

2007 VIROLOGY ANNUAL REPORT

The main work undertaken in Virology was related to its role as a National EU Reference Laboratory (NRL) for Class A and OIE Listed exotic diseases; and the performance of prescribed testing for the control of other statutory viral diseases. A comprehensive viral diagnostic laboratory service was also provided.

For surveillance purposes, 700 specimens from wild birds and 508 specimens from commercial flocks were tested by real time RT-PCR, and/or virus isolation, for avian influenza virus. In addition, serological testing for influenza on 38,786 samples from commercial poultry flocks was performed as part of two major national surveys and to satisfy requirements for movement and trade. The latter sera were also examined for antibodies to various mycoplasma species for the national surveillance programmes and for trade purposes. A further 8,000 specimens were tested serologically for influenza as part of research projects, and at the request of the industry and veterinary practitioners. Samples from avian influenza and Newcastle disease suspect cases were also examined for evidence of both high pathogenic and low pathogenic viruses.

Because of the outbreaks of bluetongue in Northern Europe in 2007, Virology, in its role as a NRL for this disease, expanded its range of diagnostic and surveillance techniques. Some 1,228 cows & 5 sheep imported from Continental Europe were tested serologically for bluetongue with negative results. In a random sero-survey of the National Herd, 1,375 bovine sera from 275 herds were examined and found negative for bluetongue.

National serological surveillance was performed for a number of other Listed mammalian diseases such as: foot and mouth disease, swine vesicular disease, classical swine fever, and enzootic bovine leucosis, all with negative results.

EU Ring Proficiency Ring Trials, using serology, antigen detection, and genome detection techniques were completed with excellent results for: Foot & Mouth Disease, Swine Vesicular Disease, Bluetongue, Classical & African Swine Fever, African Horse Sickness, Avian Influenza (2 trials) and Newcastle Disease.

Contributions were made at the Annual Meetings of the National Reference Laboratories for FMD/SVD, CSF/ASF, AI/ND & BT. The Division participated in workshops on CSF emergency vaccination and CSF/FMD proficiency testing, as well as assisting at two EUFMD international workshops on NSP serosurveillance. Drafts of some sections of the Contingency Plans for Class A diseases at Backweston were prepared, including SOPs for testing specimens from suspected cases of FMD & SVD viruses.

Virology is the official NRL for Equine Infectious Anaemia (EIA). Following the diagnosis of EIA for the first time in Ireland in mid-2006, a programme to control the disease was undertaken by the DAF which culminated in late 2006 in a sero-surveillance programme in counties Meath & Kildare. This was concluded early in 2007 when Virology tested 1,746 sera by ELISA from the final horses sampled. As a result, on 21 March 2007, the last premise restrictions were lifted and Ireland was declared free of EIA. As part of its duties as a NRL, Virology continued its supervision of another laboratory to perform official tests by producing and providing an EIA national reference serum.

In 2007, the Department of Agriculture and Food licensed the EVA vaccine “Artervac” for restricted use in stallions for the fourteenth consecutive year. As before, veterinary surgeons were required to collect a serum sample before vaccination or re-vaccination, and another sample 14-21 days after the second dose of vaccine or booster for serological surveillance. A total of 333 stallions was vaccinated in 2007 comprising 276 animals that vaccinated previously, and 57 that were vaccinated for the first time in 2007 in Ireland. Pre- and post-vaccination serum samples from these horses were examined using the serum-neutralization test.

Some 3,621 sera were tested for the Aujeszky’s Disease eradication/control programme and for herds seeking to upgrade or maintain their Aujeszky’s Disease Herd Status.

A National Survey for PRRS antibodies on sera, collected for the AD control programme, was completed with an additional 530 sera tested. Although four previously undetected herds were found positive, there is no indication that the disease represents a threat to the national pig population.

Approximately, 800 sera were also examined for a national survey to establish the prevalence of transmissible gastro-enteritis virus and porcine corona respiratory virus.

A comprehensive viral diagnostic service for farm animals was provided with over 36,444 samples from horses, cattle, pigs, and sheep examined for antibodies and virus using a number of laboratory techniques.

Multiple tests on 6,056 porcine sera, & on 1,517 equine sera, were performed for export purposes. In addition, bulls for AI stations, and herds and their progeny for entry to ICBS Tully, were tested for infectious bovine rhinotracheitis, enzootic bovine leucosis and bovine virus diarrhoea (BVD). The diagnostic service was expanded with the introduction of a polymerase chain reaction (PCR) for BVD that can be used on pooled samples, thus facilitating the promotion of a Herd Health Scheme for this disease. The Division's website at www.agriculture.gov.ie/virology was also updated. Speakers were provided for a number of meetings on Herd Health Programmes and epizootic diseases.

Research and development resulted in the evaluation and introduction of an antigen ELISA for FMD and SVD viruses for diagnostic purpose, and a real-time QuantiTect RT-PCR test for FMDV genome detection as well as the production at Abbotstown of antisera for IBR, TGE and PRCV test systems. The design and implementation of a specification for a stand-alone LIMS database for Class A diseases has also been accomplished.

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