

## About this dossier

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## Eradication: Final report for Bovine Tuberculosis 2019

For each approved annual or multi-annual programme Member States shall submit to the Commission by the 30 April each year an annual detailed technical and financial report covering the previous year. That report shall include the results achieved and a detailed account of eligible costs incurred (Art 14 of Regulation (EU) No 652/2014).

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### Reporting period

**From:** 2019

**To:** 2019

**Year of implementation:** 2019

## 1. Technical implementation of the programme

### 1.1 Description and evaluation of the evolution of the epidemiological situation, the technical implementation of the activities foreseen under the programme and the cost-effectiveness of the programme.

#### Introduction

1. Official bovine TB (bTB) statistics for Great Britain (i.e. England, Scotland and Wales) are collated from the Animal and Plant Health Agency (APHA) database ('Sam') and published by Defra on a monthly basis. The publication of those statistics takes place between two and three months in arrears to allow for relevant data entry in the field offices, as well as completion of post mortem and laboratory analyses on slaughtered animals. Therefore, the disease statistics presented here for the calendar year 2019 are still provisional and may be subject to minor adjustments in the future. Statistics for Northern Ireland are collated from the Department of Agriculture, Environment and Rural Affairs (DAERA) database and published monthly on the DAERA website. Supporting graphs and maps for England, Wales and Northern Ireland have been provided in a separately in Section 1.3 (attachment 1).

2. Unless otherwise stated, data derived from bTB surveillance and control activities in Scotland have not been included in this report because Scotland remains an OTF region of the UK and it was not included in the UK co-financed bTB eradication programme for 2019. Every year the Scottish Government submits to the Commission a separate summary of annual bTB statistics for Scotland, in accordance with Article 8 of Directive 64/432/EEC.

3. The March 2020 release of the National Statistics for TB in cattle in Great Britain, covering the 12-month period ending 31st December 2019, has been used for the compilation of this summary. A full set of the latest bTB statistics for GB is available from the various links in the following webpage:

<https://www.gov.uk/government/collections/bovine-tb> and the official year-end statistics for GB in 2019 are available here: <https://www.gov.uk/government/statistics/incidence-of-tuberculosis-tb-in-cattle-in-great-britain>

4. In order to provide up to date information to cattle farmers and private veterinarians on the geographic distribution of bTB breakdowns, Defra launched a new publicly available web based interactive mapping tool at the end of June 2015 ([www.ibTB.co.uk](http://www.ibTB.co.uk)). This displays the location of cattle holdings in England and Wales affected by TB breakdowns (i.e. positive herds), both current ones and those resolved in the previous five years.

5. The information available on ibTB is supplemented with the publication by APHA of detailed field epidemiological reports of bTB in the Low Risk and Edge Areas of England, every six and 12 months respectively: <https://www.gov.uk/government/collections/bovine-tb-surveillance-in-great-britain>

## England

6. Since 2013, for bTB epidemiological, surveillance and eradication purposes, England has been divided into a Low Risk Area (LRA) and a High Risk Area (HRA). These two zones are separated by a 'buffer' zone known as the Edge Area. The LRA comprises the majority of counties in the North and East of England (54% of England's land mass) and 20,066 cattle herds at the beginning of the year, with a default TB testing interval of four years for 90% of the herds (the remaining 10% being tested at least every year). There is no evidence of a widespread reservoir of endemic *Mycobacterium bovis* (*M. bovis*) infection in wildlife (badgers) in the LRA. The majority of TB breakdowns (positive herds) in that area occur sporadically as a result of introductions of undetected infected cattle from higher incidence regions of England and Wales and are normally quickly resolved without secondary spread within the LRA. The HRA, by contrast, is the annual testing area of England comprising the South West and the West Midlands (27% of the land mass and 20,125 herds in total at the beginning of 2019), in which *M. bovis* infection is endemic in cattle herds and in badger populations (the main wildlife reservoir of the disease). Of all new TB breakdowns (new positive herds) detected in England in 2019, 76% involved cattle herds in the HRA. The Edge Area is a region of low to moderate herd incidence situated between the LRA and HRA, which is at risk of spread of endemic bTB from the HRA. It covers 19% of England's land mass and contained 8,779 cattle herds at the beginning of 2019, which are routinely tested for TB every six or every 12 months depending on their location. The map (Figure 5) in Appendix 1 (Section 1.3 - Epidemiological maps for infection and other relevant data on the disease/activities) shows the zoning of England into bTB risk and control areas. See also the interactive bTB risk map of GB at: <https://tbhub.co.uk/>.

7. In England overall, the headline herd incidence rate of bTB in 2019 was unchanged on 2018, at 9.4 new herd breakdowns per 100 herd-years at risk. The herd prevalence declined in England from 6.0% to 5.3% (Appendix 1, Table 2). This reflects a 9% annual drop in the number of new positive herds, and a 12% drop in the number of herds not OTF at the end of the year due to a TB incident across England compared with 2018. The greater year-on-year percentage drops in positive herd numbers, herd incidence and prevalence were recorded in the Edge Area of England, reversing the trend of the last few years. There was an increase of 16% in total new herd breakdowns in the LRA (from 130 to 151), although the number of those new positive herds with visible lesion reactors and/or culture-positive animals (breakdowns with OTF herd status withdrawn - OTFW) remained unchanged on 2018 (35). At least half of the OTFW breakdowns in the LRA were clearly attributable to inward movements (translocation) of infected cattle from the higher incidence areas of GB.

8. The longer-term trends indicate that, in England overall, both the herd incidence rate and the herd prevalence have levelled off since 2012, reversing the historical increasing trend that began in the late 1980s and early 1990s (Appendix 1, Figures 3 and 4). This was mainly driven by an improving disease situation in the HRA, where the majority of TB breakdowns (positive herds) lie. As noted above, the Edge Area also recorded some encouraging improvements in the bTB statistics. The epidemiological indicators continued to reflect a very low and sporadic frequency of infection in the LRA.

