



Review of laboratory submissions from New World camelids in England and Wales (2000–2011)



D.F. Twomey^{a,*}, G. Wu^b, R. Nicholson^c, E.N. Watson^b, A.P. Foster^d

^a Animal Health and Veterinary Laboratories Agency, Starcross Regional Laboratory, Staplake Mount, Starcross, Exeter, Devon EX6 8PE, UK

^b Animal Health and Veterinary Laboratories Agency, Epidemiology, Surveillance and Risk Analysis Group, Addlestone, Surrey KT15 3NB, UK

^c Animal Health and Veterinary Laboratories Agency, Data Systems Group, Addlestone, Surrey KT15 3NB, UK

^d Animal Health and Veterinary Laboratories Agency, Shrewsbury Regional Laboratory, Kendal Road, Harlescote, Shrewsbury, Shropshire SY1 4HD, UK

ARTICLE INFO

Article history:

Accepted 29 January 2014

Keywords:

Alpaca

Llama

New World camelid

Laboratory diagnostic records

ABSTRACT

Sample submissions to the Animal Health and Veterinary Laboratories Agency's (AHVLA's) diagnostic laboratory network in England and Wales were reviewed for diseases affecting New World camelids (NWCs). In the years 2000–2011, 6757 submissions were analysed, including 5154/6757 (76.3%) for diagnosing a disease problem and 1603/6757 (23.7%) for monitoring (no clinical disease). Wasting (weight loss, ill-thrift) was the most commonly reported clinical sign across all age groups. A diagnosis was reached for 1765/5154 (34.2%) diagnostic submissions. The proportion of submissions with diagnoses was higher for carcasses than non-carcass samples and multiple diagnoses were more likely to be reached from carcasses. Parasitic diseases were collectively the most common problem, including parasitic gastroenteritis (319/1765, 18.2%), coccidiosis (187/1765, 10.6%), fascioliasis (151/1765, 8.6%), ectoparasitic infestations (86/1765, 4.9%) and cryptosporidiosis (24/1765, 1.4%). The most frequently diagnosed non-parasitic problems included nutritional diseases (182/1765, 10.3%), septicæmia (104/1765, 5.9%, including 45 cases of colisepticæmia), gastric ulceration (79/1765, 4.5%), tumours/neoplastic diseases (65/1765, 3.7%), tuberculosis (57/1765, 3.2%), clostridial diseases (44/1765, 2.5%), congenital anomalies (41/1765, 2.3%), peritonitis (39/1765, 2.2%) and Johne's disease (20/1765, 1.1%).

Crown Copyright © 2014 Published by Elsevier Ltd. All rights reserved.

Introduction

The population of New World camelids (NWCs) in the United Kingdom (UK) has increased over the last two decades (Davis et al., 1998; D'Alterio et al., 2006). Surveys of owners in the UK elicited responses from 86 herds in 1992–1993, 218 herds in 2000–2001 and 358 herds in 2007, most of which were located in England, particularly in the South and in lowland areas (Davis et al., 1998; D'Alterio et al., 2006; Lusat et al., 2009). These surveys indicate an increase in the number and size of herds, with alpacas accounting for most NWCs kept in the UK. Although the exact population of NWCs is not known (there is no official register for these species in the UK), data from the British Alpaca Society indicate that approximately 25,000 alpacas were registered in the UK in 2011 (Henson, 2011).

As well as providing estimates of population data, these earlier surveys also provided information about the diseases affecting herds of NWCs in the UK, although they were limited by small sample sizes and owners' recall and perceptions of diseases.

A review of clinical cases examined at a referral centre in England has also been published, but it is restricted by the small number of cases examined and by the nature of referral cases, which tend to represent more complex problems rather than being representative of common diseases (D'Alterio and Bazeley, 2006).

In England and Wales, the Animal Health and Veterinary Laboratories Agency (AHVLA) provides scanning surveillance for diseases of NWCs through a government-funded laboratory-based diagnostic service for private veterinarians and their clients. The aim of the present study was to review the samples submitted from NWCs to Regional Laboratories (RLs) of the AHVLA, including analysis of the epidemiological and diagnostic data generated by these submissions, comparing carcass with non-carcass samples and examining the geographical distribution of holdings from which these samples originated.

Materials and methods

Data sources

Veterinarians submitting samples to RLs are required to complete a submission form providing clinical and farm data. If owners deliver samples directly to RLs, these details are collected by an AHVLA veterinarian on receipt of the samples.

* Corresponding author. Tel.: +44 1626 891121.

E-mail address: finn.twomey@ahvla.gsi.gov.uk (D.F. Twomey).

Samples can be submitted for diagnostic (clinical disease present) or monitoring (clinical disease absent) purposes and are classified as 'carcass' (whole animals, including fetuses, submitted alive or dead) or 'non-carcass' (samples collected from live or dead animals). For the present study, individual submissions that included a mixture of 'carcass' and 'non-carcass' samples were classified as 'carcass' submissions. The structure of the RL network and the process for submitting samples are described elsewhere (Gibbens et al., 2008; Watson et al., 2008). Data from the submission form (holding address, clinical history, animal's age, reason for submission) and diagnoses are recorded on FarmFile (FF) and Veterinary Investigation Diagnosis Analysis (VIDA) databases (Gibbens et al., 2008).

Standardised definitions have been developed within VIDA that allow numerical codes to be assigned against diagnoses (Gibbens et al., 2008); multiple diagnoses can be recorded for each submission. For most diagnoses, the code is specific to a particular aetiology (e.g. *Salmonella* spp.) or pathological finding (e.g. gastric ulceration). Some generic codes (e.g. VIDA code for parasitic gastroenteritis, PGE) also use free text to record more specific details, such as the parasite species identified. 'Diagnosis Not Reached' (DNR) codes are applied if no specific diagnosis has been made.

