EUROPEAN COMMISSION
HEALTH & CONSUMERS DIRECTORATE-GENERAL

Unit G5 - Veterinary Programmes

SANCO/10845/2012

Programmes for the eradication, control and monitoring of certain animal diseases and zoonoses

Eradication programme for Bovine Tuberculosis

Approved* for 2012 by Commission Decision 2011/807/EU

United Kingdom

* in accordance with Council Decision 2009/470/EC

ANNEX I

Standard requirements for the submission of national programmes for the eradication, control and monitoring of the animal diseases or zoonoses referred to in Article 1(a) of Commission Decision 2008/425/EC

1. Identification of the programme

Member State: *United Kingdom (Great Britain) including England* and *Wales*

Disease: *Bovine Tuberculosis*

Request of Community co-financing for: 2012

Reference of this document: *UK(GB)Bovine TB Eradication Plan 2012*

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2. Historical data on the epidemiological evolution of the disease

2.1 The efforts to eradicate bovine tuberculosis (bTB) from Great Britain (GB) pre-date the first legal initiatives in this area at European Community (EC) level and were initially driven by public health concerns and the desire to increase the productivity and welfare of the national cattle herd. Following the accession of the UK to the European Community (EC; later the European Union, EU) in 1973, British cattle producers were required to comply with the rules laid down in **Directive 64/432/EEC** (as amended), including certification of TB testing of exported animals and official TB freedom of herds.

2.2 The single intradermal comparative cervical tuberculin (SICCT) test was introduced in 1947 (with the 'mammalian' (*Mycobacterium tuberculosis*) tuberculin replaced by the more potent and specific Weybridge *M. bovis* PPD tuberculin in 1975) and the voluntary herd schemes up to the 1950s were replaced by compulsory schemes. The **whole of GB became 'attested' on 1st October 1960** (i.e. each cattle herd was certified as being subject to regular tuberculin intradermal testing with immediate slaughter of any reactors). For the next two decades there was a steady decline in the incidence of reactor cattle, clinical cases and infected herds detected and every year new counties would be designated bTB-free areas in which the herd testing frequency could be gradually relaxed to reflect the improved situation.

2.3 The Eurasian badger (*Meles meles*) was first identified as a possible wildlife reservoir of infection for cattle in the early 1970s in parts of the Southwest of England where a high incidence of bTB persisted despite enhanced herd control measures (bTB 'hotspots'). A series of different strategies were developed throughout the 1970s, 80s and 90s to tackle this wildlife source of *M. bovis* in England and Wales (there is no evidence of such a reservoir in Scotland), along with further cattle-based measures. In 1979 the lowest bTB incidence was recorded in GB, with 0.49% of all herds tested having a reactor, which equated to 0.018% of all cattle tested.

2.4 However, the progressive reduction in bTB incidence stalled in the mid-1980s. Bovine TB herd incidence in the Southwest of England had remained about three times higher than in the rest of GB, despite the retention of an annual (and occasionally more frequent) tuberculin herd testing regime in those areas. Gassing (1975-1982) and 'clean ring' (1982-1986) strategies were used prior to an 'interim' badger culling strategy in place between 1986 and 1997, whereby badgers were removed only from farms where a bTB incident had been confirmed by culture of *M. bovis* and where, following investigation, it was thought that badgers were the most likely source.

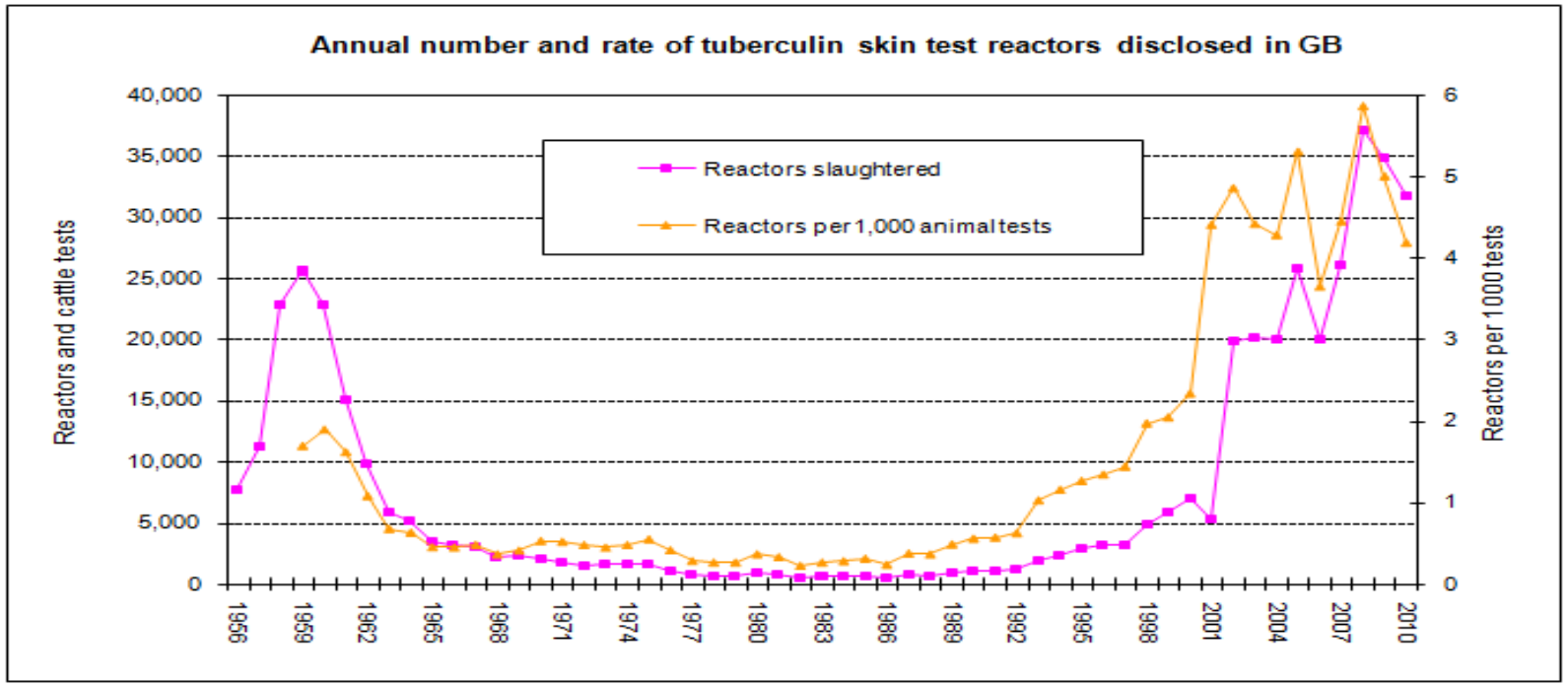


Figure 1: Number and rate of tuberculin test reactors disclosed annually in GB (1956-2010)

2.5 In 2001, the national bTB testing programme, as well as most field-based bTB research projects, was severely disrupted due to a major outbreak of **Foot and Mouth Disease**, which led to anomalous bTB statistics from 2001 to early 2003. This led to a marked fall in the number of TB breakdowns and reactors detected in 2001, followed by a sharp increase in 2002 as tuberculin herd testing resumed.

2.6 The **Krebs' report** published in 1997 concluded that "the sum of evidence strongly supports the view that, in Britain, badgers are a significant source of infection in cattle". The main recommendation stemming from this review was to set up a controlled field experiment (the **Randomised Badger Culling Trial – 'RBCT'**) overseen by the **Independent Scientific Group on cattle TB (ISG)** to quantify in a scientific way the impact of culling badgers on TB incidence in cattle. Immediately after the publication of the report in December 1997 the Government suspended all badger removal operations, pending the implementation of this trial.

2.7 The Final Report of the ISG published on 18 June 2007 included the findings of the RBCT. Evidence from the RBCT showed that at least 40% of cattle herd breakdowns in high incidence areas were caused by badgers. However the ISG concluded that badger culling (carried out in the way that was done in the RBCT) was unlikely to contribute positively, or cost effectively, to the control of cattle TB in Britain. It also concluded that there was substantial scope for improvement of control of the disease through the application of heightened control measures directly targeting cattle.

2.8 Since 2006, a further range of control measures were intoduced in England and Wales, including a compulsory pre-movement tuberculin test of all cattle over 42 days old moving out of annually and biennially tested herds and the use of the interferon-gamma (IFN-γ) test to supplement the skin test in certain circumstances. Single re-testing of inconclusive reactors (IRs) at standard interpretation was introduced on 1 March 2009 in Wales, and on 1 January 2010 in England. A new compensation system for TB reactor cattle, based on monthly tables of valuses that reflect the average sales price of different categories of cattle, came into force in England in February 2006. Individual valuations continue to be used in Wales, although tighter financial controls, including the use of monitor valuers, have been in place since 2007.

2.9 In 2007, updated advice for farmers on biosecurity and husbandry measures in relation to TB in their herd was made available. This advice was reviewed and enhanced in light of policy changes during 2009 and following the completion of the Government-funded project SE3119: an experiment to assess the cost-effectiveness of farm husbandry manipulations to reduce risks associated with farmyard contact between badgers and cattle. This updated advice was published in 2010.

2.10 In 2009, Scotland was designated an officially TB free (OTF) region of the UK (Commission Decision 2009/761/EC). To further protect the OTF status of Scotland, additional TB testing requirements have been in place since 28 February 2010 for cattle entering Scotland from low TB incidence areas of England. A more detailed history of the evolution of TB epidemiology and policy can be found in the 2010 UK(GB) Eradication Plan.

Current position

2.11 After a peak in 2008 the annual herd and animal incidence of bovine TB (and the total proportion of herds with OTF status suspended or withdrawn during the year) started to fall in 2009, in both England and Wales (see figure 2). That declining trend continued in Wales throughout 2010, whereas in England it stabilised towards the second half of the year. The available statistics for the first four months of 2011 have shown a 3.2% increase in the overall number of new TB breakdowns (i.e. newly infected herds that had their OTF status suspended or withdrawn) disclosed in England and Wales compared with the same period in 2010 (i.e. from 1,812 to 1,870). It should be noted, however, that when these data are split by country, England experienced an increase in new breakdowns from 1401 to 1499, whereas a fall was observed in Wales (from 411 to 371). Combined with a slight reduction in the number of tests carried out over the same period in unrestricted herds in England and Wales, this has resulted in a provisional 7.2% increase in the TB herd incidence rate for the first quarter of 2011 (from 6.8 to 7.3 per 100 herds).

2.12 The number of suspect cases of TB in England and Wales initially identified during routine meat inspection of cattle carcases in abattoirs ("slaughterhouse cases") increased from 312 in January-April 2010 to 495 in the same period in 2011 (462 in England, 33 in Wales). Approximately 48% of the suspect slaughterhouse cases notified in the first four months of 2011 were confirmed by isolation of *Mycobacterium bovis* on culture, whereas in the same period of 2010 the proportion confirmed was 58%.

2.13 Although the annual rate of increase in new breakdowns has slowed down since 2003 compared to the pre-FMD rate, bovine TB continues to be a problem in GB (Figures 1, 2 and 3) particularly in the South West and Midlands of England and South and Mid-Wales (Figure 4). Elsewhere in GB, TB breakdowns are sporadic and generally associated with the movements of infected cattle that escape detection by pre-movement testing. Sporadic incidental findings of *M. bovis* infection are also diagnosed in non-bovine domestic species, such as South American camelids, pigs, sheep, goats, captive deer herds, cats and, occasionally, dogs. *M. bovis* infections in those species invariably arise in parts of GB where there is an endemic high incidence of TB in cattle and wildlife and are often due to infection with the locally prevalent molecular type of the bacterium.

Year[1]	Cattle herds registered at year end	Tests on unrestricted herds (including pre-movement tests)	New TB herd incidents	New OTF-W (previously confirmed) herd incidents	Herd incidence of new TB incidents (including pre-movement tests)[2]	Total cattle tested	Test reactors	Direct Contacts	Reactors per 1,000 tests
1998	95,844	29,435	1,456	717	2.4%	2,291,877	4,876	924	2.1
1999	93,211	32,102	1,616	870	2.7%	2,628,827	5,878	850	2.2
2000	90,189	31,323	1,687	1,045	3.3%	2,722,601	7,015	1,323	2.6
2001	89,253	10,383	790	515	5.0%	1,121,335	5,382	910	4.8
2002	86,148	39,279	3,240	1,891	4.8%	3,726,250	19,787	3,037	5.3
2003	82,570	40,875	3,141	1,639	4.0%	4,243,294	19,929	2,765	4.7
2004	78,872	40,657	3,268	1,747	4.3%	4,339,847	19,775	2,569	4.6
2005	76,277	40,520 (46,564[3])	3,637	2,076	5.1% (4.5%)	4,617,817	25,665	3,696	5.6
2006	75,285	46,947 (47,322)	3,487	2,027	4.3% (4.3%)	5,229,737	19,826	1,872	3.8
2007	72,225	47,362 (86,636)	4,134	2,194	4.6% (2.5%)	5,529,786	25,714	1,438	4.7
2008	71,731	50,090 (87,420)	4,939	2,621	5.2% (3.0%)	6,045,786	36,580	2,201	6.1
2009	70,744	55,814 (91,803)	4,525	2,459	4.4% (2.7%)	6,701,810	34,451	949	5.1
2010	69,901	59,229 (102,514)	4,658	2,458	4.1% (2.4%)	7,562,694	31,534	708	4.2

Table 2.1 - TB statistics for Great Britain (England and Wales) (1998-2010)

[1]In 2001, the TB testing and control programme was largely suspended due to the Foot and Mouth Disease (FMD) outbreak. When testing resumed in 2002, resources were concentrated on herds with overdue TB tests which would have had a longer period in which to contract the disease. Also the proportion of high risk herds tested immediately after the FMD outbreak was greater than that prior to the outbreak. As a result, data for 2001 and 2002 is not comparable with other years.

[2] New OTF-W (previously known as 'confirmed') TB herd incidents as a proportion of tests on unrestricted herds

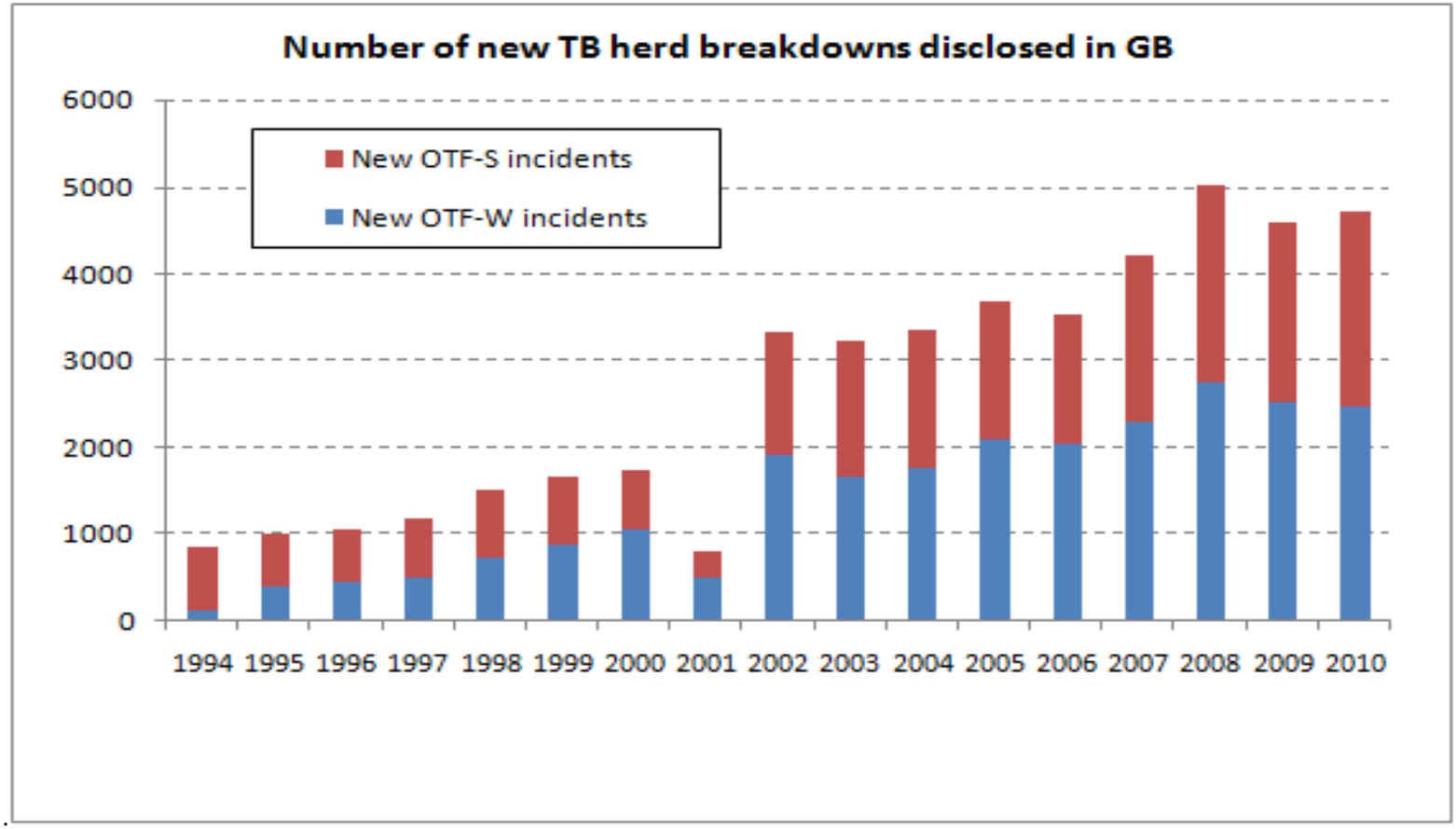


Figure 2 - Number of TB incidents (breakdowns) disclosed annually in GB (1994-2010)

