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Date: 1 May 2024

Dear Marian,

Cc Dave Slater

Bovine TB badger disease control

Thank you for sharing Dr Peter Brotherton's recent advice to your Operations Team.

I write to offer additional policy context and our assessment of the practical deployment of badger vaccination, which is available at Annex A, to assist you in forming your decision on licensing badger control in 2024.

Our bovine TB strategy is an adaptive, evidence-based, long-term approach to disease control. It is based on the fundamentals of effective testing, controls on movements to limit transmission from infected herds and good biosecurity. Since 2013, it has also included the licensing of badger culling.

The experience of the last three years has shown that whatever changes are made to disease control, those most affected by the disease, must have confidence in both the process and the trajectory. Changes need to be carefully timed and communicated, whilst balancing a range of potentially opposing views. Any abrupt changes to policy would seriously undermine our ability to engage constructively with the industry on future disease control interventions.

The consultation launched in March continues to set a clear exit strategy from culling in targeted areas to non-lethal control of the disease through deployment of badger vaccination. And that this would be delivered by industry with government support. Maintaining momentum towards achieving deliverability of badger vaccination at a landscape scale and the shift we are now seeing within farming industry towards more

active participation in badger vaccination, will be a determining factor in achieving our policy goal.

I am grateful for the continued collaboration between Defra and Natural England colleagues and look forward to this continuing, as we work together on the next phase of the policy.

Yours sincerely

A handwritten signature in blue ink that reads "Sally Randall." The signature is written in a cursive style and is enclosed in a thin black rectangular border.

Sally Randall
Director General for Food, Biosecurity and Trade

Annex A

This annex sets out additional policy context and Defra's current assessment of the practical deployment of badger vaccination. It includes expert advice on matters relating to bovine TB badger disease control from the UK Chief Veterinary Officer (UK CVO) at paragraph 11.

Upon review of Dr Peter Brotherton's advice, and consideration of the evidence sources that our teams have jointly reviewed, it may be helpful to consider the following points:

1. Badger vaccination has been licensed and available as a control measure since 2010. It is underpinned by evidence for its effectiveness at controlling disease in badger populations. Whilst badger vaccination would be expected to reduce risks of TB transmission to cattle, the scale of any benefit remains unknown in England. This evidence gap continues to represent a significant obstacle to vaccination rollout at a landscape scale, by contributing to the generally low level of confidence in badger vaccination within the farming industry.
2. Through the deployment of APHA field teams in several areas where culling has since ended, we are creating the large and contiguous areas of vaccination needed to be able to detect the effect of badger vaccination on reducing disease spread to cattle. Although analytical work is already underway in APHA using a "herd-level" analysis of historic badger vaccination data, it is anticipated that this historic data will be too small and spatially fragmented for a benefit to be detected. Additional data from successive years of deployment in these larger vaccination areas will be required, with the largest APHA area not due to complete its four-year vaccination programme until November 2026.
3. The deployment of APHA field teams has helped address previous concerns regarding the practicality of vaccination, namely whether it is possible to cage trap and vaccinate the remaining, lower-density and likely more mobile, residual badger population. It is important to consider that this deployment has been by highly experienced and full-time government field staff, at relatively small scale, i.e. 900 km^2 in 2023, and at a cost to government of £982,956. There is no evidence at present to suggest an industry-led approach could achieve the same results in a post-cull landscape, since there has been no coordinated deployment of badger vaccination by farmers to date. On this basis, it should not yet be thought of as a viable alternative that can be readily deployed at scale now, especially in a post-cull landscape and in the areas otherwise eligible for SBC licences.
4. Building capacity and confidence in the badger vaccination system takes time. Currently, we have a low number of licensed vaccinators (there were 269 authorised persons in England in 2023) or trainers, and the APHA field team resource is fully committed and there is no remaining capacity. Even if we were to take the decision to recruit additional vaccinators into APHA today, we estimate

that this would not translate into any meaningful increase in vaccination area until at least the open season of 2025, but more likely 2026.