9. The epidemiological situation in England at the end of 2019 could be summarised as follows:

- The number of cattle herds registered in England rose slightly from 49,230 at the end of 2018 to 49,411 at the end of Dec 2019.
- The number of tests on OTF herds in 2019 was 47,420 (57,544 in all herds), compared to 50,832 (61,674 in all herds) in 2018.
- The total number of new positive herds (bTB herd breakdowns) detected in 2019 was 3,297 (of which 2,001 resulted in OTF herd status being withdrawn), compared to the 3,612 new breakdowns (2,326 with

OTFW status) in 2018. This represented a drop of 8.7% in the total number of new positive herds (14% drop in OTFW cases) detected in England in 2019 relative to the previous year. Between the same two years the number of new positive herds dropped by 258 (-9.3%) in the HRA, and in the Edge Area there were 78 (10.8%) fewer breakdowns. The number of new positive cases detected in the LRA increased by 21 (16.1%) in 2019 compared to 2018.

- At the end of 2019 there were 2,596 herds in England with OTF status suspended or withdrawn (i.e. under movement restrictions) due to an ongoing bTB breakdown, compared with 2,966 at the end of December 2018. This means that herd point prevalence declined from 6.0 at the end of 2019 to 5.3% at the end of 2018. Herd point prevalence was highest in the HRA at 10.1% (down from 11.6% at the end of 2018) and lowest in the LRA at 0.3% at the end of 2019 (the same as in 2018).
- The total number of TB tests performed in animals (cattle) in 2019 was 7.53 million, which represents a 3.53% decrease compared to the equivalent figure for 2018 of 7.81 million tests.
- During 2019, APHA removed 31,102 cattle for bTB control purposes from positive (breakdown) herds in England, compared to 32,925 in 2018 (a 6% drop). The vast majority of such animals (30,310) were reactors to the tuberculin skin test and/or interferon gamma blood test positive animals and the remaining 792 animals were inconclusive and negative-testing animals removed as direct contacts from OTFW positive herds. Animal-level incidence declined from 4.1 test reactors identified for every 1,000 tests carried out on animals in 2018 to 4.0 reactors per 1,000 tests in 2019. This small reduction continues the trend in decreasing reactor numbers and animal-level incidence that had taken place in 2018 compared to 2017.
- Finally, the number of suspect cases of bTB initially identified during routine post-mortem meat inspection of cattle at commercial slaughter (slaughterhouse cases) in 2019 was 1,039 (of which 520 were bacteriologically confirmed as *Mycobacterium bovis* infections), compared to 1,102 (584) in 2018. The marked reduction in the number of slaughterhouse cases that began in the second half of 2015 appeared to level off in 2018, followed by a slight decrease in 2019. Between 2010 and 2015 the annual number of bacteriologically confirmed slaughterhouse cases had fluctuated between 900 and 1100. The steady decline in the number of tuberculous cattle detected during routine slaughter seems consistent with an enhanced sensitivity of the on-farm TB testing regime. This has been achieved through mandatory deployment of the supplementary IFN-gamma test in all OTFW breakdowns in the LRA and Edge Area, wider use of the IFN-gamma test in the HRA, adoption since April 2016 of a more rigorous TB herd testing regime to restore OTF status in all herds sustaining a TB breakdown in the HRA, and a more rigorous training, accreditation and audit scheme for TB testers (official veterinarians) introduced in 2013.

10. Overall the TB descriptive statistics for 2019 for England point to a stabilisation of the herd incidence rate and herd prevalence of bTB over the last seven years. The tighter TB testing regimes and control measures for cattle herds introduced since 2010 initially resulted in the detection of more positive herds and animals. This increasing trend peaked between 2011 and 2015 and continued until 2018 in the Edge Area, but 2019 saw reductions in annual incidence, prevalence and number of new positive herds recorded. In 2019 we also saw the lowest number of new positive (and OTFW) herds (breakdowns) recorded since 2009 in England and since 2006 in the HRA. It is hoped that the reductions that took place in 2019 will continue in future years with the gradual rollout of new licensed badger control across the HRA and in parts of the Edge Area of England.

11. The Strategy for achieving OTF status for England published in April 2014 envisages a gradual, integrated and flexible approach to bTB eradication, which includes some disease control measures applicable throughout England and more specific controls tailored to each of the epidemiological risk areas of the country. In the TB Strategy we also highlight the importance of mitigating the risks from all TB transmission routes (i.e. from both cattle and badgers) within the HRA and Edge Area. An independent review of the Strategy took place in 2018, and the Government published its response to this review in March 2020. (<https://www.gov.uk/government/news/government-sets-out-next-phase-of-strategy-to-combat-bovine-tuberculosis>).

(See section 1.4 for specific information on badger control)

## Wales

13. The number of new bovine TB herd breakdowns in Wales peaked during 2008 and 2009. Subsequently, there were substantial decreases in 2010, 2013 and 2016, with periods of relative stability in between each of these decreases. The number of new TB incidents in 2019 was the lowest annual figure recorded since 2004. There was a decrease of 11% in the number of new TB incidents in 2019. Since the TB Eradication Programme was established there has been a downward trend with some short-term fluctuations, up and down. It is also important to note that apparent short-term increases in incidence may be at least partly attributable to intensified surveillance. Indeed, there is a long-term upward trend in TB testing.

14. The number of new breakdowns varies greatly from month to month; this variation is due to a variety of reasons including the seasonal aspect of TB testing, since more testing takes place during the winter

than during the summer, the impact of unusual weather and the number of test reading days in a month. Consequently, care should be taken not to read too much into changes in the figures over short periods of time. The latest figures for Wales show that in 2019:

- There were 655 new bTB breakdowns detected (of which 363 resulted in withdrawal of OTF status due to confirmation of disease), compared with 744 in 2018 (424 OTFW due to confirmation). There are circumstances where OTFW status is applied to herds in Wales due to epidemiological reasons, without confirmation via post mortem examination or bacteriological culture. Such OTFW breakdowns are not included in these statistics.
- 15,447 tests were carried out on OTF herds, compared with 15,908 in the previous year. A further 2,443 tests were carried out on non-OTF herds, compared with 2,396 in 2018.
- 915 cattle herds were under movement restrictions at the end of December 2019 due to a bTB incident or overdue test, representing 7.8% of all herds in Wales. At the end of December 2018 974 herds were under restrictions (8.1% of all herds).
- 12,256 animals were slaughtered due to bTB control, compared with 11,231 in 2018. The increase in animals slaughtered in recent years is largely attributable to increased use of high-sensitivity testing. For example, gamma-testing, removal of Inconclusive Reactors (IRs) and severe interpretation of the skin test have all been used with the intention of clearing up infection and reducing the risk of the disease spreading and breakdown recurring.