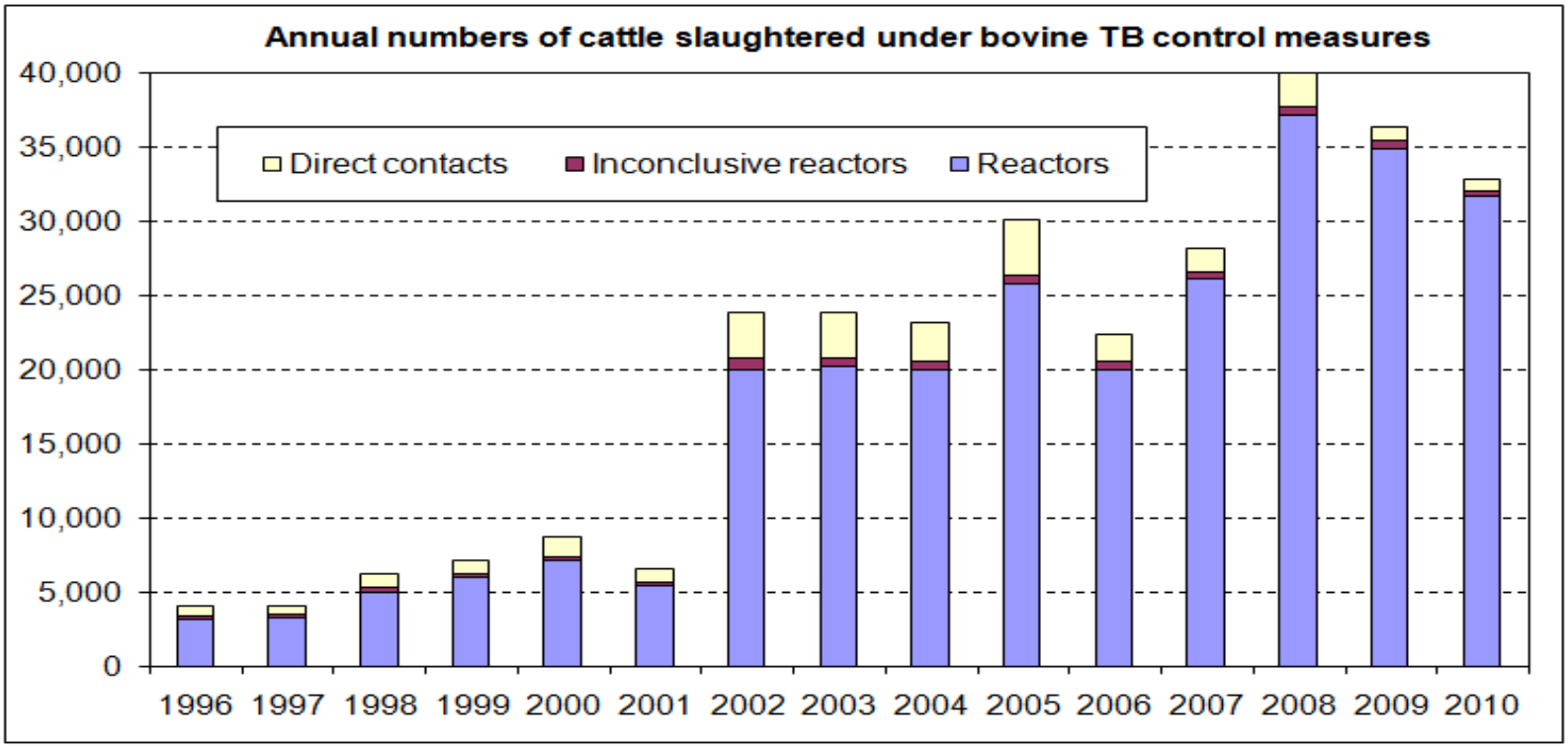


Figure 3 - Cattle slaughtered under the TB control programme in GB (1996 – 2010)

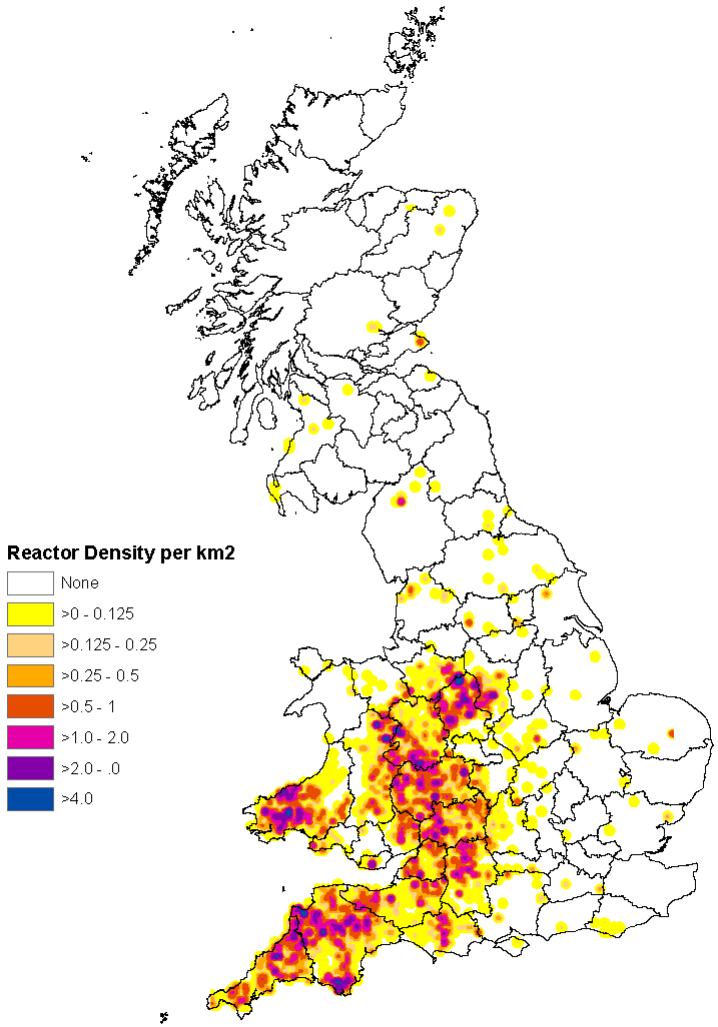


Figure 4 - Density of skin test, IFN-gamma test reactors and slaughterhouse cases per km² taken in 2010 in OTFW incidents

Recent and ongoing developments

2.14 The control, monitoring and eradication of bovine TB, as with all animal health matters, is the responsibility of the respective national administrations within the UK. In light of Scotland's OTF status, this document focuses on England and Wales. A separate plan has been submitted in respect of Northern Ireland. There continues to be close liaison between the four national administrations to ensure that policies are co-ordinated between the different countries and that opportunities to work in collaboration are realised (see section 4.2). This ensures that the fundamental measures for controlling TB remain consistent throughout the UK (see section 4 below), with tailored policies where appropriate to reflect different epidemiological risks. Scientific, epidemiological and socio-economic evidence continues to be collected and analysed to enhance the current control regime; to support decision-making on the future direction of the TB Programme; and to ensure that veterinary discretion is applied appropriately for specific risk areas. These data, information, structures and processes are integral to the programme and therefore form a key component of the GB part of the Bovine TB Eradication Plan. Close engagement with stakeholders is also fundamental in developing an effective eradication programme.

2.15 Defra and the Welsh Government have been successful in engaging stakeholder groups within the policy making process. The TB Eradication Group for England (TBEG) and the Animal Health and Welfare Strategy Steering Group in Wales have advised officials and Ministers in drawing up revised strategies for controlling, and in the longer term, eradicating TB. In England and Wales, Government and stakeholders have worked together to develop and implement a range of measures and are also continuing to develop options on a range of measures outlined below.

Progress in 2011

2.16 In England, the Coalition Government has committed, as part of a package of measures, to develop affordable options for a carefully-managed and science-led policy of badger control in areas with high and persistent levels of TB in cattle. Defra invited views on the Government's proposed approach to tackling the reservoir of infection in badgers through a public consultation from September to December 2010. The Bovine TB Eradication

Programme for England, published on 19th July 2011, sets out a comprehensive and balanced package of measures to tackle TB in cattle, badgers and other animals, including the Government's view that it is strongly minded to allow a science-led cull of badgers in the worst affected areas. For further details see the badger control section below (paragraphs 4.63 – 4.65). Cattle-based TB control measures will continue to be the foundation of the control programme across England and these measures are being further strengthened in 2012 and subsequent years where appropriate. We are also enhancing other measures to promote biosecurity, provide advice and support for farmers and tackle TB in other species. This is in addition to reaffirming out commitment to cutting-edge research, particularly to develop effective cattle and oral badger vaccines against TB as quickly as possible. For further information on the Bovine TB Eradication Programme for England please see http://www.defra.gov.uk/publications/2011/07/19/pb13601-bovine-tb-eradication-programme.

2.17 In Wales, following the Assembly elections in May 2011, a new Minister was appointed. John Griffiths, Minister for Environment and Sustainable Development, now has responsibility for bovine TB policy in Wales. The former Minister for Rural Affairs made the Badger (Control Area) (Wales) Order 2011 following a public consultation on a badger control strategy in a specific location in Wales. The Order, which came into force on 31 March 2011, enables a Government-led cull of badgers in an area of west Wales, the Intensive Action Area (IAA).

2.18 On 21 June 2011, the Minister for Environment and Sustainable Development announced that there will be a review of the scientific evidence base regarding the eradication of bovine TB in Wales. The Chief Scientific Adviser for Wales will oversee the review and has appointed an independent panel of experts. These experts will peer-review the scientific evidence base for the comprehensive programme for the eradication of bovine TB in Wales. It is expected that the report will be delivered in autumn of 2011. While the review is ongoing, there will be no culling of badgers in the Intensive Action Area, although the stringent cattle control measures which have been in place in the area since May 2010 will continue.

2.19 Defra and the Welsh Government are continuing to develop their eradication programmes, with control measures tailored to different levels of herd risk. These include considerations of: local epidemiology; proximity to high incidence areas; current disease restrictions in place; repeated

breakdowns; evidence of a wildlife reservoir; and historic incidence of bovine TB. Measures are then developed after considering appropriate scientific and epidemiological data and applied nationally and, where appropriate, regionally, supported by local veterinary knowledge.

2.20 Several enhancements to the TB eradication plan were introduced in 2010 and 2011 including in response to the recommendations of the TB Task Force of May 2009 (SANCO/10200/2006. Defra and the Welsh Government have responded to the Task Force of May 2009 (SANCO/10200/2006) report and out of the 19 explicit recommendations made, 17 have been taken fully onboard with required changes either fully implemented or, where legislative changes are required, the process being underway. The following changes have been the key measures:

- The terminology used to describe the TB status of cattle herds has changed from 'unrestricted herd', 'unconfirmed' and 'confirmed breakdown' to 'OTF herds', herds with 'OTF status suspended' (OTFS) and herds with 'OTF status withdrawn' (OTFW). This is to address the common misconception that failure to confirm *M. bovis* infection at post-mortem examination or in laboratory culture of test reactors implies that the herd was not infected. The new terminology more accurately conveys the TB status of the herd and has the added advantage of aligning us with the language used in EU legislation (as outlined in Annex A of Council Directive 64/432/EEC).

- A revised, risk-based approach to the treatment of higher-risk OTFS breakdown herds with a recent history of TB infection or adjoining an OTFW herd. Such herds must now complete two (rather than one) consecutive short interval tests with negative results before regaining OTF status. These enhanced controls better reflect the true infection status of the herd and provide greater assurance that these higher risk herds are free of disease before restrictions are lifted. It is recognised that an unknown, but substantial proportion of the total number of herds with reactors (rather than just those with "confirmed " reactors) are likely to represent true *M. bovis* infections, particularly in the endemic areas.

- Defra and the Welsh Government agree with the TB Task Force recommendation that herd testing intervals should not be set at a parish level .

2.21 Since January 2010 all herds in Wales have been subjected to routine annual TB testing and this will continue for the foreseeable future (including 2012) , whilst retaining regional policies to reflect the varying levels of disease risk.

2.22 Since 1 January 2010, England has been split into three large, well-defined TB testing areas or zones namely:

- a core annual testing area (counties of the Southwest of England and West Midlands where TB incidence is highest) so that all high risk herds are on annual testing

- a ≥10km-wide area of biennial testing (the two-year testing buffer area) and

- the remainder of the country as a background four-year testing area, except the small endemic area in East Sussex which is on annual testing and also surrounded by a two-year testing buffer, and individual herds that are recognised as being of higher risk (e.g. where milk is used in unpasteurised or with historic incidence of TB due to cattle movements).

2.23 The three testing areas have been defined on the basis of an annual national review and local assessments of historical TB herd incidence and reflect a decreasing gradient of TB epidemiological risk from south-west to north-east of the country. This also ensures that the overall percentage of herds in the annual, two-yearly and four-yearly testing zones with OTFW breakdowns at the end of the year

continues to be aligned with Annex A of Directive 64/432/EEC and that the testing effort and resources are focused where they are likely to make the greatest impact.

2.24 Defra expanded the core annual testing area and the two-yearly testing buffer zone in 2011 and this process will continue in 2012 after a review and analysis of the TB surveillance data carried out over the summer of 2011.

2.25 Overall, since the approval of our first TB eradication plan by the EU Commission in 2010, this approach has resulted in substantial year-on-year increases in the proportion of English cattle herds that are tested annually, as illustrated in the Figures 5&6 below. In 2010 the number of English herds undergoing annual TB testing exceeded those on four-yearly testing for the first time since the 1970s.

2.26 The increasing trend in the herd coverage continued in 2011 and will be maintained in 2012 with another step change in the percentage of annually tested herds in England relative to the previous year. The 2012 targets for expected herd coverage in each TB testing zone of England are shown in Table 7.1.2.1.

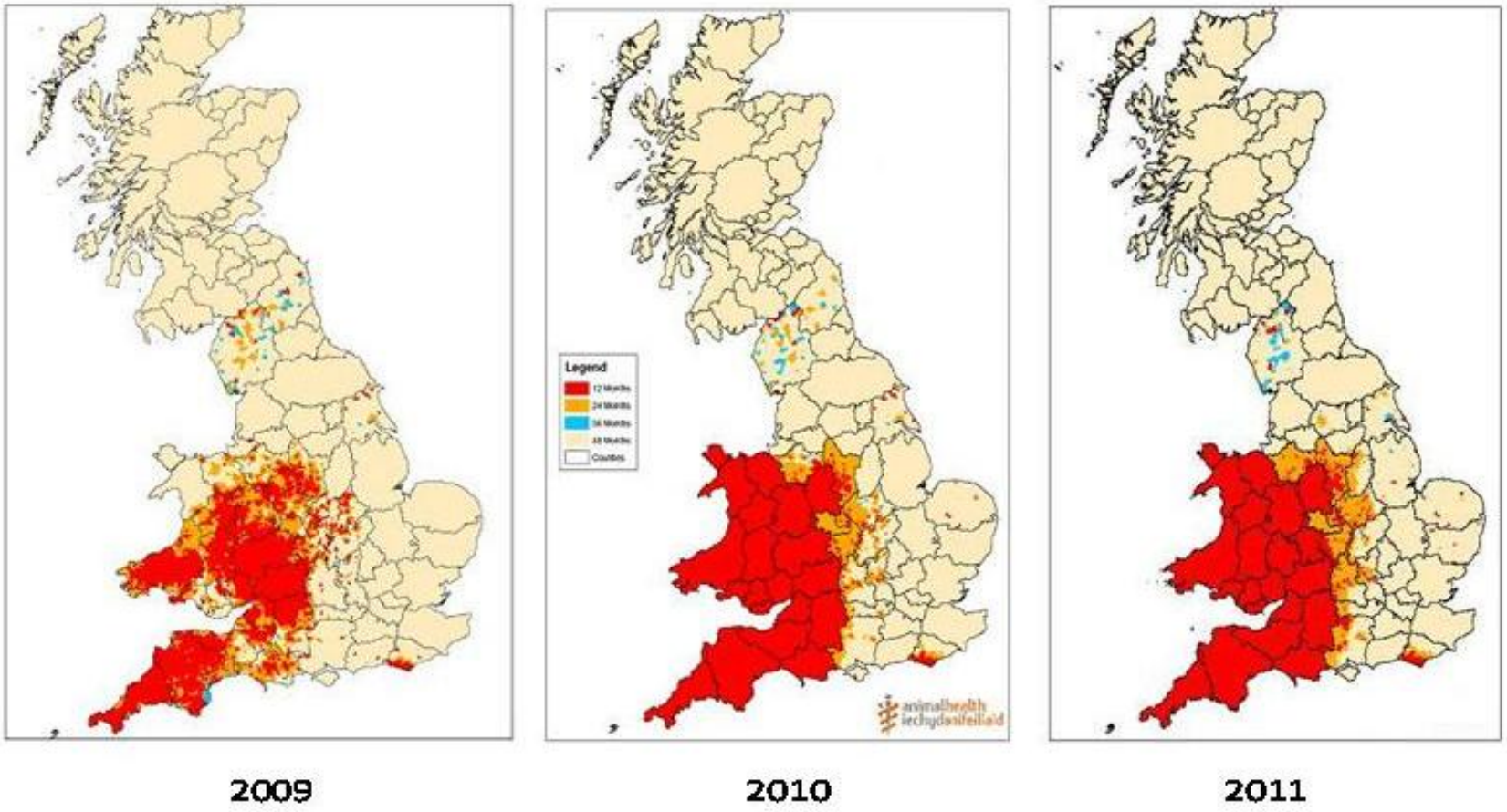


Figure 5 – Expansion and consolidation of annual routine TB testing areas and adoption of a buffer zone of two-yearly TB testing in GB between 2009 (i.e. before the first EU-approved TB eradication plan) and 2011.

