

The Parliamentary and Scientific Committee Debate 21 January 2014 — Badgers

The first Parliamentary and Scientific Committee debate of 2014 was on the somewhat controversial topic of badgers, and how best to control the spread of bovine tuberculosis (TB). Chaired by Andrew Miller MP, the session hosted three speakers: Adam Quinney, vice president of the National Farmers' Union, Professor Christl Donnelly of Imperial College London and Professor Rosie Woodroffe of the Institute of Zoology.

The debate took place set against the backdrop of the recent government-organised trial culls of badgers in Somerset and Gloucestershire in which a number of factors were changed including trial length, objectives, and estimates of badger numbers; issues which led to some people claiming that 'the badgers have moved the goalposts'. While the speakers may have opposing views on how best to scale back bovine TB and the merits of culling, the session was held with none of the bickering which has occasionally scarred the wider debate, and the feeling was of a large problem which participants were collectively trying to solve. There was agreement that TB in badgers must be controlled in order to control the spread of bovine TB, and sensible rather than partisan points were delivered.

Adam Quinney addressed the room first and spoke of the day to day challenges that farmers face, both in trying to keep their herds free of TB, and also when infections do occur. He made clear the great cost in terms of time and money that farmers spend ensuring that their herds are of the best stock and in prime condition in order to make maximum returns. It goes without saying that when large proportions of herds are lost to TB, this lost revenue can be devastating, as can the emotional impact. He noted the need for strategies which are both effective and feasible (for example, badger-proofing whole farms is not reasonable because of the cost), and put forward other questions such the effectiveness of vaccination and trials.

Christl Donnelly, a professor of statistical epidemiology, gave her analysis of the situation including data from a number of recent and historical trials. The two common types of cull which are usually implemented and compared are proactive and reactive, in which badgers are killed before or after an infection is detected respectively. Using available data, Prof. Donnelly showed that reactive culling actually increases infections in cattle herds within the trial area. Proactive culling is able to produce a decrease in herd infections within the trial area, but infections actually increase in areas surrounding the trial zone, attributable to increased roaming of badgers.

A third view was presented by Rosie Woodroffe (a collaborator of Prof. Donnelly) of the Institute of Zoology, who outlined transmission routes of TB and the impact of culls on the behaviour of badger populations. For TB to spread, populations must have both infectious and susceptible individuals, and culls will indiscriminately target both. While the number of each subset will be reduced, the proportion of infectious badgers will increase, and as the culling is thought to increase area in which badgers travel, the remaining badgers have a greater potential of passing on infection. Prof. Woodroffe also gave a brief overview of the financial considerations of culling and vaccination in the context of their effect on TB; small culls (such as

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illegal ones carried out outside of authorised zones or times) are less useful than larger scale ones, which are potentially more expensive and less useful than vaccination programmes.

Questions from the floor ranged from the reliability of the estimates of badger numbers, to novel (but unlikely) ideas to control TB transmission by the introduction of vaccinated badgers to other populations. As the debate is one in which the same studies and statistics are often being used by both sides to press different arguments, questions were posed about the reliability of the estimates of badger numbers, and the value of comparing population figures from decades ago with today. Trial methodologies also vary, and so direct comparison is often difficult. These points have contributed greatly to the lack of clarity and certainty about the how best to proceed in order to bring about a positive outcome, and need to be addressed. While some points appear to have been addressed to the satisfaction of both sides (reactive culling for example), others are still the subject of debate. The relative merits of proactive culling and vaccinations (either of cattle or badgers) are unresolved, and were only partially dealt with in this session. Clearly, if TB can be equally or more effectively controlled by vaccines as compared to culling, then this is preferable, therefore more effort should be put into developing effective vaccines. Improved trial designs are also desirable so that direct comparisons may be made and confident conclusions arrived at, and these designs should include vaccines. Clear and conclusive data are still required so that a plan for the future can be arrived at; the end goals are easily agreed upon, but the way to achieve them is not.

Summary

- The cost, financial and emotional amongst others, of bovine TB is clearly very great, and effective strategies to manage and reduce spread (including transmission by badgers) are lacking.
- The effects of badger culling have been studied, with the conclusion that reactive (after infection has been detected) culling is detrimental to the aim of limiting disease spread, and that proactive (before infection has been detected) culling can have positive effects within a limited area.
- Culling has the effect of increasing the proportion of infectious badgers within a given area. It also perturbs the established roaming of badgers, with the combined effect of increasing disease outside of a trial area.
- Discrepancies between trial design and methods for estimating badger numbers make direct comparisons of studies and years difficult.
- Vaccination (of cattle and/or badgers) offers the possibility of an effective management strategy without culling, and more effort in this area is desirable.