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Evaluation of the Danish surveillance of footpad lesions in organic and conventional broilers

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BACKGROUND
Footpad dermatitis (FPD) as an indicator of on-farm broiler welfare — Danish official surveillance system since 2002 with payment and enforcement implications. As originally developed for conventional broilers, the usability for organic broilers has not yet been investigated.

OBJECTIVES
Evaluation of performance of the official Danish FPD surveillance system with respect to potential sources of misclassification and the effect of the sampling strategy in both organic and conventional broiler feet.

MATERIALS & METHODS
Comparison of official FPD scores of 1,799 broiler feet (~100 per flock, from 9 organic and 9 conventional flocks) and scores by a laboratory reference method, based on predefined visual and invasive scoring criteria derived from the official system.

RESULTS
Wide range of severity

Differences between organic and conventional broiler feet
• Shape, colour and skin quality — less characteristic lesions in organic feet
• Higher degree of hyperkeratosis and hypertrophy of papillae in organic feet
An association between lesion size and depth was observed.

Marked differences between official and laboratory scores
• Disagreement highly restricted to scores 1 and 2 — evidence of underestimation of lesion severity in organic and conventional feet
• Disagreement more pronounced in organic feet compared to conventional, which was attributed to the organic lesions being more difficult to score.

Evidence of some degree of selection bias, especially in flocks with middle range flock scores, possibly due to insufficient randomisation.

Focus for future improvements to FPD surveillance systems

The Danish FPD surveillance system: 2 x 50 feet per broiler flock Score 0: No or very minor lesions Score 1: Less severe lesions Score 2: Severe lesions
FPD flock score = 0.5 * (number of feet scored 1) + 2 * (number of feet scored 2)

Strictly visual examination had reduced sensitivity (0.73-0.75) for detection of severe lesions compared to adding an incision of the footpad during scoring.

Scoring uniformity

Impact of making an incision?

Cut-off point?

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30.9%
13.1%
41.1%
29.0%
1.4%

Randomisation: Criteria needs to be feasible to evaluate under time constraints in commercial conditions

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