

Effects of different enrichment materials on foraging behaviour in fattening pigs in relation to feed type and feeding frequency

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Key words

Pig, enrichment materials, motivation, abnormal behaviour, feeding, accessibility, animal welfare legislation

Aim of the study

The study consisted of two experiments. The aim of experiment 1 (long term value) was to investigate the influence of eight different enrichment materials and two feeding regimes (restrictive and ad libitum) on the exploratory behaviour of finishing pigs. Experiment 2 (accessibility) aimed to examine the effect of the accessibility of cut straw provided in racks on exploratory and agonistic behaviour in finishing pigs.

Material and methods

Experiment 1 (long term value): In two sub-experiments (M and S) four enrichment materials each were tested in two replicates with eight groups of six growing pigs each kept in pens with partly-slatted floors. Half of the groups were fed either with a liquid feed twice daily, or ad libitum on dry fodder. Every three weeks, using a latin square design, the enrichment materials were replaced in a random order. Behaviour was video recorded on the second and eighteenth day after provision of a new enrichment material.

Experiment 2 (accessibility): The number of racks (one, three, six or eight) filled with cut straw was varied in two replicates with four groups of 27 growing pigs each kept in pens with partly-slatted floors and access to an outdoor area. To vary accessibility of enrichment material, the number of filled straw racks provided in a pen was changed in each group every three weeks using a cross-over Latin square design. The number of pigs showing exploratory behaviour towards the racks as well as towards straw which dropped from the racks on to the lying area was recorded by 10 min scan sampling. Displacements from the racks were recorded continuously.

Results and significance

Experiment 1 (long term value): The frequency of exploring material was influenced by material ($p < 0.001$) and day ($p < 0.001$) in experiment S and by the interaction of these two factors ($p < 0.001$) in experiment M. The strawbased materials had a higher long term value than the other materials. However, all materials were suitable to keep manipulation of pen-mates on a low level. With ad libitum feeding, the frequency of exploring material was halve as high as with restrictive feeding in both experiments ($p < 0.001$).

Experiment 2 (accessibility): The proportion of pigs per scan exploring filled racks ($p < 0.01$) as well as exploring straw on the floor ($p = 0.032$) increased as the number of filled racks increased. The rate of displacements from the racks decreased but not in a statistically detectable manner ($p = 0.395$). It seems that the provision of more enrichment material would not affect the exploratory behaviour of finishing pigs above a certain critical level of accessibility. In the present study this critical level was likely to be at around 0.15 m rack space per pig.

Publications, posters and presentations

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