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## **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