Animal & Plant Health Agency

Asiantaeth Iechyd Anifeiliaid a Phlanhigion

Centre of Expertise for Extensively Managed Livestock

Canolfan Arbenigedd ar gyfer Da Byw a Reolir yn Eang

Centre of Expertise for Extensively Managed Livestock Conference 2022

Thursday 24th November 2022

Aberystwyth University

CONFERENCE REPORT

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APHA is an Executive Agency of the Department for Environment, Food and Rural Affairs and also works on behalf of the Scottish Government, Welsh Government and Food Standards Agency to safeguard animal and plant health for the benefit of people, the environment and the economy.

Contents

Executive Summary

The APHA's Centre of Expertise for Extensively Managed Livestock (CoEEML) Conference was held on Thursday 24th November at Aberystwyth University. There was a varied programme of talks including a farmer's perspective of managing an extensive sheep flock, ruminant breeding in extensive environments, sustainable liver fluke control and a farmer led approach to managing liver fluke. We also heard about projects with relevance to extensive livestock including APHA's free sheep scab testing in Wales, bovine babesiosis project and thin ewe project, as well as AHDB's Challenge Sheep project. Finally, colleagues from the SRUC presented a case study about tick-borne disease in a Scottish hill flock and gave us an overview of the Scottish crofters' survey. There were 48 delegates in attendance from across the UK including vets, farmers, and wider industry. Initial feedback on the day was good with very positive comments received regarding the range of interesting and informative presentations.

There was a varied programme of talks during the conference

Background Information

The CoEEML is based at APHA Carmarthen Veterinary Investigation Centre (VIC). Whilst based in Wales, the Centre also covers England and forms part of the wider veterinary surveillance system operated by APHA.

Extensively-managed animals are those that are kept in such a way that they are not easily regularly and closely inspected, for signs of ill health, or significantly altered production. Examples of extensively managed livestock include animals that are kept on common land, uplands, mountains, or moors, with cattle and sheep being the primary focus.

The aims of the Centre of Expertise are to:

- Develop engagement with keepers of extensively managed livestock in order to promote disease surveillance activities and improve collection of surveillance data and information on extensively managed livestock
- Develop communication and information sharing with farmers and vets, to promote healthy livestock, productivity and sustainable farming in extensive systems
- Develop a virtual hub of expertise in surveillance in extensively managed livestock to complement the Species Expert Groups

Previous activities have included two stakeholder conferences, in Bristol in 2016 and Penrith in 2017, and a webinar was held covering tick-borne diseases in December 2020.

The aim of the 2022 conference was to bring together parties with existing or potential interest in the surveillance of disease and threats in extensively managed cattle and sheep to share information and develop collaborative ways of working.

CoEEML Conference 2022 speakers and organisers

Conference Programme

10:00-10:30	**Registration and Coffee**
10:30-10:40	**Welcome** Fin Twomey, APHA Surveillance Intelligence Unit
10:40-10:55	**An overview of the Centre of Expertise for Extensively Managed Livestock** Caroline Fenemore and Kitty Robinson, APHA Carmarthen
10:55-11:25	**A farmer's perspective of managing livestock extensively** Aled Edwards, Home Farm, Cilycwm
11:25-12:00	**Mapping liver fluke infection risk areas on grazed pastures for sustainable fasciolosis control** Dr Rhys Jones, Aberystwyth University
12:00-12:20	**Hill Sheep Health North Liver Fluke Project** Amanda Carson, APHA Small Ruminant Expert Group Lead
12:20-13:10	**Lunch**
13:10-13:55	**Ruminant Production and Breeding in Extensive Environments: Challenges and Opportunities** Emeritus Professor Will Haresign, Aberystwyth University
13:55-14:25	**Thin Ewe Project** Amanda Carson, APHA Small Ruminant Expert Group Lead
14:25-14:45	**Challenge Sheep Project** Dr Bethan John, AHDB
14:45-15:00	**Coffee Break**

