BVA – BCVA Response to the Environment, Food and Rural Affairs Committee inquiry examining the vaccination of badgers and cattle in relation to Bovine TB.

1. The British Veterinary Association (BVA) is the national representative body for the veterinary profession in the United Kingdom and has over 13,000 members. Its primary aim is to protect and promote the interests of the veterinary profession in this country, and it therefore takes a keen interest in all issues affecting the veterinary profession, be they animal health, animal welfare, public health, regulatory issues or employment concerns.

2. The British Cattle Veterinary Association (BCVA) is a specialist cattle division of the British Veterinary Association comprising 1,250 members of which approximately 950 are practising veterinary surgeons working with cattle in farm animal veterinary practice.

3. BVA and BCVA welcome the opportunity to provide evidence to the Committee on bovine TB vaccination.

4. In the longer term vaccination can and should play an important role in any bTB eradication policy, alongside other disease control measures. However, it is important to understand the current limitations of vaccination, in particular its availability, practical application, true efficacy and legal status. In this context, there is a real need to manage the expectations of the general public as to the potential role of vaccination in bTB eradication.

5. We do not believe that at the current time vaccination on its own can sufficiently prevent the spread of the disease or eradicate infection from the UK.

   Injectable badger vaccine

6. An injectable BCG¹ badger vaccine is currently available and has been deployed in an attempt to manage the disease in wildlife. While there is evidence that the BCG vaccination in badgers confers some protection against infection and reduces the progression and severity of the disease in those that become infected, it is not fully protective and does not prevent the bacteria shedding in infected animals. It also has no impact on those animals that are already infected prior to vaccination, and therefore its use in endemic areas, where the prevalence of TB in badgers is high, is likely to be of limited benefit.

7. There is no existing data to prove that badger vaccination has an impact on incidence of bTB in cattle, and more scientific evidence to demonstrate the efficacy of BCG under field conditions, measured by noting reduction in bTB incidence, is necessary.

8. Vaccinating badgers using an injectable vaccine is resource-intensive, as badgers have to be trapped so that the vaccine can be administered by trained individuals. The process also has to

¹ A scoping study undertaken by a sub-committee of the ISG identified clearly that the only candidate for practical development for a vaccine in cattle and badgers is BCG. BCG was licensed for use in badgers in March 2010.
be repeated annually, adding to the cost. As a result, the long-term affordability of an injectable vaccination programme is questionable. Further assessments of the costs of an injectable vaccination programme are being undertaken in Wales and by FERA in Gloucestershire in the single area Badger Vaccine Deployment Programme. These assessments will hopefully provide a clearer picture on the long-term viability of such a programme.

9. The Department for Agriculture and Rural Development in Northern Ireland has adopted a policy of trapping, testing and then culling or vaccinating and releasing badgers depending upon the results of the test, and are modelling this approach for the particular circumstances in Northern Ireland. Modelling work undertaken for the Welsh Assembly did not support this as the most effective strategy in Wales, with culling or vaccination alone being more favourable. The poor sensitivity of the available trap side tests was thought to make the release of infected badgers into a disturbed population a probability, resulting in the probability of an increased perturbation effect compared to culling alone, worsening the situation in cattle herds. We do not support a trap/test/cull/vaccinate-release policy based on this modelling work, but will await the outcomes of the Northern Irish project with interest should it be found that local conditions could be sufficiently different to support such a policy there.

**Oral badger TB vaccine**

10. There is currently no oral vaccine available for bTB in badgers and our representations to Government have called for more research and development to be conducted. We therefore welcomed the Government’s commitment to further invest in this area.

11. It is hoped that an oral vaccine would be easier and cheaper to administer than an injectable vaccine as trapping would no longer be required. However, there are a number of challenges in the development of an oral vaccine which would need to be addressed before the vaccine could be licensed and deployed in the field. These include:

   a. Identifying a palatable carrier substance for the vaccine which the target species will eat but which will not be taken by non-target species.

   b. Combating the problem of acid degradation in the stomach of the target species.

   c. Identifying the correct dose of the vaccine, as animals may not eat all of the carrier substance.

   d. Ensuring that as many members of the target species as possible are reached (particularly cubs) and in sufficient numbers.

12. There have been a number of oral vaccine trials in recent years and of particular interest are the trials currently underway in Ireland. In addition, work taking place in New Zealand looking at an oral vaccine for possums may provide some direction.

**Cattle TB vaccine, DIVA test and the impact of vaccination on cattle and cattle product exports**

13. At present, EU legislation does not allow the use of vaccination against bTB in cattle as part of an eradication programme. Any vaccine would therefore require amendments to be made to EU legislation. Furthermore, any acceptance within the EU for the use of such a vaccine in an approved TB eradication programme is likely to be subject to the ability to differentiate vaccinated from infected cattle using a DIVA test.
14. Similar conditions apply in the context of international trade. EU legislation, with respect to the trade of healthy animals and their products, is based upon the conditions of the World Organisation for Animal Health (OIE), the intergovernmental organisation responsible for improving animal health worldwide. For the EU to adopt changes to bTB controls, the OIE conditions will also require adaptation to ensure third-country trade.

15. These legislative hurdles are not insurmountable, but the time and effort required to drive such fundamental changes on a worldwide stage with only limited international support from bTB free countries should not be underestimated.

16. Work is ongoing on the potential licensing and deployment of BCG vaccination in cattle. We understand that the VMD will soon be reporting on a dossier that has been submitted for licensing a product ‘in principle’ and this will give an idea of the requirements for further field work needed in this country. Once licensed, a vaccination programme (specifying which animals should be vaccinated, requirements for boosters etc) will have to be designed and farmers encouraged to use it. Determining the efficacy of the vaccine under UK field conditions will be an important factor when evaluating the cost/benefit of such a programme.

17. There are high expectations of cattle vaccination; however as noted above in relation to badgers, the BCG vaccine is not wholly protective against infection, but reduces the progression and severity of the disease in those animals that become infected. Vaccination must therefore be accompanied by a DIVA test to differentiate those animals which react positively to the bTB test (the ‘skin test’) due to natural infection rather than being sensitised by vaccination. Although a DIVA test is available, as with the vaccine itself, it has not been tried and tested in UK field conditions.

18. It is important that an appropriate vaccine be developed and made available as quickly as possible. However, this is inherently a lengthy process and again, public expectations must be managed better such that the challenges of developing effective and easily deployable TB vaccines (for use in cattle or badgers) and the limitations of the current vaccine candidates are fully understood and accurately conveyed. It would be useful for a best/worst case timeline scenario to be drawn up and published to reflect all these issues and give a better understanding to all stakeholders of the challenges that lie ahead.

Summary

19. As stated above, vaccination can play an important role in eradicating TB. However, a policy of vaccination should take place alongside other control measures. Whilst the slaughter of cattle found to be infected with TB has been an essential part of the strategy to control the disease in cattle for many years, targeted, managed and humane badger culling is also necessary in carefully selected areas where badgers are regarded as a significant contributor to the persistent presence of bTB. In addition, risk-based biosecurity, surveillance and Farm Health Planning at a national, regional and farm level is essential for the control, prevention and eventual eradication of bTB. A holistic approach to TB control is needed, and we should learn from the control principles employed to tackle other similar diseases such as Johne’s.