



A bovine tuberculosis policy conundrum in 2023

On the scientific evidence relating to the Animal and Plant Health Agency/ DEFRA policy concept for '*Epidemiological*' badger culling.

APRIL 2023

An Independent report by researchers and veterinarians to DEFRA and the UK Parliament.



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Summary

Since 2013, the government has authorised and licensed dozens of 'intensive' four-year badger culls, with subsequent five-year 'supplementary' culls, reducing badger numbers by an estimated 70% across much of southwest and central England. Culling has followed the spread of bovine tuberculosis (bTB) further, across the Edge Area (EA) of central England starting in 2017. From 2018, a new approach has been trialled at two locations in the 'Low Risk Area' (LRA) of the north and east of England, where bTB outbreaks from imported diseased cattle have formed clusters of new bTB herd breakdowns. Termed 'epidemiological culling' (EC), in government documentation, it aims to kill all (100%) of resident badgers in a newly diseased 'Minimum Infected Area' and heavily reduce them in an outer area followed by vaccination of surviving badgers in the third year, as in Cumbria. The epidemiology of bTB in the EA and LRA generally differs from that of the High Risk Area (HRA) where disease has been embedded for longer.

As a result, policy appears to be pointed towards a similar approach to that of the Republic of Ireland (RoI) since 2004, which recently includes a badger vaccination component. In RoI badgers have been locally eradicated since 1992, with around 6,000 badgers culled each year, resulting in a total cull of around 120,000 over a period of roughly 20 years. Despite this, bTB in cattle herds persists due to ineffective cattle testing and movement controls. More recently around 6000 badgers have been vaccinated each year in RoI, also with no measurable response. In Wales bTB is gradually reducing at a similar rate to that of England, but without culling badgers, suggesting that such interventions are both ineffective and unnecessary even in heavily bTB diseased areas to prevent the spread of disease in cattle.

The March 2020, government "Next Steps" policy for England (2) proposes to phase-out intensive and supplementary culling by February 2026. The most recent and extensive published study of government data indicates badger culling has brought no measureable benefit to the HRA. Policy indicates that intensive and supplementary culling will be replaced by cattle and badger vaccination, with EC in 'exceptional circumstances' only, using criteria and methods developed by the Animal and Plant Health Agency (APHA). Those methods are the subject of this report.

The main technical evidence-base for EC is considered in this report. Specifically;

- The **Risk Pathways' (RP)** approach to determining the source of individual bTB infections;
- The spatial distribution of **bTB Reservoirs** in cattle and in samples of badgers from post-mortem study, and;
- The results from **Whole Genome Sequencing (WGS)** sampling, examining differences between strains and their mutations in defined areas, over time.

Evidence from scrutiny of these three main categories of investigation and the practical findings from the four-year long EC cull reference 'model' in bTB Hotspot 21, in Cumbria, collectively show:

- a) There is no clear evidence that badgers play any significant role in the spread and maintenance of bTB in cattle herds where new bTB clusters are formed.
- b) The scientific evidence from use of EC suggests it is not sufficiently robust to justify veterinary approval for any wider use.
- c) There is a continued, deep seated lack of attention to basic disease prevention measures within APHA, formed around a belief that infection from badgers negates the success of other interventions.

The use of EC is advocated by Defra, APHA and the government stakeholder information provider *TB Hub*. <https://tbhub.co.uk/>. Until the belief in the role of badgers in the spread of bTB is broken, substantial progress with bTB elimination in England will continue to be severely hampered. EC is a serious misdirection of professional epidemiology and an unjustified distraction from the main need to better identify and control disease in cattle herds and the spread caused by frequent cattle movements. An independent review or inquiry is needed because of the nature of the problem and the serious draw it has on public subsidy.