There were 127 suspect cases of bTB initially identified during routine post-mortem meat inspection in abattoirs ('slaughterhouse cases') (of which 66 were subsequently confirmed via bacteriological culture). This compares with 150 slaughterhouse cases (78 confirmed) in 2018.

15. The key measures introduced in 2017 (and continued in 2019) were:

- Bespoke action plans implemented for persistent breakdown herds, aimed at clearing up infection
- Implementation of the regional approach to TB eradication, enabling a tailored approach to disease eradication based on the disease drivers in each area.
- Implementation of enhanced contiguous testing around OTFW breakdowns in the Intermediate TB Area North in response to a spike in new TB incidents.
- Post-movement testing for cattle moved into the Low TB area to help prevent incursion of disease
- Euthanasia of badgers which test positive for *M. bovis*, and vaccination of test negative badgers in certain persistent TB breakdowns where badgers are considered to be contributing to disease persistence in their action plan
- Introduction of a cap on compensation for animals slaughtered for TB eradication

16. New policies introduced in 2019 included:

- The IDEXX antibody test has been approved as a "relevant test" under Part 2 of the Tuberculosis (Wales) Order 2010 (as amended). This allows APHA officials to use the test and any animal giving rise to a positive reaction to the "relevant test" will be considered a reactor and removed, with compensation being provided to the owner. In 2019, there were approximately 61,000 parallel Interferon-gamma tests (55,000 in 2018), 4,500 flexible-extended gamma tests (2,500 in 2018) and 3,400 IDEXX Antibody tests (1,000 in 2018) performed. In total approximately 3,200 animals positive to Interferon-gamma testing and 320 animals positive to IDEXX Antibody testing were identified and culled with compensation. A gamma test is routinely carried out in new herd breakdowns in the Low TB Area and Intermediate TB Area North; in persistent herd breakdowns and those recurrent up to the 6 months test after movement restrictions have been lifted; on animals that have been IRs at consecutive tests (where one time at least that is under severe interpretation); as part of ad-hoc herd management e.g. in explosive TB breakdowns and in anomalous reaction cases. In persistent herd breakdowns, we have moved to a position of removing all standard interpretation IRs and parallel Interferon-gamma and IDEXX testing all severe interpretation IRs., which are removed if positive to the test. The flexible-extended gamma test and the IDEXX Antibody test are used in a targeted way in higher risk animals in persistent and recurrent breakdown herds.
- The Welsh Government has engaged with a group of farmers and vets on Gower Peninsular who started to deliver badger vaccination alongside enhanced cattle control measures in order to eradicate TB in the area.
- The Welsh Government has agreed a protocol to allow non-validated tests to be used in Wales, under specific criteria, which have to be agreed by the keeper and their private veterinary surgeon. This enables the Welsh Government to authorise the use of a non-validated test, in order to enable an assessment of its performance in the live animal under field conditions, prior to test validation

Following the review of Cymorth TB delivery it was agreed by the TB Eradication Programme Board that to simplify management and increase utility of the scheme, breakdown farmers would no longer have to actively request a Cymorth TB visit (tailored biosecurity advice visit by private veterinary surgeon), they would subsequently receive the visit unless they actively opted out of the scheme. Following a period of policy development, this new management measure was introduced in September 2019. Within the Intermediate TB Area North (ITBAN) a "keep it out" version of the Cymorth TB continued to be offered.

Northern Ireland

17. Northern Ireland (NI) is epidemiologically and geographically distinct from Great Britain (GB). Policies on bovine Tuberculosis (bTB) control therefore while similar, are not directly comparable to those practiced in GB. The bTB Control Programme in NI is co-ordinated by the Veterinary Service Animal Health Group (VSAHG) of the Department of Agriculture, Environment and Rural Affairs (DAERA).

18. Disease statistics for NI are published monthly and are available on the DAERA website at; <https://www.daera-ni.gov.uk/publications/tuberculosis-disease-statistics-northern-ireland-2019>. In 2019, 22,398 herds undertook at least one tuberculin skin test in NI, with approximately 1.73 million individual cattle tested. Herd incidence was relatively stable from 2007 to 2010 followed by a sustained rise during 2011-2012, peaking at 7.46% in October 2012. Herd incidence then steadily declined to a low of 5.95% in September 2014, followed by another rise, which was particularly steep throughout 2017, peaking at 9.73% in November 2017. Herd incidence fell slightly in 2018 to 9.22% before falling more steadily throughout 2019. At December 2019, the herd incidence stood at 7.84%.

19. Changes in annual animal incidence show a similar trend, steadily increasing during 2011-12 to a high of 0.674% in November 2012, followed by a decrease to a low of 0.502% in March 2014 and then a rise throughout 2015-6. In 2017 animal incidence increased more steeply in line with the sharp rise seen in herd incidence, reaching a peak of 0.920% in November 2017, before falling to 0.879% in December 2018. Throughout 2019 animal incidence declined further, and in December 2019 reached a low of 0.753%.

20. Annual herd testing and animal testing in 2019 remained at close to 100% and abattoir surveillance of cattle slaughtered for human consumption remained at 100%. Compared to 2018, the number of tuberculin skin tests remained fairly constant (3.24 million tests in 2019 compared with 3.28 million in 2018) but the number of skin test reactors decreased markedly by 15.08% to 13,019 (15,329 in 2018). There were 1,757 new herd breakdowns, a 15.9% decrease compared to 2018 (2,089).

21. 2096 animals were found with TB-like lesions at routine slaughter in 2019, accounting for 0.48% of all animals slaughtered. This compares with 1,826 animals found with TB-like lesions at routine slaughter in 2018 (0.41% of animals slaughtered), an increase of 14.78%. Due to a four month lag time to allow completion of laboratory testing, final figures for disease confirmation during 2019 are not finalised at the time of writing. Until the end of September 2019, the number of animals confirming with bTB that were not skin reactors but were detected at routine slaughter was 826, a slight reduction of 4.62% compared to 866 for that time period in 2018. The number of herds with confirmed bTB positive animals that were not skin reactor animals was similar between September 2018 and 2019 (489 and 498, respectively). 289 new TB breakdowns were triggered by an animal found with TB-like lesions at routine slaughter which was subsequently confirmed by histology and/or bacteriology until September 2019, compared to 370 new TB breakdowns for the same period in 2018, a reduction of 21.89%. Of these 289 new breakdowns, 103 disclosed skin reactors at the resulting skin test (35.64%). All figures shown for animals found with TB like lesions at routine slaughter exclude animals imported for direct slaughter.

