BVA evidence to Bovine tuberculosis (bTB) strategy review 2018

The British Veterinary Association (BVA) is the national representative body for the veterinary profession in the United Kingdom. We welcome the opportunity to provide evidence to the review of the 25-year Bovine TB strategy. Efforts to eradicate bTB should apply established veterinary principles of disease control, and control measures in cattle must be accompanied by simultaneous and coordinated measures in badgers, other wildlife and susceptible farmed species for the success of any eradication programme.

1. Integral role of the veterinary profession

Private veterinary surgeons are trusted advisors to farmers and uniquely positioned to offer advice, and provide essential surveillance services which play a key role in the package of measures necessary to address bTB control and eradication. Measures to eradicate bTB are strengthened when farmers and their private vets work together. We believe that initiatives in Wales, such as Cymorth TB and the Gower Project, have utilised this relationship and embedded ownership of addressing bTB with the farmer. They also integrate the work of private and government vets, this is valuable as farmers can see a distinction between the role of private vets as experts in herd health and government vets as experts in legislation and licensing. These programmes should be strongly considered for their possible application in England.

Cymorth TB links farmers, OVs and government vets and has been a good example of collaborative working since 2015. Official Veterinarians (OVs) are upskilled through a training package which leads to a OCQ(V)-Cymorth TB qualification, facilitating the provision of a comprehensive approach to the management of TB breakdowns, including a high level of support to farmers under restriction, minimising the impact of the breakdown. OVs have indicated that being part of Cymorth TB has enhanced their knowledge and the value they can offer as key players in the eradication of TB.

The Gower Project was launched in 2009 by the South-East Wales Regional TB Eradication Delivery Board and funded by the Welsh Government, to support the eradication programme on the Gower Peninsula, through measures including enhanced biosecurity and cattle controls. It offers a bespoke package of support activities to farmers while presenting biosecurity as a valuable tool in the battle to eradicate TB, and an opportunity to demonstrate best practice.

2. Risk-based trading

We support the principle of risk-based trading which engenders a sense of ownership of the disease within farmers. Uptake of the Cattle Health Certification Standards (CheCS) should be prioritised and incentivised with compliance linked to reduced testing and regulatory burden. Consideration should be given to the mandatory introduction of risk-based trading whereby markets are obliged to advertise the likely risk of infection in the cattle being sold.

3. Developing new tools and technologies

We urge Defra to continue to support research and ensure it is kept in line with changing circumstances. Consideration should be given to diagnostics, epidemiological surveillance and control practices.

Diagnostics

- Research into the best use of current diagnostic techniques and the development of new diagnostic techniques is valuable. An improved diagnostic tool could offer enhanced performance, regarding test sensitivity as well as easier applicability such as being less labour intensive in the field.
- We are aware of a possible breakthrough in bovine TB control: the development of a blood test that is able to detect MTB complex bacteraemia.\(^1\) By enabling detection at an earlier stage, onward transmission risk could be minimised.
- The development of PCR technology and pen side diagnostics might allow a refined and more targeted approach to culling.

Epidemiological investigation and analysis

- A greater emphasis should be given to epidemiology and detailed investigations within Defra’s research budget for bTB. Detailed epidemiological investigation of selected representative herds to measure and compare their risk factors and what controls have been applied could reveal new control or protective measures.

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\(^1\) "Evidence of Mycobacterium tuberculosis complex bacteraemia in intradermal skin test positive cattle detected using phage-RPA" by Swift, Convery and Rees, from Nottingham University
There is limited use of epidemiology to understand why the epidemic in England is plateauing (escalating in the Edge), yet there are areas and herds that despite high local incidence are not as severely affected. We recommend that Defra fund epidemiological research specifically into two promising areas:

a) To investigate why the bTB epidemic in Wales is reducing despite similarly high incidence areas to the HRA where it is plateauing

b) To explore why a substantial number of herds in the HRA have never become infected with bTB despite similar exposure risks to their close neighbours.

Advances in the availability and affordability of whole genome sequencing (WGS) have, so far, been capitalised more fully in human medicine than in veterinary medicine - this tool would facilitate more precise typing of M. bovis and bring about a step change in our understanding and ability to control bTB. We recommend that the review encourages Defra to rapidly move to routine use of WGS to replace genotyping as the basis of investigating transmission routes and spread of infection.

Control practices

Research into genetic resistance in cattle is to be encouraged. Genetic resistance could form part of the tool box in control programs but further investigations are required to assess its effectiveness at population level and in combination with other control practices.

Research, development and deployment of vaccines for the control of bTB in cattle and badgers is vital.

BVA would welcome further investigation into alternative badger population control methods and non-lethal methods of population control (such as reproductive control).

Badger-shooting licenses should be combined with cull sample matching and proper bTB prevalence establishment.

4. Deployment of measures

Currently it can take months or years to assess and implement changes to control policy. This allows the epidemic to propagate due to the chronic persistent nature of M. bovis infections. We recommend that the timeliness for the implementation of new measures is reviewed.

Less than 66% of reactors were removed within the 10-day target in 2016. Meeting the set target will mean fewer reactors remaining on farm potentially spreading infection for longer than the control policy mandates.

Wales has seen progress which may in part be due to their wider use of epidemiology to determine controls, as in their ‘OTFW2’ definition which defines a herd as confirmed infected based on a positive skin test and epidemiological evidence suggesting infection has occurred. We recommend that this approach is considered, and supplemented by tracing any potential movement of infection to other herds for all skin test positive herds in the Edge and HRA, regardless of whether infection is confirmed at the abattoir.

England adopts a less stringent approach to cases detected by the skin test than Wales, with lesser sanctions and less follow-up (e.g. tracing) applied after a positive test, if full confirmation at the abattoir or by bacteriology is not achieved. The approach in Wales should be strongly considered for possible application in England.

The very high rate of repeat infection (nearly 60% of cases found in England in 2016 had been infected with bTB at least once in the previous three years, and infection is often revealed at the 6-month check test) suggests that controls are not working for these herds and either infection is left behind, or reintroduced, soon after restrictions are lifted. Many countries include a much longer time lag to ensure all infected cattle are found and new ones not occurring, before lifting restrictions. We recommend that the types of herds with a tendency to repeat infection are characterised, more effort is made to find and remove infection (e.g. use of the gamma test) and stronger criteria for lifting restrictions, are introduced for such herds.

5. Tackling TB in non-bovine species

The current arrangements for TB testing (SICCT) should remain in place (i.e. no routine testing of non-bovine species e.g. camelids and goats, targeted testing if co-located / contiguous with infected or test positive cattle, tracings).

For non-bovine species where an outbreak is identified:

- There should be efforts to improve biosecurity through targeted guidelines for both commercial herds and smaller hobby herds
- There should be an industry initiative to investigate other testing protocols to overcome SICCT inconclusive issues in non-bovine species.