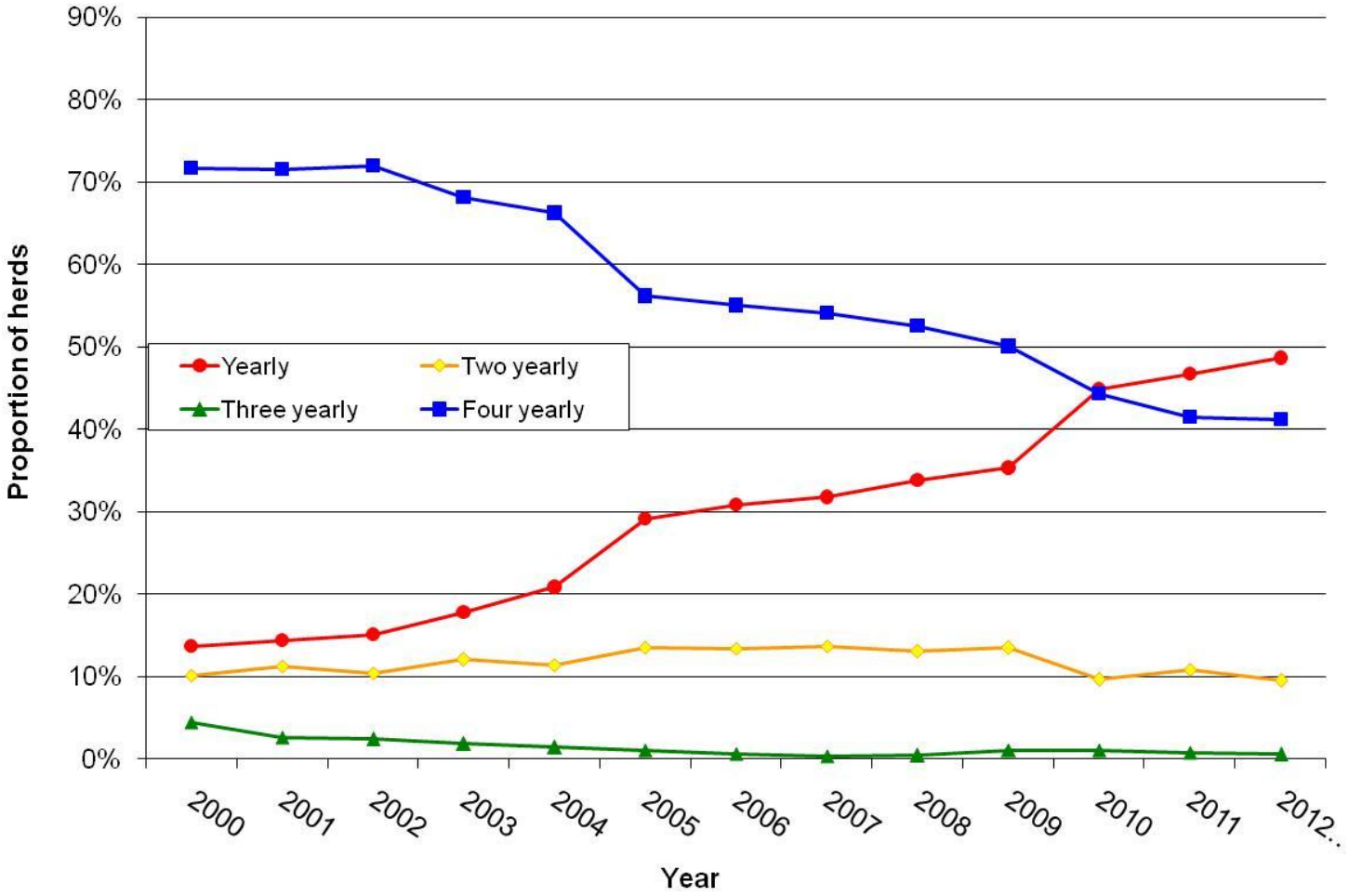


Figure 6 – Annual distribution of English herds according to their routine testing interval (2000-2012)

- **Tackling disease in wildlife in high risk areas** – Defra and the Welsh Government continue to develop approaches to tackle TB in the main wildlife reservoir i.e. badgers:
  - **Badger control (vaccination and/or culling)**
    - The Coalition Government in England remains strongly minded to introduce a carefully managed and science-led policy of badger control. Defra ran a public consultation on a proposed badger control policy from September-December 2010. The Government's proposed approach is to issue licences to enable farmers and landowners to cull or vaccinate badgers, or carry out a combination of both, subject to strict licence conditions. The farming industry would be expected to meet the cost of culling and/or vaccination. The Government's role would be to operate the licensing regime and monitor the effectiveness, humaneness and impact of the badger control measures. The Government has further consulted key stakeholders on draft Guidance to Natural England (the licensing authority), which sets out the strict licence criteria applicants for a licence would need to meet to ensure that culling is carried out safely, effectively and humanely. A decision on whether to proceed with a badger control policy is expected before the end of 2011.

    - The **badger vaccine deployment project (BVDP) in England** has been reviewed and scaled back. It was decided to continue trapping and vaccinating badgers in only one site near Stroud in Gloucestershire, so as to maintain a vaccination training capacity; and also to complete sett surveying in a second area (near Cheltenham in Gloucestershire). The project uses the injectable Badger BCG vaccine which was licensed for use in March 2010. The project will develop practical know-how for vaccinating badgers, identify and address practical issues, and help to move towards the long-term goal of an oral badger vaccine. The first commercial training course in badger vaccination was run in October 2010 and 4 more courses have taken place in 2011.

- A substantial part of the national TB research programme focuses on the development and licensing of efficacious, practical and cost-effective badger and cattle vaccines. Total investment in vaccine development since 1994 has reached more than £39 million. Research is currently focussed on achieving, licensed vaccines (with an associated DIVA test) for use in cattle and a licensed oral badger vaccine. Cattle vaccines that do not sensitise animals to the skin test (and remove the need for a DIVA test) are also a longer-term research goal.

- In Wales, consideration is currently being given to permitting the use of vaccination in badgers on a private basis, and to the introduction of a Government-led badger vaccination strategy where and when appropriate**.**

- Following consideration of the responses to a consultation on a badger control strategy for Wales alongside other information and evidence, the former Minister for Rural Affairs made the decision to make the Badger (Control Area) (Wales) Order 2011 which enables a Government led cull of badgers in the IAA. The Order came into force on 31 March 2011.

- Subsequent to Assembly elections in May 2011, the newly appointed Minister for Environment and Sustainable Development announced that there will be a review of the scientific evidence base regarding the eradication of bovine TB in Wales. The review is expected to report in the autumn of 2011. While there will be no badger culling taking place during the period of the review, the following cattle control measures have been underway in the IAA from 1 May 2010 and will continue:
    - Withdrawal of all Cattle Tracing System (CTS) linkages between holdings located within and outside the IAA. Withdrawal of all Sole Occupancy Authorities (SOAs) with re-instatement only on condition that either

all land is within the pilot area, all land is within 16km of their main holding and that they are subject to an annual review;

- Frequent movers of cattle to have a Whole Herd Test at six-monthly intervals. All breakdowns to have two clear tests before restrictions are lifted. Tracings to be carried out for all holdings where Officially TB-free status has been withdrawn;
- Veterinary practices are working with cattle keepers in the area to provide individual farm biosecurity assessments to determine key practical interventions that would help reduce the risk of their livestock contracting bovine TB.
- There is a planned test of all goat herds in the IAA to be completed by May 2012.

- An enhanced programme to provide more robust quality assurance of veterinary training and skills on TB has been developed by AHVLA to supplement existing training of its own TB testers and Official Veterinarians (OVs – private veterinary surgeons approved to carry out TB testing for the Government). A formal process for auditing of AHVLA TB testers at 24-month intervals has been drawn up and is being rolled out through AHVLA's Operations Manual. The process provides for comprehensive and auditable quality assurance of TB testing by setting out clear procedures for the audit process, standards against which testers are to be measured (for example such as use of equipment and correct completion of paperwork) and actions to be taken with regard to any identified deficiencies in standards (re-training and possible suspension from TB testing until re-training and successful audit completed). A comprehensively revised and expanded OV training programme has also been completed and details of the roll-out process are currently being finalised. AHVLA has developed an improved TB training package that will be rolled out to new OVs. This will give consistency across Great Britain as OVs will receive the same training – the same package delivered in the same way. There is an element of pre-course work to provide background understanding prior to training, comprehensive and interactive training in groups, maximum 12 in size, with a self-assessment paper, and followed by post course work.

This will increase consistency and quality of TB testing, in not only providing the same training to all but also in establishing a better understanding of TB control and management amongst OVs.

- Since January 2010, AHVLA has also been delivering enhanced veterinary advice for farmers in England experiencing their first bovine TB breakdown, through extended disease investigation visits. We are continuing to work with the veterinary profession to deliver focused veterinary advice (through private vets) to owners of herds affected by long-term breakdowns.

Timetable for further reviews and implementation of measures in England

2.27 A number of reviews of existing measures in England are either already underway or planned. The table below shows the timetable for completing these reviews and implementing measures.

2.28 We will continue to work with the Commission throughout 2012 as we develop and implement changes, and to montitor the effectiveness of these and other recently implemented measures. We will also invite the EU's Bovine Tuberculosis subgroup of the Task Force on monitoring animal disease eradication to visit in early 2012 to review and advise on progress and further steps towards eradication.

2.29 We will also be following up the recommendations of the FVO mission to England and Wales in September 2011, building where necessary on the measures already identified in the table below:

	Issue	Action	Timescale
	Testing intervals		
1.	Reviewing the approach to setting routine testing intervals	Develop options	June 2012
		Implement changes	January 2013

	Tightening of movement controls		
2.	Review existing options for licensed movements (e.g. Approved Quarantine Units).	Undertake and complete review	End January 2012
		Implement changes	March 2012
3.	Addressing risks relating to CTS linked holdings Sole Occupancy Authorities (see also 4 below)	Remove CTS links between high and low TB risk areas	January 2012
		Do not allow any new SOAs or additional land on existing SOAs	December 2011
4.	Remove certain exemptions from pre-movement testing (for housed shows, the 30-day rule and SOAs with premises in different TB risk areas)	Revised legislation enters into force	April 2012 [1]
	Compliance and enforcement		
5.	Enhanced compliance and enforcement strategy	Strategy and action plan published.	January 2012
6.	Linking the value of compensation paid to farmer behaviour	Reduced compensation paid to farmers with overdue TB tests.	April 2012 [2]

[1] This is in line with UK Government common commencement dates for new legislation of April and October
[2] This is in line with UK Government common commencement dates for new legislation of April and October

	Other		
7.	Develop a risk-based trading system	Options complete for consultation and decision.	September 2012
		Implement new system	January 2013
8.	Develop an enhanced strategy to tackle the spread of TB into clean areas	Review of options complete	February 2012
		Implement recommendations	September 2012

2.30 A number of other reviews and enhancements of existing TB control measures are also in progress including:

- We are developing a more alternative risk-based and epidemiologically sound methodology for setting routine TB testing intervals.
- In September 2010 we published the report of a review of the impacts of the pre-movement testing policy for England and Wales. The report is available on the Defra website (see http://archive.defra.gov.uk/foodfarm/farmanimal/diseases/atoz/tb/documents/pre-movement-testing-review.pdf). The review‟s main conclusion was that pre-movement testing has had a positive effect: it has reduced the level of TB spread, delivering benefits for industry and Government. The review also recognised that some of the permitted exemptions to pre-movement testing might be unhelpful from a disease control perspective.
- Defra has therefore discussed with key stakeholder groups options for removing or revising certain exemptions in England and we plan to revise the existing exemption for shows (removing the exemption for movements to shows where the animals are housed overnight) and remove the 30-day rule exemption. These changes were made in Wales in 2010. Defra intends publishing a revised TB Order for England

incorporating these changes in early 2012. Defra and the Welsh Government are also considering how best to deal with risks posed by the existing Single Occupancy Authority exemption in light of the Farming Regulation Task Force‟s recommendation that SOAs should be abolished.

- Development and implementation of a strategy to tackle disease spread at the edge of the endemic area in England during 2012.
- A scientific review of the gamma-IFN test and its use is underway with a view to extending its use within the overall control strategy.
- In Wales, increased use of IFN-gamma testing continues where epidemiological evidence suggests it is warranted in order to prevent establishment of new bTB hotspots in low incidence areas (formerly 3 and 4 yearly testing areas). The IFN-gamma test also continues to be used in OTFW breakdowns outside this area, where disease attributed to a wildlife origin is not considered already to be endemic.
- Defra and Welsh Government are developing a more comprehensive compliance and enforcement strategy with the Government and local authority enforcement agencies, including FSA, AHVLA, BCMS, as well as the cattle industry and veterinary profession.
- Following a review of the table valuation based compensation system in England, Defra will shortly be consulting stakeholders with proposals to make certain changes, including: paying reduced compensation to owners of TB affected cattle herds with overdue TB tests; introducing new categories for pedigree beef animals aged 0 to 6 months; and splitting the existing „20 months and over female dairy‟ categories into animals aged 20 months to 7 years and animals aged over 7 years.
- A review of options for a risk-based trading system is being carried out during 2011. Subject to there being a workable and cost-effective approach available, the Government will work with the industry to put forward proposals in 2012 .
- In addition to all the above, Defra and the Welsh Government continue to give high priority to their substantial ongoing **national bovine TB research programme** (see section 4.59-4.62). Epidemiological and data analysis and advice of in-house and external veterinary and scientific experts contribute to the assessment, cost-benefit analysis and decision-making on enhanced TB surveillance and control measures

3. Description of the submitted programme

3.1 Summary of the submitted programme

3.1 Historically the long-term trend has been a worsening TB situation in England and Wales resulting from a combination of both increasing overall incidence and spread of the disease to new geographical areas. Annual herd and animal incidence peaked in 2008 then fell in 2009, in both England and Wales. That declining trend has continued in Wales throughout 2010 and so far in 2011; whereas in England it stabilised towards the second half of the year and has started to increase again in 2011 (see section 2 of the Plan for more detail). The annual rate of increase in new breakdowns has slowed down since 2003 but bovine TB continues to be a problem, particularly in the South West and Midlands of England and South and Mid-Wales. Other parts of Great Britain are pretty much free of TB with only sporadic breakdowns, generally associated with movements, which are dealt with quickly.

3.2 Bovine TB is a chronic infectious disease and in the UK there is more than one maintenance reservoir with multiple routes of transmission. We have a particular problem in that there is clear evidence that the sustained high disease incidence in the south-west and west of England and parts of Wales is in part due to transmission of TB from badgers to cattle.

3.3 We are committed to eradicating TB as our long-term goal. However, due to the scale and complexity of the challenges we face in England and Wales, requiring all the reservoirs and routes of transmission to be tackled, we anticipate that this will take many years. In the short term our aim is to stop the disease spreading further and to then reverse the trend, ultimately leading to eradication. To achieve this we have extensive surveillance and control policies in place for TB in cattle which fully comply with EU legislation.

3.4 All high risk herds in England and all herds in Wales are now and will continue to be on annual routine testing for the foreseeable future. Furthermore as advised by the 2009 Task Force we have now put in place a buffer of two-year testing in England to help protect the 'clean' areas to the north and east.