15:00-15:15	**Free sheep scab testing in Wales** Kitty Robinson, APHA Carmarthen
15:15-15:35	**Surveillance and risk analysis of bovine babesiosis in England and Wales** Harriet McFadzean, APHA Starcross
15:35-15:50	**Case Study: Tick borne disease in sheep in Scotland** Iain McCormick, SRUC Veterinary Services St Boswells
15:50-16:20	**Scottish crofts: demographics, livestock health and biosecurity practices** Sue Tongue, SRUC Centre for Epidemiology and Planetary Health
16:20-16:30	**Wrap up** Fin Twomey, APHA Surveillance Intelligence Unit
16:30	**Conference close**

Delegates also had the opportunity to network during breaks throughout the conference

Summary of Presentations

Fin Twomey, head of the Surveillance Intelligence Unit (SIU) of the APHA welcomed delegates and introduced the day.

Caroline Fenemore and Kitty Robinson, both Veterinary Investigation Officers at APHA Carmarthen and joint leads of the CoEEML, gave an overview of the group. The aims of the CoEEML were discussed, alongside the challenges of trying to increase disease surveillance in this sector. As previously identified by the group, the diseases of most interest to extensive livestock keepers are sheep scab, tick borne diseases and liver fluke. These diseases therefore remain our focus. Outputs of the CoEEML include a dedicated webpage on the APHA's Vet Gateway, Focus Articles in the Veterinary Record, and stakeholder conferences.

A farmer's perspective

Aled Edwards, a beef and sheep farmer from Cilycwm in the Upper Tywi Valley, gave the audience his perspective of managing an extensive sheep flock. Aled has grazing rights on Mynydd Mallaen, a 7000 acre Site of Special Scientific Interest (SSSI), with 58 rights holders and 18 active graziers. His flock of 500 breeding ewes graze common land on the mountain for 10 months of the year, with output aimed at raising one lamb per ewe per year.

Mynydd Mallaen is a Site of Special Scientific Interest (SSSI), with 58 rights holders and 18 active graziers on the mountain. *(Photo credit: Aled Edwards).*

Advantages of this extensive system include reduced fly strike in the summer due to altitude, lower temperatures and less fleece soiling, and less transmission of infectious diseases due to low stocking densities. There are many challenges, including difficulty shepherding over such a large area, and the introduction of diseases and treatment resistance from other flocks.

Diseases of concern were highlighted as:

- Tick borne fever – signs include fever, lameness, paralysis and death due to abscesses. The habitat is ideal for ticks with bracken encroachment and dense vegetation. Local breeds appear to be less susceptible. There is concern that under grazing and fewer flocks will result in increased tick-friendly habitat.

- Sheep scab – to receive payments through Glastir (a sustainable land management scheme in Wales launched by the Welsh Assembly Government in 2012), graziers must remove all sheep from the common for one month (21/10-21/11) and sheep from each flock must be fully plunge dipped before returning to the common. The Mynydd Mallaen Grazing Association has purchased, with a grant, a dipping trailer for members to use and employs shepherds to ensure all sheep are found and dipped. However, it is impossible to be sure 100% of sheep are gathered, and the costs for dip and dip disposal have hugely increased.

Environmental pilot schemes to manage bracken encroachment by mechanical bruising, and Molinia by controlled burning are in place.

Ruminant breeding in extensive environments

Emeritus Professor Will Haresign of Aberystwyth University spoke about the challenges and opportunities of ruminant breeding in extensive environments. Hill sheep breeding was discussed, and it was noted that although genetic improvement is important for improving the profitability, it is also vital that unique genetic characteristics which help these breeds to survive in harsh hill environments are not compromised. An overview was given of the Hybu Cig Cymru (HCC) Hill Ram Scheme, a genetic improvement scheme for Welsh hill breeds introduced in 2018. This scheme uses an index which includes maternal traits in addition to growth and carcass traits, and has flocks engaged in performance recording spread widely across Wales. The importance of selecting for maternal traits as well as growth and carcass traits in suckler beef herds too was also emphasised.