5. The SBC area that is eligible for culling in 2024 is approximately 16,500 km². This is more than ten times larger than the total area vaccinated by APHA in 2023. Even if we were able to substantially increase the size of the APHA field team, we estimate that vaccinating this SBC area would cost the taxpayer in excess of £20 million and even a government led approach on a targeted basis would likely be prohibitively expensive, especially in a challenging fiscal context. In view of this, landscape scale deployment of badger vaccination is contingent on industry support and delivery. And there is currently insufficient government capacity or other trained personnel to train industry vaccinators in the numbers likely required.
6. The gradual phasing out of intensive and supplementary badger control by January 2026, implemented following the 2021 consultation¹, was a deliberate policy consideration and one that Natural England supported in its consultation response. It was adopted to ensure that current licensed areas achieve the benefits of badger control, while allowing time to gradually build capacity and improve the deliverability of badger vaccination, i.e. addressing the limitations that have been set out in the paragraphs above. We are only part-way through this transition.
7. In the three years since 2021, we have worked to improve the ease and affordability of practical deployment of badger vaccination and to put in place measures that will increase the evidence-base over time (as described in paragraph 2). As a result of this policy development, there is now a much more realistic prospect of a farmer led approach to badger vaccination, despite the negative farmer attitudes towards the method². However, there remains no coordinated deployment of badger vaccination by farmers, and uptake is still not yet at the rate to scale to that needed to replace culling. In asking farmers to again take the lead in the deployment of this intervention, we need to continue to engage them on policy design and implementation. Shortening of the existing transitional period by an earlier curtailment of eligible SBC areas would limit our ability to do this and it would be detrimental to farmers trust generally (noting that social research on farmer attitudes towards badger vaccination revealed that trust in government is a critical factor to farmer receptiveness to the method³).

¹ <https://consult.defra.gov.uk/bovine-tb-2020/eradication-of-btb-england/>.

² This is supported by numerous social science studies. For example: Benton, C.H., J. Phoenix, F.A.P. Smith, A. Robertson, R.A. McDonald, G. Wilson, and R.J. Delahay. 2020. Badger vaccination in England: Progress, operational effectiveness and participant motivations. *People and Nature*. 2:761-775. Chivers, C., D. Maye, G. Enticott, T. Lenormand, and S. Tomlinson. 2022. Exploring farmer attitudes towards the vaccination of badgers against bovine tuberculosis. Dicks, F., T. Marks, E. Karafillakis, and M.A. Chambers. 2021. Vaccination as a Control Tool in Bovine Tuberculosis: Social Media Monitoring to Assess Public Response to Government Policy Development and Implementation. *Vaccines*. 9:314.

³ [Social research project to understand farmer current/ future attitudes to cattle and badger TB vaccination in Britain - SE3336 \(defra.gov.uk\)](#).

8. Whilst evidence suggests that once culling ends in an area there will be a period where TB incidence in cattle remains low, that incidence will be steadily rising without other controls implemented. There is uncertainty over the speed at which disease in badgers will rise, and we would continue to welcome Natural England's support in development of a surveillance and monitoring system to monitor the impacts of a recovering badger population.
9. It is also relevant to consider that current proposals for a targeted badger intervention policy remain subject to the ongoing consultation exercise⁴. This is not current policy; implementation is contingent on consideration of consultation responses and ministerial decisions. In any case, were this to become policy, we envisage deployment in 2024 and 2025 to be limited in scale, through an initial pilot and the gradual licensing of areas thereafter, dependent on epidemiological need.
10. And finally, in respect of the evidence sources considered by our teams, it would also be helpful to consider the following two points:
 - a. The peer-reviewed research from Birch et al (2024), recently published in Nature Scientific Reports, has shown the benefits of the current badger control policy in reducing TB incidence in cattle. We accept that the policy consists of badger culling alongside cattle controls, including further interferon gamma testing. However, we should highlight that the badger culling is likely to be a major contributing factor to the disease control benefits observed (the authors also reflecting this view by the label "badger control policy"). This is also evident from the speed and magnitude of the changes in TB incidence in cattle, with significant reductions in TB early in the culling process, prior to changes to cattle testing. There should be no doubt that culling is producing disease control benefits, even if cattle controls are further contributing to these effects, and the precise relative contributions of these measures cannot be precisely quantified.
 - b. Although Birch et al. (2024) estimates that the disease control benefits of culling appear to level out after four years of intensive control, it is important to note that the small number of areas analysed in the later years does result in greater uncertainty in these estimates (larger confidence intervals) relative to the initial years, and it may be that future analyses with more data demonstrate a greater effect. Additionally, although the effect of culling on TB in cattle does not increase further in the later years of culling (years 4+) this does not mean that there are no disease control benefits to the latter intensive control or SBC years.

Conclusion

⁴ <https://consult.defra.gov.uk/bovine-tb/bovine-tb-consultation-wildlife-cattle/>.

11. In view of the points set out in the previous paragraphs, the UK CVO advises that:

- a. Any gap between the end of one form of badger disease control and the successful deployment of another, should be as narrow as possible to bank the maximum disease control benefits and ensure progress towards disease eradication by 2038 is not jeopardised.
- b. A successful transition will be dependent on maintaining industry confidence through this transitional period that bovine TB in cattle can be effectively controlled without widespread badger culling.
- c. Whilst there has been significant investment in badger vaccination to address limitations to the deliverability at a landscape scale, we are only part-way through this policy development. Further work is required to resolve outstanding barriers to uptake and therefore any decision to remove the option of cull licences in eligible SBC areas could prove premature and risk losing the benefits derived from these culls to date.