To dock or not to dock? Faecal soiling measurement in sheep

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Abstract

Faecal soiling is one of the welfare indicators in the AWIN welfare assessment protocol for sheep (Ovis aries) and is measured by dag scores. Studies on dag scoring for ewes with docked and undocked tails have given rise to contradictory results. The aim of this study was to compare faecal soiling between ewes with docked and undocked tails and evaluate inter-rater reliability for faecal soiling of ewes. This study was conducted on a farm in Southern Brazil and included 66 undocked and 94 docked ewes. Dag score was recorded by three assessors on a scale of 1 to 5. There was no significant difference on faecal soiling for docked compared to undocked ewes and the median dag score was 3 (1–5). Repeatability amongst assessors by intra-class correlation coefficient of dag scores on docked and undocked ewes was 0.49 and 0.40, respectively; however, these repeatabilities showed no significant differences. The modest repeatability between three assessors on dag scoring indicates caution as regards the use of faecal soiling as an indicator and suggests a need for further studies. The best field results may be obtained by increasing the assessment sample to at least 160 ewes or by raising the number of assessors to five to promote better inter-observer repeatability. Results suggest that tail-docking did not promote cleanliness on the breech area. Considering the negative impact on welfare, it seems reasonable to reverse the burden of proof and desist from recommending tail-docking in the absence of clear scientific evidence of any benefit.

Keywords: animal welfare, dag, faecal soiling, intra-class correlation coefficient, inter-observer reliability, sheep welfare indicator

Introduction

Dag formation is caused by the adhesion of faecal matter to the breech area of sheep and it has been considered a risk factor for cutaneous myiasis or flystrikes (Farm Animal Welfare Council [FAWC] 2008). The consistency of the faeces will affect its ability to accumulate into dags, since stools or diarrhoea are potentially able to adhere to wool and pre-existing faeces thereby developing into dags (Waghorn et al 1999). Diarrhoea, in turn, may result from endoparasitic infection or nutritional imbalance (Llonch et al 2015).

Regarding the negative impact on animals, faecal soiling is an indicator of good health in the AWIN welfare assessment protocol for sheep, and is measured via dag scores (AWIN 2015). Faecal soiling may be considered an indirect trait for susceptibility to flystrike (Australian Wool Innovation Limited and Meat and Livestock Australia 2007). There are three dag-scoring scales used for sheep: 0–5 (Larsen et al 1994), 1–5 (Australian Wool Innovation Limited and Meat and Livestock Australia 2007) and 0–4 (AWIN 2015), in which higher values are an indication of dirtier animals.

Removal of a portion of the tail is a common procedure in sheep. The prevention of flystrike and cleanliness are the two main reasons for tail-docking sheep (Morris 2000; Sutherland & Tucker 2011; Sheep Standards and Guidelines 2013), since it has been suggested that it reduces levels of faecal soiling (FAWC 2008). However, it is unclear whether tail-docking reduces faecal soiling in sheep and the scientific evidence to support the importance of tail-docking in preventing flystrike is sparse (since there have been relatively few controlled studies of flystrike in sheep [FAWC 2009; Sutherland & Tucker 2011]) and somewhat contradictory. While some studies have shown increased faecal soiling with relatively longer tails (Scobie et al 1999; Fisher & Gregory 2007), another found little effect of tail length on faecal soiling (French et al 1994), while Scobie et al (1999) were unable to show any relationship between tail length and cleanliness. In addition, intriguingly, Watts and Marchant (1977) reported more faecal soiling on sheep with very short tails. In a Brazilian study, Madeira et al (1998) concluded that tail-docking failed to control myiasis in sheep and, in fact, the resultant lesion facilitated the establishment of flystrike since tail-docked flocks showed an infestation rate twice that of intact flocks. Since docking is considered acutely painful, causing a permanent disfigurement to the animal, it is important to consider the rationale behind its use, in order to evaluate if it is necessary (Sutherland & Tucker 2011).