3.5 England and Wales have introduced a range of other new and enhanced measures over the past few years (see para 2.20 and 2.21 for detail), including:

- Clearer terminology
- Single re-test of inconclusive reactors
- Enhanced controls of OTFS/OTFW breakdowns
- Improved slaughterhouse surveillance
- Proposed badger control measures
- Review and tightening of national requirements for Pre Movement Testing
- Enhanced quality assurance of TB testing
- Enhanced use of gamma interferon testing
- Improved use of epidemiological data for targeting surveillance and control on the basis of risk.

3.6 We have implemented 17 out of the 19 Task Force recommendations.

3.7 In 2012 (and beyond) we are already planning a range of enhanced measures including:

- Tightening of movement controls,
- Working with the industry to explore options for risk-based trading,
- Implementing an enhanced strategy to tackle the spread of TB into clean areas
- Enhanced compliance and enforcement of controls
- Review of licensed movements from restricted herds.
- Review of Pre Movement Testing exemptions.
- Linking the value of compensation paid in England to farmer behaviour (as already implemented in Wales).

3.8 Furthermore we recognise the need to take action to address the risk of TB transmission from badgers to cattle if we are to move towards eradication of the disease.

3.9 The Coalition Government in England is committed, as part of a package of measures, to develop affordable options for a carefully managed, science-led policy of badger control in areas of high and persistent levels of TB in cattle. Following a public consultation in 2010, the Secretary of State announced in July 2011 that she is strongly minded to allow culling under licence as part of a badger control policy. (Licences to trap and vaccinate badgers would also continue to be available). The Government is currently considering the responses to a further consultation of key stakeholders on the detail of how badger control operations would work, and intends to make an announcement later this year on whether it intends to proceed with the policy

3.10 The Badger (Control Area) (Wales) Order 2011 which enables a Government led cull of badgers in the Intensive Action Area (IAA) came into force on 31 March 2011. Subsequent to Assembly elections in May 2011, the newly appointed Minister for Environment and Sustainable Development announced that there will be a review of the scientific evidence base regarding the eradication of bovine TB in Wales. The review is expected to report

in the autumn of 2011. While there will be no badger culling taking place during the period of the review, the additional cattle control measures that have been underway in the IAA from 1 May 2010 will continue.

3.11 We are committed to taking action in response to the FVO mission report/recommendations and will respond fully once we have received the FVO report. We already have action in hand on a number issues which will address some of the concerns raised by the FVO including a tightening of movement controls, and a clearer instructions to farmers on requirements and recording for cleansing and disinfection.

3.12 We are continuing to invest in a substantial (~£7.5m) research programme which aims to help improve the epidemiological understanding of the TB situation in GB and support the further development of tools and measures for tackling the disease, including cattle and badger vaccines, improved diagnostics and enhanced surveillance and control measures.

3.13 In England over the next five years, initially at least we anticipate a worsening of the disease indicators as we detect more disease following the consolidation and expansion of annual and two-year testing and as recently introduced and planned enhanced measures start to have an effect. Towards the end of the period we anticipate there will be reduced risk and levels of spread to clean areas and a stabilising of the disease situation in the endemic areas (see section 7 for targets).

3.2 Description of submitted programme

3.14 The UK Government is committed to ensuring that there is a comprehensive and balanced package of measures to tackle TB, with eradication as the ultimate long-term goal. In England, the **Bovine TB Eradication Programme for England**, published on 19th July 2011, describes the approach in detail and reflects the determination to tackle TB in cattle, badgers and non-bovine farmed animals. The approach is:

- Comprehensive: tackling TB in cattle, non-bovine farmed animals, and wildlife; addressing all transmission routes to tackle TB in cattle (cattle to cattle and between badgers and cattle). Making best use of all available tools.
- Risk-based: targeting controls on disease risk, based on veterinary advice and discretion, and making the best possible use of resources.
- Staged: seeking to stop the disease spreading in the short-term, bringing it under control, and ultimately eradicating it.

Further details can be found at http://www.defra.gov.uk/news/2011/07/19/next-steps-to-tackle-bovine-tb-in-england-2/ and the Programme document at http://www.defra.gov.uk/publications/files/pb13601-bovinetb-eradication-programme-110719.pdf.

3.15 The TB Eradication Programme in Wales was launched in April 2008 and provides a framework for a comprehensive approach to TB eradication. The Programme has been developed based on the key principles of infectious disease control, namely 'keep infection out, rapid early identification of infection, containment of infection and elimination or eradication of infection'. The Programme proposes measures to deal with the disease on all fronts and to tackle all sources of TB infection in order to achieve eradication. Whilst the TB Eradication Programme continues, a review of the scientific evidence base will be undertaken to ensure that the existing measures continue to be fit for purpose, and that those measures are appropriate. The eradication of bovine TB in Wales is a long term commitment that will require the application of new technologies and scientific developments as they become available and the continued evolution of policy which the Welsh Government will continue to monitor.

3.16 Current annual GB spend on TB controls is about £100m (including Scotland), of which compensation (circa £50m) and testing (£30m) make up the largest share. From April 2011, budgets for animal health expenditure have been devolved to each administration.

3.17 The GB TB programmes sit within the broader context of the **GB Animal Health and Welfare Strategy** and the UK's objectives for **sustainable agriculture**. In achieving the eradication of TB, the measures within the GB TB programme therefore need to be consistent (and certainly

not in conflict) with the UK's economic, environmental and societal objectives of a sustainable farming sector and sustainable rural economies, communities and environment. Furthermore actions and measures applied within the GB TB programme have to be seen in the context of the need to provide value for money for public (i.e. taxpayer) expenditure.

3.18 Further complexity is introduced by marked regional variations in the incidence of TB, with much of North and East England low risk areas, with Scotland having been recognised as an OTF region, it is endemic in the West and South-West of England and large areas of Wales (see Figure 4). This leads GB to take a regional approach with different control and eradication measures required in different regions. Animal health policy is a devolved matter, so that Governments in England and Wales can implement different policies to reflect the regional circumstances. See section 4.2 and figures 5 and 6 for an outline of devolution and the current governance structure.

3.19 Following the completion of the FVO mission to the UK (England and Wales only) in September 2011 to evaluate the operation of the bovine TB eradication programme, the Governments in England and Wales are fully committed to taking action to address the issues and concerns raised. Action has already been taken and is under way to address a number of the issues identified by the FVO inspectors during the course of the audit, including the removal of exemptions from requirements to notify and pre-movement test movements from high to low TB risk areas and clarification of cleansing and disinfection requirements. Once the Governments in England and Wales received the final report and recommendations of the FVO audit we will put in place an action plan to directly address the other concerns raised including any areas of non-compliance with EU legislation and will respond to the FVO and European Commission setting out these plans in greater detail.

3.20 The new and existing controls are summarised below and described in more detail in section 4.

Surveillance

- Active surveillance by compulsory comparative skin testing of all herds at regular intervals (ranging from 1 to 4 years in England, although all herds in Wales will continue to be subject to annual testing) depending on local disease incidence and veterinary risk assessment of the epidemiology in the area.
- Additional active surveillance is provided by private pre-movement.
- Abattoir surveillance and back-tracing of the herds of origin of any carcases with suspect tuberculous lesions.
- Additional targeted skin testing of OTF herds (and animals) at risk: e.g. herds contiguous to OTFW breakdowns, re-formed herds (following depopulation for bTB control purposes), animals traced from OTFW breakdowns, follow up testing in herds recently re-gained OTF status, imported cattle etc.
- Annual national review of routine herd TB testing intervals, to adjust the boundaries of the defined area of England under annual TB testing and the surrounding biennial testing buffer zone, based on the latest epidemiological evidence and in accordance with Annex A of 64/432/EEC.
- Use of post movement testing is encouraged as best practice, in particular for herds in low TB incidence and risk areas that source cattle from higher risk areas.
- Consideration of the outcomes of the review of the scientific evidence base in Wales

Control

- Use of epidemiological and other data to inform and assess effectiveness of policies.
- Use of veterinary discretion to inform actions at a local level to reflect local disease risks.
- Immediate movement restrictions and suspension of OTF status on herds with overdue TB tests (zero tolerance) and active management of all overdue tests by AHVLA.
- Where skin test reactors (or culture-positive slaughterhouse cases) are detected, the following additional measures are adopted to eliminate the infection from the herd and contain its spread to other herds:
    - DNA tagging of reactors at the point of disclosure (from April 2011)

- Slaughter and disposal of all test reactor animals, including repeat IRs after a single skin re-test.
- Compensation paid for animals compulsory slaughtered based on table valuations in England and based on individual valuations in Wales. In Wales since May 2010, farmers receive reduced compensation levels if they do not comply with Veterinary Improvement Notices (VINs), allow their TB tests to become overdue or do not comply with the regulations.
- Cattle movement restrictions.
- Isolation, removal and slaughter, with compensation, of test reactors and contacts within 10 working days, followed by post-mortem examination of all of these animals and culture of tissue samples from a representative number of reactors (if more than one).
- Short interval testing (at > 60 day intervals (max. 90 days)) with different approaches taken (e.g. depending on whether demonstrable evidence of TB is found at post-mortem examination or through laboratory culture (OTF suspended vs OTF withdrawn), although under certain circumstances TB breakdowns considered to be higher risk will be required to clear two consecutive short interval tests and will therefore have an extended period under restriction. In Wales these higher risk TB breakdowns will also trigger tracings and contiguous TB testing as appropriate.
- Epidemiological enquiry by a veterinary officer, using a standardisedised report form into the causes of the breakdown and advice to herd owners on prevention measures.
- Forward and back-tracings from OTFW breakdown herds and check testing of herds that are contiguous to those breakdowns.
- Ancillary IFN-gamma testing of all OTFW herds identified in low incidence areas, and certain OTFW herds in the higher risk areas suffering chronic or severe breakdowns. In Wales, in order to prevent establishment of new foci of bTB in low incidence areas, the IFN-gamma test is deployed alongside the skin test where epidemiological advice suggests that it is warranted. Ancillary IFN-gamma testing is also used in other areas where there is a OTFW TB breakdown that cannot be attributed to a wildlife origin.
- Occasional stamping out of severely infected groups or entire herds (partial or total depopulation).

- Check testing of breakdown herds 6 and 18 months following the restoration of their OTF status. In England, in the case of TB breakdowns with OTFS status in the low incidence areas (i.e. those involving 3 or 4 yearly tested herds) these check tests are done 12 months following the restoration of OTF status
- Appropriate cleansing and disinfection of buildings, transport and equipment in OTFW herds.

- In autumn 2011, the TB in Cattle function of VetNet (AHVLA's old legacy IT system)will be shut down and the management of the TB surveillance and control functions will transfer to AHVLA's new IT system ('Sam'). The Sam system replaces a number of older systems used to manage bTB testing and will streamline the whole process by reducing the administrative effort for both OVs and AHVLA staff. Consistency of delivery will be improved because immediate updates on customer records will be visible by all in AHVLA. The system will be part-automated and will allow direct transmission of TB test data through interfaces with OV practices, FSA meat hygiene inspectors and the TB culture laboratory, all of which will improve the quality and assurance of disease test data throughout the test data lifecycle.

Other measures in place

- Compulsory pre-movement tuberculin testing of over 42-day old cattle moving out of 1- or 2-yearly tested herds, paid by herd owners. In Wales, compulsory pre-movement testing will continue to apply to all herds in 2012 given that all herds will be subject to an annual testing regime. In Wales, pre-movement testing policies continue to be reviewed following enhancements to the requirements in May 2010. In addition there is the requirement to pre-movement test animals from low incidence areas in England before movement to Scotland (unless they have spent all their lives in a low incidence area or are moving directly to slaughter in Scotland).
- Tailored policies to reflect area disease incidence and risks, for example the maintenance of the Intensive Action Area in South West Wales which includes enhanced measures to address cattle sources of infection and proposals to address wildlife sources of infection. Regional projects to reduce the risks of transmission between cattle and wildlife on the Gower peninsula and in North Wales will continue.

- Animal husbandry best practice guidance.
- Enhanced surveillance and controls are being introduced in the area at the edge of the TB endemic area in England where there has been ongoing spread of the geographical area impacted by TB to rapidly identify areas of concern, understand the extent of the spread, and to prevent TB becoming endemic in new areas.
- Additional measures for certain breakdowns in a previously clean area.
- The first of what is planned to be a series of TB epidemiology/risk assessment workshops for AHVLA regional veterinary leads (RVLs) and TB lead veterinary officers was held in March 2011. It is intended to hold similar workshops on at least an annual basis. RVLs are required, as from 1 April 2011, to provide annual TB epidemiological summaries for their Region that are collated into an annual national TB field epidedemiology report.
- Registration, identification and movement reporting of all cattle (and other livestock species).
- TB control measures in wildlife, including limited injectable badger vaccination (Badger Vaccination Deployment Project) in England.
- Maintenance of the Intensive Action Area in Wales and continuation of the enhanced cattle control measures.
- Monthly update of bTB statistics including number of herds registered, TB tests carried out, new herd incidents, reactors slaughtered, tests overdue and herds under movement restrictions.
- Continuation of the framework, underpinned by The Tuberculosis (Wales) Order 2011, to deal with incidence of bovine TB in non-bovine species in Wales.
- Development of further measures for dealing with the disease in species other than cattle (e.g. camelids and goats).
- Change of approach to OTFS breakdowns (higher risk TB breakdowns where TB lesions are not detected at post mortem examination and M. bovis is not detectable at bacteriological culture) so that two consecutive clear short interval tests (rather than one) are required before restrictions are lifted.
- Development of advice projects for farmers.

- Enhanced veterinary assurance procedures for TB testing.
- Involvement of stakeholders in agreeing approach to TB management and developing the eradication plan and programme. In England, the TB Eradication Group advises the Secretary of State on bTB and its eradication and includes representatives from Defra, AHVLA, the farming industry and the veterinary profession. In Wales, the three Regional Eradication Delivery Boards are taking forward projects which are tailored to the disease situation in their region. The North Wales Regional Eradication Delivery Board continues to deliver a Biosecurity Intensive Treatment Area (ITA) to encourage farmers to follow best practice advice from private vets in order to deal with existing disease quickly and to keep clean areas free of disease. The North Wales Board has recently reported on a pre-movement testing sticker pilot, where passport stickers are provided for pre-movement tested cattle as proof of testing, and consideration is now being given by the Regional TB Eradication Delivery Boards to its wider rollout. The South East Wales board is taking forward a project on Gower, which focuses on eradicating the disease in the area through implementing biosecurity measures, enhanced cattle measures and measures to deal with the wildlife reservoir of infection. There are also biosecurity best practice days taking place throughout the South Wales region. Similar projects are also taking place in England (for example the South East Keep TB Out campaign).
- The wide-ranging TB research programme, centres on four areas:
    - Development of vaccines for use in cattle and badgers.
    - Development of improved diagnostic tests for use in cattle and badgers.
    - Economic and social research related to the impacts of TB and its control.
    - Understanding the epidemiology of TB in cattle and wildlife, and the impact of control measures on disease spread.
- Our priorities for future research include:
    - Development of an oral badger vaccine.

  - Development of a cattle vaccine with an accompanying DIVA test.
  - Work towards a non-sensitising cattle vaccine.
  - Development of improved methods to detect infected badgers or setts.
  - Understanding the social and economic impacts of TB control policies.
  - Better understanding of how TB spreads from endemic areas.
  - Understanding the impact of badger ecology and behaviour on TB transmission.
  - Alternative methods of badger culling, and non-lethal methods of badger control.
- We plan to make changes to the way the monthly TB statistics are presented so that they are more informative and easier to access and interpret.

4. Measures of the submitted programme

4.1. Summary of measures under the programme

4.1 *Duration of the programme:* The programme submitted is for the year 2012. This Plan includes the latest measures which will be in place for 1st January 2012 and outlines the current thinking on how controls might be amended in the future. This plan builds on the 2010 and 2011 Plans as part of the ongoing, long-term programme to control and eradicate TB from cattle in Great Britain (England and Wales).

4.2 Measures utilised during the 2012 programme will focus on regular testing and slaughter of reactor cattle, pre-movement testing, slaughterhouse TB surveillance and supplementary use of the IFN-gamma blood testing. Measures to reduce the risk of transmission of TB between wildlife, particularly badgers, and cattle in endemic areas will be introduced. A badger control strategy is planned alongside stringent cattle control measures in the Intensive Action Area in Wales. Measures in the programme will be kept under review.

Duration of the programme: 5 years

First year: 2010	Last year: 2015
X Control	X Eradication
X Testing	X Testing
X Slaughter of animals tested positive	X Slaughter of positive animals tested
X Killing of animals tested positive	X Killing of animals tested positive
X Vaccination	X Extended slaughter or killing
· Treatment	X Disposal of products
X Disposal of products	X Vaccination
X Eradication, control or monitoring.	X Monitoring or surveillance

4.2. Organisation, supervision and role of all stakeholders in the programme

4.3 The control, monitoring and eradication of bovine TB, as with all animal health matters, will be the responsibility of national, devolved administrations of the UK. The competent authorities for determining the policy based on EC Decisions are:

Bovine TB Programme
Department for Environment, Food and Rural Affairs (Defra) – responsible for policy in England
9 Millbank
c/o 17 Smith Square
London SW1P 3JR

Chief Veterinary Officer for Wales
Welsh Government
Cathays Park
Cardiff CF10 3NQ

4.4 Defra will remain the central competent authority for TB in the UK. Scotland has achieved OTF status and is not included in this Plan. Northern Ireland also operates under devolved arrangements, but is considered epidemiologically distinct from GB and is the subject of another section of the UK Plan.

