



# Influence of nest site and nipple drinkers in front of nests on laying hen behaviour in aviary systems

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## Introduction

In laying hen houses with aviary systems two nest sites can be distinguished: either at the walls of the house or integrated into the aviary blocks. Integrated nests are often equipped with nipple drinkers in front of the nests to make the nests more attractive to the hens and therefore to prevent floor eggs. The aim of the study was to investigate whether integrated nests cause crowding in front of the nest especially when drinkers are present at this place.

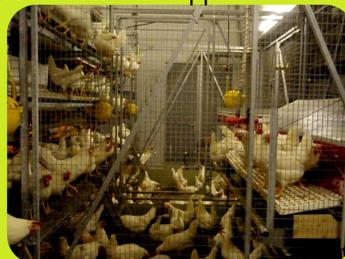
## Animals & Method

4,500 LSL hens, randomly assigned to 20 pens along a corridor, were housed in groups of 225 birds in a laying hen barn. Each pen was equipped with a BOLEGG Terrace® aviary and four Vencomatic®-Classic-Sidebelt-Nests (two facing the corridor and two facing the outdoor run). Ten pens had integrated nests (five with nipple drinkers and five without) and ten pens had wall-placed nests (five with nipple drinkers and five without).

Integrated nests without nipple drinkers / with nipple drinkers



Wall-placed nests with nipple drinkers / without nipple drinkers

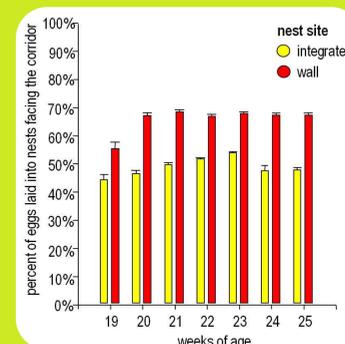


The number of eggs per pen was recorded separately for nest-eggs and mislaid-eggs every day. Nest platforms were filmed and behaviour of 25 week-old hens was analysed using the GLM in the NCSS statistic programme. Therefore 48 minutes per pen throughout the 4 hours of the main laying period were observed, consisting of the first 3 minutes of every quarter of an hour. At the beginning of every 3-minute interval, the individual standing in the centre of the observed area (as defined by the position of its feet) was chosen as the focal animal. When the focal animal left the observation area during the 3-minute interval or a new 3-minute interval began, a new focal animal was chosen in the same manner.

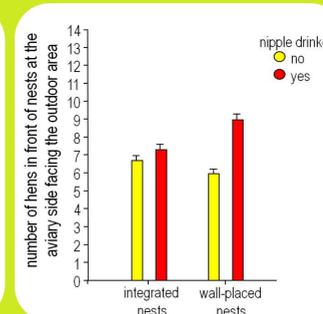
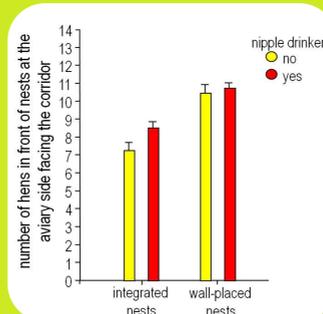
## Results

The number of floor eggs did not differ between the nest sites from begin of lay until 25 weeks of age and no differences were found between nests equipped with nipple drinkers and those without nipple drinkers.

Integrated nests were equally used at both sides of the aviary block but at pens with wall-placed nests, hens showed a strong preference for nests facing the corridor.



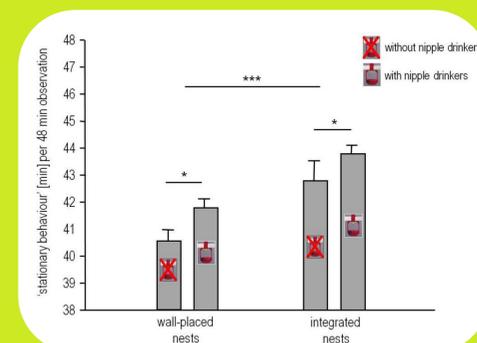
Therefore, the number of hens standing in front of the nests depended on the interaction between nest site (wall / integrated), nipple drinker equipment (yes / no) and side of the pen (facing corridor / facing outdoor run). Most hens stood in



front of wall-placed nests with nipple drinkers facing the corridor. Thus, the number of agonistic interactions was higher at wall-placed nests compared with integrated nests facing the corridor ( $F_{1,16}=7.28, P<0.05$ ).

Wall-placed nests were inspected more often ( $F_{1,32}=22.83, P<0.0001$ ). In front of integrated nests hens were significantly less active than in front of wall-placed nests, i.e. they did not move away from their location for a longer duration. This effect was intensified if nipple drinkers were available in front of the nests.

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## Conclusions

Different nest sites and nipple drinkers above the nest platforms in front of nests have an impact on the behaviour of young laying hens in aviary systems. Contrary to the common belief no effect of nipple drinkers in front of nests on the number of floor eggs could be found. Placing nests inside the aviary block seems to be beneficial to a more evenly distribution of hens across the nests. Further research is needed about the imbalance in nest use of wall-placed nests but the more hens are attracted to the same nest, the more agonistic interactions will occur on nest platforms and may lead to problems regarding animal welfare.