



**QUESTIONS TO  
THE MINISTER  
FOR RURAL  
AFFAIRS**

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## **QUESTIONS TO THE MINISTER**

- 1. How long will it take to eradicate Bovine TB from the Welsh national herd?**
- 2. Is Bovine TB a human health risk?**
- 3. Is Bovine TB in practice an animal health risk?**
- 4. Are the current cattle controls adequate?**
- 5. Does Bovine TB in wildlife have any significant impact on controlling Bovine TB in cattle?**
- 6. Would badger vaccination rather than culling be a more effective and cost effective way to tackle the Bovine TB reservoir in wildlife?**
- 7. What is the ecological function of the Welsh badger, and what are the consequences of extermination in any area?**
- 8. Will you give proper consideration to the impact on Tourism and to other economic and fiscal consequences of any wildlife extermination policy you propose?**
- 9. Is there an alternative approach to Bovine TB?**
- 10. Are the Welsh Ministers aware of the overwhelming opposition to wildlife culling?**

## 1. **How long will it take to eradicate Bovine TB from the Welsh national Herd?**

The Minister admits it is a long term project, but how long and is eradication really possible?

On previous evidence, eradication of Bovine TB from a national herd is a very long term project, likely to take several decades. Attempts at eradication, by all known means including episodes of badger culling, but excluding vaccination, have been in progress in the UK since 1950. It took Australia from 1971 to 1998 to achieve official Bovine TB free status. New Zealand is 20 years into a campaign and starting a second 20 year scheme. Ireland started in the 50's and (incidentally mounting a draconian badger cull for many years) still has one of the highest cattle infection rates in Europe. Farming, environmental and ecological conditions are of course very different in each of these countries, but the common factor is that success takes a long time, is uncertain and may be transitory.

In their final report to DEFRA “Bovine Tuberculosis in England: Towards Eradication” (April 2009), the Bovine TB Advisory Group concluded:  
(Ref 1 – Page 4)

### **(iii) CONCLUSIONS**

1. Bovine TB has been a difficult and demanding problem for many years. There are reasons for believing that it can be controlled and finally eradicated but this will require a long-term commitment by all stakeholders and take at least 20 years.

Even if eradication is achieved, the chances of recurrence are high. Scotland and the Netherlands are among the most recent examples of officially Bovine TB free countries reporting fresh outbreaks.

Beating Bovine TB is a long term process which requires long term solutions introduced when the technology is ready, not expediency and short term political gestures.

## 2. **Is Bovine TB a human health risk?**

DEFRA state on their web site: (Ref 2)

Bovine TB is a zoonosis, i.e. an infection that can be transmitted from affected animals to people, causing a condition very similar to human TB. However, the risk to people contracting TB from cattle in Great Britain is considered very low. At present, less than 1% of all confirmed cases of TB in humans are due to infection with *Mycobacterium bovis* (*M. bovis*). This view is supported by the Health Protection Agency, who identify the current risk posed by *M. bovis* to human health as negligible.

Most milk and other dairy products are pasteurised which removes any chance of infection. *M. bovis* bacteria in meat are killed during cooking. Indeed the relevant authorities consider the risk of humans catching Bovine TB so low in the UK that meat from potentially infected cattle killed after failing TB tests, as well as cattle found at abattoirs to be infected, are sold into the human food chain.

Professors Paul R. Torgerson (Ref 3) and David J. Torgerson (Ref 4) are among the few who have looked at Bovine TB both from first principles and from the perspective of their own relevant but different disciplines. They stated in a recent paper (Ref 5) that:

In light of the evidence we have presented here, we would propose that the continuing bTB programme in the UK is economically unacceptable as a public health intervention. Furthermore, data is lacking with regard to the positive economic effects to animal health, given that the main costs are implementation expenditure. Thus, the most effective way of reducing the economic impact of bTB is to stop the bTB control programme in its present form. A shift away from prevention in cattle, whilst continuing with the regulation of milk and meat, should provide adequate public health protection at relatively modest costs.

While TB was once a serious human health problem, it is now rare and the Bovine form we are concerned with here is even rarer at 1% of the few cases presented. TB in all forms is now considered such a remote risk to human health that routine vaccination of children in the UK has been abandoned except where particular risk is identified.