Georeferencing

The location of holdings, from which samples were submitted, was determined by their unique CPH (County Parish Holding) reference number and randomised at county level before plotting on a map.

Data analysis

The FF and VIDA databases were searched for all submissions from NWCs from 2000 to 2011. Variables examined were reason for submission (monitoring, diagnostic), sample type (carcass vs. non-carcass), age, clinical history and diagnosis. Submissions were classified within age groups, which were estimated by production stage if an age was not provided: 0–6 months (pre-weaned crias), 6–12 months (post-weaned crias), >12 months (adults), fetus and unknown. Where appropriate, VIDA diagnoses were collated into disease types, for example 'Nutritional Disease' represents multiple VIDA codes. Pathological findings were summarised from the collated observations recorded in individual reports representing the most common diseases.

Results

Submissions data

A total of 6757 submissions were received during the period 2000–2011 (Table 1); 6121/6757 (90.6%) were from alpacas and 636/6757 (9.4%) from llamas. The annual number of submissions increased each year from a minimum of 213 in 2000 to a maximum of 1093 in 2009, followed by a decrease in 2010 and 2011 (Table 1). Of the total submissions made during the study period, 5154/6757 (76.3%) were diagnostic and 1603/6757 (23.7%) were monitoring submissions; 1477/5154 (28.7%) of diagnostic submissions included carcasses (Table 1). Non-carcass diagnostic submissions included mostly blood (1549/3677, 42.1%) or faeces (1474/3677, 40.1%); other samples in this category included swabs (286/3677, 7.8%), gastrointestinal contents (220/3677, 6.0%), liver (189/3677, 5.1%), skin (154/3677, 4.2%), lung (123/3677, 3.3%) and kidney (87/3677, 2.4%). No carcasses were included in the monitoring submissions. Table 2 summarises the number of submissions within each age category; most submissions were from adults (3672/6757, 54.3%). For diagnostic submissions, the clinical histories were broadly similar across all age groups, except for

abortion/stillbirth, which only applied to adults (Table 3). Wasting, which included weight loss and ill-thrift for the purpose of this review, was the most common clinical sign in all age categories.

Georeferencing

The location of holdings submitting samples, randomised at county level, is shown in relation to the location of RLs (Fig. 1). The map includes all sample categories (monitoring vs. diagnostic) and all sample types (carcass vs. non-carcass) from 4107/6757 (60.8%) submissions from 825 holdings. The remaining 2650/6757 (39.2%) submissions could not be included due to absence of CPH data.

Diagnoses

A diagnosis was reached for 1765/5154 (34.2%) diagnostic submissions (Table 4). A diagnosis was approximately twice as likely to be reached from submissions from 0–6 month old animals than from other age groups (Table 4). A diagnosis was least likely to be reached from fetal submissions. The DNR frequency was higher for non-carcass samples (2900/3677, 78.9%) than for carcasses (489/1477, 33.1%) (Table 5). With the exception of fetal submissions, a diagnosis was approximately 10 times more likely to be reached from a carcass submission than from a non-carcass submission (Table 5). More than one diagnosis was reached in 261/1765 (14.8%) submissions that yielded a diagnosis. Multiple diagnoses were more frequently recorded from carcasses than non-carcass submissions; 212/988 (21.5%) carcasses and 49/777 (6.3%) non-carcass submissions yielding a diagnosis had more than one diagnosis.

The 10 most frequent diagnoses within each of the sample categories (carcass and non-carcass) are summarised in Table 6. Parasitic diseases were represented in five of the top 10 diagnostic categories, i.e. PGE, coccidiosis, fascioliasis, ectoparasitic infestations and cryptosporidiosis. The most frequent diagnoses were similar across age groups, apart from fascioliasis, tumour/neoplasia, tuberculosis (TB) and Johne's disease, which were not within the 10 most frequent diagnoses for the 0–6 month age group, and cryptosporidiosis and congenital anomalies, which were more common in young crias (data not shown). Less frequent diagnoses are recorded by body system in Table 7.

PGE (319/1765, 18.1%) was confirmed by demonstration of adult helminths in the alimentary tract or helminth eggs in samples of faeces, although the latter can be difficult to interpret, since faecal egg count does not always reflect the severity of infestation (Cebra and Stang, 2008). The following gastric and intestinal parasites were detected: *Bunostomum*, *Camelostomylus*, *Capillaria*, *Cooperia*, *Haemonchus*, *Marshallagia*, *Nematodirus*, *Teladorsagia*, *Ostertagia*, *Trichostrongylus* and *Trichuris* spp. The main clinical signs included wasting, diarrhoea, malaise and pale mucous membranes. Additional pathological findings in carcasses included inflammation of the C3 stomach compartment, enlarged mesenteric lymph nodes, subcutaneous oedema, ascites, hydrothorax

Table 1
Total number of submissions to AHVLA Regional Laboratories from New World camelids in England and Wales (2000–2011).

Submission type	Year												
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
All submissions	213	239	279	385	408	464	558	696	927	1093	879	616	6757
Monitoring only	17	21	26	55	76	87	123	184	224	358	254	178	1603
Diagnostic only	196	218	253	330	332	377	435	512	703	735	625	438	5154
Carcass	66	24	57	74	70	103	137	121	209	243	247	126	1477
Non-carcass	130	194	196	256	262	274	298	391	494	492	378	312	3677

Diagnostic submissions are subdivided into carcass (including fetus) and non-carcass submissions.

Download English Version:

<https://daneshyari.com/en/article/2463998>

Download Persian Version:

<https://daneshyari.com/article/2463998>

[Daneshyari.com](https://daneshyari.com)