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Observing lame sheep: evaluating test agreement between group-level and individual animal methods of assessment

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Abstract

For on-farm sheep welfare assessment, a reliable, simple and robust method is required to assess the level of flock lameness. This study examined the level of test agreement for two binary lameness scoring systems for sheep. The first was a group-level lameness assessment of sheep performed on ungathered sheep at pasture and was termed group observation method (GOM). The second method of lameness assessment was performed after gathering of the sheep and involved close observation of the gait of individual sheep in a handling pen and was termed individual animal gait assessment (IAGA). Following individual gait assessment, each sheep was also examined for the presence of specific foot and limb lesions: white line lesions (WL); inter-digital dermatitis (ID); footrot (FR); contagious digital dermatitis (CODD); toe granuloma (TG); and joint swellings (JS). A total of 3,074 sheep were assessed from 40 flocks in North England and Wales by one assessor. Test agreement between the assessment methods was found to be good as judged by linear regression and Bland-Altman plots. The method of group observation identified a slightly higher proportion of lame sheep compared to the individual animal examination and also appeared to be a more feasible on-farm method of observation. Over half of the sample sheep were identified with WL but this did not appear to be associated with a high level of lameness (as assessed by IAGA) with just under 12% of sheep with WL being identified as lame. In contrast, the percentage of lame sheep was most closely associated with CODD and over 80% of animals with this lesion were scored as lame.

Keywords: *animal welfare, foot lesion, lameness, on-farm assessment, sheep, test agreement*