

What matters to a sow in a farrowing system?

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Farrowing and the system

- Farrowing crates are largely used in NL
- Why?
 - Relatively low numbers of crushed piglets
 - Control by farmer is easy possible
 - Faeces is easy to remove



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Standard farrowing crate



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Farrowing and the system

- Farrowing crates are largely used in NL
- Why?
 - Relatively low numbers of crushed piglets
 - Control by farmer is easy possible
 - Faeces is easy to remove
- What is the problem?
 - Welfare of sows is challenged
 - E.g. no locomotion possible, no nest building possible, injuries develop, bar biting is observed
 - Other systems exist and are under development, but:
 - It is still not clear what a farrowing/lactating sow really needs



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Goal

Aim of this study:

- Determine what a sow needs in a farrowing system by using existing information from literature

....of several projects together

- Re designing the farrowing system
 - It has to meet the needs of the sows and piglets
 - of the farmer
 - of the environment
 - of the consumer and citizens

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The "needs" approach

- Why using needs?
 - Preventing discomfort
 - It has a motivational background
 - Physical
 - Behavioural
 - It results in 'okay' welfare
- Considering interests rather than solving the current problems and reducing discomfort at that level
 - As used in previous research like Comfort Class
- What should we give to the sow?



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The “needs” approach



- Definition of welfare (Bracke et al., 2001):
 - “The quality of life as perceived from the animal's point of view, i.e. the level of satisfaction and frustration of the animal's needs”
- Definition of needs (Bracke et al. 1999):
 - “The states of the animal's motivational systems, which specify the animal's proximate goals”

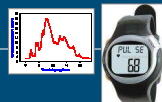
Analytical framework

A need has been suggested to be a need if motivation to fulfil that need is present and/or deprivation effects are observed



Photo: Wim Houwers

Analytical framework



- Three questions:
 1. What is the behaviour concerning the need?
 - represents type, duration and intensity of natural behaviour
 2. Is distress present when deprived from the need?
 - physiology (e.g. heart rate, cortisol) and behaviour (time budgets, stereotypies) in system experiments
 3. Is motivation to fulfil the need proven?
 - demand and preference studies

Inspiration

Indication

Proof

Results

- Studied needs:
 - Feed and water intake
 - Exploration and foraging
 - Locomotion
 - Thermoregulation
 - Social contact
 - Nesting behaviour
 - Maternal behaviour

Results: Nesting behaviour

- Example: Nesting behaviour
 1. - (isolation from group)
 - building mock nests
 - nest site seeking
 - nest building
 2. - Physical: Increase in cortisol and heart rate
 - Behavioural: nesting behaviour (nosing, rooting) and redirected behaviours (biting bars), and restless (→ crushing piglets)
 3. - Authors suggest motivation for nest building based on natural behaviour and redirected behaviour
 - Others proof it by test: lifting a lever, giving preformed nest

Discussion



- Word ‘motivation’ easily used in literature
- Performed motivational studies are limited
- Interactions between needs are not or only occasionally considered
- Ultimate vs. proximate goals/needs
- Using needs only is not enough in designing

Discussion

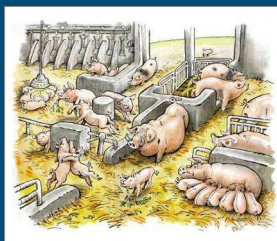
- Not all needs found in literature are included
 - Rest
 - Defecation
 - Play
 - Mating
 - Respiration
 - Health
 - Safety
 - Body care
- Lacking information at this point (e.g.):
 - Is having a nest necessary after piglets are born
 - Effect social isolation on sow
 - Enrichment and piglets
 - The importance to the sow of gradual weaning
 - The effect on the sow of early weaning

Conclusions

- This approach is a useful tool to identify:
 - which needs are suggested to be necessary to be fulfilled
 - during which periods these needs are necessary
- It is not always possible to identify to what degree needs have to be fulfilled, e.g. locomotion
- A clear yes or no answer is not possible
- Not finished yet!

The next step...

- is translating these needs into facility requirements



Design of a family system
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Thank you for your attention

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Photo: Wim Houwers