

This abstract is dedicated to the memory of Dr Sue Haslam

The Welfare of Laying Hens in four different housing systems in the UK

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Laying hens are kept in a range of housing systems, however, there have been few studies which have collected comprehensive, valid, un-confounded data to compare hen welfare across these systems. A total of 26 flocks representing conventional cages (6 CC), furnished cages (6 FC), barn (7 B) and free-range (7 FR) systems were studied and data collected in three ways. Each flock was visited three times throughout the laying period and detailed data collected on the history, housing, husbandry, climate, health and welfare of the hens. The producers were asked to complete and return a weekly questionnaire on welfare and husbandry. At the end of lay, 150 hens from each flock underwent post-mortem examination. Indicators assessed by the researchers that were significantly (repeated measures ANOVA) influenced by housing system included: gentle feather pecks (CC = 0.01; FC = 0.06; B = 0.16; FR = 0.38 pecks/hen/min), mean % hens with feather damage (FR = 15; CC = 24.7; FC= 24.9; B= 26.9) and faecal corticosterone (FC=11.2; CC=14.3; FR=16.1; B=21.6ng/g). Post mortem analysis revealed that housing system significantly influenced levels of the following variables (assessed on ordinal scales of 0 (least damage) to 3 (most damage)): skin damage (C=0.59; FC=1.05; B=1.31; FR=1.68) and keel protrusion (C=0.91; FC=1.00; B=1.12; FR=1.21). The % of birds with old keel fractures also varied with housing system (CC=17.7; FC=31.7; FR=59.8; B=69.1) as did % with keel fractures incurred at depopulation (B=1.2; FR=1.33; FC=3.63; CC=24.6) and the % of hens that were vent pecked (FC=1.6; CC=6.2; B=10.0; FR=22.5). Weekly questionnaires from the producers revealed significant effects of housing system on % eggs with blood on (FC=0.83; CC=0.98; FR=1.42; B=2.05), and eggs with calcification spots (FC=1.2; FR=1.7; CC=3.5; B=4.1). This study did not include a detailed analysis of all hen behaviours but, considering the indicators of physical wellbeing and stress response that were measured, the welfare of hens in the FC system appeared to be better than that of hens in other systems.

Keywords: laying Hen, welfare, housing, post-mortem