22. The number of animals tested using interferon-gamma (IFN-G) in 2019 was 22,438, with 540 removed solely based on IFN-G results, and compared with 23,454 animals tested and 625 removed solely based on IFN-G results in 2018. Less cattle were tested using IFN-G in 2019 as less herds were recruited and sampled due to a temporary pause for no deal Brexit contingency planning within VSAHG in November, which is usually a peak month for IFN-G testing (2,458 animals from 29 herds were tested in November 2018, compared to 1,587 animals from 20 herds in 2019). Yearly target numbers are calculated from April to April and we made up deficit in January 2020 (2,019 sampled in 2019 vs 2,953 sampled in 2020). Therefore, while we ultimately reached our target number of samples for 2019/2020, number of samples for the calendar year 2019 were reduced. The % of positives confirmed of total sampled is down from 3.6% to 3% but small changes at low % level can have a significant impact. These figures are also animals removed (not total positives) which depends on surrender rate as well which increased from 75.1% in 2018 to 81.3% in 2019.

23. The number of animals removed as 'negative in contact' (NIC) in 2019 was 673 compared with 999 during 2018, a reduction of 32.63%. Policy changes implemented in March 2018 where animals that were previously standard inconclusive at herd tests under OTW restriction were re-interpreted under severe interpretation and taken as NIC contributed to the relatively large number of NIC animals removed in 2018.

24. The decline in herd and animal incidence levels have occurred since DAERA announced additional measures at the end of 2017, which were implemented in full by March 2018. These measures, which continued to be applied in 2019, include:

- a reduction in the threshold for Officially Tuberculosis Free Withdrawn (OTW) status from more than 5 non-visibly lesioned reactors to more than 1 non-visibly lesioned reactor;
- the increased use of 'severe interpretation' to remove infection earlier and reduce the risk of leaving undisclosed infected animals in a herd at de-restriction;
- the review of previous skin test results by Veterinary Officers in all new OTW herds. Any animal which

was inconclusive at standard interpretation at a breakdown test (where TB had been confirmed at slaughter and /or laboratory, or more than 1 reactor during breakdown) within the past 3 years is compulsorily removed. Veterinary Officers also have discretion to remove any other animals considered higher risk on the basis of historic skin test results; and

- OTW herds now require an additional 6 monthly test following de-restriction. This means that all OTW herds must have at least 4 consecutive clear herd tests (2 clear breakdown tests then 2 clear tests at 6 month intervals following de-restriction) before returning to annual testing.

25. The purpose of these measures is to identify infection at an earlier stage, remove it more promptly and prevent further spread.

26. Alongside this, work has also progressed on the development of the new TB Eradication Strategy for Northern Ireland. Building upon the proposals made by an independent TB Strategic Partnership Board (TBSPG) in 2016, 21 recommendations have been developed across six thematic areas. In August 2019, Departmental approval had been agreed on 4 of the 6 themes, with proposals on finance and wildlife intervention have been developed for Ministerial consideration. The two most robust and evidence based wildlife intervention strategies have been identified and an outline business case is being drafted. The finance and funding recommendation also recognises the need to reduce TB compensation levels in Northern Ireland, proposing a reduction to 90% of market value in the first year of implementation followed by a further reduction to 75% of market value in year 2. A proposal to cap compensation to a maximum of £5,000 per animal is also proposed.

27. With the restoration of Northern Ireland's devolved institutions in January 2020, the overall Strategy will now be subject to the consideration and approval of the new Minister of Agriculture, Environment and Rural Affairs. The Strategy will also require the approval of the Northern Ireland Assembly. However, the return of devolution has removed a significant barrier to implementation of new policy measures. In the absence of a Minister (between January 2017 and January 2020), DAERA had been limited to consulting on the proposals and progressing some less contentious measures.

28. Over 200 responses were received during a public consultation on the Department's response to the TBSPG recommendations closed in February 2018. Since then, in May 2018, DAERA proceeded with the TBSPG recommendation to establish the TB Eradication Partnership (TBEP), an independent group to provide advice on the strategic direction of the TB eradication programme.

29. Further actions from TBSPG's recommendations that were progressed in 2019 include working with our laboratory partner, the Agri-Food and Biosciences Institute (AFBI), and field delivery staff to increase the capacity for testing cattle using IFN-G to 30,000 in the year 2020/2021 (from 23,000 per annum to date), with an aim to reach annual testing of 45,000 samples by 2022/2023. The value of IFN-G testing, an EU approved test, was recognised by the TBSPG as an important supplementary test to the skin test.

30. Improvements have been made to the standard of bTB testing across NI by the introduction of the TB Testing Services Contract in 2016. Outcomes in the Key Performance Indicators (KPIs) improved dramatically from their introduction in April 2016 to year 3 quarter 4 in April 2019 (See Appendix 1). The number of approved testing practices not reporting reactors fell by almost 50% from the second quarter of 2016 to the second quarter of 2019 (See Appendix 2). The TB Testing Services Contract is a five year contract due to cease in April 2021 at which point DAERA may choose to extend or replace it.

31. Improvements have also been made to the standards of post mortem surveillance (an action point from the 2016 FVO audit report), resulting in better detection of infection at slaughter. The number of confirmed LRS per 1000 animals slaughtered has risen, indicating that this enhanced surveillance is productive.

32. It was not possible to put in place a strategy for wildlife intervention during 2019, owing to the absence of ministerial direction. However, research and data collection in this regard continued to take place, developing an evidence base on which Ministerial decisions can now be taken. During 2019, 293 badgers were collected through a road traffic accident survey. 17% of those for which test results are available so far, have tested positive. A field survey was also carried out in 2019 to assess the effect of the BCG sub strain Sofia on the Dual Path Platform (DPP) sett-side test. 28 animals, which had previously been vaccinated twice with the Sofia vaccine as part of a field project, were recaptured. Seven of these animals were positive to the DPP test. Further analysis of this data is ongoing. DAERA is currently sponsoring a study to establish baseline data on deer population distribution and prevalence of TB infection within that population. A number of sett surveys were ongoing throughout 2019, including the commencement of one in September 2019 of a 189Km<sup>2</sup> area around Saintfield in County Down, to determine the location of active setts within that area. Such surveys would be required as a precursor to any future wildlife intervention, pending Ministerial direction.

