Assessing dairy cow welfare at the beginning and end of the indoor period using the Welfare Quality® protocol

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Abstract

The Welfare Quality® (WQ) project developed protocols as international standards for farm animal welfare assessment. For dairy cattle, the WQ protocol may be performed any time during the indoor period when the herd has no access to pasture. However, timing of welfare assessments during the indoor period might influence the outcome, as pasture access influences many welfare aspects and such effects are likely to carry over to the beginning of the indoor period. In order to test this hypothesis, we assessed ten herds at both the beginning and end of the same indoor period. Assessment at the end of the indoor period resulted in a higher prevalence of the following welfare measures: severely lame cows, mild integument alterations, coughs per cow per hour, diarrhoea, and vulvar discharge. In addition, at the end of the indoor period, the mortality rate was higher and the Qualitative Behaviour Assessment (QBA) score was worse, but there were fewer cows with dirty udders and mean time to lie down was lower. This led to worse scores on the criterion and principle levels of WQ integration, but resulted in a lower welfare categorisation for one of the herds only. The better scores for several aspects of health and for the QBA at the beginning of the indoor period not only confirm the carry-over of positive effects of access to pasture, but also imply a need for careful consideration of the timing and frequency of WQ assessments of herds that are housed outdoors for part of the year.

Keywords: animal welfare, dairy cattle, pasturing, welfare assessment, Welfare Quality®

Introduction

Previous studies have explored possible links between access to pasture and various aspects of dairy cattle welfare. Predominantly positive relationships were found, with access to pasture being related to a lower prevalence of lameness (Onyiro & Brotherstone 2008), a lower incidence of clinical mastitis (Washburn et al 2002), and a lower mortality rate (Burow et al 2011). When cows are kept indoors for several months during winter (as is common practice in Belgium and other countries with a similar climate), the positive effects of previous access to pasture are likely to carry over to (at least) the beginning of the indoor period, because welfare problems generally take some time to develop. There is little knowledge, however, about how the timing of welfare assessment during the indoor period affects the assessment’s outcome. Corazzin et al (2010) found that in herds with access to pasture during summer-time, the prevalence of lameness, injuries, coughs and vulvar discharge increased from three weeks after transferral to indoor housing onwards, as did the time it took the animals to stand up after lying down. Burow et al (2013) used an aggregated welfare index to assess the welfare of loose-housed Danish herds (all with access to pasture in summer) during the indoor and outdoor periods. They concluded that welfare was better during summer than during winter. This suggests that timing of assessment is critical to welfare assessment of herds that are allowed outdoors for part of the year.

The Welfare Quality® (WQ) protocol for dairy cattle (Welfare Quality® 2009) describes an elaborate procedure to assess dairy cattle welfare. This protocol is one of the few that have been developed to assess overall welfare in addition to separate welfare indicators. It describes 33 measures of dairy cattle welfare as well as a method to integrate these into an overall welfare categorisation: ‘excellent’, ‘enhanced’, ‘acceptable’ or ‘not classified’. This protocol is carried out during the indoor period because some of the evaluations are impossible to perform while the animals are at pasture, but the protocol provides no guidelines or restrictions regarding the timing of assessments during the indoor period (ie, beginning, middle or end). However, no studies have been performed to determine whether the timing of such assessments can result in variation of the welfare assessment. Especially for cattle kept indoors during winter only, it is possible that a welfare assessment performed at the beginning of the indoor period may not be comparable with one performed at the end.

To investigate whether the time lapse between the last day of pasture access and the day of assessment actually affects