4.5 There is close liaison between the devolved structures, including at a GB level through the UK TB Liaison Group so that there is a consistency of approach maintained across GB and Northern Ireland. The **GB Strategic Framework (2005)** provides a further structure for the coordination of programmes between England, Wales and Scotland by ensuring a common approach across the countries for existing and emerging measures, whilst

allowing the introduction of different measures addressing the regional variability of TB incidence in GB. This arrangement continues to apply following the recognition of Scotland's regional OTF status.

4.6 This structure also emphasises the need to engage and work closely with stakeholders in developing eradication programmes in England and Wales. In each country groups have been established to provide advice and recommendations to Ministers on TB and its eradication. The TB Eradication Group for England, established in November 2008, is made up of representatives from Defra (including the Government's Chief Veterinary Officer), AHVLA, the farming industry, and the private veterinary profession. The Group is tasked with reviewing the strategy and recommending improved measures for the control and eradication of TB in England. The Agriculture and Food Minister Jim Paice announced the establishment of a new Animal Health and Welfare Board for England on 26 April 2011. The Board will bring together experts, including farmers, veterinarians, welfare experts and others from outside Government together with Defra's Chief Veterinary Officer, to make direct recommendations to Ministers on policy affecting the health and welfare of all kept animals such as farm animals, horses and pets. The new Board has been created based on the findings from the Independent Responsibility and Cost Sharing Advisory Group, which published the findings of their work on how animal keepers can play a greater role on tackling animal disease. It will have strong links to the TB Eradication Group for England and stakeholder organisations so that their expertise, ideas and opinions inform the Board's decisions.

4.7 The TB Eradication Programme for Wales is overseen by a Programme Board with membership including the farming industry, veterinary profession, AHVLA and Welsh Government. In addition, three **Regional Eradication Delivery Boards** have been established to ensure that delivery of policy is specific to regional and local conditions and that it is implemented effectively. These regional boards integrate existing responsibilities and include representatives from AHVLA, the farming industry, veterinary profession, auctioneers, Local Authority Trading Standards and the Welsh Government. The TB Eradication Programme **Technical Advisory Group** (TAG), brings together scientific, veterinary, social science, disease modeling, agricultural economics and public health expertise to provide expert technical advice on the design and delivery of the component projects of the Programme. The **Animal Health and Welfare Strategy (AHWS) Steering Group** is responsible for the implementation of the GB Animal

Health and Welfare Strategy in Wales and involves a wide range of industry, welfare, veterinary, and Government stakeholders and is also the TB Eradication Programme's key stakeholder group. A Badger Vaccination Technical Group has been established in order to consider options for a badger vaccination strategy in Wales. The Group includes experts in the veterinary, ecological and disease modeling fields in addition to Welsh Government officials. Proposals developed by the Technical Group will be considered by the TB Eradication Programme Board later in the year (2011).

Delivery of TB Controls in Great Britain

4.8 The competent authorities for field delivery of TB control policy in GB on behalf of Defra and the Welsh Government are set out in the table and figure 7 below. These governance arrangements will remain in place, taking account of Scotland's regional OTF status.

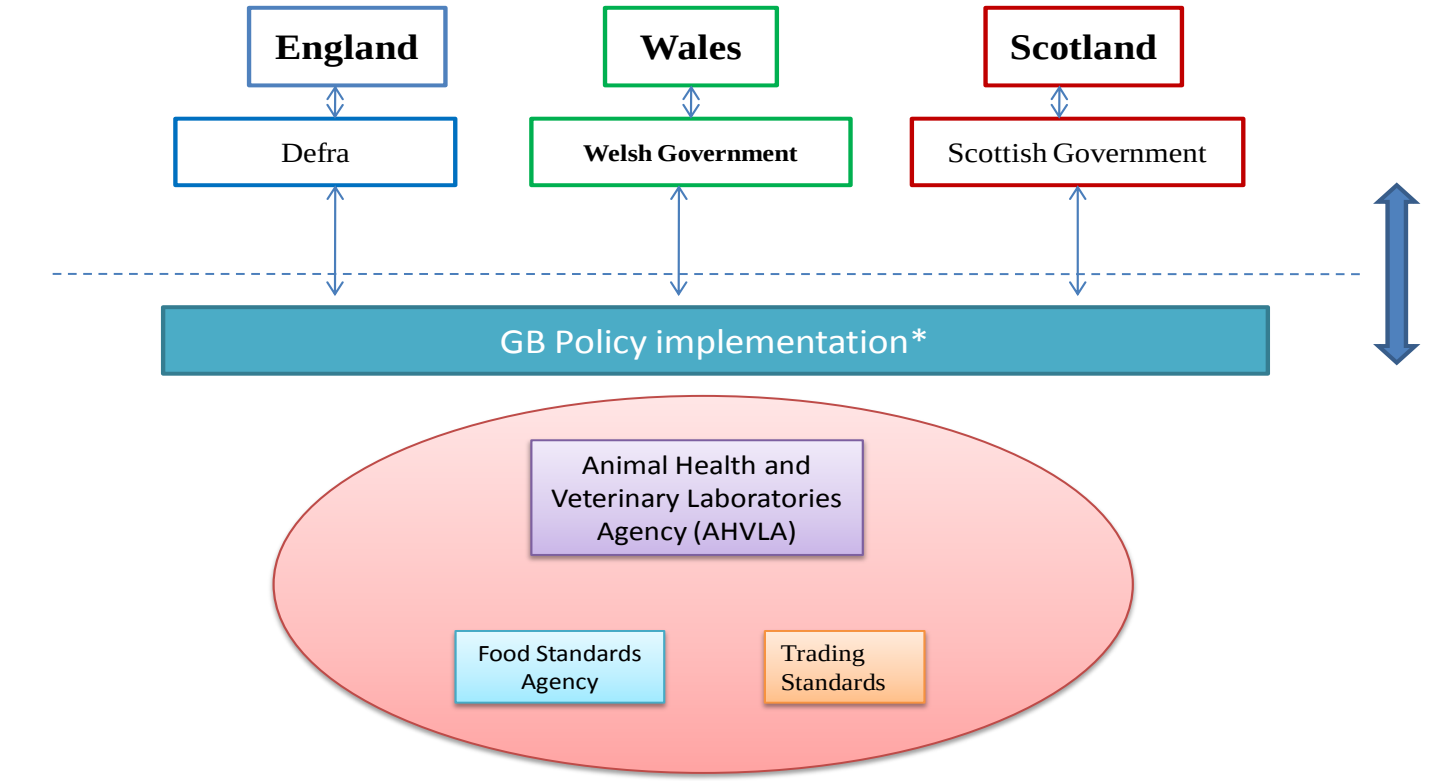
4.9 Animal Health and Veterinary Laboratories Agency (AHVLA) is the lead agency in delivering the overarching strategy laid down by central Government. AHVLA has the authority to deal with local issues in line with this strategy and leads on individual case management. All field based operations are overseen by the Directors of Animal Health for England, Scotland and Wales. If there is any doubt about what type of action is permitted, AHVLA will ask the relevant administration department for a view. In England, AHVLA consists of seven regions, aligned to the Government Office structure, led by a Regional Operations Director working closely with a Regional Veterinary Lead (RVL) and a Regional Management Team. The seven Regional Offices are supported by a further seven Animal Health Offices (Figure 8).

Organisation name	Address	Responsibilities	IT systems used

Animal Health and Veterinary Laboratories Agency (AHVLA)	Block C, Government Buildings, Whittington Road, Worcester. WR5 2LQ and New Haw, Addlestone, Surrey. KT15 3NB	Executive agency of Defra primarily responsible for ensuring that farmed animals in Great Britain are healthy, disease free and well looked after. The lead delivery body on TB issues, carrying out or managing:
		• Routine on-farm surveillance (skin testing)
		• Enhanced surveillance
		• Annual testing interval review
		• Skin test training and audit
		• Control measures
		  ○ Service of movement restrictions and movement licences
		  ○ Testing regime including gIFN
		  ○ Isolation of reactors and public health controls
		  ○ Reactor removal and compensation
		  ○ Post-mortem examination and sampling
		  ○ Case management
		• Approval of special types of units (e.g. approved finishing units and dedicated slaughter gatherings)
		• Monitoring compliance
		• Enforcement in conjunction with Local Authorities
		• Field epidemiology (including use of Disease Report form – a revised version of which will be available shortly) to inform management and control decisions.
		• Laboratory support to Defra's Animal Disease Surveillance and Control Programme, including diagnostic services.
		• Provides epidemiological and data analysis.
		• Wide-ranging involvement in TB research and development
		• Regional network of veterinary laboratories in England and
			"Sam"– customer registration, contact history and management of testing schedules for routine surveillance including electronic collation and submission of TB test results and breakdown management including Post Mortem Examination, epidemiological and financial data.
			
			Links to other IT systems – VLA database; CTS; RITA etc
			
			Sam is the new Animal Health IT system and a TB specific module will be rolled out in 2011 at which time the use of the existing systems (Vetnet and the TB Information System - TBIS) will be phased out
			
			VLA database – this is a two-way information flow with Animal Health. The database receives data from Animal Health (e.g. reactor sample submission details) and data sent back to Animal Health (e.g. culture results).
			Vetnet
			Vebus
			CTS (see below)

		Wales Links to the other agencies through agreements. Delivers policy in partnership with private veterinarians appointed to carry out certain activities on the behalf of Ministers. These Official Veterinarians comprise a testing network of approx 4400 OVs in 1100 practices within an overall surveillance network of approx 10,200 OVs in 2,200 practices.	
Rural Payments Agency (RPA) (incorporating the British Cattle Movement Service)	**British Cattle Movement Service (BCMS),** Curwen Road, Derwent Howe, Workington, Cumbria. CA14 2DD	The RPA is an Executive Agency of Defra.The competent authority for livestock movements, identification, imports, deaths and tracing for all cattle to be used for animal health (surveillance, planning and control) and subsidy control purposes.	The Cattle Tracing System is administered by BCMS and is the central database to register all cattle movements, births and deaths. The RPA also administer the RITA system, which provides Vetnet with core data on holdings to maintain up-to-date customer information. Link of IT systems to Vetnet and Vebus.
Food Standards Agency (FSA)	Food Standards Agency, Aviation House, 125 Kingsway, London. WC2B 6NH	The FSA is an independent UK organisation (Non-Ministerial Government Department) set up to protect public health and customer interests in relation to food. It is directly accountable to Parliament and publishes the advice it issues. It is led by a Board appointed to act in the public interest (not representing industry sectors). It has policy responsibility in the UK for the implementation of the EU Food Hygiene Regulations, which are enforced by the Local (food) Authorities. The functions of what was formerly the Meat Hygiene Service have been assumed into the FSA. This covers post mortem examination on carcases of cattle slaughtered for food consumption; and reactors or dangerous contacts identified by Animal Health, slaughtered in licensed red	

		meat abattoirs.	
Department of Health (incorporating the Health Protection Agency)	Department of Health, Richmond House, 79 Whitehall, London. SW1A 2NS	The Health Protection Agency (HPA) – a non-departmental public body incorporates local Health Protection Units, each of which has teams of health professionals including a Consultant in Communicable Diseases (CCDC). CCDCs are specialist doctors who risk-assess and, where necessary, instigate TB screening of human in-contacts upon receipt of a notification from Animal Health of *M. bovis* infection in a cattle herd. There are equivalent public health protection bodies in Wales.	
Local Authorities		Monitoring and enforcement of animal health aspects of TB legislation will be borne by the Trading Standards Departments of Local Authorities throughout GB. Environmental Health departments of Local Authorities enforce EU feed and food (e.g. dairy) legislation. Local Autorities liaise at a local level with Animal Health in relation to enforcement of bTB legislation and with BCMS on cattle identification issues.	Local Authorities maintain the Animal Movement Licensing System, which is the key data source for Local Authorities when monitoring compliance. Animal Health uses the system to approve animal gatherings and monitor movement standstills. The system has links to Vetnet and CTS
Environment Agency	Environment Agency National Customer Contact Centre PO Box 544 Rotherham S60 1BY	Disposal of by-products including disposal of reactors unfit to enter an abattoir and milk from reactor cows	
Food and Environment Research Agency	The Food and Environment Research Agency Sand Hutton York YO41 1LZ	Wildlife and husbandry issues (including involvement in the Badger Vaccine Deployment Project)	



* TB policy implemented by multi- agency delivery partners

Figure 7 – Delivery of animal health controls in Great Britain

4.10 In Wales, there are 2 main Animal Health Regional Offices based in Carmarthen and Caernarfon. These offices are headed by Regional Operations Directors assisted by Regional Veterinary Leads (RVL) and Regional Field and Administrative managers and supported by a team of veterinary, technical and administrative staff. There is a centralised tracings centre in Cardiff covering the whole of Great Britain (Figure 8).

4.11 A formal process for auditing of TB testers at 24-month intervals has been rolled out through AHVLA's Operations Manual. The process provides for comprehensive and auditable quality assurance of our TB testing programme, by setting out clear audit criteria and procedures and standards against which testers are to be measured (for example such as use of equipment and correct completion of paperwork), and corrective actions to be taken (e.g. re-training and possible suspension from TB testing until re-training and successful audit completed). Since January 2010, AHVLA has also been delivering enhanced veterinary advice for farmers going through their first bovine TB breakdown, through extended disease investigation visits. We are working with the veterinary profession to deliver focused veterinary advice (through private vets) to owners of long-term breakdown herds**.**

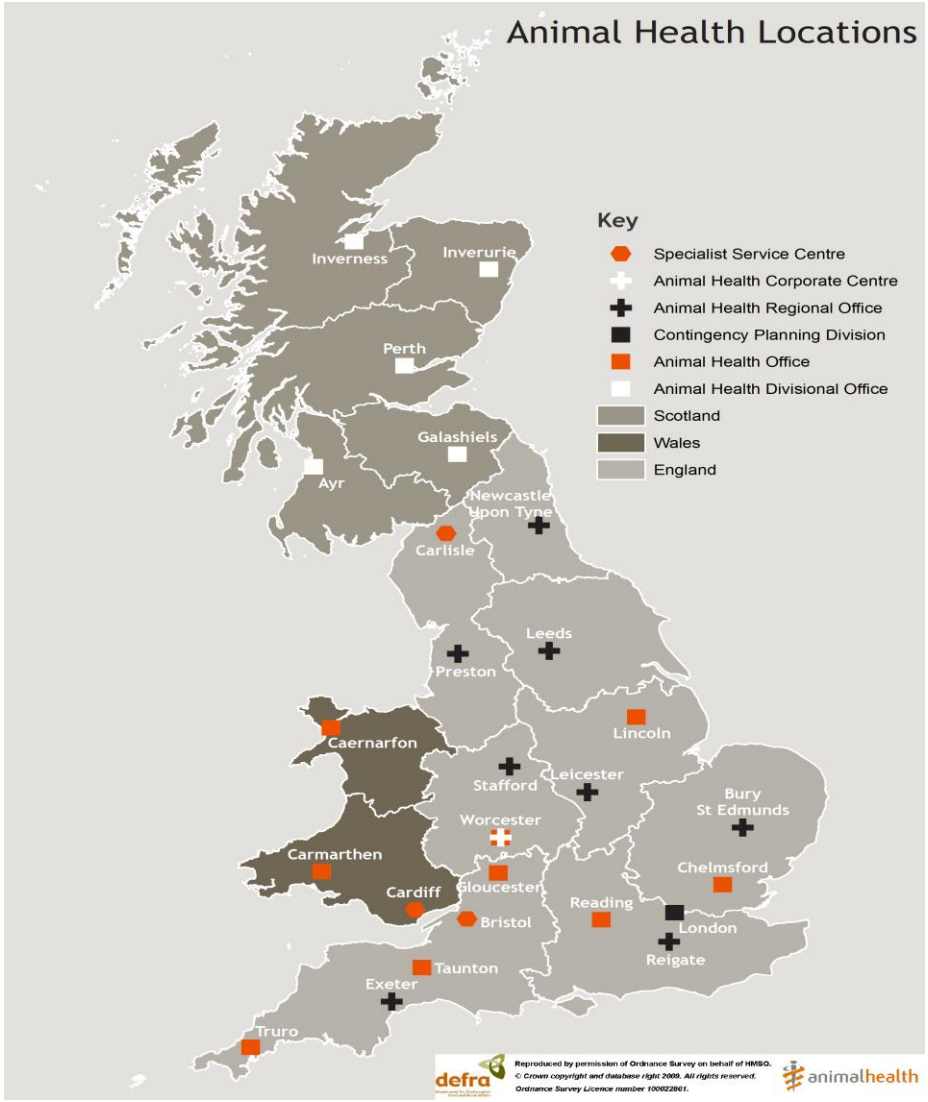


Figure 8: Current AHVLA Regions

4.3. Description and demarcation of the geographical and administrative areas in which the programme is to be implemented:

4.12 United Kingdom (Great Britain), UK(GB) – England and Wales.

4.4. Description of the measures of the programme

4.4.1 Notification of the disease

4.13 In compliance with Council Directives 64/432/EEC as amended and 78/52/EEC, bovine TB will remain a notifiable disease of cattle. Under domestic legislation; the Tuberculosis (England) Order 2007 and the Tuberculosis (Wales) Order 2010; any person who suspects the presence of TB in a bovine animal within their charge is legally required to notify their local AHVLA office immediately (whether it is clinical signs in the live animal or tuberculous lesions in carcase). AHVLA will carry out an official investigation of the herd of origin of such animals (by clinical examination and skin testing) to establish whether infection is present. The isolation of *M. bovis* from tissues of any mammal other than man is also notifiable to the AHVLA in Weybridge. Under the Tuberculosis (Deer) Order 1989, TB is also a notifiable disease in deer. Bovine TB is defined as infection of cattle with *M. bovis* (*M. caprae* has never been isolated in GB).

