

Occurrence of gregarious nesting at different ages in laying hens

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Under commercial conditions, the domestic hen will often choose the same nest as other hens have used or indeed are still using, even if they have a choice between the occupied nest and an available nest. Sharing a nest simultaneously with other hens is a phenomenon called gregarious nesting. Knowledge about gregarious nesting behaviour is limited, but welfare problems likely to be associated with it are scratches, heat stress, excessive expenditure of energy, and increased level of aggression. The aim of the present study was to investigate the development of gregarious nesting behaviour with age in laying hens over a 6 months period, starting when full-rate egg-production was reached at 20 weeks of age. Twelve groups of 15 Isa Warren hens were housed in pens each containing 3 adjacent roll-out nest boxes (W:40xD:30xH:34 cm). Nesting behaviour was video recorded on 5 days in both weeks 20 and 44 of age. Data collected from the video recordings were time and identity of each hen for all entries and exits from each nest box. The proportion of gregarious nest box visits of the total number of visits where the hens had a choice between gregarious or solitary nesting was higher at 20 than 44 weeks of age ($P<0.001$). There were 4 categories of nest box status: 1) ALL-OCC; all nest boxes, including the one visited, were occupied, 2) OCC; the nest box visited was occupied, while at least 1 other nest box was available, 3) ALL-AVAIL; all nest boxes, including the one visited, were available, and 4) AVAIL; the nest box visited was available, while at least 1 other nest box was occupied. The number of nest box visits was dependent on the interaction between age of the hens and nest box status ($P<0.001$); in week 20 of age the nest box status that received the highest number of visits was OCC, whereas in week 44 of age the highest number of visits was directed to nest boxes with the status AVAIL. There was also an effect of the interaction between age and nest box position on the number of visits ($P<0.05$). The nest box to the left (= closest to the corner) was more often visited at both ages than the other nest boxes, but there tended to be fewer visits to the left nest box in week 44 than 20 of age ($P<0.10$), resulting in a more even distribution of visits between the nest boxes at age 44 weeks. A number of general parameters did not change with age ($P>0.05$); duration of the prelaying period and number of a) hens using nest boxes, b) eggs laid in nest boxes, and c) floor eggs. In conclusion, the occurrence of gregarious nesting behaviour was reduced with age.

Keywords: *Gallus gallus domesticus*, gregarious nesting, laying hen, nest box use, nesting behaviour