building. Sow wants space and material to build nest with.
- Farrowing. Sow wants a degree of comfort and to be undisturbed. Piglets need a safe, warm and protected environment.
- Nest occupation. Sow wants the ability to get away from the litter. Piglets need protection, warmth and regular suckling events.
- Social integration. Sow wants to mix with other sows, and mix her piglets with other piglets. Piglets want gradual social integration, with the sow nearby.
- Weaning. Sow wants to gradually decrease suckling and stop lactation. Piglets want gradual change from milk to solid food and to be weaned when ready.

From this, we can see that the conventional farrowing crate will likely impact the sow's welfare during any phase in which she needs freedom of movement. From the piglets point of view however, the crate plays a crucial role in safeguarding their welfare, primarily by reducing mortality, at farrowing and during the nest occupation phase. The crate is also relatively easy to manage. At the other end of the system spectrum, a farrowing ark in a paddock may better meet the sow's freedom of movement, increasing her welfare, but may increase the pig-

lets' vulnerability to crushing, starvation and hypothermia, thereby decreasing their welfare. Management of outdoor systems can also be difficult, especially if the sow is protective. All other farrowing systems in Figure 1, will likewise have welfare trade-offs.

**Conclusions & Recommendations:** The assessment of welfare within farrowing systems remains a difficult area of study due to the conflicting needs of the sow and her litter. Conventional farrowing crates can safeguard piglet welfare during the farrowing and nest occupation phases, especially limiting early pre-weaning mortality; an extremely important factor for the welfare of the individual piglet and also for the profitability of the commercial producer.

However, conventional crates also have a number of disadvantages with respect to sow and piglet welfare during other stages of lactation. Many alternative systems confer welfare benefits during some of the farrowing stages, albeit at an economical cost to the producer.

For piglet mortality not to be a problem, which currently it is, there needs to be a greater reliance on the selection of our gilts and sows for positive maternal traits (i.e. locating, moving and being responsiveness to their piglets when lying down) and a greater reliance on caretaker skills to manage the farrowing and lactating systems optimally.

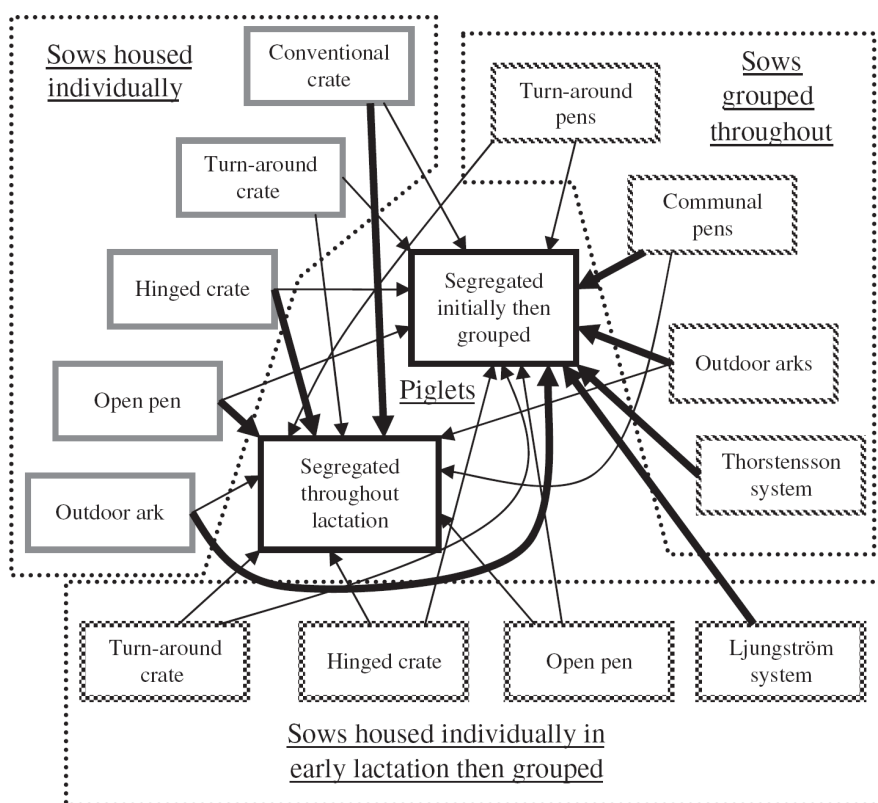


Figure 1: Diagrammatic representation of possible farrowing systems. Most common combinations joined by thick arrows. (Source: Johnson & Marchant-Forde, 2009)

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