

INDIVIDUAL BEHAVIOURAL PROFILE IN GROUP HOUSED SOWS AND ITS IMPACT ON THE OFFSPRING

TATEMOTO, Patricia; BERNARDINO, Thiago de Almeida; LIMA, Beatrice Morrone; ZANELLA, Adroaldo José

Animals vary in the way that they interact with their environment, even within populations that we consider homogeneous. Our objective was to evaluate the individual profile of group housed pregnant sows in relation to their interactions with their social and physical environments, and the impact of the characteristics in their offspring. Twenty-nine pregnant sows were studied, on an experiment testing high and low fiber diets. The assessments were made by direct observation, for 24 minutes per animal, per day of observation. This sampling strategy was chosen because it comprises times before and after the two meals (12 min before and 12 min after). Each data collection period was conducted over three consecutive days, on the 30, 60, 75 and 90 (-1 and + 1 days) of pregnancy. The behaviour was consistent, without any changes over pregnancy ($p > 0.05$). The diets used in this experiment did not affect individual variation in the sow behaviour. We analyzed fear behaviour in the offspring from sows with high or low abnormal behaviour performance, using open field and novel object tests. We used the coefficient of variation, to assess behavioural variability in sows. Inactivity accounted for 19% of the variability whereas activity levels showed 60% of variability among the sows. Interaction with the physical environment was responsible for 83% of the variability. Abnormal behaviour showed 87% of variability, foraging behaviour had 108% of variability and the variable with the highest coefficient of variation was aggressive behaviour (139%). In the piglets, the offspring from sows with high abnormal behaviour performance spent more time in the central quadrants. In the open field test the offspring from sows with low abnormal behaviour vocalized more. Individual profile characterized by high performance of abnormal behaviour was correlated with measures of emotionality in the offspring. Therefore, it is

Center for Comparative Studies in Sustainability, Health and Welfare,
Department of Veterinary Medicine and Animal Health, School of Veterinary Medicine and
Animal Science, FMVZ, University of São Paulo - USP - São Paulo State,
Pirassununga 13635-900 - SP, Brazil.
Corresponding author – patricia.tatemoto@usp.br

relevant to understand the individual profiles of animals to promote improvements in their welfare.

Keywords: abnormal behaviour; emotionality; piglet; fear tests.

References

1. Bolhuis JE, Schouten WGP, Leeuw JA De, Schrama JW, Wiegant VM. Individual coping characteristics, rearing conditions and behavioural flexibility in pigs. *Behav Brain Res.* 2004;152: 351–360. doi:10.1016/j.bbr.2003.10.024
2. Jensen P. Individual variation in the behaviour of pigs - noise or functional coping strategies? *Appl Anim Behav Sci.* 1995;44: 245–255. doi:10.1016/0168-1591(95)00617-2
3. Koolhaas JM, Korte SM, De Boer SF, Van Der Vegt BJ, Van Reenen CG, Hopster H, et al. Coping styles in animals: current in behavior and stress-physiology. *Neurosci Biobehav Rev.* 1999;23: 925–935. doi:10.1016/S0149-7634(99)00026-3
4. Mendl M, Zanella AJ, Broom DM. Physiological and reproductive correlates of behavioral strategies in female domestic pigs. *Anim Behav.* 1992;44: 1107–1121.

Center for Comparative Studies in Sustainability, Health and Welfare,
Department of Veterinary Medicine and Animal Health, School of Veterinary Medicine and
Animal Science, FMVZ, University of São Paulo - USP - São Paulo State,
Pirassununga 13635-900 - SP, Brazil.

Corresponding author – patricia.tatemoto@usp.br