TB is a painful memory of an era when living, food processing, sanitary and medical conditions were very different. Policy and expenditure in Wales should be concentrated where it is needed, on real and not historic health challenges.

- Ref 2** [www.defra.gov.uk/foodfarm/farmanimal/diseases/atoz/tb/human/index.htm](http://www.defra.gov.uk/foodfarm/farmanimal/diseases/atoz/tb/human/index.htm)
- Ref 3** Section of Veterinary Epidemiology, Vetsuisse Faculty, University of Zurich, Zurich.
- Ref 4** Department of Health Sciences, University of York, York YO10 5DD, UK
- Ref 5** Trends in Microbiology Vol 18 No2 "Public health and bovine tuberculosis: what's all the fuss about?"

### 3. **Is Bovine TB in practice an animal health risk?**

Professors Paul R. Torgerson (Ref 3) and David J. Torgerson (Ref 4), in “Public health and bovine tuberculosis: what’s all the fuss about?” (Ref 5) state:

We propose that bTB control in cattle is irrelevant as a public health policy. In the UK, cattle-to-human transmission is negligible. Aerosol transmission, the only probable route of human acquisition, occurs at inconsequential levels when milk is pasteurised, even when bTB is highly endemic in cattle. Furthermore, there is little evidence for a positive cost benefit in terms of animal health of bTB control. Such evidence is required; otherwise, there is little justification for the large sums of public money spent on bTB control in the UK.

No evidence exists that policies intended to eliminate TB in cattle have been arrived at to boost animal health, welfare or productivity. TB in cattle has been seen as a human health issue.

It is reasonable to conclude that if Bovine TB was in itself significantly affecting farm productivity evidence would have emerged by now. Clinical symptoms of TB are rarely seen in cattle on farms. Healthy cattle are being slaughtered and farmers are suffering unnecessarily. Of course it is desirable to minimise disease in farm animals, but only at proportionate financial and animal welfare cost.

The effect on farming is not the effect of the disease, it is the effect of the policy, a policy which has had only limited effect and causes greater human and animal welfare problems than it relieves, at enormous cost to the taxpayer. The “cure” is not only ineffective, it is worse than the disease.

We consider this and a possible solution in 9 below.

#### 4. Are the current cattle controls adequate?

Strict additional cattle control and biosecurity measures were introduced in the West Wales “Intensive Action Pilot Area” (IAPA) in May 2010 but to no other Bovine TB “hot spot”.

Dr Glossop, the Chief Veterinary Officer, stated: “The additional measures we are introducing are an absolutely vital element of the programme.”

It is generally accepted that cattle to cattle transmission is the most common source of infection, and the only way infection is likely to enter a clean area.

The Final Report of the Independent Scientific Group (Ref 6) concluded (page 181):

##### **Overall conclusion**

10.92 Our overall conclusion is that after careful consideration of all the RBCT and other data presented in this report, including an economic assessment that badger culling cannot meaningfully contribute to the control of cattle TB in Britain.

10.93 We further conclude from scientific evidence available, that the rigorous application of heightened control measures directly targeting cattle will reverse the year-on-year increase in the incidence of cattle TB and halt the geographical spread of the disease.

Why have the stricter cattle controls introduced into the IAPA not also been introduced to all the Bovine TB hot spots in Wales?

Why does the Farmers Union of Wales want the enhanced cattle controls in the IAPA lifted following the quashing of the Tuberculosis Eradication (Wales) Order 2009?



**5. Does Bovine TB in wildlife have any significant impact on controlling Bovine TB in cattle?**

Many non-bovine wild, feral and domestic animals can carry Bovine TB. In recent history the badger has been singled out for particular attention, but with little or no evidence we can unearth to support claims of higher infection or transmission than any other species. Likewise there is little or no evidence of the significance and prevalence of Bovine TB transmission between cattle and species other than badgers.

The evidence that badgers can infect cattle is statistical only, in particular from the Krebs trials. Significantly the trials concentrated on badger to cattle but not cattle to badger infection and did not give attention to the significance of other species (wild, feral or domestic).

It is reasonable from the evidence of the Krebs trials to believe that a link between badgers and TB in cattle exists, but the precise mechanism and circumstances are obscure. Equally the extent to which the badger is more or less involved than any other species is unknown. Badgers have simply received more attention than any other species, without any sound reason.

