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 The Old School, Brewhouse Hill, Wheathampstead,  
 Hertfordshire AL4 8AN, UK  
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## **A weak point analysis of welfare in Danish dairy herds using two different welfare assessment systems**

ND Otten<sup>\*†</sup>, T Rousing<sup>‡</sup>, VHS de Oliveira<sup>‡§</sup>, M Reiten<sup>‡</sup>, A-M Michelsen<sup>†</sup>, F Hakansson<sup>†</sup>,  
 VP Lund<sup>†#</sup>, H Houe<sup>†</sup>, M Denwood<sup>†</sup>, JT Sørensen<sup>‡</sup>, B Forkman<sup>†</sup> and MK Kirchner<sup>†¶</sup>

<sup>†</sup> Department of Veterinary and Animal Sciences, University of Copenhagen, Denmark

<sup>‡</sup> Department of Animal Science, Aarhus University, Blichers Alle 20, 8830 Tjele, Denmark

<sup>§</sup> National Veterinary Institute, Department of Disease Control and Epidemiology, SE-751 89, Uppsala 7, Sweden

<sup>#</sup> The Danish Veterinary Association, Peter Bangs Vej 30, 2000 Frederiksberg, Denmark

<sup>¶</sup> VIER PFOTEN, Stiftung für Tierschutz, Linke Wienzeile 236, A-1150, Vienna, Austria

\* Contact for correspondence: [nio@sund.ku.dk](mailto:nio@sund.ku.dk)

### **Abstract**

*This study aimed to identify current weak points in animal welfare in Danish dairy production at herd level using the Welfare Quality<sup>®</sup> (WQ) protocol, and at national level using the Danish Animal Welfare Index (DAWIN) protocol. The DAWIN was developed as a monitoring tool for the welfare of the Danish dairy cow population, derived from the aggregation of DAWIN assessments at herd level. The DAWIN dairy cow protocol covers 29 measures (13 resource- and 16 animal-based measures) that were weighted and aggregated into a final overall population welfare score. A total of 3,591 cows from 60 dairy herds were assessed throughout 2015. Results from both the WQ and DAWIN were presented at six criteria levels in order to identify specific areas of concern relating to animal welfare at herd versus population level. Both protocols indicated a good general level of welfare across study herds, but also identified insufficient water supply as the main area of concern. In addition, resting comfort (ie time needed to lie down, collisions with barn equipment, cleanliness of rear body parts, animals lying outside of the designated lying area) and disease (in terms of the proportion of cows with chronically elevated somatic cell counts) were identified as problematic areas. The two assessment protocols both identified behavioural deficits, but in the WQ it was due to zero-grazing systems in contrast to the insufficient numbers of cow brushes in the DAWIN protocol. Despite differences in the aggregation, similar areas of concern were identified at criteria level.*

**Keywords:** animal welfare, assessment, dairy cattle, population level, welfare problems, Welfare Quality<sup>®</sup>