Mapping of liver fluke risk areas

Dr Rhys Jones of Aberystwyth University gave a very informative talk on sustainable fasciolosis control using mapping of liver fluke infection risk areas on grazed pastures. The mud snail *Galba truncatula* is required for fluke to complete their lifecycle, therefore areas with favourable mud snail habitats present a risk for fluke infection of livestock. An ideal mud snail habitat consists of a muddy

area with standing water for most of the year, including over the summer months. Areas with fast flowing water or which are over-poached are detrimental to the snail.


The mud snail *Galba truncatula* is required for liver fluke to complete their lifecycle. Favourable mud snail habitats include muddy areas with standing water for most of the year. *(Photo credit: Dr Rhys Jones).*

Environmental DNA (eDNA) is defined as DNA that is expelled by organisms and accumulated in the environment. Research on Welsh farms has demonstrated that the use of eDNA analysis can help to identify *G. truncatula* habitats in areas where the snail has not been detected by eye. In addition, eDNA has been used to help identify spatial factors associated with mud snail detection. Although not commercially feasible in the short term, eDNA is already helping to improve the understanding of *G. truncatula* ecology and fluke epidemiology in a research setting.

Continuing with the theme of liver fluke, Amanda Carson, the former veterinary lead of the APHA Small Ruminant Expert Group, gave us an overview of the Hill Sheep Health North liver fluke project which ran from November 2017 until May 2021. A full overview of this project was published in a previous Surveillance Focus Article; Managing liver fluke on hill farms. *Veterinary Record*. 191 (3), 115-117.

Monitoring replacement ewes in extensive systems

Dr. Bethan John, an Animal Health and Welfare Scientist at AHDB, presented AHDB's Challenge Sheep project, which was in its fifth of seven years. The project came about as it was recognised that the management of replacement ewes needs improving. The premature loss of first season ewes is estimated to cost the national flock £13.4 million annually. Data is being captured from approximately 7,000 replacements across 10 commercial flocks, in a range of systems across the country from hill to lowland, including multiple breeds. Farmers send data regarding ewe weight and body condition score (BCS) at five key points in the production cycle and lamb weights are also recorded when applicable.

Preliminary findings from two extensive systems were presented. The first farm is a hill system grazing open common fell in County Durham, the second is a 100% grass-based upland system in Northumberland. Generally, the median BCS in the upland system was higher at each management point compared with the hill system; an expected finding as the ewes are not withstanding the same environmental challenge. Some barriers to monitoring flock health in extensive systems have been identified in the project, namely missing data points as the farmer managing the hill flock was unable to BCS ewes when they were away on the fell.

APHA Projects

Overviews of APHA projects with relevance to extensively managed livestock were also given including:

- Thin Ewe Project, which investigated the flock-level significance of "iceberg diseases"; APHA thin ewe investigation project. *Veterinary Record*. 189 (3), 106-108.
- Free sheep scab testing in Wales; Surveillance report into free ectoparasite examination for sheep scab in Wales – December 2021 to March 2022.
- Bovine babesiosis surveillance project in England and Wales; the findings are due to be published at a later date.

Scottish case studies

Iain McCormick, a Veterinary Investigation Officer at SRUC St Boswells, presented a case study about tick-borne disease in a Scottish hill flock.

Four five-month-old lambs were submitted live to investigate hind limb lameness and ill-thrift in a flock of 1300 Scottish Blackface and Cheviot ewes. The 5000-acre farm was managed by one shepherd. Replacements were homebred and lambs sold as stores. Grouse and pheasant shooting on the farm was managed by 12 gamekeepers.

The April born lambs grazed on extensive hill ground with bracken overgrowth all summer. Affected lambs were first seen in August, with 15 lambs showing clinical signs, 10 of which had been euthanased. On examination, all four lambs were lame in one or both hind legs. One lamb also had a ruptured corneal ulcer and lesions consistent with orf. At postmortem examination, lambs had extensive joint ill lesions and abscesses.