33. DAERA recognises the importance of achieving value for money in the delivery of NI's bTB Control

Programme and endeavours to save money where possible, without compromising the quality of delivery of the programme.

34. The TB Testing Services Contract which commenced in 2016, has reduced cost per animal tested by Approved Veterinary Surgeons by 11.2% compared to the previous arrangement.

35. The largest cost to the delivery of the TB Programme remains compensation. However, due to the significant reduction in reactor numbers in 2019, the cost of compensation was reduced from 23.6M for the financial year 2018/2019 to a projected total bill of 19.5M for 2019/2020.

36. Implementing changes to the finance and funding of NI's TB Control Programme is one of the key TBSPG recommendations, including options to reduce compensation costs. The newly appointed Minister of Agriculture, Environment and Rural Affairs will shortly be considering recommendations relating to the proposed Strategy's Finance and Funding theme in detail.

## **1.2 Details on the level of achievement of the targets set in the approved programme and technical difficulties.**

1. The combined targets for England, Wales and NI in 2019 are derived from the values set out in Section 7.1.2.1 of the 2020 final approved bTB programme for the UK – a 20% reduction in 2020 on 2018 levels, implies a 10% reduction for 2019. This means a target prevalence of 13.9% and incidence of 8.65%, which equates to: 9323 positive herds and 5796 new positive herds. A 'positive herd' was a herd of cattle, bison or buffalo with OTF status suspended or withdrawn due to a TB breakdown (i.e. the identification of one or more tuberculin skin test reactors, or laboratory-confirmed slaughterhouse cases).

2. The actual (observed) figures for the UK for 2019 were 9,531 positive herds and 5,719 new positive herds, resulting in a period herd prevalence of 14.58% and a herd incidence of 8.75%.

3. This programme covers three countries of the UK with different epidemiological situations and slightly different approaches to bTB eradication (regarding in particular the management of the reservoir of infection in badgers). Therefore, it is necessary to set out the evolution of the programme and its technical difficulties separately for each country.

### England

4. The targets implied by the 2020 UK eradication plan were 5,594 positive herds in England during 2019 resulting in period prevalence of 16.64% positive herds, along with 3247 new cases (9.66% herd incidence), assuming a maintained level of testing. The actual number of herds affected was 5,796 and there were 3,297 new incidents.). Prevalence was 17.8% and incidence was 10.1%, i.e. slightly above the respective targets. The table 3 at appendix 1 displays the equivalent figures for each of the three bTB risk areas of England.

5. The number of positive herds in the HRA was 4463 with 2505 new incidents compared to 4908 affected in 2018 and 2760 new incidents (a decrease in 445 in herds affected and 255 in new herd incidents). This resulted in a period herd prevalence of 25.39% which is 7.8 percentage points lower than 2018 where it was 27.18%. In 2019 herd incidence was 14.3% which is 1 percentage point lower than 2017 at 15.3%.

6. The number of positive herds in the Edge Area was 1119 with 641 new incidents compared to 1120 affected in 2018 and 719 new incidents. A decrease of 1 in herds affected (0.01%) and decrease of 78 (11%) in new herd incidents. This resulted in a period herd prevalence of 14.6% which is 0.4 percentage points lower than 2018 where it was 14.2%. In 2019 herd incidence was 8.4% which is 0.75 percentage points lower than 2018 at 9.1%.

7. The number and proportion of herds affected by bTB and the numbers of cattle slaughtered for bTB control purposes in England are still very high by the standards of most EU Member States and by comparison with the situation in the UK in the 1970s and early 1980s, when the disease only persisted in small pockets in the Southwest of England. However, as set out in section 1.1 the epidemiological situation is not uniform across the country.

8. National bTB statistics available online (<https://www.gov.uk/government/statistics/incidence-of-tuberculosis-tb-in-cattle-in-great-britain>) show that the herd incidence of bTB in England remained at the same level as in 2018 and the herd prevalence decreased in 2019 compared with 2018. There is a continuation of the divergent trend in High Risk Area (HRA) and Edge, with HRA incidence decreasing and Edge incidence increasing until 2018 and signs of improvement in 2019.

9. Bovine TB herd incidence and prevalence remained at very low and stable levels in the Low Risk Area (LRA) in 2019. Herd prevalence and the incidence of herds with OTFW breakdowns in the LRA are

comparable to those of Scotland. In 2019 there were 21 more new breakdowns (16%) in the LRA (151 cf. 130 in 2018) and 1 less herds (-1%) had their OTF status suspended or withdrawn at the end of the year due to a TB breakdown (67 cf. 66 herds). The number of new herd breakdowns with OTF status withdrawn due to test reactors with visible lesions or culture-positive animals was stable at 35. Of those new OTFW breakdowns detected in the LRA last year, 14 have provisionally been attributed to inward movements of infected cattle from the higher incidence areas of England and Wales ('imported' or 'non-indigenous' cases). The very low and stable frequency of indigenous bTB breakdowns observed in the LRA for the last 20 years supports the case for retaining the background four-yearly herd testing frequency for most herds in that part of England.

10. The Edge Area has experienced a drop in bTB incidence and prevalence in 2019 with 78 fewer new breakdowns detected compared with the previous year (641 cf. 719 respectively) and 81 fewer herds had their OTF status suspended or withdrawn at the end of the year compared with 2018 (487 cf. 568). The majority of such breakdowns occurred in the parts of the Edge Area closest to the HRA in which cattle herds are subjected to six monthly surveillance testing (see the map in Figure 5 of section 1.3). This increase is not unexpected given the rollout in recent years of more sensitive surveillance and breakdown testing regimes as part of the Edge Area strategy – starting in January 2013 with blanket annual herd testing, followed since January 2014 by a more robust skin testing regime in all breakdown herds and supplementary interferon-gamma blood testing in all herds with OTF status withdrawn. In January 2015, we replaced annual surveillance (and radial) herd testing with six-monthly surveillance testing of all herds in the Edge Area of Cheshire. Nevertheless, we believe that the more intensive herd testing regime applied since 2013 in this area will have a positive impact and contribute to reduce the number of total and OTFW new breakdowns in the medium term. Bovine TB surveillance and controls were further strengthened on 1st January 2018 by (a) fully incorporating into the Edge Area five counties that hitherto straddled the HRA and Edge Area and (b) replacing annual testing with six-monthly herd testing in some counties of the Edge Area (and supplementing annual testing with radial surveillance in the rest of the area).

