

Temperament, adaptation and maternal abilities of Meishan and Large White sows kept in a loose-housing system during lactation

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Outline

- Introduction
- Experimental design: performance in lactation
- Objectives
- Behavioural study: measures and results
- Discussion - Conclusion



Introduction

- Genetic variation in pig behaviour

Breeds known for having contrasted maternal abilities and temperament :

Meishan: old chinese unselected breed, very good performance, calm animals

Large White: selected for lean growth rate and prolificacy, active animals

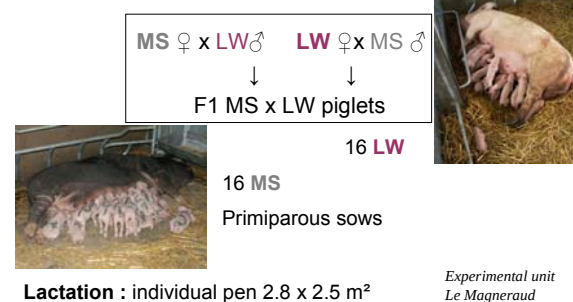
- Towards loose-housing in lactation ...

⇒ sows suitable for this environment



Experimental design

Test of **maternal component** only



Performance in lactation

Meishan vs **Large White**

- No difference in stillbirth and later mortality, remarkably low
- Larger litters
- Heavier piglets
- Higher litter growth
- Better nursing behaviour
- Piglets more eager to suckle

⇒ Large maternal component involved in success of reproduction

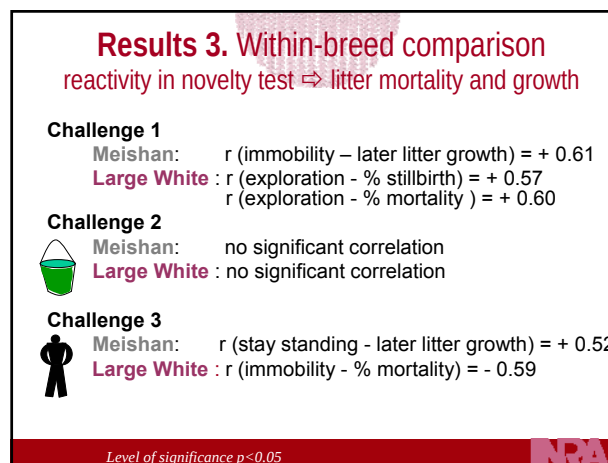
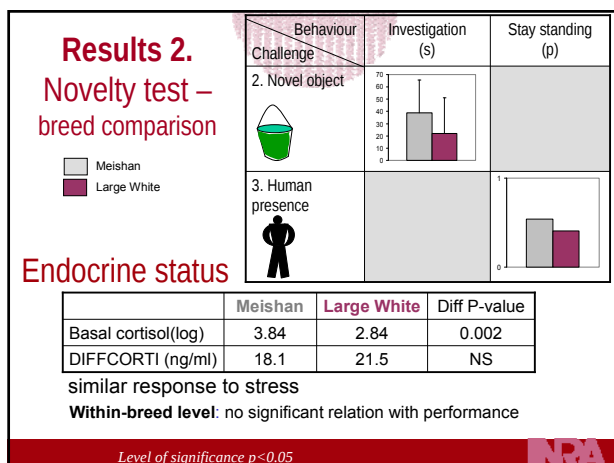
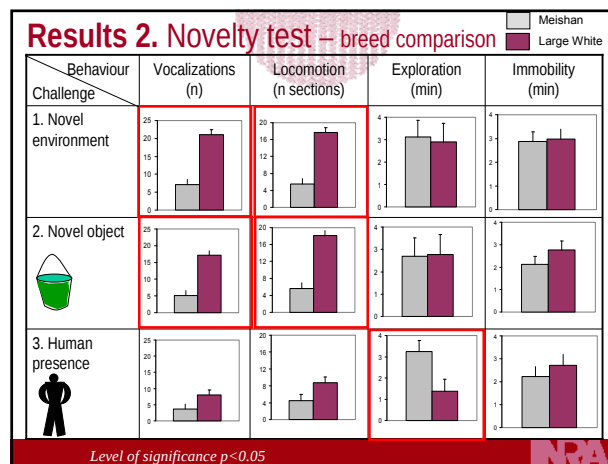
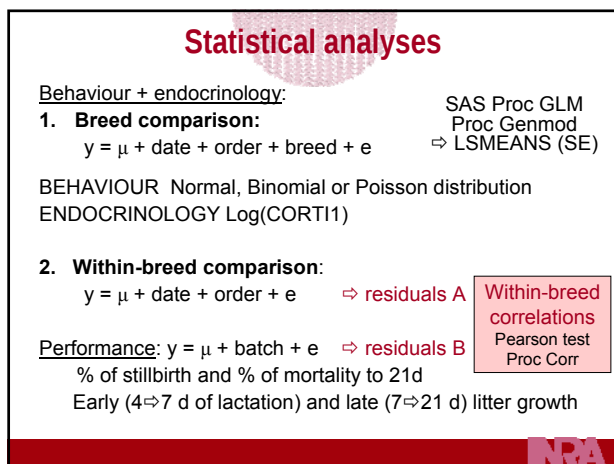
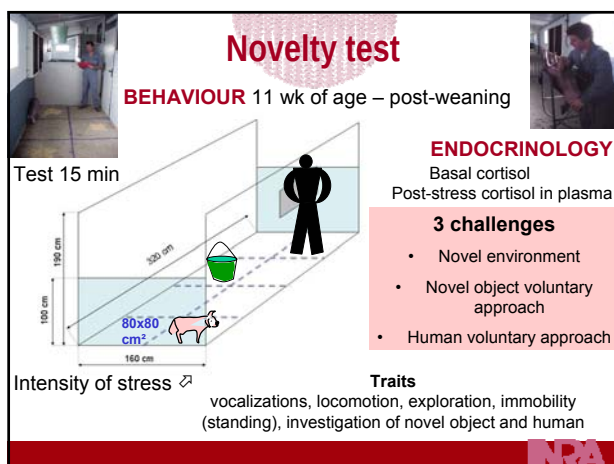
Canario et al., EAAP 2007; Knowing Animals WQ2009

