



The effects of outdoor and indoor housing on pig health

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Who are we???

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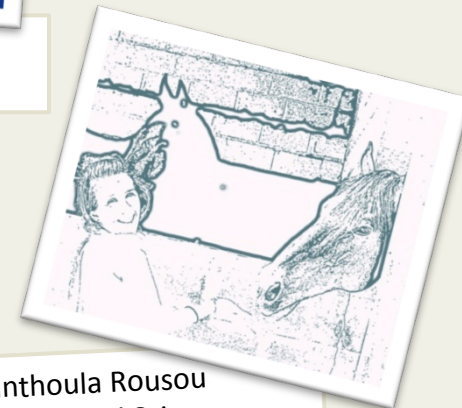
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The effects of outdoor and indoor housing on pig health

Our project

- **Differences in pig health between outdoor and indoor systems**



Literature



Interviews with farmers (conventional, free range, organic)



Interviews with experts (scientists)



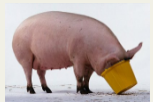
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Our project

- Differences in pig health between outdoor and indoor systems



Literature



Digestion



Respiration



Locomotion



Reproduction



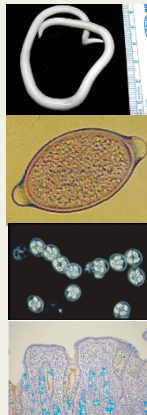
Skin



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What literature says about.... **digestion**

- **Intestinal parasites**
 - **Helminths** → higher outdoor (Eijck and Borgsteede, 2005)
 - **Protozoa:** → higher outdoor (Ryan et al., 2003); (Bilic and Bilkei, 2006)
- **Recommendations**
 - Anthelmintics
 - Pasture rotation
 - Biological control (fungus in feed, which kills certain helminths)
 - Start off farm with helminth-free sows





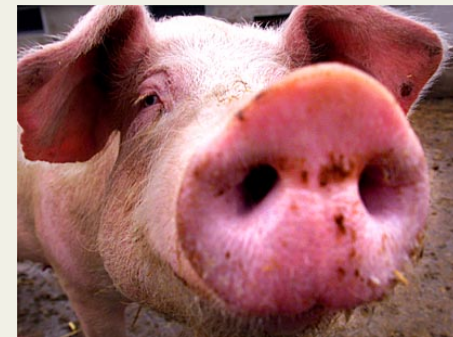
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What literature says about.... **Respiration**

- **Pneumonia & pleuritis**

	Organic (%)	Conventional (%)
Pneumonia	19.2*	4.5 (Kijlstra and Eijck, 2006)
Pleuritis	1.8*	7.4 (Hansson et al., 2000)

*P<0.001



- **Air quality**

- Ammonia → less outdoor (Møller, 2000)
- Hydrogen sulphide → less outdoor
- Dust → less outdoor...but: providing straw → dust ↑ + endotoxin levels ↑ = more respiratory problems (Møller, 2000), (Kijlstra and Eijck, 2006)

- **Recommendations**

- Prevent draft by better isolation of outdoor areas (plastic flaps/ walls)
- Prevent dust by spraying water/oil

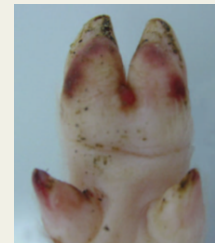


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What literature says about.... **Locomotion**

- **Foot and limb lesions**

- Soil or solid concrete with deep bedding → low prevalence (Kilbride et al 2009, Mouttotou et al 1998, Scott et al 2006)
- Slatted floors → high prevalence (Kilbride et al 2009, Scott et al 2006)



- **Osteochondrosis**

- Deep litter housing + more space → lowest prevalence of O.C. (Grevenhof et al., 2011)

- **Recommendations**

- Use soft surface such as soil or concrete with deep bedding → **less foot & limb lesions**
- Deep litter + more space → **less osteochondrosis**



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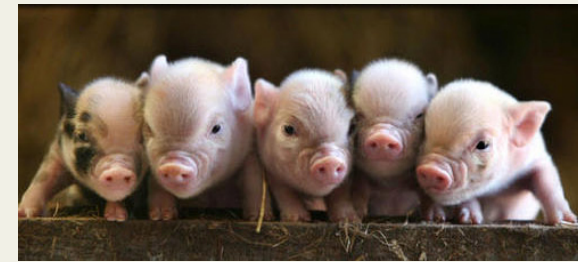
What literature says about... **Reproduction**