## Wales

11. The measures set out in the 2019 UK TB Eradication Plan for implementation in Wales were aimed at getting ahead of the disease, stopping it spreading, clearing up infection quickly and keeping herds and wider areas (such as north Wales) free of disease. Success in these objectives will result in sustained reductions in the incidence and prevalence of the disease, leading towards eradication. These indicators are unpredictable and may be influenced by a variety of factors. The unpredictable nature of the disease makes it difficult to reliably forecast even relatively short-term changes in TB indicators.

12. The Welsh Government recognises that TB eradication is a long term objective. In 2017 the TB eradication programme in Wales was regionalised, with 5 new TB areas established to reflect current and historical disease levels. A national eradication target was announced along with interim milestones for each of the TB areas. If they are achieved Wales will be Officially TB Free (OTF) by 2041.

13. The number of herds affected in the High TB Area West was 638 with 311 new incidents compared to 619 affected in 2018 and 333 new incidents. This resulted in a period prevalence of 21.8%, which is 0.9 percentage points higher than 2018 where it was 20.8%. In 2019 incidence was 10.6%, which is 0.6 percentage points lower than 2018 at 11.2%. During Quarter 4 2019, we saw the lowest quarter incidence in the High TB Area West since the Eradication Programme was established.

14. Looking at the figures over a longer term, between 2012 and 2019 Wales saw a 20% decrease in bovine TB herd prevalence and a 34% decrease in herd incidence.

15. These reductions are due to a net fall of 40% in the number of new TB incidents. Since the trend is not linear over the period, it is important to consider short-term changes in the context of long-term trends. Indeed, the trend observed in Wales since 2008 is punctuated by periods of instability and even short-term increases. Despite this, there is a clear long-term downward trajectory.

16. As well as the lowest level of incidence for 15 years, the annual 2-year recurrence rate in 2019, for incidents closed in 2017 was the lowest in 8 years and since we have begun recording this measure. Therefore, less incidents which have been closed are suffering another incident within 2 years.

17. In 2017, Wales was regionalised in respect of TB eradication and in terms of the statistics. 5 TB Areas based on incidence were created: High TB Area East, High TB Area West, Intermediate TB Area North, Intermediate TB Area Mid and Low TB Area.

18. The number of herds affected in the High TB Area East was 403 with 211 new incidents compared to 471 affected in 2018 and 2250 new incidents. This resulted in a period prevalence of 15.8%, which is 2.2 percentage points lower than 2018 where it was 18.1%. In 2019 incidence was 8.3%, which is 1.3



percentage points lower than 2018 at 9.6%. Prevalence at the end of 2019 is the lowest since 2015 and incidence is at its lowest since the Eradication Programme was established.

19. The number of herds affected in the High TB Area West was 63819 with 311 new incidents compared to 619 affected in 2018 and 333 new incidents. This resulted in a period prevalence of 21.8%, which is 0.9 percentage points higher than 2018 where it was 20.8%. In 2019 incidence was 10.6%, which is 0.6 percentage points lower than 2018 at 11.2%. During Quarter 4 2019, we saw the lowest quarter incidence in the High TB Area West since the Eradication Programme was established.

20. The number of herds affected in the Intermediate TB Area Mid was 111 with 45 new incidents compared to 96 affected in 2018 and 60 new incidents. This resulted in a period prevalence of 6.1%, which is 0.9 percentage points higher than 2018 where it was 5.2%. In 2019 incidence was 2.5%, which is 0.8 percentage points lower than 2018 at 3.2%.

21. The number of herds affected in the Intermediate TB Area North Area was 95 with 75 new incidents compared to 102 affected in 2018 and 67 new incidents. This resulted in a period prevalence of 11.7%, which is 0.3 percentage points lower than 2017 where it was 12.0%. In 2019 incidence was 9.2%, which is 1.3 percentage points higher than 2018 at 7.9%.

22. The number of herds affected in the Low TB Area was 42 with 23 new incidents compared to 50 affected in 2018 and 34 new incidents. This resulted in a period prevalence of 1.8%, which is 0.3 percentage points lower than 2018 where it was 2.0%. In 2019 incidence was 1.0%, which is 0.1 percentage points lower than 2018 at 1.4%.

23. Regional differences in bovine TB are presented on the Bovine TB Dashboard <https://gov.wales/bovine-tb-dashboard>

24. Although the data indicate that surveillance and control measures are combining over the long term to bear down on bovine TB in Wales, it is not possible to isolate the impact of individual policy interventions on the prevalence or incidence of the disease. It is likely that the observed trends are the result of a combination of policy measures implemented over time. A range of enhanced measures were introduced as part of the refreshed TB Eradication Programme in 2017 but it may not be possible to detect the impact of those new policies for some time after implementation.

25. However, we do know that for some time there has been a substantial increase in the number of animals slaughtered for TB control. This is primarily due to policy changes to increase test sensitivity, which will help clear up infection and reduce the risk of disease spreading and breakdowns recurring. For example, increases in gamma-testing, use of severe interpretation of skin test results and removal of Inconclusive Reactors in chronic breakdown herds. We believe that investing in identifying disease early will reap rewards in the medium term, preventing spread both within and between herds.

\*Prevalence = number of herds positive at any time during the year divided by number of herds actually tested during the year

\*\*Incidence = number of new herd incidents divided by number of herds tested during the year

#### Northern Ireland

26. DAERA believe that the programme changes introduced since 2016 are resulting in infected animals being detected at an earlier stage and this is starting to show a positive return in Annual herd incidence was 7.84% in December 2019, an encouraging reduction of 14.97%, from 9.22% in December 2018 but above the expected herd incidence of 5.00% predicted for Northern Ireland in the EU approved UK TB Eradication Programme for 2019. The herd prevalence of 9.88% in December 2019 also saw a significant reduction of 20.26% compared to 12.39% in December 2018, but was above the predicted herd prevalence of 6.21%. Animal prevalence was 0.752% in December 2019, a decrease of 14.45% from 0.879% in December 2018 but above the predicted animal prevalence of 0.56%. DAERA believes that targets set for NI's TB Programme for 2019 were unattainable. However, we are pleased that significant progress has been made throughout 2019, and with the restoration of devolution in Northern Ireland, key political decisions on the implementation of a TB Eradication Strategy for Northern Ireland can now be progressed.