Culling of badgers has been shown to increase the prevalence of Bovine TB in the remaining badgers, leading to at best no reduction in the number of infected badgers in the remaining population. (Final Report of the Independent Scientific Group (Ref 6) (page 78 para 4.26)

*Effects of culling on M. bovis infection in badgers*

4.26 Culling profoundly altered the prevalence and distribution of *M. bovis* infection in badgers. Statistical analyses adjusting for variables such as age, sex, triplet, and various measures relating to the probability of detecting infection, revealed that prevalence rose on successive proactive culls (Woodroffe *et al.*, 2006b). Overall, by the fourth cull (odds ratio 1.92, 95% confidence interval 1.51-2.45) after adjusting for other factors (Woodroffe *et al.*, 2006b). Because of the rise in prevalence, the reduction in the density of badgers achieved by proactive culling was not associated with the equivalent reduction in the density of infected badgers.

This leaves serious concerns about the disease levels in the long term after a culling programme ends when the badger population reestablishes itself. Will the increased proportional prevalence remain, leaving greater numerical numbers infected in the long term?

It is important not to ignore the overall conclusion reached from the Krebs trials (Final Report of the Independent Scientific Group (Ref 7) (page 181). This was unusually simple and clear, answering “no” to the question the trials were conducted to answer: ‘Is culling badgers effective as a means of controlling Bovine TB?’

**Overall conclusion**

10.92 Our overall conclusion is that after careful consideration of all the RBCT and other data presented in this report, including an economic assessment that badger culling cannot meaningfully contribute to the control of cattle TB in Britain.

10.93 We further conclude from scientific evidence available, that the rigorous application of heightened control measures directly targeting cattle will reverse the year-on-year increase in the incidence of cattle TB and halt the geographical spread of the disease.

However important reducing the reservoir of Bovine TB in wildlife is, culling badgers is not the way to do it. In spite of any short term benefits, in the long term it is ineffective and probably counterproductive.

And in the second paragraph of the Chairman, Professor Bourne’s, covering letter:

The ISG’s work most of which has already been published in peer-reviewed scientific journals - has reached two key conclusions. First, while badgers are clearly a source of cattle TB, careful evaluation of our own and others data indicates that badger culling can make no meaningful contribution to cattle TB control in Britain. Indeed, some policies under consideration are likely to make matters worse rather than better. Second, weakness in cattle testing regimes mean that cattle themselves contribute significantly to the persistence and spread of disease in all areas where TB occurs, and in some parts of Britain are likely to be the main source of infection. Scientific findings indicate that the rising incidence of disease can be reversed, and geographical spread contained, by the rigid application of cattle based control measures alone.

Leading members of the ISG such as Professors. Bourne, Woodroffe, Cheeseman, Jenkins and Donnelly have all recently confirmed this finding in the light of updated statistics.

It is hard, if not impossible, to find any leading scientist who, speaking within his own relevant field of expertise, supports the concept of culling badgers to reduce Bovine TB in preference to other methods.

Scotland has achieved official Bovine TB free status without killing a single badger.

Whatever well meant arguments are advanced for tackling any wildlife reservoir of Bovine TB, it is totally pointless to attempt it by culling badgers, as this demonstrably does not have the desired long term effect.

**6. Would badger vaccination, rather than culling, be a more effective and cost effective way to tackle the Bovine TB reservoir in wildlife?**

Few would disagree with the desirability of reducing the prevalence of any disease in otherwise beneficial native wildlife, as long as the means is less harmful than the disease and there are no unintended consequences or ethical drawbacks.

Injectable vaccine for badgers is now ready for use. The table below compares the effects of vaccinating badgers (by injection) with culling. In either case they would be trapped using the same method at comparable costs. Since badgers only live an average of 4 to 5 years in the wild, annual vaccination leads to a rapid reduction in the proportion infected. Culling leads to a long term increase in the proportion infected.

According to WAG's own modelling (ref 7);

4. Since culling also perturbs the badger population and produces an increase in herd breakdowns immediately outside the control area, culling and vaccination appear to be equally effective in reducing cattle herd breakdowns across the whole simulated grid.

