



Letters & Notices

BOVINE TB

Badger culling to control bovine TB

WE respond to the letter from Christine Middlemiss and Gideon Henderson.¹ Defra selected a small sample of the unculled data, as opposed to all unculled areas from the start of culling in 2013 (Fig 1). Defra also restricted its analysis to culled data from 2015/16

compared with data from areas that have 'never been' culled, as of 2019/20, projected backwards to 2015/16 only.¹ In our analysis, we included all available data from culled and unculled areas for 2013/14 to 2018/19 inclusive, using approximately twice as much data as that cited by Defra.² By diminishing the number of reference herds, Defra weakens the comparison due to the heterogeneity of the data.

“Excluding data, as Defra has done, adds unnecessary risk

Fig 2 illustrates the difference between the approaches. It reveals a general downward trajectory of incidence, which began before badger culling was rolled out, from 2016/17 in 'all unculled' and culled areas. It indicates little demonstrable difference between culled and unculled areas regardless of length of time culled, reflecting a reduction in incidence that does not appear in Defra's smaller 'never culled' sample.

Published data for the remaining unculled area in 2019/20 do not match those used by Defra (green v blue in Fig 2). We calculated the herd incidence in unculled areas for September 2019–August 2020 as 10.9 per 100 herd years at risk (HYAR). However, Defra's analysis shows an incidence of approximately 13.4 per 100 HYAR (Fig 1 in Defra's letter).¹ Since this represents the data from areas that were unculled throughout, it should correspond. Only publicly available data were used in our analysis and, despite requests, the data table for the figure in Defra's letter¹ has not been made available.

If Defra's claim of 'inappropriate grouping' of cull area data were true, the detection of an effect relative to time after culling started should have been apparent in our analysis of interactions, and none was seen. The limitations of a study of three small pilot cull areas over four years, upon which Defra relies,³ were recognised by the authors of that publication.⁴

Withheld Defra data may enable analysis per cull area rather than by whole high-risk area and by county. Although alternative analyses may adjust for more variables, the dependence, for example, on log-transformed variables and small amounts of data⁴ might deliver erroneous results. It is also worth noting that excluding data, as Defra has done, adds unnecessary risk.

Our study is transparent and used unmanipulated data, despite the unusual and serious accusations levelled by the Defra press office and in associated blogs since publication.



Fig 1: Percentage of all cattle herds in the high-risk area during badger culling in cull years 2013/14 to 2019/20 by intervention status: comparison of the data used by Langton and colleagues² v that used by Defra¹

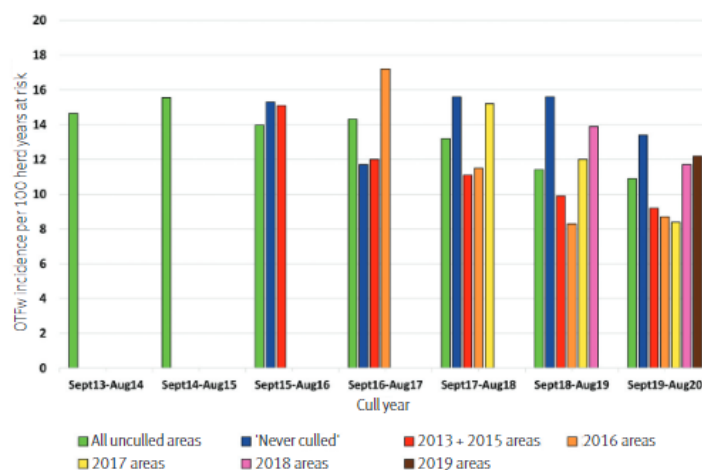


Fig 2: Officially Tuberculosis Free – withdrawn (OTFw) incidence using data from Fig 1 of the Defra letter analysis,¹ with the addition of incidence data from the entire unculled area (green) from 2013 onwards. Other colours show areas where culling commenced in a particular year

We remain available to discuss these matters with Middlemiss and Henderson and maintain that no badger culling licences should be renewed or newly issued given the debate around their scientific rationale.

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References

- 1 Middlemiss C, Henderson G. Badger culling to control bovine TB. *Vet Rec* 2022;190:243–4
- 2 Langton TES, Jones MW, McGill I. Analysis of the impact of badger culling on bovine tuberculosis in cattle in the high-risk area of England, 2009–2020. *Vet Rec* 2022; doi:10.1002/vetr.1384
- 3 Defra. Bovine tuberculosis: consultation on proposals to help eradicate the disease in England. A consultation exercise contributing to the delivery of the government's strategy for achieving bovine tuberculosis free status for England. <https://bit.ly/3IAGeo7> (accessed 24 March 2022)
- 4 Downs SH, Prosser A, Ashton A, et al. Assessing effects from four years of industry led badger culling in England on the incidence of bovine tuberculosis in cattle, 2013–2017. *Sci Rep* 2019;9:14666

BOVINE TB

Data showing impact of badger cull in control of bovine TB

I GATHER that Defra's response to Langton and colleagues' analysis of government data on the impact of badger culling¹ was that the paper 'has been produced to fit a clear campaign agenda and manipulates data in a way that makes it impossible to see the actual effects of badger culling on reducing TB rates. It is disappointing to see it published in a scientific journal'.²

What disappoints me is that Defra has not managed to publish its own manipulation of the data in a way that fits its own agenda of continuing the cull. I look forward to seeing its interpretation of the data soon.

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