Extensive joint ill lesions in a lamb with Tick borne fever. *(Photo credit: Iain McCormick, SRUC).*

Testing revealed that all four lambs were positive for tick borne fever by PCR. Bacteriology identified *Acinetobacter, Fusobacterium necrophorum* and *Bibersteinia trehalosi* from joints and abscesses, and *Yersinia enterocolitica* from ileum of one. All four lambs had a high worm burden and low liver selenium. Histopathology confirmed parapoxvirus infection (orf) in one of the lambs. Advice was given on ectoparasiticide treatment for ticks, and it was recommended to review both vegetation management and general flock management.

Finally, Dr. Sue Tongue, veterinary epidemiologist at SRUC, gave us an overview of the Scottish crofters' survey which looked into the demographics, livestock health and biosecurity practices of crofters in the Scottish Highlands. There are over 20,000 crofts in Scotland with approximately 33,000 people living in crofting households and 750,000 hectares in crofting tenure. Previous and existing initiatives in the Scottish Highlands and Islands as well as other research were also discussed.

Conference Feedback Summary

A feedback form was issued to all delegates following the conference via an online survey and, of 48 attendees, 25 responded. All answers were anonymous.

Respondents were asked which sector they came from, if they would be interested in attending future conferences, and their preferred format. They rated each presentation on a scale of 0-5 and the conference organisation, venue, and catering on a scale of 0-10.

Respondents were also asked for suggestions on future topics, and speakers and given the opportunity to add further comments on conference improvements they would like to see in the future.

The feedback given was very positive with some good suggestions made for the future. The full feedback report can be seen in Appendix A.

The Organising Committee would like to thank the delegates that responded to the online survey after the conference. We were pleased that the majority of respondents felt the conference met its aims and was a success, and all areas were given top marks by some respondents. The suggestions and comments provided have been taken forward to be considered for the next conference.

APHA Conference Organising Committee November 2022

Caroline Fenemore, Veterinary Investigation Officer, APHA Carmarthen

Kitty Robinson, Veterinary Investigation Officer, APHA Carmarthen

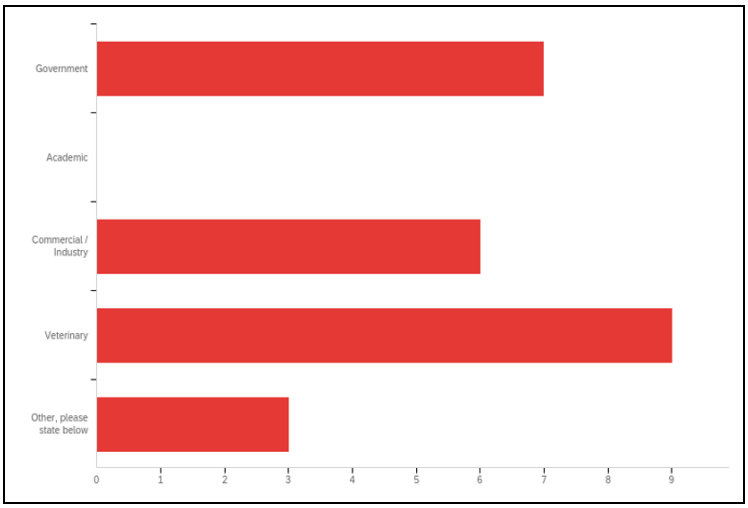
Sophie Garrington, Data Manager, APHA Surveillance Intelligence Unit

Appendix A

Conference Feedback

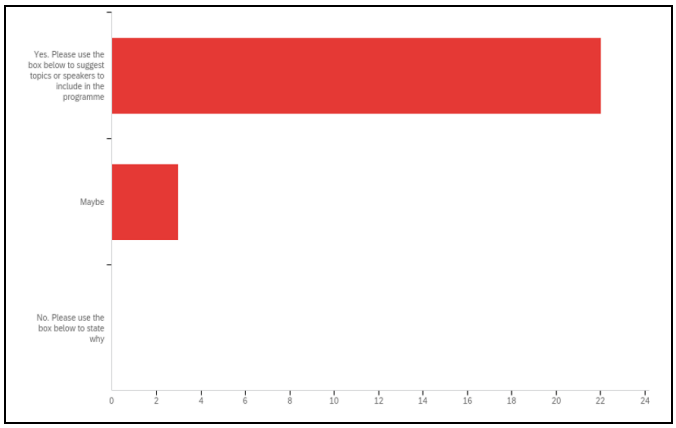
A feedback form was issued to all delegates following the conference via an online survey and, of 48 attendees, 25 responded. All answers were anonymous.

