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Organizan

AUPA Asociación Uruguaya de Producción Animal

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Animal behavior studies as a tool for improving husbandry strategies in pigs fattening systems

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The aim of the present study is to characterize general and social pig behavior under two different production systems and to draw inferences about possible implications for the design of husbandry strategies. Ninety six pigs, averaging 41.7 kg live weight, were divided into groups of 12 animals, with four replicates per treatment, representing two production systems: (T1) confined in pens of 12 m^2 and (T2) pigs kept in parcels with field shelters and access to pasture. Behavioral observations were performed by scan sampling at intervals of 5 minutes in three 2-hours periods (7:00-9:00, 13:00-15:00 and 18:00 to 20:00) during the weeks 6, 8, 10 and 12 of the experiment. Aggressions were registered continuously in two 0.5- hour periods. Blood samples were taken for cortisol analysis and other physiological parameters. Behavior data were analyzed by Proc Mixed of SAS 9.2. In T2, pigs usually rested at midday hours, being more active in the morning and afternoon, while in T1 active and passive behaviors were similar along the day. The number of reciprocal aggression in the observation period was 4.2 ± 3.7 for T1 and 2.3 ± 2.2 for T2 (p = 0.0359). Unidirectional aggressions were higher in the afternoon in T1 respect to T2 (2.6 ± 1.8 and 0.8±1.2, p=0.0003). Cortisol levels in T1 and T2 were 6.6 ± 2.74 and 5.0 ± 2.01 respectively (P <0.0001). It is concluded that welfare is not compromised in any of the systems, but higher levels of cortisol and aggression indicate some stress problems in confinement system. Exploration is a priority for pigs and the restriction of it possibilities promoted aggressions in T1, which implies that the enrichment of housing environment could reduce aggression as happened in T2 with more exploration alternatives. In the other hand, having an exclusive resting «hut» in the outdoor system, with the present space allowance, seems to be an important factor to reduce aggressions during resting time. In T1 dispute for resting space resulted in one of the two main sources of conflict together with exploration. The practically null aggressive behavior registered during grazing and the reduction of aggressions during resting time in the outdoors system, suggest the possible use of a pasture parcel with a rustic shelter when regrouping animals during fattening period or before transport to the slaughter house, in order to foster motivation for exploring and reduce social aggressive interactions.

Animal behavior studies as a tool for improving husbandry strategies in Holstein fattening systems

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The present study's objective is to characterize behaviour of three different Holstein steers production systems and it implication for husbandry strategies. Forty eight Holstein castrated males were randomly divided into three groups, corresponding to three treatments: (T1) confined into a 210 square meters yard, (T2) confined into a similar yard with six hours (10:00 to 16:00) of access to grassland, (T3) permanent placed at grassland. Behaviour was registered by scan sampling every five minutes, during twelve hours a day (7:00 to 19:00), three days per week, in four weeks distributed throughout the experiment. In order to describe behaviours pattern, a negative binomial regression, correspondence analysis (CA) and logistic regressions were performed. Grazing was the main behaviour of T2 and T3, while eating hay was the most frequent for T1. For all treatments, lying was the second most frequent behaviour. Despite animals in T2 accessed to grassland only half of the time than those in T3, mean grazing behaviour frequency was 31.3 % for T2 and 37.8 % for T3 being significant different (P<0.05) but represented only 6.5% of difference between the two treatments. CA separated behaviours of T1 from T2 and T3. For the CA of behaviour as a function of weather conditions, several behaviours are close to certain conditions, e.g.: «standing» and «ruminating while standing» which are behaviours associated to animal`s discomfort, are closer to rainy weather; while «lying» or «ruminating while lying» are more related to sunny weather. The most frequent eating behaviours of each treatment are associated to good weather conditions: sunny and warm, but «eating hay» (EH) in T3 is related to hot or rainy conditions. Logistic regression, showed that lying tend to increase along the day in all treatments, while EH increased in T1 (p=0.009) but decreased in T2 and T3 (p= 0.0473 and 0.0319). It is concluded that different systems affect the behaviour patterns of steers and it is possible to use this knowledge for improving productive performance and welfare. Grazing is important for animals and in the case of restricted access to pasture it is important to consider the early morning and late afternoon periods. In confined animals, grazing is mainly substituted by eating hay, and then number and size for hay suppliers are important in order to avoid competence between animals. Supplying some shelters could improve welfare and allows stimulation of some food ingestion.