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ScienceDirect
Preventive Veterinary Medicine 83 (2008) 52–64
PREVENTIVE VETERINARY MEDICINE
www.elsevier.com/locate/prevetmed

Naming and recognition of six foot lesions of sheep using written and pictorial information: A study of 809 English sheep farmers

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Received 2 November 2006; received in revised form 14 June 2007; accepted 22 June 2007

Abstract

In 2005, 3000 questionnaires were sent to a random sample of English sheep farmers from a list kept by the English Beef and Lamb Executive (EBLEX) to investigate whether farmers could correctly name six common foot lesions in sheep from a characteristic picture and a written description. The lesions were interdigital dermatitis (ID), footrot (FR), contagious ovine digital dermatitis (CODD), shelly hoof, foot abscess and toe granuloma. In addition, farmers were asked to report the total percent of lame sheep in their flock in 2004 and the percent of this lameness attributable to each of the six lesions listed above. The overall response percentage was 44 with a useable response of 32%.

Fifty-nine farmers out of 262 (23%) who answered all six questions named all six lesions correctly. This was greater than expected by chance. The same questionnaire of six lesions was presented at a meeting of specialist sheep advisors, primarily veterinarians, 37/47 (79%) responders named all six lesions correctly.

From the six lesions listed above, the percent correctly named by farmers was approximately 83%, 85%, 36%, 28%, 65% and 43% and the percent incorrectly attributed to another lesion was 5%, 47%, 10%, 13%, 35% and 7%, respectively. The most commonly used incorrect name was FR, with farmers tending to name any hoof horn lesion as FR. A comparison of the distribution of sheep lame by a lesion correctly named compared with the same lesion incorrectly named as FR suggested that farmers recognised lesions but did not name them correctly; the distribution of lameness fitted the pattern for the correctly named lesion rather than the pattern of lameness attributed to FR. The results were validated with farm visits and a repeatability study of the questionnaire.

The mean farmer-estimated prevalence for all lameness was 10.4%; with 6.9%, 3.7%, 2.4%, 1.9%, 0.9% and 0.8% of the sheep lame with ID, FR, CODD, shelly hoof, foot abscess and toe granuloma respectively from respondents who correctly named these lesions. Whilst ID and FR were the most prevalent causes of

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0167-5877/$ – see front matter
doi:10.1016/j.prevetmed.2007.06.003

lameness in most flocks it is possible that in up to 17% flocks the primary cause of lameness was a different lesion.

Keywords: Foot lesions; Sheep; Repeatability; Validity; Lameness; Footrot

1. Introduction

Lameness in sheep has been identified by sheep farmers in GB as their highest cause of concern for poor health in the flock (Goddard et al., 2006). There is no evidence that the incidence or prevalence of lameness in sheep in GB has decreased in the last 30 years despite recommendations for its control. In 1994, the estimated prevalence was 8% (Grogono-Thomas and Johnston, 1997) and in 2000 it was 10% (Wassink et al., 2003b, 2004). The most common infectious causes of lameness in sheep are interdigital dermatitis (ID) and footrot (FR) (Grogono-Thomas and Johnston, 1997) and more recently concern has been raised over the newly emerging infectious disease, contagious ovine digital dermatitis (CODD) (Wassink et al., 2003a). In addition to these infectious causes of lameness, there are non-infectious causes which include white line degeneration (shelly hoof), foot abscess and toe granuloma. These are generally considered to be of low prevalence (Grogono-Thomas and Johnston, 1997; Winter, 2004a,b), but there has been no study to be sure of this (details of the clinical presentation of these lesions is presented in Winter, 2004a).

Recent research indicates that new approaches to managing FR and ID might be more effective for control of these diseases than previous recommendations (Wassink et al., 2003b, 2004, 2005; Green et al., 2007). However, another reason for the failure to reduce lameness in sheep may be that farmers incorrectly diagnose the cause of lameness and therefore manage lameness incorrectly. Most recent epidemiological studies in GB that have quantified lameness in sheep and its causes (Grogono-Thomas and Johnston, 1997; Wassink et al., 2003a,b, 2004; Hosie, 2003) have used farmer opinion of the cause and prevalence of lameness in their flock and are, consequently, based on the untested premise that farmers can recognise and name the foot lesions associated with lameness and that they can identify lame sheep. The former assumption is tested in this paper.

Self-administered questionnaires are a valuable research tool to collect data. They are generally more rapid to complete than telephone or personal interviews (Kelsey et al., 1996). In data collected via questionnaires the response to each question should be valid and repeatable (Sargeant and Martin, 1998). Although questionnaire data are widely used, there are only a few studies in veterinary epidemiology that discuss validity; only 11 articles out of 120 (9.2%) using questionnaire data that were published in peer reviewed journals between 1984 and 1988 stated the questionnaire validity (Vaillancourt et al., 1991).

This paper presents the results from a study of farmer and sheep-expert naming of six foot lesions of sheep in 2004 with validation. The prevalence of lameness and lesion specific causes attributed to this lameness is presented.

2. Materials and methods

2.1. Development and implementation of the questionnaire

2.1.1. Study population

Win Episcope 2.0 was used to estimate the sample size. Sample size was calculated assuming 50% of flocks affected with each lesion, based on the 34–77% of flocks affected as estimated by