Oral vaccine (which would be administered in bait left near setts) is expected to be licensed by 2015. This will not have the cost, logistical and ethical constraints of injectable vaccination as no trapping is needed, nor is the badger subjected to any unnatural treatment or distress. Deployment will be simple and cheap.

While the argument about the significance and extent of wildlife reservoirs of Bovine TB will continue and probably never reach a definite conclusion, political pressure from the farming unions for badger culling is likely to continue regardless of the scientific advice. It should be firmly resisted.

A “farmer led” cull as proposed by English Agriculture Minister Jim Paice would be particularly illogical as it would cause extreme perturbation of otherwise stable badger families and spread disease. The evidence that TB in badgers and in cattle are connected also shows that disturbance of badgers by culling leads not only to much greater levels of TB in the remaining badgers but serious increases in TB in cattle on farms immediately outside the cull area. Whatever view is taken of the disease reservoir in the badger population, it is better to leave them alone or vaccinate them.

We can see no real argument against immediately announcing, if only for political reasons, a commitment to commence deployment of oral badger vaccine without further delay as soon as it becomes available by 2015.

The only questions needing debate before entering such a commitment would be concerned with who would pay, farmers or the taxpayer, and whether deployment at any particular sett would be compulsory or voluntary.

Use of injectable badger vaccination before 2015 could have some effect on cattle TB, and might have some political benefit. Is it worth the effort and negative cost benefit in a 20 to 30 year eradication programme when the oral vaccine will be ready within 5 years?

## Culling vs Vaccinating Badgers

Culling	Vaccination
Evaluated in 2007 in the UK by the ISG and rejected as unable to “meaningfully contribute to the control of cattle TB in Britain”	Widely supported by many scientists
Controversial, socially divisive and distressing	Broadly supported or tolerated
Cost: £4220 / km2 (WAG FOI request) (Ref 8)	Cost: £2900 / km2 year one, £1600 / km2 thereafter (DEFRA Report ) (Ref 9)
Minimum 5 years duration. Therefore starting culling now commits us to continued culling. commits us to nothing.	Long duration beneficial but not required, so vaccinating now
Large area required (>200km2)	Large area beneficial but not required
‘Hard’ boundaries required, so cannot be used in many TB hotspots	No boundary requirements, so vaccination is potentially useful for all TB hotspots
Must be carried out swiftly and simultaneously, respecting the closed season	Can be carried out over the year, no closed season
Inefficient or slow execution would lead to even greater perturbation.	No need to vaccinate in a short period or simultaneously over large areas, so will be beneficial whatever the delivery strategy.
Significantly increases TB prevalence in badgers	Significantly reduces TB prevalence in badgers
‘Perturbation’ spreads TB. Of particular concern to farmers whose land has been TB free for decades and who do not wish to see their healthy badgers culled and replaced by infected ones.	No perturbation effect, so will not cause any further breakdowns.
Significant policing cost, potentially impossible to police effectively.	Policing costs likely to be minimal
Benefits likely to be short lived (Jenkins et al ) (Ref 10)	Benefits likely to endure many decades (WAG spatial strategies model ) (Ref 11)

- Ref 8 [www.wales.gov.uk/publications/accessinfo/disclosurelogs/dl2300/disclog2346a/?lang=en](http://www.wales.gov.uk/publications/accessinfo/disclosurelogs/dl2300/disclog2346a/?lang=en)  
 Ref 9 [www.defra.gov.uk/foodfarm/farmanimal/diseases/atoz/tb/documents/vaccine\\_badger.pdf](http://www.defra.gov.uk/foodfarm/farmanimal/diseases/atoz/tb/documents/vaccine_badger.pdf) Annex 4  
 Ref 10 [www.plosone.org/article/info:doi/10.1371/journal.pone.0009090](http://www.plosone.org/article/info:doi/10.1371/journal.pone.0009090)  
 Ref 11 [www.wales.gov.uk/docs/drah/research/090916annex5en.pdf](http://www.wales.gov.uk/docs/drah/research/090916annex5en.pdf) page 18

**7. “What is the ecological function of the Welsh badger, and what are the consequences of extermination in any area?”**