27. There was a welcome decrease in herd level disclosure at live animal surveillance in 2019, with a similar number of animal tests being performed (3.24M in 2019, following on from 3.28M in 2018). As described above under Section 1.1., due to a four month lag time to allow completion of laboratory testing, final figures for disease confirmation during 2019 are not finalised at the time of writing. However, latest figures show there was a 12.43% reduction in the number of confirmed herds in the 12 months to the end of September 2019 (2,085 herds), compared to the previous 12 months (2,381 herds). The number of animals with confirmed bTB decreased by 14.14% to 6,350 in the 12 months to the end of September 2019, down from 7,396 in the previous 12 months.

28. There were 1,757 new TB reactor herds in 2019, a 15.9% decrease from 2089 herds in 2018. Similarly, there was a 15.08% decrease in the number of TB reactors disclosed in 2019, 13,019 down from 15,330 in 2018.

29. In summary, substantial reductions in herd and animal incidence, and in the number of herds and with confirmed bTB breakdowns were seen in NI in 2019. Evidence for this is provided graphically in appendices 3 and 4.

30. As outlined above, the Northern Ireland Assembly and Executive were not operational for a three year period, from January 2017 to January 2020. This absence of political decision making made it very difficult to progress with key aspects of the bTB Programme, including the finalisation of a TB Eradication Strategy for Northern Ireland. However, in January 2020, Edwin Poots MLA was appointed as Minister for Agriculture, Environment and Rural Affairs. Mr Poots has already went on record to note that reducing the level of bTB in Northern Ireland is one of his key priorities

**1.3 Epidemiological maps for infection and other relevant data on the disease/activities (information on serotypes involved,...) (Please attach files of data using the PDF attachment feature) Use the textbox below to provide clarifications for the maps you attach, if needed.**

Appendix 1 - Final report for Bovine Tuberculosis 2019 UK (statistical figures, map, tables)

Appendix 2 Final report for Bovine Tuberculosis 2019 UK (TB Heat map NI 2019)

**1.4 Additional epidemiological information (on epidemiological inquiries, abortions, lesions found in abattoir, human cases, etc...)**

(specific information on badger control from section 1.1.)

1. The TB Strategy envisaged the rollout of farmer-led badger culling into new areas of the HRA and in parts of the Edge Area with endemic *M. bovis* infection in badgers. In 2019 there was continued expansion of licensed badger culling, with 11 new areas within the High Risk and Edge Areas of England while badger culling continued in the 32 existing areas. All 43 areas carried out effective culls, as assessed by Natural England's Chief Scientific Officer and the UK CVO. October 2019 saw the publication of a peer-reviewed epidemiological analysis on the effect of badger culling on cattle TB incidence in the first three licensed areas of England (Downs et al. (2019) Scientific Reports). The report builds on the work by Brunton et al. (2017) and shows a statistically significant decline in bTB herd incidence in the first two cull areas: a 66% reduction in OTF-W TB incidence rates in Area 1-Gloucestershire and a 37% reduction in Area 2-Somerset over the 4 years of intensive badger culling, relative to similar comparison areas in which no culling took place. The study also looked at the first two years of culling in Area 3-Dorset, which showed no change yet in TB incidence. These results were consistent with the findings of the Randomised Badger Culling Trial and show that an intensive badger culling policy implemented by the farming industry can result in statistically significant reductions in the incidence of cattle TB in endemic areas.

2. In 2018 the badger control policy was amended to enable culling in the LRA in the unlikely event that TB-infected badgers are linked with cattle herd breakdowns in that part of England. Currently the only such area is in East Cumbria (Area 32), where the aim of culling is to prevent disease spread within the wildlife and aid eradication of disease from the local area. TB surveillance was conducted in badgers removed from East Cumbria in 2018 and 2019. Two (0.6%) out of 313 tested badgers that were removed in the 2019 culling operation proved positive for the strain of *Mycobacterium bovis* previously identified in badgers and cattle in this locality, down from a prevalence of 11.1% in badgers removed the previous year. Operations were deemed safe, effective and humane by Defra's Chief Veterinary Officer.

<https://www.gov.uk/government/publications/bovine-tb-summary-of-badger-control-monitoring-during-2019/summary-of-2019-badger-control-operations>

<https://www.gov.uk/government/publications/bovine-tb-surveillance-in-wildlife-in-england>

3. In 2019, the following programme enhancements were implemented in England:

- Rollout of licensed badger culling operations to nine new areas of endemic high bTB incidence in the HRA and two in Edge Area, representing 57% and 4.5% of their respective land areas. Licensed badger culling and additional TB controls in cattle continued for a second year in a defined section of East Cumbria (Northwest of England - LRA) where endemic *M. bovis* infection was identified in badgers for the first time in 2017, associated with a persistent cluster of TB breakdowns in local cattle herds:

[www.gov.uk/government/collections/bovine-tb-controlling-the-risk-of-bovine-tb-from-badgers](http://www.gov.uk/government/collections/bovine-tb-controlling-the-risk-of-bovine-tb-from-badgers)

- New round of applications for badger vaccination projects in the Edge Area supported by government under its Badger Edge Vaccination Scheme: [www.gov.uk/government/publications/badger-edge-vaccination-scheme-2-bevs-2](http://www.gov.uk/government/publications/badger-edge-vaccination-scheme-2-bevs-2)

- Successful completion of the pilot to explore the use of approved (lay) tuberculin testers (ATTs) in private veterinary practices. It is expected that practices in England will have the opportunity to use ATTs from late 2020, subject to providing the specified requirements: <http://apha.defra.gov.uk/documents/ov/Briefing->

4. The government's response to the review of England's bovine TB eradication strategy published in March 2020 envisages that the current intensive badger culling policy will begin to be phased out in the next few years, to be gradually replaced by government-supported badger vaccination and surveillance. Badger culling will remain an option where epidemiological assessment considers it necessary. The government will continue to monitor the badger control policy as areas move to badger vaccination.

