UNIVERSITY OF COPENHAGEN

DEPARTMENT OF VETERINARY AND ANIMAL SCIENCES

Head morphology and body measurements of IUGR and normal piglets – a pilot study

E-mail: mnn@sund.ku.dk

Marlene Nytofte Nielsen, Joanna Klaaborg and Charlotte Amdi

Department of Veterinary and Animal Sciences, University of Copenhagen, Frederiksberg C, Denmark

INTRODUCTION

- Hyperprolific sows have increased litter sizes but also an increased amount of piglets that have been exposed to varying degrees of intra uterine growth restriction (IUGR).
- IUGR piglets have lower survival rates and need extra care to improve their survival (Amdi et al 2013, 2016, 2017 JAS).
- Due to brain sparing IUGR piglets have a different head morphology (Hales et al 2013 JAS, Chevaux et al 2010 IPVS), however this method has not yet been quantified.

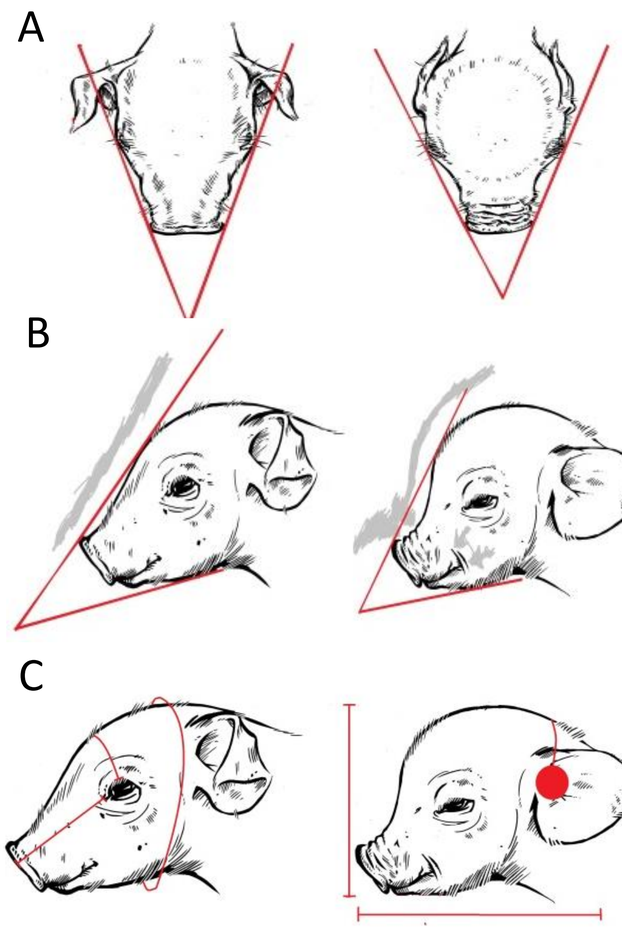
AIM OF STUDY

To quantify the headshape identification method.

MATERIALS AND METHODS

- Eight newborn piglets were characterized as either normal or IUGR based on BW and head shape.
- After birth, several measurements of head and body were carried out.
- Data were analyzed using PROC GLM in SAS.

Figure 1



(mod. from Hales et al. 2013, JAS)

RESULTS

- Head height, angle of the head (figure 1A), nasal-bridge, length and diameter were all smaller in IUGR piglets compared to normal piglets ($P < 0.05$).
- Angle of the nasal-bridge was greater in IUGR piglets compared to normal piglets (45.0 vs. 31.5°; $P < 0.01$; figure 1B).
- Length of snout-to-eye and ear-to-ear were smaller in IUGR piglets compared to normal piglets ($P < 0.05$; figure 1C).
- Length between shoulders, between shoulders and hips and length from snout to tail were smaller in IUGR piglets compared to normal piglets ($P < 0.05$).

CONCLUSION

- There are significant differences in morphological features between IUGR and normal piglets.
- The difference in head-nasal angle confirms the brain sparing effect that occurs in IUGR piglets.
- The head shape is an easy on-farm tool for the farmer to locate IUGR piglets needing extra care rather than BW alone.