4.14 Slaughterhouse inspection of all cattle destined for human consumption will remain a key additional tool in our surveillance strategy for TB, supplementing the tuberculin skin testing regime in all areas (1, 2, 3 and 4 yearly testing intervals) in order to identify additional infected herds that evade detection by (or become infected between) skin tests. This is consistent with one of the recommendations in the EU Taskforce TB sub-group report (SANCO/10200/2006 final). In 2010, a total of 1,363 suspect tuberculous carcases of cattle were reported by FSA meat inspectors in GB (out of approximately 2.2 million cattle slaughtered in the country) of which 1,034 yielded *M. bovis* on tissue culture. These slaughterhouse cases of bTB accounted for approximately 22% of all confirmed new bTB breakdowns disclosed in GB during the year. Additionally, FSA meat inspectors will continue to carry out post mortem examinations on all carcases of non-reactor cattle from OTFS and OTFW herds slaughtered in abattoirs, as well as all skin and gamma-interferon test reactors and direct contacts slaughtered by AHVLA. The FSA has committed to improving TB detection rates at all slaughterhouses by increasing the accuracy of diagnosis when TB is suspected and the level of submission of suspect cases. In 2011, the FSA will

extend enhanced TB sampling and awareness training for all their staff not only in cattle slaughtering premises but more widely to include all non-cattle red meat abattoirs as a priority. They also plan to improve monitoring of sample submission and confirmation rates to inform the need for future intervention. Reactors displaying characteristic lesions of TB in typical sites will confirm infection in that animal and, if the first such case the herd, the herd's status is downgraded to OTFW. Where TB is suspected from typical lesions, identified at routine commercial slaughter of cattle from OTF herds, AHVLA will trace and issue movement restrictions on the herd of origin within two working days of receipt of notification from the FSA, and the herd's Official TB Free (OTF) status will be automatically suspended pending the receipt of culture results.

4.15 All cases with suspect tuberculous lesions detected during commercial slaughter will undergo tissue sampling for histological and bacteriological examination at AHVLA. Between 60-70% of those slaughterhouse cases will be expected to yield *M.bovis* on culture based on historical data. Following suspension of OTF status and a veterinary risk assessment, the local AHVLA office may decide to arrange for an immediate tuberculin skin test of the herd of origin or wait for the laboratory results. In situations where it is difficult to decide on visual inspection whether or not the lesions in a slaughterhouse case are tuberculous, a preliminary diagnosis based on histopathological examination at the AHVLA is available within two weeks. The skin check test if carried out will initially be interpreted at standard interpretation pending the culture results, when reinterpretation may be necessary. If this test gives negative results and the tissue cultures prove negative for *M. bovis*, the herd's OTF status will be automatically restored and the herd will be marked forward for the normal testing interval for the herd in that area. By contrast, should the laboratory culture and/or skin test results prove positive for bovine TB, the normal procedures following the disclosure of a positive test reactor will be followed and the OTF status will be withdrawn pending further herd testing at 60 day intervals.

4.4.2 Target animals and animal population

4.16 The programme will target all bovine animals (including Asiatic water buffalo and bison) kept on agricultural premises in GB over 42 days old for surveillance purposes and breakdown control purposes, although in some circumstances AHVLA may require testing of all bovines in the herd,

including calves under 42 days of age. In addition the legislation and programme will contain certain measures to address other reservoirs and sources of TB (including some non-bovine species and wildlife).

4.4.3 Identification of animals and registration of holdings

4.17 All herds and holdings will be registered in accordance with Directive 64/432/EEC as amended. All cattle holdings must be registered onto the Cattle Tracing System (CTS), operated by the British Cattle Movement Service, which has been in operation since 1998 and was introduced primarily to support BSE control measures. All registered premises will be recorded onto this system. The CTS Online allows cattle owners to:

- Register new cattle births;
- Report cattle movements;
- See the life history of their cattle;
- See a list of the cattle on their holding;
- Check the movement history of an individual animal; and
- Download information on their cattle for use in their farm management software.

4.18 In addition, the Cattle Identification Regulations 2007 for England and Wales require farms to retain registers for 10 years, and in any other case (e.g. markets) for 3 years, from the end of the calendar year in which the last entry was made.

4.19 In GB the livestock identification system provides traceability of cattle from birth to death. It underpins all disease control programmes for cattle, including bovine TB and provides general assurance for consumers of the place of origin of beef and dairy products. The domestic rules governed by Regulation (EC) 911/2004 which set out detailed requirements for the implementation of Council Regulation 1760/2000/EC. Cattle are identified by a unique Official Animal Identification number (OAI), which is provided by the competent authority, the BCMS. All cattle born after 1 January 1998 must have an approved ear tag in each ear, bearing its unique OAI, which will remain with the animal throughout its life. Animals born in, or imported into Great Britain, before 1 January 1998 may continue to be identified by a single tag. Cattle born after 1 July 2000 must be identified

by a UK 12 digit numeric ear tag. All cattle must be tagged within 20 days of birth, although in the case of dairy animals, at least one of the tags must be fitted within 36 hours of birth. In addition, all cattle born in, or imported into GB, since 1 July 1996, must have a valid cattle passport. This details the unique eartag number given to the animal, movement history between holdings (farms/markets/slaughterhouses), the breed, sex and date of birth of the animal. Passports must be applied for within 27 days of birth (within 7 days of the 20-day tagging deadline). Details of all births, movements between holdings (farms, markets and slaughterhouses) and deaths of individual cattle, must be notified to the BCMS (births within 27 days of the event, movements within 3 days of the event, death within 7 days of the event). BCMS will then input this data into the CTS.

4.20 Unannounced spot checks, based on a risk analysis of holdings, will be carried out by payment agency inspectors on 5% of holdings, to check that keepers are complying with all cattle identification and registration requirements, and an annual report on the results will be sent to the Commission by 31 August 2012 as required by Commission Regulation 499/2004/EC. If errors are found cattle movement restrictions will be imposed (such as whole herd movement restrictions). In addition, any keeper found to be deliberately breaking the cattle identification rules may be prosecuted. If the courts find that a keeper is guilty of an offence they may impose penalties, including fines of up to £5,000 and possible custodial sentences, or £10,000 and custodial sentences under fraud legislation.

4.4.4 Qualifications of animals and herds

4.21 The TB control programme in GB will be conducted under domestic legislation: the Tuberculosis (England) Order 2007 and the Tuberculosis (Wales) Order 2010. There are no recorded herds of unknown TB status in GB. Maintenance, suspension, withdrawal and re-qualification of OTF herd status will be in accordance with paragraphs 2 and 3 of Annex A of Directive 64/432/EEC. Briefly, all herds will be designated OTF unless placed under TB movement restrictions due to skin test reactors, suspect slaughterhouse cases, inconclusive reactors detected within 3 years of an OTFW TB breakdown, delayed (overdue) TB testing, presence of suspect clinical cases (very unusually), or any combination of those situations, in which case the OTF status will initially be **suspended** (OTFS). Cattle herds will have their OTF status **withdrawn** (OTFW) whenever characteristic lesions of TB are detected at post-mortem examination of test reactors, or *M. bovis* is isolated in tissue samples from any animal in the herd. Additionally, any herds in

Wales that have had their OTF status suspended due to a TB breakdown and have a history of OTF status withdrawn in the previous three years, or are contiguous to an OTFW herd, unless a Veterinary Risk Assessment determines otherwise, will themselves be designated OTFW and be subject to the same requirements as all OTFW herds. In **England**, OTFS herds with a history of OTFW breakdowns or adjoining an OTFW herd will incur one extra herd test at 60 days with negative results to regain OTF status.

4.4.5 Rules on the movement of animals

4.22 In accordance with Council Directive 78/52/EC (Article 14), whilst an investigation is being carried out, the herd will be placed under official surveillance and movements of cattle into or out of the herd will not be permitted except to a limited number of desitinations (including direct to slaughter), always under licence from AHVLA. Suspected animals within the herd will also be isolated pending slaughter (reactors and contacts) or re-testing (inconclusive reactors). Appropriate follow-up re-testing of OTFS and OTFW herds, at minimum intervals of 60 days, will take place to eliminate residual infection and restore OTF status in accordance with paragraph 3 of Annex A of Directive 64/432/EEC. Local Authorities monitor and enforce movements from non-OTF herds.

4.23 A range of options have been developed for cattle farmers with herds under TB restrictions (for example to address potential animal welfare problems resulting from over-stocked premises) without materially compromising disease controls. The options potentially available (subject to national policy, compliance with conditions for facility and AHVLA approval on the back of a satisfactory risk assessment) to TB restricted cattle farmers below will be subject to ongoing review, which will take account of reconmmendations from the 2011 FVO TB mission to GB:

- Approved Quarantine Units (AQUs), introduced in Wales and England. These allow the operator to purchase calves aged 10 months and under from multiple TB restricted premises. The animals, once collected, will be subject to standard TB testing protocols with the objective of achieving TB free status. All animals entering the unit must have a clear test result in the previous 60 days;

- Approved Finishing Units (AFUs), operate in England and Wales. Operators can purchase cattle from multiple sources (TB restricted and unrestricted premises) for fattening or finishing. Cattle in such premises can move only to slaughter and must be clear tested within previous 90 days if moving from a restricted herd;

- Pre-movement exempt finishing units (EFUs) – operators can purchase cattle (from non TB restricted herds only) that have not been pre-movement tested. The cattle can only be moved to slaughter;
- TB isolation units – allow farmers to isolate and test restricted cattle (from a single source) with the aim of regaining TB free status i.e. the isolated group can be managed/tested separately from the rest of the herd. Cattle must be clear tested in last 60 days unless under 42 days old at time of movement;
- Dedicated sales in England – clear tested cattle from TB restricted herds can be sold through auction, but only to farmers with TB restricted cattle herds i.e. tight control over who can sell and buy at these sales. All cattle must be clear tested within the 60 days before the sale. TB slaughter markets/collection centres. Movement is only to slaughter (no return policy) and therefore cattle must have clear test within 90 days of movement.

4.24 Only limited and controlled cattle movements onto and off TB restricted premises are permitted, for animal welfare reasons (e.g. address overstocking problems, shortage of feed or housing, treat cattle), and to help TB affected cattle owners maintain sustainable businesses subject to satisfactory veteriunary risk assessment, These options were developed and agreed with veterinary experts to ensure they did not materially increase disease spread risks. In all cases a documented and satisfactory Veterinary Risk Assessment – to be completed by an AHVLA VO – is required before movement license requests can be approved. Field instructions are provided to AHVLA staff to ensure VRAs are objective, consistent and robust. Field instructions require AHVLA veterinary officers to carry out a veterinary risk assessment to identify higher and lower risk herds with less scope

allowed for movements to and from higher risk herds (e.g. where there are VL reactors). The trading options detailed here are **not** available for owners of herds with overdue tests.

Pre-movement testing (PrMT between OTF herds in GB)

4.25 The derogation at Annex A, section I-1 of 64/432/EEC is being applied in England and Wales. However pre-movement TB testing is nevertheless mandatory for **domestic movements of cattle between OTF holdings** in England and Wales. This policy was introduced in 2006 as an additional control measure to protect the low incidence areas of the country, to reduce the risk of moving infected cattle between herds in the high incidence areas and as a surveillance tool to supplement the routine TB herd testing regime. For Wales, given the annual testing regime in place for all herds, all cattle over 42 days old require a pre-movement test.

4.26 The Tuberculosis (England) Order 2007 and the Tuberculosis (Wales) Order 2010 require that all cattle 42 days old and over moving out of 1- or 2-yearly tested OTF herds in England and Wales must be tuberculin skin tested with negative results in the 60 days prior to the movement, subject to certain exemptions (e.g. movements to slaughter) . In addition, animals from low incidence (3- and 4-yearly testing) areas in England must also be skin tested before movement to Scotland, unless they have spent all their lives in a low incidence area or are moving direct to slaughter. For Wales, given the annual testing regime in place for all herds, all cattle over 42 days old require a pre-movement test.

4.27 In general, pre-movement tests are privately arranged and paid for by herd owners, whereas AHVLA supplies the tuberculin used in the tests free of charge. Cattle tested with negative results as part of a routine surveillance or any other official TB test paid for by the Government in an OTF herd may also qualify as being pre-movement tested for domestic purposes, provided that their movement takes place in the ensuing 60 days. Given that the Summary of Product Characteristics for the bovine and avian tuberculins used in the UK prescribes a minimum interval of 42 days between two consecutive tuberculin skin tests, and that a 60-day interval is recommended anyway, a validity of 30 days for PrMT would not be practical for the

common domestic movements of cattle – this would imply that negative-testing cattle in 1- and 2-yearly tested herds that require PrMT could neither be moved between days 31 and 63 after their last tuberculin test. Therefore, unlike pre-export tests, the period of validity of a domestic PrMT is set at 60 days to match the shortest possible interval between two consecutive skin tests.

4.28 Between 1 March 2006 and 30 June 2011, 2401 reactors were identified in 1397 herds from dedicated pre-movement tests in England and Wales; and a further 3658 inconclusive reactors (IRs) were also identified during the same period. In 2010, 7.5.% of all new TB breakdowns in GB were identified through PrMT.

4.29 Herd owners wishing to move cattle to another farm or to a market must retain copies of their TB test charts as proof of testing and are advised to retain evidence of the relevant PrMT exemption for non-tested stock. Those farmers marketing cattle will be asked for copies of this evidence as assurance of the test status of their animals. Non-compliance with the pre-movement testing policy is an offence under the TB Order. The AHVLA Pre-Movement Testing Monitoring Unit check every month a proportion of all cattle movements on the Cattle Tracing System (CTS) against AHVLA cattle TB testing records, for possible PrMT breaches. Suspected breaches are reported to the Local Authorities for investigation and, if appropriate, prosecution. In addition, compliance with TB testing requirements, including PrMT, is one of the criteria usd for Common Agricultural Policy (CAP) cross-compliance checks, so that illegal movements of animals can result in a reduction to the owner's Single Payment.

4.30 Where a PrMT-eligible animal is identified as not being tested, the animal will be placed under movement restrictions and subject to a post-movement test paid for by the owner of the holding. If the post-movement test is not completed within 60 days, the whole herd is placed under movement restrictions (OTF status suspended) until such time as the cattle test clear.

4.31 The first stage of a review of PrMT in England and Wales was completed in 2010, this included an assessment of the impacts of the policy since its introduction in 2006. A report of the policy review was published on Defra's website in September 2010. The review's key finding was that

PrMT had been successful in reducing the spread of TB - 1,445 reactors and 2,360 inconclusive reactors were disclosed over three years up to March 2009. Additionally a further 6,514 reactors were disclosed as a result of follow-up testing in herds with pre-movement test positive animals.

4.32 In Wales the number of eligible PrMT exemptions was reduced in 2010 and continue to be reviewed in light of emerging disease risks and findings from the 2011 GB FVO mission. Defra is now using the analyses of data to inform thinking on if/how policy could be enhanced in England e.g. by abolishing some of the PrMT exemptions. As mentioned earlier (paragraph 2.21), stakeholders have been consulted about options for enhancing the PrMT policy. In 2012, Defra and Welsh Government will be tightening the movement and testing rules for Cattle Tracing System (CTS) linked holdings and Single Occupancy Authorities. In the England this will be so that all cattle moving from high to lower risk areas to be reported to BCMS and remove the current pre-movement testing exemption for cattle moved between SOA premises in different TB risk areas.

4.33 A project in Wales managed by the Regional Eradication Delivery Board will see the use of stickers on cattle passports as an additional way of demonstrating that the cattle have been pre-movement tested being rolled out across Wales in 2011, following its successful trial in North Wales.

4.4.6 Tests used and sampling schemes

4.34 As contemplated in Directive 64/432/EEC, the Single Intradermal Comparative Cervical Tuberculin (SICCT) test will continue to be the primary screening test for TB in GB. Additionally, and in line with the recommendations of the EU Task Force TB sub-group (SANCO/10200/2006 Final), the IFN-gamma blood test will be used in specific OTFW herds as an ancillary parallel test to enhance sensitivity. Further analysis is being undertaken during 2011 to assess other ways of enhancing the sensitivity of the routine TB testing regime in England and Wales.

