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The Old School, Brewhouse Hill, Wheathampstead,
Hertfordshire AL4 8AN, UK
www.ufaw.org.uk

Animal Welfare 2016, 25: 179-184
ISSN 0962-7286
doi: 10.7120/09627286.25.2.179

Keel-bone damage and foot injuries in commercial laying hens in Denmark

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Abstract

Keel-bone damage and foot injuries have a negative impact on welfare in laying hens. The extent of the problems in Danish commercial flocks of layers is unknown. Therefore, the aim of this study was to assess the current prevalence of keel-bone damage and foot injuries in Danish commercial flocks of laying hens and to investigate the effects of production system, housing system, hybrid and age. The occurrences of keel-bone damage, hyperkeratosis and missing toes were higher at 62 compared to 32 weeks of age, while the reverse was found for toe wounds, foot-pad lesions and bumble feet. There was no difference between barn and organic production systems in the risk of having keel-bone fractures and foot injuries, except that barn hens were more likely to have foot-pad lesions than organic hens (32 weeks: 16.1 vs 3.1%). Hens in multi-tiered systems were more likely to have keel-bone fractures compared to hens in single-tiered systems (62 weeks: 11.6 vs 4.9%). Of the four hybrids, Lohmann Brown Lite had a higher risk of keel-bone fractures, whereas bumble feet were found more frequently in Lohmann LSL. Keel-bone damage and foot injuries are less common in Danish non-cage systems compared to most of the reporting presently available from other countries. We suggest transnational studies, aimed at identifying the causal factors of this discrepancy, to increase existing knowledge on how to reduce incidences of keel-bone damage and foot injuries.

Keywords: animal welfare, foot injuries, housing system, keel-bone damage, laying hen, production system