SAS software $p < 0.05$

Objectives

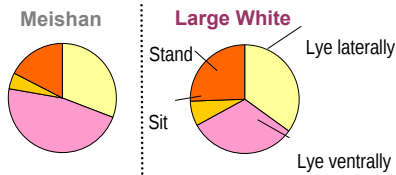
Relevance of behavioural traits recorded early in life, as criteria of selection to improve sow maternal abilities ?

1. Estimate behavioural differences between **Meishan** and **Large White** gilts
In two stressful situations - change of environment
 - Reactivity during a novelty test
 - Adaptation to individual pen in lactation
2. Relations of behaviour with performance in lactation
⇒ within-breed level



Results 4 – Adaptation to individual pen

Between breed No difference in postural activity



Within breed

Meishan $r(\text{standing} - \text{early litter growth}) = + 0.64$
Large White $r(\text{standing} - \% \text{ stillbirth}) = + 0.64$
 $r(\text{standing} - \text{early litter growth}) = - 0.77$



Level of significance $p < 0.05$

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Discussion - Conclusion

- Breed comparison
Low discrimination according to behavioural reactivity in stressful situation (vocalizations and locomotion in **Large White**)
- Predictors of good maternal abilities
 - Standing position
favourable to maternal abilities in Meishan vs unfavourable in **Large White**
 - Exploration: sign of anxiety in **Large White**
 - Immobility $\Leftrightarrow$ growth in Meishan
 $\Leftrightarrow$ survival in **Large White**
- Reactivity in prepubertal period $\Leftrightarrow$ lactation performance
late gestation $\Leftrightarrow$ farrowing performance

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Discussion - Conclusion

- Preliminary study to investigate early behavioural indicators of good maternal abilities – small data set
- Environment at farrowing promoted good performance in both breeds. In farrowing crate ?
- Perspectives:
Relation of aggressiveness during gestation with performance
Analysis of a complete design with purebred litters too



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Acknowledgements

Funding : French Ministry of Agriculture

Data collection : Le Magneraud : J. Bailly, E. Bayle, H. Lagant
Students : A. Bouquet, J. Goutorbe, E. Mosnier, M. Quiertant



Thank you for your attention

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