TB surveillance - routine tuberculin skin herd testing programme

4.35 All cattle herds in Wales will continue to be subject to an annual testing regime for the foreseeable future (including 2012) and will, therefore, be required to comply with PrMT requirements when moving cattle.

4.36 As explained in section 2.20 of this plan, and in line with Annex A of 64/432/EEC, all herds in England are routinely tested every 1 to 4 years, according to a partition of England into two large areas of high and low bovine TB incidence (annual and four-yearly testing zones respectively), separated by a wide 2-yearly testing 'buffer' zone. The approach seeks to reflect the current local risk of infection for cattle herds and ensure a more coherent picture for TB surveillance, rather than setting intervals using a mechanistic method based on old administratitive units that do not correspond to the geographic distribution of cattle herds or of bovine TB across GB. Although AHVLA offices still use the old system of 'counties' and 'parishes' for the day-to-day management of the TB testing programme, this is simply because the animal health, farm registration and livestock movement systems in GB still rely on the tradictional 'CPH' (county/parish/holding) code, which is well understood and accepted by farmers and private vets alike. The new routine TB testing frequency map for 2012 is shown in **Figure 9**. This highlights the expansion of the core annual testing and two-year testing buffer areas compared with 2011 (Figure 9a) and illustrates the fact that the annual testing area does cover all parts of England and Wales at high risk of bovine TB breakdowns (Figure 9b). The new map for 2012 has been derived from a veterinary assessment of a range of recent TB epidemiological, incidence and prevalence data sources. It shows an expansion of both the core annual testing area and the two-year testing buffer areas introduced for 2012. This follows the principles that:

a. A core area across the whole of South-West England and the West Midlands remains on annual TB testing for 2012, since this represents the area of endemic high TB incidence and risk in England broadly associated with a local wildlife reservoir. The south part of Cheshire and the old counties of West Midlands and Warwickshire will also move on to annual testing and where required we will extend the two-year

testing buffer to retain the separation of annual and four-year testing areas. No pockets of less frequent routine testing remain within this core annual testing area;

b. The northern and eastern edges of this endemic core annual testing area are separated from the low TB incidence and risk regions of England by a wide, continuous ‘buffer’ of 2-yearly routine testing interval, so that the core annual and background 4 yearly testing areas do not adjoin. Within this 2-yearly testing buffer, small areas may be placed on annual testing where local TB incidence and risk is higher;
c. The small area in the South-East of England along the East Sussex coast, which has historically sustained a low but endemic TB incidence linked to badger infection, will remain on a background of annual routine testing and surrounded with a 2-yearly testing buffer.
d. The rest (North and East) of England, where the incidence and risk of TB has historically been very low and there is no evidence of a wildlife reservoir of TB, will remain on background 4-yearly routine testing. Within this background 4-yearly testing area where there have been recent incursions of TB due to movements of infected cattle, smaller areas are placed on more frequent testing. In the area immediately to the east of the buffer, where there are smaller areas placed on annual testing these are surrounded with a 2-yearly testing buffer, as a precaution, since this area is considered to be at a slightly higher TB risk than areas further to the North and East.

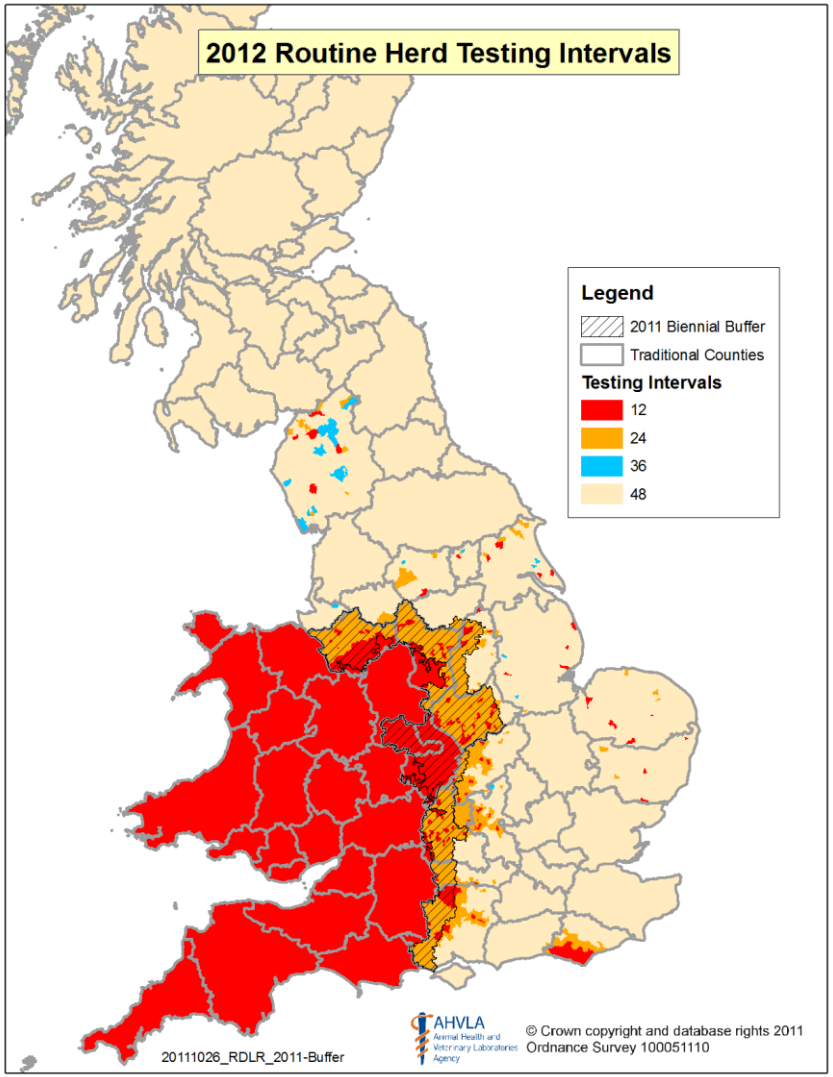


Figure 9(a) – TB routine testing intervals for 2012 showing a marked north- and eastwards expansion of the annual testing area of England

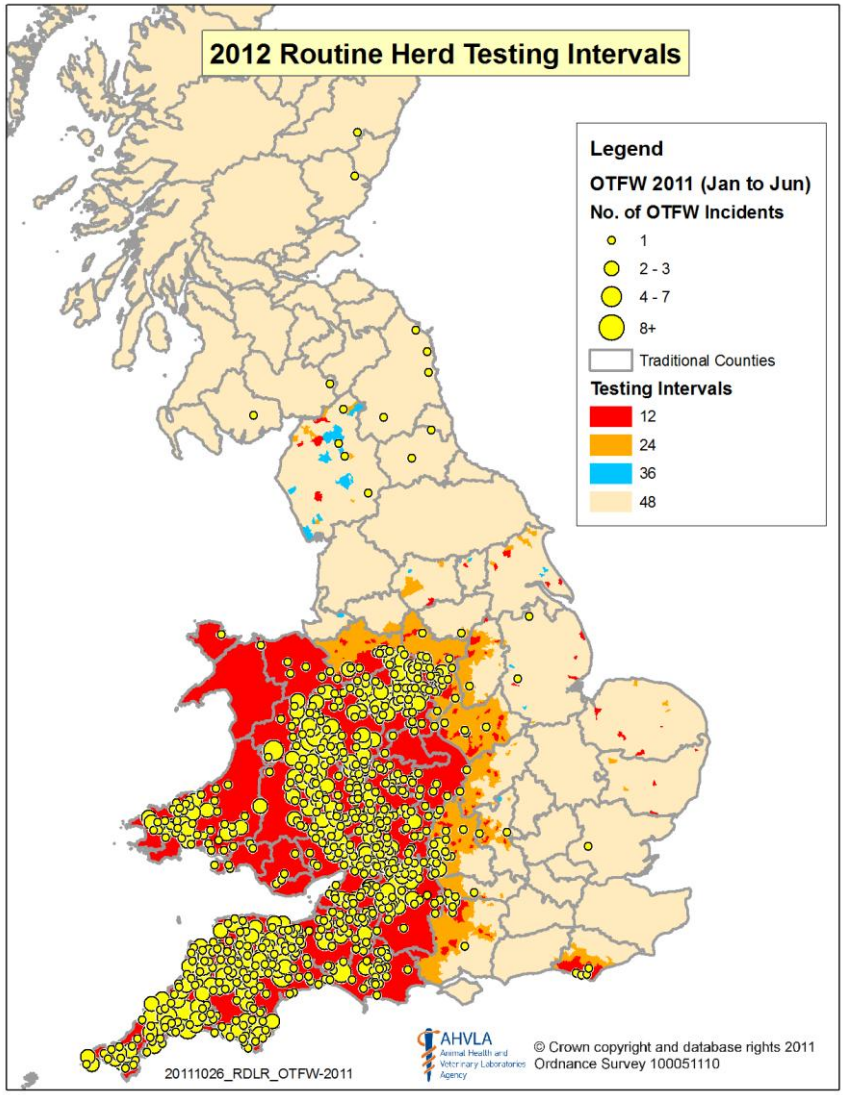


Figure 9 (b) - Geographic distribution of new TB herd breakdowns (OTF-W) identified in the first half of 2011, mapped onto the proposed herd testing interval areas for 2012

4.37 Whilst the high TB incidence areas of England will remain on annual testing for the foreseeable future, Defra and AHVLA will initiate in the early summer of 2012 another national review of the routine herd testing coverage in England. This process of reviewing the herd testing frequencies across the country will be maintained every year to ensure that herd testing coverage remains current and continues to target (and, where necessary, goes beyond) the areas of high TB incidence and risk. Furthermore, AHVLA offices will retain the discretion to **increase** testing frequency within their jurisdictions in response to changes in the local disease situation throughout the year.

4.38 To optimise the effectiveness of TB surveillance in lower incidence areas, the testing of herds in 2, 3 and 4 yearly testing areas will be organised so as to ensure that an equal proportion of routine herd tests will be carried out each year. This approach, known as 'temporal smoothing', ensures that herd tests are distributed equally across the area over the testing cycle.

4.39 In 2, 3 or 4-yearly testing areas of England, certain herd types that pose a higher animal (e.g. bull hiring herds, dealers' herds, heifer-rearers' herds and artificial insemination studs) or public health (e.g. petting farms and other premises regularly open to the public) risk of bTB will be subject to a annual TB testing regardless of the default testing frequency in their area.

4.40 In addition, all raw cows' drinking milk must originate from OTF herds. All dairy herds and on-farm bed and breakfast facilities that produce and retail unpasteurised milk to the final consumer are subject to annual testing regardless of the default testing frequency in their area.

4.41 AHVLA will also carry out investigations of any clinical suspects notified to them. However, this is likely to only occur in a small number of cases as animals with clinical signs of TB are rarely seen on farms. Details of passive TB surveillance carried out in slaughterhouses can be found in paragraphs 4.14-4.15.

4.42 The herd owner will be responsible for arranging scheduled tests under the routine surveillance programme, which will be paid for by Government. AHVLA will give herd owners advance notice of the 2 or 3 month window in which the test must be completed by their nominated Official Veterinary practice. Test notification letters will be sent centrally from AHVLA to ensure consistency of notification across England and Wales. Official Veterinarians (OVs) will also be notified by AHVLA of the due dates for their clients' herd tests. Routine and other skin tests are carried out by OVs, AHVLA veteririnarians and AHVLA veterinary paraprofessionals[3] (fully trained lay testers working under the direction of AHVLA veterinary officers[4]). To ensure compliance with the tuberculin testing programme, a **zero tolerance regime for overdue tests** was introduced in February 2005, whereby a herd's OTF status is automatically suspended as soon as a TB test becomes overdue. AHVLA actively manage these overdue tests by a combination of formal warnings and staged sanctions, potentially leading to a reduction in Single Farm Payments and referral of the herd owner to the Local Authority for prosecution. In Wales, a failure to comply with testing requirements may also affect the amount compensation received for any TB reactor animals with a reduction in compensation of up to 95%. In the event of non-cooperation by a herd owner, under The Tuberculosis (Testing and Powers of Entry) (Wales) Order 2008, for inspectors are able to enter land and to obtain a warrant for purposes of testing bovine and other animals for disease. Once tested, a herd is marked forward in the AHVLA database for its next TB test according to the normal TB testing frequency for the area and taking also into account the herd's TB history and TB risk factors. The successful efforts in Wales to reduce the number of overdue TB tests and ensure that compensation is associated with a keepers compliance with testing are ongoing. In England, a consultation will take place to make certain changes to the Cattle Compensation (England) Order 2006, including a sliding scale of sanctions that will reduce compensation to herd owners that have had a TB breakdown following significantly delayed TB tests.

[3] Pre-export tests have to be carried out by a veterinary surgeon.

[4] The UK has a comprehensive, tried- and-tested programme for training and assessment of paraprofessional TB testers. They are required to undergo a rigorous training programme under the direct supervision of a Veterinary Inspector. To complete this they are required to have undertaken a number of TB tests, and seen and identified a number of reaction types and demonstrated a minimum level of competence before appointment. They are thereafter audited, on an 'unannounced' basis, within three to six months of initial appointment followed by regular field audits by full-time Defra veterinary staff at the same interval and to the same clearly-defined standards as veterinary TB testers.

Control measures in infected herds for the restoration of OTF status

Management of TB incidents

- Where test reactors are identified or disease is suspected clinically or at slaughter, a range of measures will be taken to contain and eliminate the infection as quickly as possible. Veterinary discretion is applied where appropriate, which often means that enhanced measures are applied in comparison to the baseline (for example g-IFN test useage where appropriate).
- Herd restrictions will be imposed (OTF status suspended) and limited movements of cattle into and out of the herd can only take place under a licence issued by AHVLA.
- Reactor animals will be identified with a DNA eartag at the point of disclosure.
- Rapid removal of reactors and contacts within 10 working days of disclosure to a licensed abattoir (if the animal is potentially fit for human consumption) or animal by-products approved collection centre/disposal site.
- Compensation for reactors and contacts, with reduced compensation payable in Wales to farmers who do not comply with testing requirements and Veterinary Improvement Notices.
- Post-mortem examination of all reactors and contacts with tissue culture of selected animals. Where demonstrable evidence of *M. bovis* is found in at least one reactor (typical macroscopic lesions and/or isolation of *M. bovis*), the OTF status of the herd is automatically withdrawn.
- Where a dairy herd has its OTF status suspended, AHVLA will notify the Chief Environmental Health Officer of the local food authority to ensure compliance with food hygiene regulations, including the pasteurisation of milk and witholding from the human food chain any milk produced by individual reactor cows.
- Notification of animals with visible lesions and/or positive culture to the local medical authorities (CCDC) for risk assessment of human in-contacts on the farm.
- Skin testing of the whole herd at least 60 days after removal or effective isolation of reactors and then every 60 (up to 90) days thereafter, restoring OTF status if the results are negative at one (most OTFS herds) or two (OTFW herds and some OTFS herds) consecutive tests.

- Severe (re-)interpretation of the skin test where demonstrable evidence of *M. bovis* infection is found at PM examination/culture (OTFW herds).
- Risk-based approach to the testing of herds contiguous to cattle holdings with OTFW breakdowns.
- Ancillary in vitro g-IFN testing (Bovigam) in specified circumstances in OTFW herds.
- Epidemiological enquiry including molecular typing of *M. bovis* isolates.
- Provision of biosecurity advice to herd owners.
- Risk based approach to source and spread tracings - check testing of origin herds and testing of individual animal at herds of destination where at-risk movements have been identified.
- Cleansing and and disinfection of premises occupied by reactor animals (OTFW herds only).
- Occasional partial or complete depopulation, depending on prevalence of skin and IFN-gamma test reactors and subject to veterinary risk assessment.
- Follow-up testing of OTFW and OTFS herds 6 and 18 months after restoration of its OTF status, including pre-movement testing of any cattle moved to other herds during that period.
- Application of OTFW status to higher risk breakdown herds, including associated tracings and contiguous testing in Wales.

4.43 In accordance with paragraph 3A in Annex A of 64/432/EEC, some of the above procedures may be relaxed and will not apply where the OTF status of the herd remains only *suspended*. Previously, *withdrawal* of OTF status was only triggered by positive identification of *M. bovis* infection in the herd (i.e. detection of classical TB lesions at post-mortem and/or isolation of the organism by tissue culture). Defra and the Welsh Government have been working with AHVLA to gather and analyse epidemiological data to inform a change of approach to the management of such breakdowns. This analysis has identified a range of factors that indicate a high risk of a herd that is suffering a previously termed unconfirmed breakdown will subsequently suffer a confirmed breakdown. Two of these factors that suggest a significantly higher probability of future confirmed breakdowns on an

easily quantifiable basis are: herds with a history of TB in the herd (as defined by confirmed incidence of TB in the herd within the last three years); and the presence of TB in the local area (as defined by confirmed incidence of TB in a contiguous herd). Herds where *M. bovis* has not been confirmed by post-mortem analysis and which meet either of these criteria will be placed under restriction for longer periods and be required to pass further skin tests to reduce the risk from undisclosed and recurrent infection within the herd or spread of disease to other herds. In Wales, these higher risk breakdowns will trigger OTF withdrawn status and associated tracings and contiguous testing will be applied.

