Development and testing of an on-farm welfare assessment protocol for dairy goats

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Abstract

To ensure that farm animal welfare issues are identified and addressed appropriately, there is a need for robust on-farm welfare assessment protocols. This paper describes the development of a comprehensive welfare assessment protocol for dairy goats (Capra hircus) and its testing on 30 commercial dairy goat farms in Norway. The protocol combines animal-based welfare indicators with measures of husbandry provisions to enable the identification of welfare problems and challenges inherent to the production system. The study also includes a first report of group level qualitative behavioural assessments (QBA) of goats. Due to reliability and validity issues related to behavioural assessments of human-animal interactions, indices of stockperson attitudes were incorporated as a complementary assessment of stockmanship. The most prevalent physical conditions observed were ocular discharge, skin lesions, udder asymmetry, calluses on knees and hocks, and overgrown claws. Moreover, fear levels appeared to be of particular concern in some herds. Significant associations were found between qualitative behavioural assessments and measures of health and stockmanship. Floor type was associated with four animal-based welfare outcomes. Reliability and validity of goat welfare indicators need to be further tested, and intervention plans and thresholds need to be determined so that advice can be tailored to the specific problems identified on each farm. We conclude that the protocol can work as a tool to identify welfare issues in dairy goat herds, and that this study may be a valuable contribution to the development of a much-needed welfare assessment protocol for dairy goats.

Keywords: animal welfare, behaviour, dairy goats, health, human-animal relationships, stockmanship

Introduction

In order to identify and address welfare problems in the dairy goat industry, there is a need for robust and scientifically validated on-farm welfare assessment protocols. Resource provisions, like space allowance and air quality, can be measured objectively (Webster 2003; Whay et al 2003) and thus be used to ensure compliance with current legislation, which by and large sets requirements relating to resources. However, they do not provide sufficient information about the actual welfare outcome (Webster et al 2004). To rectify this, recent work on farm animal welfare assessment has been focused on implementing more direct animal-based welfare indicators.

Comprehensive on-farm welfare assessment protocols have been developed for several of the most commonly farmed species. Examples are the protocols developed through the Welfare Quality® project (Canali & Keeling 2009; Blokhuis et al 2010) and the Bristol Welfare Assurance Programme (BWAP) (Main et al 2004, 2007), both providing protocols for cattle, pigs and poultry. The Five Freedoms (Farm Animal Welfare Council 1993) are widely accepted as a sound framework for identifying elements that may compromise animal welfare. The Bristol Welfare Assurance Programme (BWAP) has based the welfare assessment on the logics of the Five Freedoms, while the Welfare Quality® protocols are based on 12 criteria, building on and extending the Five Freedoms (Blokhuis et al 2010). No formal welfare assessment protocol exists for goats (Capra hircus), and to our knowledge, only one paper has published empirical data from overall welfare assessment of this species (Anzuino et al 2010).

Qualitative behavioural assessments are summations of overall behavioural expressions that may help observers interpret the meaning of behaviours for the animal’s welfare state (Wemelsfelder & Farish 2004). The method has been incorporated into the Welfare Quality® protocols, eg the protocol for dairy cattle (Knierim & Winckler 2009). A study of individual differences in goats’ temperament utilised a similar approach to rate individual goats’ behaviour in the milking parlour (Lyons 1989), but to our knowledge, no published work exists regarding the use of this method for goat welfare assessments at group level.