FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

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

Vibe Pedersen Lund[1,2,*], Ana Rute da Silva Oliveira[2,3], Liza Rosenbaum Nielsen[2] & Jens Peter Christensen[1]
[1] Department of Veterinary Disease Biology, Faculty of Health and Medical Sciences, University of Copenhagen, 1870 Frederiksberg C, Denmark,
[2] Department of Large Animal Sciences, Faculty of Health and Medical Sciences, University of Copenhagen, 1870 Frederiksberg C, Denmark,
[3] Faculty of Veterinary Medicine, University of Lisbon, 1300-477 Lisbon, Portugal
* E-mail: vl@sund.ku.dk / vibepedersenlund@gmail.com

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

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)

Scoring system ⟷ **Sampling strategy**

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

MATERIALS & METHODS

Comparison of official FPD flock scores of paired samples of feet (2 x 50 feet from the first and last third of every flock processed) of 11,628 conventional broiler flocks processed during a 2.5 year period (~99.6% of Danish production)

RESULTS

Wide range of severity


Score 0


Score 0


Score 1


Score 1

Cut-off point?


Score 2


Score 2


Score 2

Impact of making an incision?

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

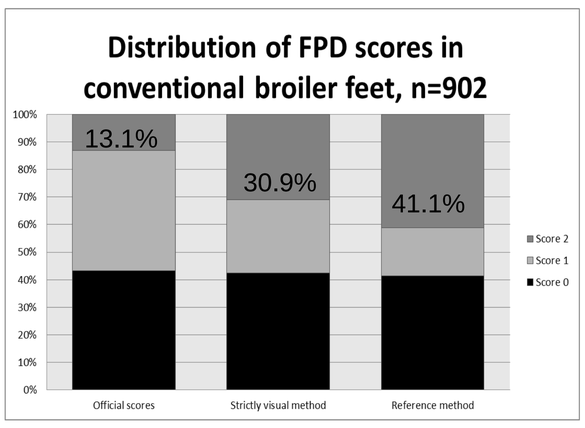
Differences between organic and conventional broiler feet

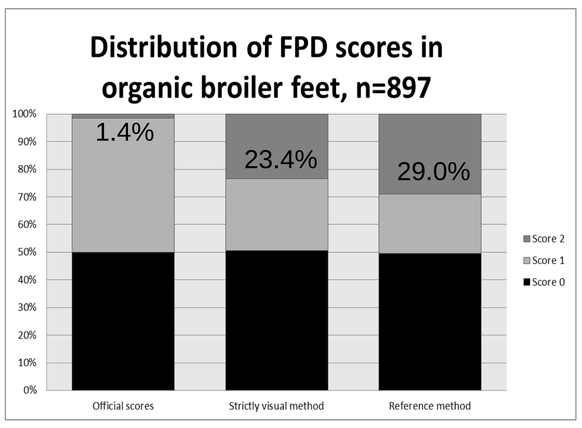
- Shape, colour and skin quality ⟶ less characteristic lesions in organic feet
- Higher degree of hyperkeratosis and hypertrophy of papillae in organic feet

An association between lesion size and depth was observed

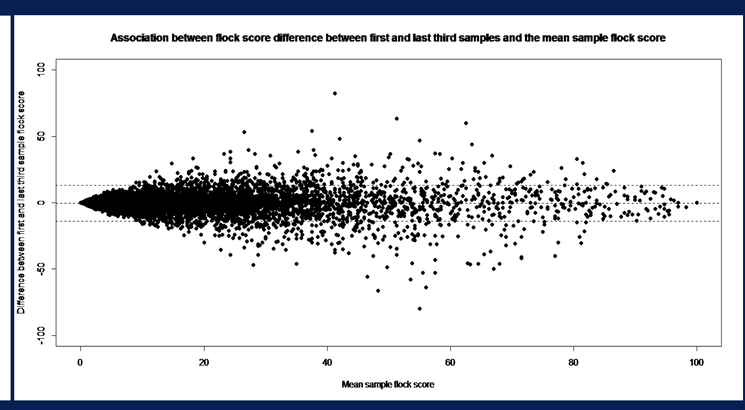
Marked differences between official and laboratory scores

- 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

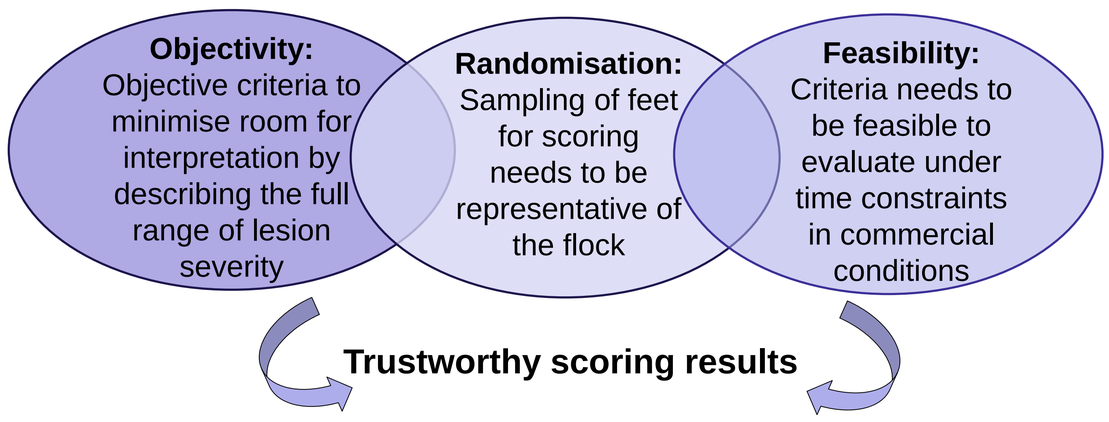




Evidence of some degree of selection bias, especially in flocks with middle range flock scores, possibly due to insufficient randomisation



Focus for future improvements to FPD surveillance systems



This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement n° 613574.

Acknowledgements: official veterinarians and technicians for help collecting data material, slaughterhouse personnel for shipping of data material and Lyngsoe Systems A/S, Aars, Denmark for extraction of data from the KIK database.

SVEPM 2015 – Ghent, Belgium