EFFECTS OF ENVIRONMENTAL ENRICHMENT ON THE IN PIG REARED IN INTENSIVE SYSTEM

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Pigs are active animals that require a proper environment to express their exploratory behaviour. The absence of enrichment can negatively affect their behaviour and consequently their welfare [1]. In fact, the EU Directive 2001/93/EC states that pigs should be provided with proper materials to satisfy their needs for investigation and manipulation. The aim of the present study was to assess the welfare through behaviour observations in pigs reared in conditions of intensive farming and provided with three different kinds of enrichment. The investigation lasted 7 weeks and involved 75 pigs divided in 3 Groups homogeneous for live weight (34.9±2.57 kg) and age (11 weeks) and reared in boxes with chains hanging from ceiling as basic enrichment. The first Group received a further enrichment composed by logs laying on the floor (LL), the second received an enrichment composed by hanging logs (HL), the third was maintained in the usual environment (C). After an adaptation period of one week, the animals were video recorded on Monday and Thursday for 6 weeks. Every day of observation comprised two sessions of 90 minutes each, one in the morning and one in the afternoon. The scan sampling technique was used [2] with observations recorded for 30 seconds every 5 minutes; behaviours were classified as “Active” (feeding, drinking, exploring and social activity) and "Inactive” (standing and lying). Behavioural sampling [3] was performed on the observation of pig interactions. Statistical analyses were carried out by ANOVA for each behaviour considering the environmental enrichment and the period of the day as variability factors. Interactions among pigs were analysed by a non-parametric test (Wilcoxon). The Results about behaviours did not show significant differences for the parameter “Active” and “Inactive”. Significant differences ($P<0.001$) were detected among the groups on parameters related to the social interactions. Specifically, in the C Group it was observed that pigs showed a higher incidence of head to head knock and bites, while belly nosing, considered a social-interaction behaviour [4], was higher in HL Group ($P<0.001$). In addition, in HL Group the overall aggressive behavioural patterns were significantly lower ($P<0.02$). The period of the day (morning or afternoon) resulted in statistical significant differences, with pigs of all groups being less active in the morning than in the afternoon ($P<0.01$). In conclusion, the use of hanging logs was more effective than logs laying on the floor in reducing aggression within the members of the group, which improved environment and animal welfare.

[1] Averós X., Brossard L., Dourmad J. Y., de Greef K., Edge H.L., Edwards S.A., Meunier-Salaun M.C. A meta-analysis of the combined effect of housing characteristics on the behavior and performance of pigs, Applied Animal Behaviour Science 127: 73-85, 2010. [2] Martin P., Bateson P. Measuring Behaviour. An Introductory Guide. Cambridge University Press. 2007. [3] Jensen P. An ethogram of social interaction patterns in group-housed dry sows. Applied Animal Ethology, 6: 341-351, 1980. [4] Yuzhi Li, Gonyou H.W. Analysis of belly nosing and associated behavior among pigs weaned at 12-14 days of age. Applied Animal Behaviour Science 77: 285-294, 2002.