Characterisation of footpad lesions in organic and conventional broilers

Recent data suggest that organic broilers often score worse on footpad lesions than conventional broilers but also that the current scoring of organic broiler feet may be misleading. In order to characterise footpad lesions in organic broilers, this study assessed and compared footpad lesions in a sample of 2987 conventional and 3578 organic broiler feet obtained from a large Danish abattoir during summer and winter. The feet were scored according to two scoring systems: the modified Danish surveillance scoring system and a histopathology-based new scoring system specifically developed to target the ability to differentiate between broiler feet with hyperkeratosis and ulcers. For both systems, all broiler feet with visible lesions were cross-sectionally incised. Significant differences between the two production systems were found for both scoring systems ($\chi^2 = 710; P < 0.001$ and $\chi^2 = 247; P < 0.001$ for the new and the surveillance systems, respectively), showing that a larger proportion of the organic feet compared to conventional feet - summer and winter - exhibited signs of hyperkeratosis. In addition, a smaller fraction of the organic feet than of the conventional feet were given the outermost scores, that is, normal or ulcerated; 13.4% v. 25.3% broiler feet were given score 0 for organic v. conventional production systems, respectively ($\chi^2 = 152; P < 0.001$), and 18.4% v. 23.8% feet were given score 4 for organic v. conventional production systems, respectively ($\chi^2 = 308; P < 0.001$). Thus, the results suggest that surveillance scoring systems such as the one used in Denmark are useful for the examination of footpad lesions in broilers from both types of production systems. However, the results have also raised attention to a typical characteristic of the feet of organic broilers, that is, profound hyperkeratosis, which may underlie potential misclassifications in surveillance scoring systems like the one used in Denmark. Among the possible solutions to this challenge to the correctness and fairness of the scoring system are improved procedures (such as mandatory incision), training of technicians and calibration of results (especially for the organic footpads).

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