Effect of nest site on the behaviour of laying hens kept in aviaries: Part of an experimental test of the aviary systems bolegg terrace and voletage vita

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Key words
Laying hen, Aviary system, Behaviour, Nest site, Swiss Authorisation Procedure

Aim of the study
This study was part of the Swiss authorisation procedure for farm animal housing systems. In Switzerland aviaries with nests that are integrated into the aviary rack (like Bolegg Terrace and Voletage Vita) are not authorised yet. With regard to animal welfare, laying hens were housed in aviary systems with integrated nests and their behaviour was compared to hens housed under standard conditions with wall-placed nests.

Material and methods
The study was conducted in two consecutive experiments. During the first experiment 5628 laying hens were housed in groups of 300-365 hens in aviary systems under commercial conditions. The nest site (wall-placed or integrated) was switched every 8 weeks and behaviour in front of the nests was analysed according to the nest site. Additionally, the heterophil to lymphocyte ratio (H/L ratio) of the hens was determined to evaluate the stress load under different housing conditions. In the second experiment, 4500 laying hens were housed in 20 pens (225 individuals per pen) in a laying house with the Bolegg Terrace system. At every second pen integrated nests were replaced by wall-placed once. Half of all pens had nipple drinkers in front of the nests. Behaviour of hens under different housing conditions was compared at 25, 36 and 43 weeks of age.

Results and significance
Although slight differences in the behaviour of laying hens in front of integrated nests compared to individulas in front of wall-placed nests could be detected, the nest site does not seem to be relevant for the nest acceptance. Only little differences in the number of mislaid eggs could be detected and H/L ratios of hens to whom integrated nests were available were not different from those housed with wall-placed nests. More important is a detected imbalanced nest use within the pens. Crowding in front of preferred nests occurred. As a consequence, agonistic interactions on crowded nest platforms increased ($P = 0.03$) and hens pushed each other significantly more while nest searching. The equipment of nest platforms with nipple drinkers had no effect on nest use ($P = 0.66$) but hens behaved less active if nipple drinkers were available. The width of the platform in front of the nest also influenced laying hen behaviour. Compared with narrower platforms, balance movements decreased on wider ones.

Publications, posters and presentations
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