## 2. TECHNICAL IMPLEMENTATION ON RUMINANT DISEASES PROGRAMMES

VERY IMPORTANT: Please fill out the following tables with figures corresponding to measures performed during the implementing period (1/1 to 31/12).

**Table A - DATA ON HERDS**

Region	Animal species	Total number of herds	Total number of herds under the programme	Number of herds to be checked under the programme this year	Number of herds checked	Number of positive herds	Number of new positive herds	Number of herds depopulated
		% of positive herds depopulated	% of herds coverage		% of positive herds Period herd prevalence		% of positive herds Herd incidence	
England	Cattle and Buffalo	49,411	49,411	32,484	32,484	5,796	3,297	30
		0.52 %	100 %		17.84 %		10.15 %	
Wales	Cattle and Buffalo	11,769	11,769	10,490	10,490	1,289	665	4
		0.31 %	100 %		12.29 %		6.34 %	
Northern Ireland	Cattle	23,263	23,253	23,253	22,398	2,446	1,757	17
		0.7 %	96.32 %		10.92 %		7.84 %	
<b>Total</b>		84,443	84,433	66,227	65,372	9,531	5,719	51
		0.54 %	98.71 %		14.58 %		8.75 %	

**Table B - DATA ON ANIMALS**

Region	Animal species	Total number of animals	Number of animals under the programme	Number of animals to be tested under the programme this year	Number of animals tested	Number of animals tested individually	Number of positive animals	Number of animals with positive result slaughtered or culled	Number of animals slaughtered
		% coverage at animals level				% positive animals Animal Prevalence			
England	Cattle and Buffalo	5,279,566	5,279,566	4,189,401	4,189,401	4,189,401	30,310	30,310	31,102
		100 %				0.72 %			
Wales	Cattle and Buffalo	1,119,844	1,119,844	1,199,688	1,199,688	1,199,688	8,711	8,711	12,256
		100 %				0.73 %			
Northern Ireland	Cattle	1,732,196	1,732,196	1,732,196	1,732,196	1,732,196	13,019	13,019	14,231
		100 %				0.75 %			
<b>Total</b>		8,131,606	8,131,606	7,121,285	7,121,285	7,121,285	52,040	52,040	57,589
		100 %				0.73 %			

**Table C - DATA ON VACCINATION PROGRAMMES**

Region	Animal species	Total number of herds	Total number of animals	Number of herds in vaccination programme this year	Number of herds vaccinated	Number of animals vaccinated	Number of doses of vaccine administered	Number of adults vaccinated	Number of young animals vaccinated	Number of animals with primary vaccination (initial+ booster)
England	Badgers	0	0	0	0	368	368	0	0	0
Wales	Badgers	0	0	0	0	554	554	0	0	0
<b>Total</b>		0	0	0	0	922	922	0	0	0

**Table D - DATA ON STATUS OF HERDS AT THE END OF THE PERIOD**

Region	Animal species	Total	Unknown	Not free or not officially	Free of	Free from	Officially
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			number of herds and animals under the programme		free from disease		officially free-disease status suspended/withdrawn	disease	free from disease
					Last check positive	Last check negative			
herds	England	Cattle and Buffalo	49,411	0	1,872	0	1,867	0	45,672
animals	"	"	5,279,566	0	559,031	0	333,225	0	4,387,310
herds	Wales	Cattle and Buffalo	11,769	0	613	0	293	0	10,863
animals	"	"	1,119,844	0	154,825	0	32,559	0	932,460
herds	Northern Ireland	Cattle	23,253	0	771	1,168	1,153	0	20,171
animals	"	"	1,732,196	0	145,700	152,467	89,989	0	1,344,040
<b>Total - herds</b>			84,433	0	3,256	1,168	3,313	0	76,706
<b>Total - animals</b>			8,131,606	0	859,556	152,467	455,773	0	6,663,810

**Table E - SUSPENSION/WITHDRAWAL OF THE FREE OR OFFICIALLY FREE STATUS**

Region	Animal species	Status	Reason	Number of herds
Northern Ireland	Cattle	Withdrawn	The disease is suspected	1,522
Northern Ireland	Cattle	Withdrawn	overdue test	417
Northern Ireland	Cattle	Suspended	The disease is suspected	191
Northern Ireland	Cattle	Suspended	overdue test	962
England	Cattle and Buffalo	Suspended	The disease is suspected	2,596
England	Cattle and Buffalo	Suspended	other	1,169
Wales	Cattle and Buffalo	Suspended	The disease is suspected	657
Wales	Cattle and Buffalo	Suspended	Non-negative result in diagnostic test	258
<b>Total</b>				7,772

**Table F - STRATIFIED DATA ON SURVEILLANCE AND LABORATORY TESTS**

Region	Animal species	Test type	Number of samples	Number of tests	Number of positive tests
Northern Ireland	Cattle	Tuberculin test	3,195,190	3,195,190	12,942
Northern Ireland	Cattle	Gamma-interferon test	22,441	22,441	888
Northern Ireland	Cattle and Buffalo	Bacteriological test	3,573	3,573	1,189
England	Cattle and Buffalo	Tuberculin test	6,647,266	6,647,266	19,233
England	Cattle and Buffalo	Gamma-interferon test	262,636	262,636	10,025
England	Cattle	Bacteriological test	8,278	8,278	5,132
England	Cattle	PCR test	4,564	4,564	4,557
Wales	Cattle and Buffalo	Tuberculin test	1,881,683	1,881,683	7,082
Wales	Cattle and Buffalo	Gamma-interferon test	65,923	65,923	3,200
Wales	Cattle and Buffalo	Bacteriological test	4,177	4,177	918
Wales	Cattle	PCR test	881	881	876
<b>Total</b>			12,096,612	12,096,612	66,042
			<b>Methods of laboratory analysis</b>	<b>Total number of tests</b>	
			<b>Total - Bacteriological test</b>	16,028	
			<b>Total - Gamma-interferon test</b>	351,000	
			<b>Total - PCR test</b>	5,445	
			<b>Total - Tuberculin test</b>	11,724,139	

COMMENT / ADDITIONAL CLARIFICATION

