

Bovine TB and badger controls

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THERE have been a number of letters in recent editions of *Veterinary Record* (Den Leonard, May 24, 2014, vol 174, pp 535-536; Declan O'Rourke, Neil Blake and Martin Whitehead, June 7, 2014, vol 174, pp 584-586) relating to the efficacy of badger culling as a means of controlling the spread of bovine TB in cattle. We felt the need to provide some clarity with regard to the evidence base relating to this complex issue.

First, the efficacy of indiscriminate badger culling (or more correctly 'killing', since the term 'culling' implies a selective process) as a means of controlling bovine TB is not supported by the available scientific literature (Donnelly and others 2006). As John Bourne stated in his introduction to the Independent Scientific Group's report, following the Randomised Badger Culling Trial (RBCT), 'It is unfortunate that agricultural and veterinary leaders continue to believe, in spite of overwhelming scientific evidence to the contrary, that the main approach to cattle TB control must involve some form of badger population control' (Independent Scientific Group 2007). Indeed there is good evidence that badger social stability mitigates, and social perturbation (caused by killing) increases, the spread of infection in badgers (Weber and others 2013), and scientific analysis confirms that, because of the perturbing impact culling has on surviving badger behaviour, badger culling can result in increased prevalence of infection among remaining badgers, potentially increasing the risk of transmission to cattle (Woodroffe and others 2006, Bielby and others 2014).

Second, the killing methods being employed by licensed contractors and researched by Defra are very far removed from those employed during proactive culling in the RBCT in a number of respects; in particular, the time periods over which the killing has taken place and the estimated proportions of badger populations removed during those periods (Independent Expert Panel 2014). As pointed out by the meeting of scientific experts facilitated by Defra officials in April 2011 during the formulation of the current policy, '... the more that a future culling policy deviates from the conditions of the RBCT ... the more likely it is that the effects of that policy will differ ...' (Defra 2011). Therefore, the results of the RBCT cannot legitimately be used to support current policy and the policy cannot be described as 'science-based'. The 'controlled shooting' of badgers employed during the pilot culls carried out in Gloucestershire and Somerset last year was deemed both ineffective and inhumane by the Independent Expert Panel charged with evaluating them (Independent Expert Panel 2014).

Third, the premise that badger killing can be justified on the grounds that wildlife controls have been deemed necessary in other countries in order to control TB in cattle is seriously flawed. Very few countries have had to kill wildlife as a part of their TB control programmes; rather, control has been achieved through strict testing regimes, including using the single intradermal comparative cervical tuberculin (SICCT) test as a herd, rather than individual, test, for which it is better suited. None of the countries in Europe (including Scotland) that has achieved TB-free status has adopted policies of widespread systematic wildlife controls and where low levels of bovine TB remain these generally relate to concerns regarding cattle controls (Schiller and others 2011, EFSA and ECDC 2014). The water buffalo (*Bubalus bubalus*) in Australia were a relatively small group of feral animals in Kakadu National Park and the wetlands of the Northern territories, and not a significant part of the brucellosis and tuberculosis eradication policy in that country (Australian Government 2011). White tail deer (*Odocoileus virginianus*) in the USA only became a part of the problem because hunters practised winter feeding of animals in order to increase their availability for hunting, which brought them into close contact with other deer and with cattle (Berentsen and others 2008). This leaves just New Zealand, where brush tail possum (*Trichosurus vulpecula*), an introduced species, which has caused significant ecosystem disruption and which has very different social structures and habits from badgers, has been targeted; it is hardly a comparable situation to that faced in England (Clifton-Hadley and others 2000). Serious doubts about the contribution that systematic and widespread badger killing in the Republic of Ireland has made to the 'successful' reduction in bovine TB prevalence in that country have emerged following identification of similar trends in cattle TB incidence between the Republic of Ireland and Northern Ireland where badger culling has not been employed to date (Northern Ireland Badger Group 2014), and there are concerns regarding whether badger populations will recover from the impacts of the policy adopted in the Republic of Ireland (Carroll and others 2013).

Fourth, the premise that badger vaccination is 'unproven' or that it has 'no meaningful effect' is unfounded. Clinical field studies on free-living badgers demonstrated significant reductions in bovine TB incidence following vaccination (Chambers and others 2010), and vaccination has been shown to significantly reduce the severity and progression of disease (and hence the extent to which individuals are infectious) in vaccinated adult badgers and the risk of infection in unvaccinated cubs (Carter and others 2012). Furthermore, vaccination does not result in perturbation and, therefore, offers a reliable method of reducing prevalence of infection in badgers without any associated increased risk to cattle.

Lastly, the evidence from the Area Eradication Strategy, conducted during the 1950s and 1960s, and recent data on bovine TB incidence and numbers of cattle slaughtered particularly from Wales, suggest that strict cattle testing and control measures, combined with risk-based trading and strict adherence to biosecurity protocols, can bring this infection under control in the absence of indiscriminate badger killing. While Defra has been wasting significant amounts of public money designing, licensing, policing and assessing the shambolic 'pilot culls' that took place in Gloucestershire and Somerset last year, Wales has reduced the number of cattle compulsorily slaughtered as a result of TB testing by more than 50 per cent since 2009, without killing a single badger. Data on new herd incidents in Wales for the 12 months to the end of March this year showed a 22 per cent reduction on the previous 12 months, with the number of cattle slaughtered down by a third over the same period; the number of new herd incidents and cattle slaughtered in Wales during March 2014 was the lowest for a single month in March since 2008 (Welsh Government 2014). Data from England also show encouraging trends.

Many mammal species can become infected with bovine TB, and badgers are undoubtedly capable of carrying and transmitting the infection. However, attempts to control bovine TB in cattle by killing badgers have been repeatedly shown to be ineffective, cruel and unnecessary.

In supporting efforts to resolve this situation, we as a profession must not succumb to advocating the apparent 'easy fix' of inhumane and indiscriminate badger killing when it has no basis in science and, as such, is not ethically justifiable.

Signed by the following 19 members of the Royal College of Veterinary Surgeons:

Marc Abraham
Caroline Allen
Heather Bacon
Fiona Dalzell
Bronwen Eastwood
Richard Edwards
Phill Elliott
Bruce Fogle
Geoffrey Hale, Geraldine Hale
Mark Jones
Andrew Knight
Jo Lewis
Iain McGill
Alastair MacMillan
Andre Menache
Richard Saunders
Peter Southgate
Paul Torgerson

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