Foot health in sheep – prevalence of hoof lesions in UK and Irish sheep

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Introduction Lameness in sheep is usually attributed to the infectious condition of footrot, the etiology, prevalence and genetic background of which has previously been documented. Far less is known about other (non-footrot) hoof lesions that cause lameness in sheep, in particular the extent to which they are prevalent in our sheep populations and the relative degree to which they cause pain and lameness. There is a dearth of surveillance data in this area and so the purpose of this paper is to present prevalence data of such hoof lesions recorded in different breeds and crosses in the UK and Ireland, in relation to prevalence of footrot, and to report recent data on lameness prevalence in the Irish Republic.

Material and methods As part of a wider study investigating the genetic basis to footrot (Nieuwhof *et al*., 2008), between 2005 and 2008, records of hoof lesions were collected on 4,360 Blackface, 5,940 Texel, and 962 Welsh Mountain sheep from 27 farms across the UK. None of the farms had more than one breed running together as one flock. Apart from footrot lesion scores (reported by Conington *et al*., 2008) on a 5 point scale, each hoof was scored for the presence or absence of white line degeneration (shelly hoof), interdigital fibroma, white line abcess, Contagious Ovine Digital Dermatitis (CODD), Granuloma and Pedal joint sepsis. Whether or not the hoof was abnormally-shaped (Mis-shapen) and overgrown was also noted. In N. Ireland, with the exception of interdigital fibromas, the same data were collected on two occasions in 2009, approximately 6 weeks before and after lambing, respectively, of on 6 hill and 6 lowland farms across N. Ireland (approximatey 150 ewes per farm). The genotypes used for the hill farms were purebred Blackface, Swaledale X, Cheviot X, Lleyn X and Texel X Blackface and for the lowland farms they were Texel X, Belclare X, Charolais X, Cheviot X, Lleyn X, Romney X, Suffolk X. Prevalence (presence in any hoof) of each condition was expressed as a % of animals affected at each scoring occasion. In the Irish Republic, a total of 1353 records on lameness (0/1) representing 694 Belclare, 148 Cambridge, 249 Suffolk and 262 Texel ewes managed on the same farm were used for this study. All cases of lameness were examined and cases of footrot recorded. Ewes were classified on an annual basis as having had footrot or not.

Results The percent prevalence of each recorded lesion is shown in Table 1 according to genotype and source of data. It also shows the percentage of records with mis-shapen and overgrown hooves. There were significant breed differences in the percent prevalence (and confidence interval, CI) of lameness in the Irish Republic sheep, shown in Table 2 (p=0.02). With the exception of the data on Texel sheep, the highest prevalence of all lesions in the UK and NI data sets was shelly hoof. This was mostly consistent across breeds and higher than footrot lesion prevalence. Very low prevalence levels were recorded for White line abcess, CODD, Granuloma and Pedal Joint Sepsis for all sheep. Large between-farm differences was recorded.

Table 1 Prevalence of hoof lesions after inspection if sheep had ≥1 hoof affected (%)

	Texel	B/face	Welsh Mt.	Hill breeds (NI)	Lowland breeds (NI)
Number	5,940	4,360	962	1592	1800
Footrot[1]	23.3	17.3	15.5	16.6	13.1
Shelly hoof	19.5	47.4	53.0	56.7	40.0
Interdigital fibroma	10.2	7.1	12.0	-	-
White line abscess	0.4	0.4	0	0	0.2
CODD	0.1	0.1	0	0	0.4
Granuloma	0.25	0.9	0	1.3	1.7
Pedal joint sepsis	0	0.7	0	0	0
Mis-shapen	27	16.2	7.1	11.7	10.4
Overgrown	24.5	19.3	22.6	-	-

[1] Hoof lesions on 0-4 point scale defined as Conington *et al*., (2008)

Table 2 Lameness in Irish sheep

	Mean	CI
Suffolk	10.2	7.0-14.7
Texel	13.1	9.4-18.5
Belclare	7.1	5.2-9.5

Discussion The prevalence data give some indication of the extent to which sheep are subject to abnormal hoof lesions. Shelly hoof is the most significant problem for the majority of the flocks recorded, although the extent to which it causes lameness is not known. After footrot, interdigital fibromas, was reported to have the next highest prevalence although again, the extent to which they cause lameness is unknown and hence further studies on this are required.

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