A weak point analysis of welfare in Danish dairy herds using two different welfare assessment systems

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Abstract

This study aimed to identify current weak points in animal welfare in Danish dairy production at herd level using the Welfare Quality® (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®

Introduction

Animal welfare assessment is a complex task, calling for scientifically valid multi-criteria and multi-stage approaches. The complexity starts with the definition of animal welfare, as this is often thought to encompass several important dimensions (Fraser et al 1997; Appleby & Sandøe 2002). While the underlying definition of animal welfare will determine the design of the assessment, the intended purpose must also be reflected. Motives for assessing animal welfare vary considerably, as they can cover anything from classification and certification to decision support. The Animal Needs Index (ANI; Bartussek 1999), for instance, is performed at a federal level in Austria as part of an organic compliance control, while the RSPCA’s Freedom Food in the UK is intended as a product labelling system. Finally, animal welfare assessment may be intended as an advisory tool for producers, similar to the Danish Cattle Federations (DCF) protocol (Danish Cattle Federation 2005). The choice of measures and aggregation methods used in the given welfare assessment protocols are highly dependent on the intended purpose of these protocols (Johnsen & Sandøe 1999). Some protocols therefore rely more heavily than others on the assessment of risk factors for impaired animal welfare in terms of resource- and management-based measures. The resource-based measures are valuable in decision support schemes, as these risk factors can be altered to achieve better results in selected animal-based measures, and they are less time consuming to obtain. However, the scientific consensus is that a truer picture of animal welfare can be achieved by observing the unit of interest, ie observing the animals directly by means of animal-based measures (Webster et al 2004; Keeling 2009). This was the approach taken in the most comprehensive welfare assessment protocol to date, the Welfare Quality® (WQ) protocol. The WQ project developed welfare assessment protocols for several animal species within the primary production (Blokhuis 2008), and the protocols relied primarily on animal-based measures for evaluating animal welfare at herd level. While most protocols aim to evaluate animal welfare at herd level, to our knowledge no previous studies have evaluated the welfare of a whole animal population, eg at a national