- **Sows**

- Reproductive performance → lower outdoor (because of longer lactation period) (Com-EU-Communities 2008); (Varkensbesluit 2012)
- Toxoplasma → higher outdoor (Kijlstra and Eijck, 2006)
- Seasonal infertility → higher outdoor (outdoor 29%, indoor 16%) (Akos and Bilkei, 2004)

- **Recommendations**

- Higher performance → Lactational estrus (Kongsted and Hermansen, 2009) (Alonso-Spilsbury et al., 2004)
- Prevent toxoplasma → No cats

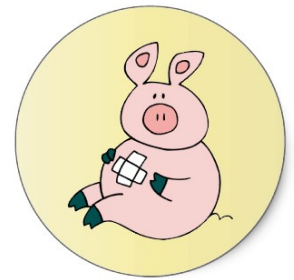




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What literature says about.... **Skin**

- **Tail biting** → less outdoor (Cagienard, Regula et al. 2005)
- **Belly nosing** → less outdoor, non confined sows (organic) (Petersen 1994)
- **Aggressive biting** → less outdoor (Turner, Farnworth et al. 2006)
- **Sun burning** → only outdoors
- **Recommendations**
 - Provide foraging opportunities → less tail biting
 - Provide pre weaning separation → less belly nosing
 - Provide more space → less aggressive biting
 - Provide mud pools, shade → less sunburn





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Interviews

In order to keep a strong link with practical experiences we have interviewed:

Farmers

- 3 Organic farms
- 2 Free Range ('Scharrel') farms
- 2 Conventional farms

Experts

- Health and Welfare
- Transmission of Diseases
- Behaviour
- Production Systems





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What the organic farmers say about it...

“The main health problems we encounter are:

- *Coughing (when pigs stay outside during cold nights)*
- *Leg injuries (when pigs are running too much into structures and other pigs)”*

“Deworming is an important measure in order to control parasitic diseases.”

“Within extensive farms diseases spread less easier within the herd.”

“Having pigs outdoors is the most natural way of farming pigs. Pigs build up natural resistance outside which ensures their health.”





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What the free range farmers say about it....

“Free range farming puts animal health and welfare above everything, which is examined by a veterinarian. We faced problems such as:

- *Tail biting, therefore we docked the tails*
- *Foot lesions (Coronet infections), because of sharp edges in the outdoor area*

“Farming should be based on respect for the animal.”

“Having pigs outdoors makes the sector transparent, everyone can see what is happening.”





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What the conventional farmers say about it....

“Antibiotics are used in order to limit the disease pressure. The pig sector is working hard to limit the antibiotics use.”

“Problems with tail biting occur, especially when the tails are left too long, therefore we need to dock the tails”

“Our pigs are provided with good housing and climate, which is checked regularly.

From a health perspective pigs should be inside, from a welfare perspective pigs should go outside.”

“I don’t have enough land to house all my pigs outside. Environmental laws obstruct me from that.”

“In case the consumers are willing to pay more, I would have my pigs outside and give them more space.”



	No. of animals/ha
Piglets	74
Breeding sows	6.5
Finishing pigs	14
Other pigs	14

Maximum number of animals per hectare in organic (Com-EU-Communities 2007).





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What the experts say about it

“More than health and production, the environmental pressure will be a weak point of outdoor pig husbandry.”

“If outdoor animal husbandry is the way society wants to go, we should do that and we are in possession of the methods to do so.”

“Good management practices are essential for the success of outdoor farms and their beneficial effects on the pigs.”

“The advantages of outdoor animal husbandry should be brought inside in order to create synergy from both systems”





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In conclusion

Literature

Benefits and potential problems but also sufficient ways to overcome.

Farmers

Willing to have pigs outdoors when consumers are willing to pay and environmental laws are not obstructing.

Experts

Outdoor pig husbandry is feasible and beneficial for the animals, although there are still many challenges to overcome.



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Questions???