Attendees were from a mix of sectors as detailed in the graph below. Three respondents were categorised as Other and gave further information as their sector being Irish Veterinary Laboratories, Commercial undertaking Government work, and Agriculture.



Respondents were asked to rate each presentation based on the information and level of interest on a range from 0 to 5. Talk 3 – 'Mapping liver fluke infection risk areas on grazed pastures for sustainable fasciolosis control' was the highest scoring with an average rating of 4.44 closely followed by talk 2 – 'A farmer's perspective of managing livestock extensively' with an average rating of 4.32. The third rated talk was Talk 10 – 'Case Study: Tick borne disease in sheep in Scotland' with an average rating of 4.26. The remaining talks' average rating ranged between 3.60 and 4.17.

The majority of respondents expressed an interested in attending another CoEEML conference:



Respondents who were interested in attending a future conference were asked to suggest possible future topics. These included:

Louping ill virus

Resistance to disease in hefted flocks

Plant toxicities in extensively managed flocks

Veterinary practitioner case reports

An ecologist's perspective

A panel discussion with vets, farmers and ecologists

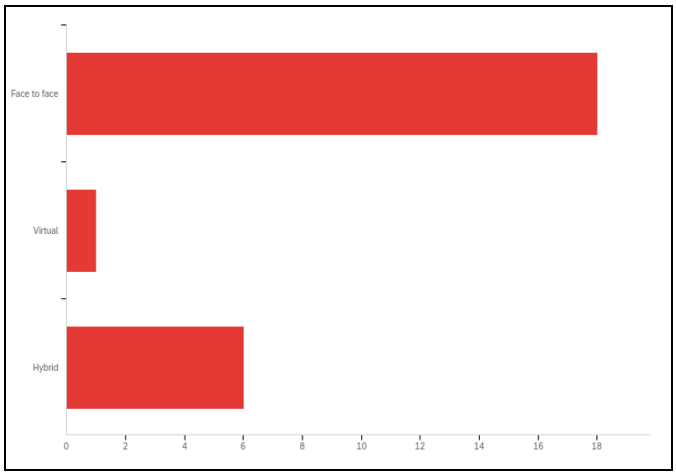
Vaccine availability

Infectious respiratory disease control in extensively grazed sheep

Ongoing project updates

Sustainability and best practice, e.g. sustainable worm control

The majority of respondents preferred the format of face-to-face although some voted for a hybrid or virtual format:



The conference organisation was rated on a scale of 0 to 10 with Registration achieving an average rating of 9.20 and Communication achieved an average rating of 8.84.

The venue and catering was rated on a scale of 0 and 10. Venue location achieved an average score of 8.24, Venue Facilities had an average 8.44, and Catering received an average rating of 7.84.

Finally, the feedback form requested any further comments or suggestions: -

Programme and presenters	Delegates	Venue	Catering	Event organisation	Conference format - face to face	Other
Lovely mix of varied talks and topics, all highly relevant	Great to see some farmers, it would be nice to have more next time!	Great room, occasionally hard to hear as the microphone kept fading in and out depending on where the presenter stood.		Excellent!		
						Can we have the power point slides of the presenters?
	I thought a few more farmers might have been present					

			Perhaps some form of forced networking - table movement
More time for questions	A hot lunch would be appreciated by those traveling a long way	The maps issued to locate the building were pixelated and difficult to read on a phone	
Improve sound system		not joined up so better communication required	

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