Assessing the current state of bovine TB on farms

EXTENSIVE sessions at October's BCVA congress and the recent Official Vet Conference provided further explanations and insights into the current state of bovine and badger TB.

RICHARD GARD reports on presentations at both the 2015 BCVA congress and the recent OV conference which examined the issues but still left some questions unanswered

As with all good exchanges there were many questions raised, some of which remain to be answered. The first OV Conference, at the home of Improve International near Swindon, was well attended with some 250 delegates split into "large animal" and "other animal" streams.

The thrust is clearly for veterinary practices to be able to advise clients on how to reduce and eliminate bTB from cattle. As grandfather rights evolve into assessment and training, many more veterinary surgeons will be required to take on board the disease control options as well as the revised testing regime.

The presentation on genotyping by Dr Noel Smith, head of bTB genotyping at the APHA, was enlightening and led to a request from the floor for genotype information to be provided to practices about client herds.

The strain of bovine tuberculosis has been identified from every cattle breakdown of bTB in Britain over the past decade and a half. A database of over 80,000 isolates has been accumulated. The speaker observed that the genotypes of *M. bovis* in Britain and Ireland are distinct from those in mainland Europe.

British genotypes are similar to those found in other parts of the world, related to trade in cattle. He suggested that a local strain of bTB was exported from the British Isles to the colonies in the 1600s and was then spread around the world.

Today, the various genotypes have a specific home-range. Some 95% of bTB breakdowns are in the home-range or within 50km of it and 97% of genotypes have a home-range. Dr Smith indicated that the spoligotype identified from a bovine slaughtered for bTB indicates whether the animal has been transferred out of the *M. bovis* home-range.

Reference was made to the 2014 Surveillance Report and this contains a great deal of useful information of direct interest to vets in practice about various aspects of the disease. During 2014, 96 different genotypes were isolated and 20% of those were outside their home-range. The most common spoligotype is 17a followed by 11a and 25a.

The report notes that a cow in Devon with 17 has been bought in, whereas 11a, 11b, 11k, 9c and 9e have a Devon home-range. Dorset has a mainly 9f home-range with a touch of 11a, 17a and 21a. The inference is that the bacteria do not thrive outside of their home-range.

Dr Smith commented that "the observed geographical clustering of *M. bovis* genotypes is incompatible with a cattle-only transmission model for bTB in GB, or cattle-movement patterns. The geographical localisation of bTB home-range suggests a local, relatively static environmental (wildlife) reservoir of the bacterium".

The report lists the duration of breakdowns, with 10% of those resolved in 2014 having lasted for 18 months or more. There is mention of the number of positive animals slaughtered per breakdown but the maximum collated is 10-plus. It is difficult to reconcile this with the farmers and vets mentioning "hundreds" of cattle culled during an outbreak.

The worst affected counties have about 20% of herds under restriction. More information on the high-end breakdowns would provide further perspective on the impact of local bTB outbreaks.

The report states that it is "difficult to distinguish between persistent undisclosed cattle infection from a previous bTB breakdown and a newly introduced infection event".

Dairy herds are likely to have a longer duration of a breakdown and it is stated that the "time to lift restrictions is more related to herd size than to the type of herd".

In terms of disease spread and control, the relative difficulty to resolve bTB outbreaks in dairy herds and beef herds is going to trouble farmers and veterinary practices. Dairy cows live much longer within a disease risk environment. During the BSE restrictions, beef animals had to be slaughtered before 30 months and many herds still operate to a short time from birth to slaughter. It seems surprising that duration of risk appears not to be related to disease outbreaks.

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Dr Smith pointed out that BCG originates from a French genotype that is rare in mainland Europe. Two thirds of human isolates of *M. bovis* are not present in the cattle database. Badgers mirror the cattle home-ranges and, as he explained, "badgers do not go on holiday". Transmission from animals to humans of *M. bovis* is, at most, accountable for one-third of the human cases.

Fencing worthwhile

At the BCVA congress, James Russell of Derbyshire Veterinary Services said that the effect of erecting mesh and electric fencing to enclose the buildings of a pedigree beef herd at a cost of £10,000 had dramatically reduced the number of positive cattle culled.

The financial benefit is specific to the farm requirements and this farm forms part of a large estate where repeated bTB failures were undermining the operation. Freedom from bTB has not been achieved but the fence is seen as being worthwhile for this particular herd.

Paul Rodgers of Allen & Partners in Carmarthen gave a comprehensive appraisal of the developments with Iechyd Da, a co-operative venture involving veterinary practices in South Wales. Now operating the current testing and assessment programme, the speaker said that the standard operating procedure for the test (SICCT) required further clarity to accommodate practical on-farm operations.

As part of Cymorth TB, the practices are involved in advice and biosecurity visits to clients. The speaker concluded with a reflection on the El Alamain speech that, with bTB in Wales in 2015, "Now is not the end, it is not even the beginning of the end, but it may be the end of the beginning." The full content of the paper is in the proceedings.

Epidemiology project

The Wales CVO, Christianne Glossop, opened the OV Conference and she was present when Paul Shroeder outlined the TB Wales Epidemiology Project at the BCVA congress with the headline that Wales is 95.6% bovine TB-free.

The project started in 2013, identified six different cluster areas within Wales and investigates the risk factors within each locality. Herds with a bTB history and "gem herds" – those that remain disease-free but are within a high-risk area – are reviewed.

Active vaccination of badgers is taking place. The data collected are presented on a "dashboard" to maintain positive engagement with farming stakeholders and to stimulate discussion.

Cull review

Roger Blowey gave a review of the 2013 and 2014 badger culls in Gloucester and Somerset, that were farmer-designed and farmer-enacted with "surprisingly little veterinary practitioner involvement".

The original objective was to assess the efficiency, humaneness and safety of a combination of free shooting and cage trapping; the Independent Expert Panel considered that the pilots failed on all counts.

The speaker questioned whether the criteria selected were reasonable and achievable. Removal of badgers in the pilots in the second year was similar to the figures from the Randomised Badger Culling Trial. The target figures for culling performance were estimates.

The pilots were constrained by Natural England so that the cull could withstand legal challenges. Mr Blowey hopes that when roll-out occurs in other areas, more veterinary surgeons will be prepared to support the badger culling efforts.

Herd biosecurity

At the OV Conference, Ifan Lloyd of St James Veterinary Group in Swansea described an approach to herd biosecurity by involving farmers in discussion and farm walk groups. He has found that the farmers are more knowledgeable than they are given credit for.

Local area maps of low, medium and high disease risk are more meaningful if the target herds are all tested within the same month. Farmers are willing to share information with neighbours about the details of TB breakdowns. The aim is to apply best practice to "keep it out" and the application of personal biosecurity by veterinary surgeons on-farm is critically appraised by the farmers.

- A second Official Vet Conference is being planned for September 2016.