The Proceedings of XXV World's Poultry Congress 2016
—— Abstracts

WPC2016

THE XXV WORLD'S POULTRY CONGRESS

September 5–9, 2016
Beijing, China

The Proceedings of XXV World's Poultry Congress 2016 —— Abstracts

Editors: Ning Yang, Ling Lian, Jiangxia Zheng,
Xiangping Liu and Changxin Wu

Hosted by the World's Poultry Science Association,
and organized under the auspices of the World's Poultry Science Association
and the Chinese Association of Animal Science and Veterinary Medicine.

S5−0018 A comparison of nesting behaviour in RFID− based single and family nests

Andrea Heinrich[1], Wiebke Icken[2], Stefan Thurner[1], Georg Wendl[1], Heinz Bernhardt[3], Rudolf Preisinger[2]
1. Bavarian State Research Center for Agriculture, Institute for Agricultural Engineering and Animal Husbandry, Freising, Germany 2. Lohmann Tierzucht GmbH, Cuxhaven, Germany 3. Technische Universität München, TUM School of Life Sciences Weihenstephan, Chair of Agricultural Systems Engineering, Freising, Germany
Corresponding author: andrea.heinrich@lfl.bayern.de

The aim of the study was to evaluate the impact of two nest systems on the nesting behaviour of layers. Therefore, Lohmann brown layers were housed in two barn compartments with different RFID- based nest systems, Weihenstephan funnel nest boxes (FNB, n=72) and high frequency group nest boxes (HFGN, n=16). Both nest systems use RFID- transponders to register the nesting behaviour. Whereas, only one layer at the very same time can use the single nest (FNB), the family nest (HFGN) is occupied with up to ten layers. Therefore, only in family nests social behaviour between layers can be observed. More than 850 layers were reared together and transferred to the production barns at an age of 18 weeks. Taking into account the age of the hen, the layers were divided into two groups, each group in one system. Data recording started at an age of 21 weeks. After 4.5 months the groups were changed and housed for further 5.5 months in the other system. The number of occupations and the duration of a nest visit were compared for both systems with Wilcoxon signed rank sum test. In summary, the effect of familiarisation was seen in each system. During the first month of observation in a specific nest system, the number of nest visits per hen was higher compared to the 2nd to 4th month. In 28 days, a layer had on average 3 more nest visits in the FNB, when housed there first, though the number of nest visits was 29 for both nest systems when housed in the HFGN first. During the whole observation period the variation in the number of nest visits was slightly higher for the HFGN than for the FNB. The duration of a nest visit was on average 6 minutes longer in the HFGN than in the FNB, irrespective of the nest system in which the layers were housed first. Therefore, the layers show a very homogenous nesting behaviour in single nests, where they seem to feel free of external factors. In family nests the same layers show a more variable behaviour which results in better nest acceptance.
Keywords: nesting behaviour, RFID, single nest box, family nest

S5− 0019 Effect of feeding system, genotype and gender on behaviour and stress in broiler chickens

Angela Trocino[1], Daniela Bertotto[1], Valentina Ferrante[3], Francesco Gratta[2], Marco Birolo[1], Alessandra Sinigaglia[1], Gerolamo Xiccato[2]
1. Department of Comparative Biomedicine and Food Science, University of Padova 2. Department of Veterinary Science and Public Health, University of Milan 3. Department of Agronomy Food Natural Resources Animals and Environment, University of Padova
Corresponding author: angela.trocino@unipd.it

The present study aimed at evaluating whether and how behaviour and stress of broiler chickens could be affected by genotype (standard vs. high breast yield), sex, and feeding regime (ad libitum vs. restricted rate, 80% from 13 to 21 d of age). A total of 768 day-old chicks was housed in 32 pens, their behaviour was video- recorded at 11, 18, 25, 32, 39 and 45 d of age, and controlled for 10 consecutive seconds every 30 min to measure the percentage of chickens showing mutually exclusive behaviours (standing, sitting/lying, walk, drink, feed, peck floor, peck fixture, peck tail of other bird, peck other bird, peck own tail, dust bath). Faeces pooled by pen and individual plasma were weekly sampled to measure corticosterone concentrations by microtitre radioimmunoassay (RIA). Behavioural and corticosterone data were analysed with PROC GLIMMIX and MIXED (SAS Institute, Cary, USA), respectively, including genotype, gender, feeding regime and age as fixed effects, and pen as a random effect. On the whole trial, genotype affected the percentage of standing chickens (11.1% vs. 12.3% in standard vs. high breast yield; $P<0.001$). Males were observed pecking other birds more than females (0.11% vs. 0.05%; $P<0.001$) and showed less comfort activities (6.21% vs. 6.51% ; $P=0.05$). Broilers submitted to feed restriction were more active than those fed ad libitum (standing birds: 12.5% vs. 10.8% ; $P< 0.001$), were more often at the feeders (9.19% vs. 8.20%; $P=0.01$), and showed higher faecal corticosterone (13.6 ng/g vs. 12.2 ng/g; $P<0.10$). In conclusion, feed restriction promoted broiler activity, but chickens experienced hunger and stress (as measured by corticosterone concentrations), whereas the other factors had a weak effect. Relatively to stress measurements, corticosterone in plasma was not affected, whereas pooled faeces collected from the litter appeared to be a valid matrix, to be sampled in a repeated, non- invasive, and non- stressful way.
Keywords: feed restriction; welfare; broiler chickens