The ecological function of the badger in Wales is complex, and not fully understood. Relationships with some more easily studied species have been demonstrated, for example the Randomised Badger Culling Trials showed removal of badgers brings about an increase in fox and hedgehog numbers, potentially impacting on other species, for example a decrease in the number of brown hares. (Ref 12, 13)

Badgers are also known to regulate numbers of many other species, including some that may be considered pests, such as rabbits, field voles, wasps and cockchafers (Ref 7, 8). Many other species use badger setts (including the tunnels, spoil heaps and bedding) and would be likely to be affected by the removal of badgers. These species include foxes, rabbits, polecats, bank voles, and a very large number of invertebrates (Ref 14, 15)

Badgers, through their foraging behavior, also have an important but not fully understood role in seed dispersal, and their intervention in plant habitats can lead to increased floral diversity (Ref 16, 17, 18, 19).

Many other aspects of their ecology and the more detailed impacts that ‘trickle down’, for example, from immediate impacts like changing fox numbers, may be very varied depending on the local ecological context.

The full role of the badger, and the impact of removal, may vary between regions and is certainly not fully understood. We interfere at our peril.

- Ref 12 Bourne et al (2007). Bovine TB: The Scientific Evidence. Final Report of the Independent Scientific Group on Cattle TB
- Ref 13 Trewby, LD; Wilson, GJ; Delahay, RJ; et al. (2008) Experimental evidence of competitive release in sympatric carnivores. *Biology Letters* 4 (2), pp 170-172
- Ref 14 Clark, M (2007) Badgers. Whittet books
- Ref 15 Neal E and Cheeseman C (1996). Badgers. Poyser Natural History
- Ref 16 Fedriani, JM; and Delibes, M (2009) Seed dispersal in the Iberian pear, *Pyrus bourgaeana*: A role for infrequent mutualists. *Ecoscience*, 16 (3) pp 311-321
- Ref 17 Fedriani, JM; Wiegand, T; and Delibes, M (2010). Spatial pattern of adult trees and the mammal-generated seed rain in the Iberian pear. *Ecography*, 33 (3) pp 545-555
- Ref 18 Gao, XM and Sun, SC (2005) Effects of the small forest carnivores on the recruitment and survival of Liaodong oak (*Quercus wutaishanica*) seedlings. *Forest Ecology and Management* 206 (1-3), pp 283-292
- Ref 19 Martinez, I; Garcia, D; and Obeso, JR (2008) Differential seed dispersal patterns generated by a common assemblage of vertebrate frugivores in three fleshy-fruited trees. *Ecoscience* 15 (2) pp 189-199

**8. Will you give proper consideration to the impact on tourism and to other economic and fiscal consequences of any wildlife extermination policy you propose? (Ref 20)**

“Tourism is big business in Wales. It contributes around £3.5 billion a year to the economy and employs up to 100,000 people at the peak of the season.”  
Alun Ffred Jones (WAG website, August 6th 2010)

Tourism in West Wales is rural tourism, inextricably linked to farming. In 2001 the cost to Welsh tourism of the Foot and Mouth outbreak was £120 million, yet the Welsh Assembly Government did not undertake an impact on tourism survey before attempting the cancelled badger cull in the IAPA.

The 4.2 million visitors to Pembrokeshire spend £521 million annually (direct and indirect revenue), creating 14,108 full time equivalent jobs.

If a badger cull caused just 5% of expected visitors to choose to holiday elsewhere, the loss to Pembrokeshire’s economy would be £26 million a year, impacting directly on small businesses.

The badger adds value to tourism in West Wales. Two of West Wales’ best known and most popular tourist developments, Bluestone and Fforest, and many smaller businesses make direct use of the presence of badgers in their marketing.

*“Wales must compete with every other location for our share of the world’s commercial, political, social and cultural transactions. The markets in which we compete are increasingly global and very crowded – we need a distinctive competitive identity.” Economic Renewal: A New Direction, July 2010. (WAG)*

On the 18th May 2010 national television news broadcast coverage of numbers of police escorting masked Welsh Assembly Government representatives on to private land near Newport, Pembrokeshire, in order to carry out a survey of badger setts without the owner’s permission. It was a publicity disaster for tourism in West Wales.

The image of Wales as an eco-friendly, clean, green, tourist destination and as a cutting-edge centre for media and the arts would be irrevocably



damaged by a badger cull. It is not a cutting-edge response to the problem of Bovine TB.

