

**McGill I, Menache A, Knight A, Allen C, Hill S & Eastwood B.
Simultaneous vaccination 'best way' to tackle bTB. *Vet Times* [UK]
2012; 42(38): 35.**

Dear Editor,

We are all veterinary surgeons - either clinicians or scientists - and are dismayed that there is a very real prospect that this government will pursue a cull of badgers.

The report of DEFRA's own Independent Scientific Group (ISG)¹ which was set up to look at the issue, states in the conclusions of its £50 million research project: "Careful evaluation of our own and others' data indicates that badger culling can make no meaningful contribution to cattle TB control in Britain."

Despite this weighty opinion to the contrary, the Coalition has chosen to cherry pick data that supports the need to cull badgers - a policy that, in our opinion, is flawed on many levels.

The cull would cause untold suffering to the unfortunate badgers targeted in this massacre, and would result in additional suffering due to resultant ecosystem imbalances. Bovine TB reduction is likely to be very small at best, and in some areas may actually increase¹. Attempting to remove the major carnivore from a local ecosystem by shooting, not only encourages badger movements into neighbouring areas and then back again¹, it would also disturb the population numbers and increase movement of other species such as foxes, deer, rats, voles, mice and birds, which potentially also carry TB^{2,3} thus furthering its spread.

We do have to question as to whether a thorough Disease Risk Analysis has been properly carried out on shooting large numbers of potentially TB infected animals in the same vicinity. Far from removing the threat of TB, it is entirely possible that the contamination of the land with TB bacteria will simply further its spread into other wildlife, and ultimately, dairy cows.

We are dismayed that the heads of veterinary organisations such as the BVA and BCVA have made statements supportive of the cull, and feel that this gives a misleading impression as to the views of the veterinary profession as a whole. The veterinary profession is almost entirely composed of individuals who care a great deal about animal welfare, and who, in general, respect wild animals and their right to live wherever possible unabused by humans.

Solving the problem of TB in the UK will require study of the mode of transmission to naturally infected cows. In particular the genetics of resistance to TB in the dairy herd needs to be further elucidated. Breeding preferentially for milk yield via artificial insemination (AI) has undoubtedly had some adverse impacts on the genotype of the cow in other respects^{4,5,6}, as natural selection is no longer operant. The susceptibility of most of the dairy herd to BSE, for example, was largely due to the paucity of genetic variation in the PrP gene, which controls susceptibility to BSE^{7,8}. Indeed, evidence suggests that the BSE agent actually arose *de novo* from mutated PrP genes in the dairy herd⁹. When this BSE agent was delivered into the food supply by the

recycling of cattle offal back into cattle food, the catastrophic results were all too predictable - for cows, for farmers, for consumers, and for the UK. Have we learned nothing from that debacle?

Infectious agents and their hosts tend to adapt or co-evolve together such that a balance is formed between infection, immunity and survival, and this is demonstrably true for TB^{10,11}. In badgers, this balance with TB has happened across millennia. Dairy cows stopped co-evolving with TB more than 50 years ago, due to AI. The only thing dairy cows have co-evolved with, is human will, industrial economic policy - and money.

We need to start implementing the outbreeding of dairy cows to introduce some heterozygosity, or hybrid vigour, back into these unfortunate creatures, before they become the ticking bio time bomb that intensification, and a breeding programme based on AI, could result in.

It is a disgrace that the veterinary profession would even consider a cull of badgers when there are alternative strategies for the long term, such as vaccination, which haven't been tried on any large scale. This, rather than slaughter, is the preferred method for the control of TB in humans. Perish the thought that the medical profession would choose to follow the same medieval control methods as the veterinary profession. Both cattle and badgers should be vaccinated, in our view, to give such a trial the best chance of success. The ISG recommended that a vaccine for cattle should be a priority¹.

For the long term, putting a sticking plaster over one running sore, when there are metaphorical sores breaking out all over the dairy industry, will not, in our view, resolve the problem. The problems need to be tackled at their fundamental root - and that is the way that the dairy industry has evolved during the past 60 years. Since the 1950s, AI has been used to selectively breed mutant cows which produce large quantities of milk, but which evidently have little resistance to diseases such as TB and BSE. The fact that any herds with cattle showing detectable immunity to TB (TB reactors) are summarily slaughtered, further increases the immunological naivety of the herd.

The economic pressures brought to bear have recently brought the value of milk down below the cost of production, further pressuring farmers and cows, and compounding the problem. Intervention by the Government to protect small-scale milk producers financially, would alleviate many welfare issues in cattle brought on by sheer poverty - of both small farmers and cattle. TB is often a disease of poverty, in humans as well as animals, and many of our dairy cattle live in poverty equivalent to that of a workhouse during the industrial revolution. Most importantly, there is poverty in the lack of any normal relationships around breeding and calf rearing. The only long-term solution is a paradigm shift in favour of cattle welfare, small farmers and wildlife - not mega-dairies and money. We need to start looking, right now, at the economic and genetic background to the dairy industry, and fix it, before it's too late.

We support the long term restructuring and de-intensification of the dairy industry to better support the health and welfare of cattle, as well as that of small farmers and consumers. This would go some way to help to ensure a more natural, less pressured

life for the dairy cow.

We wish to register a view that we believe represents the majority of our profession. We the undersigned do not support a badger cull. The widespread shooting of a protected indigenous species like the badger would be brutal, misguided, foolish, disgraceful, expensive and potentially counter-productive.

We believe that a simultaneous vaccination programme, for both cattle and badgers, would be the best solution to protect animal and human health.

Yours faithfully,

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