



In this CVERA e-zine, we provide a brief overview of some of the recent and ongoing work conducted by CVERA staff in collaboration with a wide range of national and international institutions. More in-depth information can be found at <http://www.ucd.ie/cvera/>, noting the role of CVERA to provide high quality independent scientific research and advice to support national evidence-based policy making in animal health & welfare and public health and related matters.

Quantify *Mycobacterium bovis* transmission in a badger vaccine field trial

In the UK and Ireland, Bacille Calmette-Guérin (BCG) vaccination of badgers has been suggested as one of a number of strategies to control or even eradicate *Mycobacterium bovis* infection in badgers. A [recent paper](#) by Aznar and colleagues from Wageningen University examines the results of the badger vaccination field trial conducted in County Kilkenny. The paper introduces a novel trial design and analytical methods allowing for the effects of vaccination on protection against infection and, more importantly, on transmission to be estimated. The results of this study reveal that, with vaccination coverage in badgers exceeding 30%, eradication of *M. bovis* in badgers in Ireland is feasible, provided that the current bovine control measures also remain in place.

Wildlife Administration Unit and badger vaccination

DAFM's Wildlife Administration Unit (WAU) has had responsibility for the implementation of the Department's wildlife strategy for bovine tuberculosis since its foundation in 2002. The strategy is implemented under licence from, and in co-operation with, National Parks and Wildlife Service (NPWS). CVERA provides ongoing support to the WAU, including the approval or rejection of badger capture requests under specific circumstances as agreed with NPWS in accordance with the terms of the 1976 Wildlife Act (as amended). CVERA also generates regular WAU activity and "area under treatment" reports, provides ongoing support to field staff working in problem areas and generates resources for various projects including vaccination trials, bait study trials and the non-inferiority trial. CVERA will continue to provide support to the WAU as it progresses to the badger vaccination phase of the TB eradication programme, as [announced](#) by the Minister for Agriculture, Food and the Marine, Michael Creed, TD in January, 2018.

On-farm antimicrobial usage

There is increasing scrutiny of on-farm antimicrobial usage as part of discussions - internationally, within the EU and nationally - on antimicrobial resistance. In several EU member states, farm-level data are now available to allow objective assessment and benchmarking. In a [recent publication](#), intramammary antimicrobial usage in Ireland between 2003 and 2015 has been quantified, based on national sales data. In recent years, there has been a reducing use of in-lactation therapy, whereas the national coverage of dry cow therapy is approaching 100%. Further, there is a small but increasing percentage of tubes, both for in-lactation and dry cow use, containing antimicrobials that are critically important for human health. The results highlights positive national progress, but also areas for detailed review.

Bovine spongiform encephalopathy

The investigation of bovine spongiform encephalopathy (BSE) cases can be particularly difficult, in large part due to the time lag between exposure of the BSE agent and the onset of clinical signs. Drawing on the experience gained in Ireland over many years, a [recent paper](#) describes an epidemiological framework and BSE investigation questionnaire to aid in the investigation of suspect BSE cases, and the application of this tool during the investigation of a suspect BSE case in Ireland in 2015.

Hypothetical route of the introduction of Schmallenberg virus into Ireland

Schmallenberg virus (SBV) is a viral pathogen of ruminants that first emerged in Europe in 2011. In Ireland, the first confirmed case of SBV was identified in October 2012. In conjunction with DAFM's Central Veterinary Laboratories, CVERA used SBV serology on archived bovine sera combined with Atmospheric Dispersion Modelling to investigate the potential introduction of SBV into Ireland through a *Culicoides* (biting midge) wind incursion event in the summer of 2012. The findings are presented in the [Veterinary Record](#).

RISKSURV workshop

CVERA and the SAT division in DAFM recently ran a workshop on the design of risk surveillance systems using the RISKSURV tool. A key message from the workshop was the need to clarify the primary purpose of surveillance, either early detection, demonstrating freedom from disease, measuring prevalence or case finding. The first two objects are relevant to exotic diseases such as bluetongue and foot and mouth disease, and the latter to surveillance of endemic diseases such as Johne's disease and bovine tuberculosis. Workshop participants explored the use of the RISKSURV design tool to facilitate a structured approach to the design of disease surveillance programmes. More details of the RISKSURV tool can be found [here](#).

BVD mapping

CVERA produce monthly maps for Animal Health Ireland (AHI) in support of their national Bovine Viral Diarrhoea (BVD) eradication program. These [maps](#) include the monthly cumulative distribution of persistently infected (PI) births per year and the number of positive animals detected and still alive since the program commenced. Plans are underway for AHI, Animal Health & Welfare Northern Ireland and CVERA to expand this mapping series to cover the island of Ireland in the near future.

African Swine Fever

Following its initial incursion into the EU in early 2014, African Swine Fever (ASF) is now present in a number of EU member states. In support of the European Commission and individual member states, the Animal Health and Welfare Panel within the European Food Safety Authority (EFSA) has now produced 8 scientific opinions and reports on a range of issues relevant to ASF and its control. Its most recent [scientific report](#), published on 8 November 2017, covers the 12 month period to September 2017. It is clear that sharing best practice, including early detection and rigorous emergency measures, is critical to stopping spread. Further, despite concerted efforts to stop ASF spread among wild boar, humans have played a critical role in spreading the disease. Simon More is chair of the AHAW Panel and a member of the current ASF working group.

BVD eradication

CVERA, Animal Health Ireland, and UFZ in Leipzig collaborated to evaluate the Irish BVD eradication programme and inform its future development. In particular, an epidemiological modelling approach was used to predict the likely time-to-eradication of BVD from Ireland and to evaluate the pros and cons of switching to a serological, as opposed to tissue-tag

testing, approach. The study highlighted the adverse impact of PI retention on time-to-eradication. The study was recently published in [Preventive Veterinary Medicine](#).

Influenza D Virus in Cattle, Ireland

CVERA provided mapping support for DAFM's Laboratory Services in their letter entitled 'Influenza D Virus in Cattle, Ireland' recently published in [Emerging Infectious Diseases](#). The study confirms the emergence of influenza D virus in Ireland.

***M. bovis* 2020**

Planning is ongoing for the Seventh International Conference on *Mycobacterium bovis* (*M. bovis* 2020 for short). *M. bovis* 2020 will take place in Galway from 8-11 June 2020, bringing together scientists, policy makers, veterinarians and industry stakeholders from around the world with the aim of identifying constraints and providing practical solutions for the control and eradication of *M. bovis*. The Scientific Committee will be formed over the coming months. For more information please visit www.mbovis2020.com or follow us on Twitter @mbovis2020

Simon More

Professor of Veterinary Epidemiology and Risk Analysis

Director of the Centre for Veterinary Epidemiology and Risk Analysis

UCD School of Veterinary Medicine

University College Dublin

www.ucd.ie/cvera

+353 (0)1 716 6144

@UCD_CVERA