Before any decision can be made on a badger cull anywhere in Wales, it is imperative that a full and independent Impact on Tourism Survey be undertaken.

## **9. Is there an alternative approach to Bovine TB?**

TB is no longer the human health problem it was before pasteurisation, modern living conditions and universal healthcare. Bovine TB at 1% of the few human cases of TB is a very small part of the remaining cases, dwarfed by other health issues more worthy of funds and effort.

The real problem is the dreadful effect that EU and UK Bovine TB policy is having on farmers.

In an ideal world it is desirable to eradicate any disease, but not at any cost. In this case we are paying a disproportionate price without worthwhile or tangible results, and the policy is causing greater costs and disruption than the disease.

Fortunately a solution exists in cattle vaccination which, using the existing BCG vaccine would control infection levels. The same vaccine was once given to all children in Britain. While not 100% effective, it is painfully obvious after some 60 years that the existing policy of testing and culling cattle is far from 100% effective. Better vaccines are likely to replace BCG in time.

Welsh and UK policy on Bovine TB is ultimately driven by EU directives requiring member states to eradicate Bovine TB, and then laying down in detail both the means of so doing and restrictions on the means of so doing.

EU Directive 78/52/EEC of 13 December 1977 Chapter III Article 13b requires member states to prohibit use of cattle TB vaccine.

Ref 20 This is an extract from a paper written by Yvette Brown, to be published shortly.

Member States shall ensure that under a plan for the accelerated eradication of tuberculosis:

(a) the presence and suspected presence of tuberculosis are compulsorily and immediately notifiable to the competent authority;

(b) the following are prohibited: (i) any therapeutic or desensitizing treatment of tuberculosis;

(ii) anti-tuberculosis vaccination

EU Regulation (EC) No 853/2004 of 29 April 2004 Section IX Chapter I Para 4 prohibits sale of milk from animals which fail the current TB skin test. However vaccinated and infection free cows may erroneously fail this test.

4. Raw milk from any animal not complying with the requirements of points 1 to 3 – in particular, any animal showing individually a positive reaction to the prophylactic tests vis-à-vis tuberculosis or brucellosis as laid down in Directive 64/432/EEC and Directive 91/68/EEC – must not be used for human consumption.

EU Directive 64/432/EEC requires prohibition of trade in cattle which fail a Bovine TB test. This applies only to live cattle and does not affect meat exports, and individual importing countries can grant derogations for cattle for slaughter. Live exports only form a very small (and controversial) part of cattle exports.

It is intolerable, particularly in a matter where environmental farming and trade conditions vary widely from country to country, that every detail should be dictated to us in this way. In Wales we would object to the Westminster Government telling us how to control Bovine TB, yet we are in reality bowing to such pressure from the EU.

The time has come to demand changes to the relevant EU directives, insist on derogations, or ignore them. Wales should find a way that suits Wales, and take the opportunity to lead Europe not follow.

**10. Are the Welsh Ministers aware of the overwhelming opposition to wildlife culling?**

Pembrokeshire Against the Cull, the main local opposition group, has more than 500 supporters and their public meetings are typically attended by more than 200 people. Members have frequently had to comfort smallholders and retired women, often living alone, distressed and terrified at the prospect of badgers being killed on their land.

The local press has published hundreds of letters concerning Bovine TB, the overwhelming majority opposed to badger culling.

A petition on the Welsh Assembly website was signed by over 1,600 people, one of the largest responses since the petitions site was set up.

The previous consultation was widely perceived as biased. Tourism businesses, accounting for more of the Pembrokeshire economy than agriculture, were not consulted directly. Individual responses opposed to badger culling were not taken into account on procedural technicalities.

The only vociferous support for badger culling comes from the farming unions (whose members are by no means unanimous in the matter) and some farm veterinary practices. Only a minority in West Wales derive their livelihood from farming. Agriculture as a whole (all sectors including those not affected by Bovine TB) takes third place to tourism and energy as the leading employer.

Exterminating badgers would have shifted the suffering and death from cattle to badgers, from the cattle farming minority to the non farming majority, and from agriculture to tourism, without any evidence of effectiveness or of cost benefit. The policy was morally and politically bankrupt from the start.