Assessment of sheep welfare using on-farm registrations and performance data

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Abstract

Farm animal welfare is a societal concern, and the need exists for scientific protocols to assess welfare. This paper describes the development of a protocol to assess the welfare of sheep (Ovis aries) and its application in 36 farms in Norway. There were two parts to the protocol; the animal- and resource-based measurements obtained during farm visits, and the analysis of production data. Data collection took place during visits to 36 farms in the lambing season (April-May) in 2007 (n = 11) and 2008 (n = 25). A fear test was conducted, and ewes were scored on a scale from 0 to 3. Forty-one percent of the ewes tested had a fear score of 3, indicating the lowest level of fear. Mean (± SD) fear score across farms were 1.9 (± 0.5). Higher fearfulness was found to be associated with lower ewe body condition scores (BCS). Mean (± SD) BCS across farms was 2.6 (± 0.6). A relatively large proportion of the ewes had a BCS of 2 (41%), which may be associated with an increased risk of nutritional stress, disease and low productivity. Eight farms had more than 5% (range 5.4–24.4%) of lamb carcases categorised in the lowest conformation class, which may be an indication of a welfare problem. This study is the first step in the development and validation of a welfare assessment protocol for sheep, and further research is needed to assess the overall reliability of the protocol.

Keywords: animal-based measures, animal welfare, production, resource-based measures, sheep, welfare assessment protocol

Introduction

Sheep production is of major economic importance in many countries and has been the subject of less industrialisation than many other forms of livestock production. Reduced economic output may, however, be a risk factor for sub-optimal health, handling and poor welfare situations, since there is little room for input resources per animal. Public concern about farm animal welfare has steadily increased during recent years. The majority of participants in population surveys carried out in seven European countries (2005) believed that farm animals feel pain like humans, indicating an acknowledgement of farm animals as live, sentient beings (Kjaernes & Lavik 2007). Increasing demand from customers for humane production has put pressure on livestock industries to improve and provide evidence of the welfare status of their animals. Therefore, there is a need for scientifically based welfare assessment protocols.

Sheep undergo painful husbandry procedures in many countries, such as castration and tail-docking of lambs (Molony & Kent 1997). This species also experiences a wide range of diseases and tissue injuries, including mastitis, footrot and fly-strike. Sheep are stoic creatures, and they do not display overt behavioural signs of distress and pain. Human observers may also lack the ability or skills to identify behaviours indicative of sub-optimal welfare in sheep.

Examples of existing on-farm monitoring systems include the Tiergerechtheitsindex (TGI) developed in Austria, the Bristol Welfare Assurance Programme (BWAP 2009) and the Welfare Quality® (2009) project protocols. The TGI system focuses mainly on resource-based measures (eg floor type and space allocation). Today, there is considerable agreement to use mainly animal-based measures when assessing animal welfare (Keeling & Veissier 2005). The Welfare Quality® welfare assessment protocols and the Bristol welfare assurance programme (BWAP) protocols are developed for the assessment of cattle, poultry and pig welfare. These protocols focus essentially on animal-based measures. Many of the welfare measures applied in the