



Animal &
Plant Health
Agency

Report into free ectoparasite examination for sheep in Wales

December 2017 to March 2018

June 2018

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Background

This initiative was suggested and funded by the Welsh Government. Its aims were to support accurate diagnosis of pruritic sheep and to promote correct treatment. Where possible it also would provide samples to APHA and the University of Bristol for further research using *in vitro* tests into macrocyclic lactone resistance in *Psoroptes ovis* mites.

Materials and methods

The project launched in December 2017 and was promoted by information to farmers and veterinary surgeons through APHA newsletters, social media and farming industry bodies. The first samples were received on 20.12.17. The last samples were received on 03.04.18 (but were posted in March).

The skin scrape and/or wool samples were submitted in the usual way via a farmer's veterinary surgeon, with submitter and animal details, and examined following APHA standard operating procedures (SOP). This is a third party (UKAS) accredited test. If no ectoparasites were seen on direct examination, a potassium hydroxide digest was prepared and examined.

Following on from our involvement in resistance detection in sheep scab mites (*Doherty, E., Burgess, S., Mitchell, S., Wall, R. (2018) First evidence of resistance to macrocyclic lactones in Psoroptes ovis sheep scab mites in the UK. Veterinary Record 182, 106*), it was intended to submit further samples from this project for further work in this area. However it became apparent early on in this project that sheep scab mites were not being received alive in sufficient numbers to allow many to be forwarded to the University of Bristol after examination. Enquires by veterinary surgeons suspicious of inefficacious macrocyclic lactone (ML) treatment of sheep scab led us to direct them to submit samples direct to Bristol University.

Results

164 submissions were received. Some submissions had several separate samples submitted so 262 individual examinations were carried out in this project.

Table 1. Diagnoses made and the number of submissions involved

Sheep scab due to <i>Psoroptes ovis</i>	78 (47.6%)
Ectoparasitic disease due to lice	35 (21.3%)
Number of submissions diagnosed with both <i>Psoroptes ovis</i> and lice	8 (4.9%)
No ectoparasites detected	43 (26.2%)
Total submissions	164

Ectoparasites were detected in 121 (73.8%) submissions. No other tests were carried out for other potential skin pathogens (e.g. *Dermatophilus congolensis*, ringworm)

147 different holdings submitted samples to this project. Of these 20 (13.6%) had not previously submitted samples to APHA.

Treatment history

16 submissions (9.8%) had findings and a history of previous ML treatment that raised strong suspicions of inefficacy. i.e. live mites detected post ML treatment and little resolution of clinical signs. Other submissions where *P. ovis* mites were only detected on a KOH digest post treatment could have indicated inefficacy, but as there is no information on how long dead mites may remain in a fleece, were not counted as such.

New submitters to APHA

It was encouraging that 20 holdings had not submitted samples to APHA in the past i.e. showed greater involvement with the diagnostic surveillance system through this project.

Discussion

There was a good uptake in this free testing initiative. In the same period the previous year there were 25 submissions from sheep holdings in Wales to APHA for ectoparasite examination. This free initiative resulted in over a 500% rise in submissions.

Anecdotally this project has also led to greater involvement of private veterinary surgeons with their sheep farming clients who have had pruritic sheep. In the past, there was a large element of self-diagnosis by the farming community with purchase of treatment from farmers' merchants without veterinary involvement.

Sheep scab due to *Psoroptes ovis* was the predominate diagnosis (in 78 submissions) with a further 8 submissions where both *P. ovis* and lice were detected. *P. ovis* mites were therefore detected in 52.4% of submissions to this project. It would therefore appear that *P. ovis* mites are the major cause of ectoparasitic disease in sheep on Welsh farms causing pruritus, production loss and welfare concerns.

It has been shown that there can be a 30% difference in body weight between infested and non-infested lambs. (*Kirkwood (1980) Veterinary Record 107, 460*). Also that lamb birth weights can be 10% less from severely affected ewes compared to mildly affected females (*Sargison (1995) Veterinary Record 136, 287*).

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<http://apha.defra.gov.uk/vet-gateway/surveillance/experts/exten-man-livestock.htm>

The Animal and Plant Health Agency (APHA) is an executive agency of the Department for Environment, Food & Rural Affairs, and also works on behalf of the Scottish Government and Welsh Government.