4.44 In 3 and 4 year testing areas in England a enhanced TB surveillance will be instigated for new, confirmed TB breakdowns where the cause cannot be attributed to recently purchased cattle. This will comprise additional testing of cattle herds and a survey of dead badgers and wild deer identified in an area within a 3 km radius of the OTFW holding.

Tuberculin test

4.45 Tuberculin testing of cattle will continue to be the main TB surveillance and control tool in England and Wales in 2012. Testing is by the single intradermal comparative cervical test (SICCT), using 0.1 ml of bovine (30,000 IU/ml) and avian (25,000 IU/ml) PPD tuberculins manufactured by Prionics AG in Lelystad, The Netherlands under a 3-year supply contract awarded in Dec 2009. This paired presentation of tuberculins received a Marketing Authorisation for use in UK and a number of other MSs from the Veterinary Medicines Directorate in December 2010. From an epidemiological point of view and in the context of TB control, a herd is any number of animals that are held, kept or handled in such a manner that they share the same likelihood of exposure to infectious diseases, in line with the guidance from the bovine TB sub-group of the Commission Task Force (SANCO/10200/2006 Final). Training will be provided by AHVLA with new OVs supervised by AHVLA (including one supervised test for OVs after 6 months). AHVLA carry out audits of testing procedures for quality assurance purposes.

4.46 The interpretation of the comparative reactions to the injection of tuberculin will vary depending on the TB history and status of the herd. **Standard interpretation** in line with section 2.2.5.2 of Annex B of Directive 64/432/EEC will be used for herds with no recent history of bovine TB,

or no visible evidence of infection at post mortem or following laboratory culture of recently disclosed reactors. In line with SANCO/10200/2006 Final recommendations and section 2.2.5.3.5 of Annex B of the Directive, a more **severe interpretation** will be applied to 60-day Short Interval Tests (VE-SI) carried out in OTFW (see above), to maximise the probability of detecting infected animals.

Interferon gamma diagnostic blood test

4.47 In line with Directive 64/432/EEC, in GB, the **interferon-gamma** (IFN-gamma or Bovigam™) test will be used as an ancillary parallel test, alongside the tuberculin skin test in specified circumstances. Using both tests in parallel in this way enhances the sensitivity of testing so enabling as many infected cattle in a herd as possible to be identified and removed from the herd at the earliest opportunity.

4.48 Under this policy the primary focus of the IFN-gamma test will be in OTFW breakdown herds in lower risk (2, 3 and 4 yearly testing) areas; the objective being to reduce the risk of new, intractable TB hotspot areas becoming established in hitherto low prevalence areas. The test will also be used in certain herds (e.g. with particularly severe TB problems) in areas of high TB incidence. The use of the IFN-gamma test will be mandatory in GB under the following circumstances:

- On tuberculin test-negative animals in all OTFW new TB incidents in the 2, 3 and 4 year testing zones in England and, in Wales, where an epidemiological assessment has indicated a low TB incidence in the area;
- On tuberculin test-negative animals in severe TB incidents, to inform decisions as to the need for whole or partial herd slaughter;
- On tuberculin test-negative animals in herds in high risk areas with persistent, confirmed infection that fail to resolve through repeated short-interval tuberculin tests and have taken basic herd bio-security precautions;
- In Wales, whilst implementing an annual testing regime, in order to prevent disease entering low incidence areas (predominantly in North Wales), the IFN-gamma test alongside the skin test is deployed where epidemiological advice suggests that it is warranted. Ancillary IFN-

gamma testing is also used in other areas where there is a OTFW TB breakdown and disease cannot be attributed to a wildlife origin and is not already considered to be endemic.

4.49 Between 23 October 2006 and end July 2011, 126,442 IFN-gamma blood tests were performed on cattle from 6,020 herds, identifying 12,167 positive animals. All IFN-gamma test positive animals are treated as TB test reactors and quickly removed to slaughter.

4.50 Occasionally, in exceptional circumstances, AHVLA may use a modified IFN-gamma test with more specific *M. bovis* antigens as a serial test of skin test reactors and inconclusive reactors in chronic OTFS herd breakdowns arising in 2, 3 or 4-yearly testing areas, where non-specific cross reactions to tuberculin are suspected. The serial IFN-gamma test may also be deployed for re-testing of suspected fraudulent tuberculin test reactors presenting with abnormal skin responses.

4.51 The use of the IFN-gamma test will continue to be reviewed in England and Wales.

Inconclusive reactors (IRs)

4.52 Any animals identified as IRs by the SICCT test read under standard interpretation will only be re-tested once after an interval of 60 days and will be removed as reactors if their status remains unresolved at that stage, in line with Annex B to Directive 64/432/EEC. At the discretion of the case veterinary officer, IRs in OTFW breakdown herds which do not automatically become reactors under severe interpretation may, on occasions, be designated direct contacts and slaughtered straight away before they undergo re-testing.

Imported cattle

4.53 All cattle imported into GB from non-OTF EU Member States and other parts of the UK (Northern Ireland, Isle of Man) must comply with the TB certification conditions set out in Council Directive 64/432/EEC (as amended). Cattle from Northern Ireland and the Isle of Man are subject to pre-

movement testing within 30 days of departure using the comparative skin test. Additionally, post import skin testing of cattle from Northern Ireland, the Republic of Ireland, Isle of Man, and any non-OTF EU Member States is conducted 60 to 120 days after arrival in GB, unless the animals are destined for direct slaughter. Based on a risk assessment, it may also be necessary to carry out TB checks and testing of certain consignments from third countries.

Exports of cattle to other EU Member States

4.54 Cattle of at least 42 days of age that are intended for intra-Community trade are TB tested in the 30 days prior to the date of export (as per Article 6 of Directive 64/432/EEC) using the single intradermal comparative cervical test. However, **only the bovine reaction will be considered** when interpreting the test results in such animals. In line with Council Directive 64/432/EEC (point 2.2.5.3.4 in Annex B), any animals showing a positive bovine reaction (i.e. an increase in the skin fold thickness greater than 2 mm or the presence of oedema 72 ±4 hours after tuberculin injection) will not be certified for intra-Community trade.

Control in non-bovine animals

4.55 Suspicion of disease in the carcase of non-bovine species is notifiable. Passive surveillance is and will continue to be carried out on domestic livestock other than cattle (farmed deer, sheep, pigs, camelids and goats) mainly by meat inspection in animals going through licensed abattoirs, necropsy of suspect clinical cases by AHVLA, or via the surveillance network provided by OVs and private veterinary surgeons. In the first half of 2011/12 financial year there will be additional training of Meat Hygiene Inspectors in abattoirs and awareness raising among private vets about the symptoms of TB in non-bovine animal carcasses. If bacteriological tests confirm infection with *M. bovis* in non-bovine animals, where appropriate, movement restrictions will be imposed by AHVLA and usually only lifted following two clear tuberculin tests, and also the local Health Protection Unit's CCDC is informed. *M. bovis* infection in all non-bovines is monitored by AHVLA. The application of movement restrictions to non-bovine farmed animals is currently being reviewed in England to consider whether the present arrangements are proportionate and fit for purpose.

4.56 In Wales, a public consultation was launched in August 2010 on proposed legislative arrangements for preventing and managing incidents of bovine TB in non-bovine animals, specifically camelids, goats and deer. The Tuberculosis (Wales) Order 2011, which came into force on 31 March 2011, provides AHVLA with the powers they need in order to deal effectively and quickly with TB incidents in these non-bovine animals and replicates, to a large extent, the arrangements already in place for bovine animals, including a statutory compensation scheme for animals removed as TB reactors.

4.4.7 Vaccines used and vaccination schemes

Badger vaccination

4.57 Recognising that action to address the wildlife reservoir of bovine TB is needed, a **Badger Vaccine Deployment Project** using a licensed injectable vaccine (Badger BCG) has been in progress in England since Summer 2010. The deployment project will develop practical know-how for vaccinating badgers, identify and address practical issues.

4.58 This is the first practical use of a vaccine for TB in badgers outside research trials. Vaccination is taking place in the Stroud area of Gloucestershire and was selected from those with the highest historical incidence of bovine TB in cattle. This area of some 100km² of cattle farms has been targeted, with vaccination continuing for at least five years. Over 500 badgers were vaccinated in this area in 2010. The deployment project is designed to build farmer confidence in vaccines as a key tool in an eradication programme; build a core of trained lay vaccinators with practical experience in identifying, trapping and vaccinating badgers which could be used for a broader roll out of injectable or oral vaccines. BadgerBCG is also now available for use across the country if farmers wish to use vaccination as a way of reducing transmission risks to their herds. In England, should a decision be taken to cull badgers to control TB, it is proposed to make available up to £250,000 each year for 4 years to support and encourage badger vaccination to help mitigate against the negative effects of culling brought about by perturbation, when no other physical buffers are

available. In Wales, consideration is currently being given to permitting the use of vaccination on a private bases and to the introduction of a Government led vaccination strategy where and when appropriate.

4.59 The future scope for vaccination of badgers and cattle will be an important strand of the GB approach to eradicating TB including tackling transmission within herds and between cattle and the wildlife reservoir. Recognising this the Welsh Government is working closely with Defra on research into badger and cattle vaccines and will include vaccination of badgers in bovine TB policy in Wales as and when available and appropriate. A Vaccination Technical Group has been set up to consider possible options for a badger vaccination strategy in Wales.

4.60 Research is under way to develop an oral BCG vaccine and suitable bait formulation as this may offer the most practicable application of a vaccine to a wildlife population in the longer term, if technical barriers can be overcome. The efficacy of candidate oral vaccine formulations is currently being tested in captive badger challenge studies at the Animal Health and Veterinary Laboratories Agency (AHVLA). Research into a suitable bait for the oral vaccine, and field studies in Gloucestershire evaluating strategies for deploying the bait, are being carried out by AHVLA and the Food and Environment Research Agency (FERA). However, developing an oral vaccine against TB in badgers is proving more difficult than originally hoped. This means that a usable oral badger vaccine could be many years away. We cannot say with any certainty if and when an oral badger vaccine might be available for use in the field.

Cattle vaccination developments

4.61 Research continues to be funded into **cattle TB vaccination** experiments with BCG and other vaccine candidates, which include a range of live attenuated and sub-unit vaccines. EU legislation currently prohibits the use of TB vaccines in cattle, and Directive 64/432/EEC would prevent trade in vaccinated cattle because vaccination with BCG sensitises cattle to the skin test causing them to react as if they were infected. However, vaccination offers an additional, valuable tool for controlling and eradicating bovine TB, in particular in endemic areas, so research is being carried out in GB to develop tests to differentiate infected from vaccinated animals (so-called '**DIVA' tests**) to address the legal concerns. An application for a UK

Marketing Authorisation for BCG in cattle is expected to be submitted to the UK Veterinary Medicines Directorate in October 2011. Similarly, a separate application for OIE validation and certification of the DIVA test is likely to take place in 2012.

Research projects

4.62 The Bovine TB Science Advisory Body (SAB) was set up in January 2008 to provide independent advice to Defra's Chief Scientific Advisor and Chief Veterinary Officer on TB-related research. The SAB has sub-groups focusing on specific areas of Defra's TB research portfolio: epidemiology and wildlife risks; diagnostics; and vaccines.

4.63 Defra funds a wide-ranging TB research and development programme aimed at improving our understanding of the disease and at developing novel tools and refining existing tools and how we apply them to tackle the disease. It covers many branches of science (including immunology, vaccination, diagnostics, epidemiology, ecology and genetics), as well as social science and economics. Between 1991 and 2010 Defra funded over 90 individual research projects, and invested approximately £86 million in TB research and development. In recent years, an increasing proportion of this research budget has been directed towards developing vaccines and associated diagnostic tests. Further details of ongoing research and reports of completed projects can be found at http://randd.defra.gov.uk.

4.64 Following consideration of the Government's priorities, and a range of advice we have identified the following as priorities for our evidence programme:

- Oral badger vaccine.
- Injectable cattle vaccine including non-sensitising vaccines.
- Cattle diagnostics including a DIVA test.
- Epidemiology of the disease and modelling of the effect of different interventions.
- Understanding the spread of the disease from endemic areas.

- Ecology and behaviour of badgers as relevant to TB transmission.
- Understanding changes in badger numbers in recent years and badger ecology particularly the effect of low level perturbation on disease transmission, to measure the effect of low level culling e.g. selective culling.
- Improved methods for detecting infected badgers or infected setts e.g. PCR-based tests.
- Non-lethal forms of badger control e.g. fertility control.
- Whole-sett culling methods e.g. gassing.
- Understanding the social and economic aspects of our TB policies on farmers and other stakeholders.

4.65 The budget for the TB research programme in 2011/12 will be £7.9m.

Wildlife issues

4.66 There is clear evidence that transmission from badgers to cattle is a key factor in the epidemiology of bovine TB in many parts of England, especially the West Midlands, West and South-West of England and in Wales. In high incidence areas**,** a significant proportion of herd breakdowns result from infection from badgers. Interventions to reduce transmission from badgers to cattle will therefore be an essential part of the programmes designed to eradicate TB in cattle over the longer term in England and Wales.

Badger culling

4.67 In Wales, it is recognised that both cattle and wildlife sources of infection need to be addressed in order to eradicate bovine TB and the Welsh Government continues with the stringent cattle control measures within the Intensive Action Area. Whilst there will be no badger culling taking place during the period of the review of the scientific evidence base, these cattle control measures will continue. Further details of additional measures underway in the Intensive Action Area to address bovine TB in cattle and the proposals to address bovine TB in badgers are outlined in this plan (see paragraph 2.20)

4.68 The Coalition Government in England has committed, as part of a package of measures on TB, to develop affordable options for a carefully-managed and science-led policy of badger control in areas with high and persistent levels of TB in cattle. Defra ran a public consultation from September-December 2010 on a proposed badger control policy. The Government's proposed approach is to issue licences to enable farmers and landowners to cull or vaccinate badgers, or carry out a combination of both, subject to strict licence conditions. The farming industry would be expected to meet the cost of culling and/or vaccination. The Government's role would be to operate a licensing regime and monitor the effectiveness, humaneness and impact of badger control measures. The Government is currently further consulting key stakeholders on draft Guidance to Natural England (the licensing authority), which sets out the strict criteria applicants for a licence would need to meet to ensure that culling is carried out safely, effectively and humanely. This consultation closes on 20th September 2011. A decision on whether to proceed with a badger control policy will then be made in autumn 2011. If a decision is taken to permit badger culling, the culling method would be piloted in two areas initially in the first year, to confirm the effectiveness and humaneness of controlled shooting. The evaluation of these pilots would be overseen by an independent panel of scientific experts. If the evaluation concluded that controlled shooting is indeed effective and humane, then, and only then, would the policy be rolled out more widely.

4.4.8 Information and assessment of biosecurity measures (management and infrastructure) in place in the holdings involved

4.69 The Governments in England and Wales are collaborating with industry to promote wildlife bio-security advice, through production of a training DVD which will be made widely available to farmers via government and industry websites. An explanation of what TB is and what it means to have it on farm, as well as encouragement to put husbandry and biosecurity measures in place, is included in a series of leaflets given to all farmers who have a TB breakdown. The advice is updated to take account of the latest research findings on an on-going basis.

4.4.9 Measures in case of a positive result

Officially TB Free Status and Slaughter of Animals

4.70 In line with Annex A of Council Directive 64/432/EEC as amended, OTF status will be *suspended* by service of a legal notice (known as 'TB2') on the herd owner:

- Where an animal discloses with a positive result to the tuberculin skin test (a **reactor**);
- Where a test reveals IRs only, in a herd that had OTF status withdrawn within the previous three years.
- Following the discovery of lesions suggestive of bovine TB in carcases at a slaughterhouse;
- Where a tuberculin test becomes overdue; and
- In suspected clinical cases (although this is very rare and the first action would be to carry out a tuberculin skin test).

4.71 Following the identification of reactors they are removed for slaughter as a matter of urgency (with the majorty being removed within 10 working days of disclosure). Whilst on the farm Reactors and IRs, must be immediately detained on the holding and isolated as far as practicable from other cattle in the affected and any adjoining holdings, until they are removed for slaughter or subject to further testing, respectively. The case veterinary inspector will issue the herd owner with a legal **Notice of intended slaughter** (form TB03) under Article 15 of the Tuberculosis (England) Order 2007 and Article 17 of the Tuberculosis (Wales) Order 2010, detailing the place and conditions of isolation for the animal(s) tailored to each affected farm. The isolation conditions are aimed to ensure spatial and temporal separation of the reactor(s)/IR(s) within a building or field so as to prevent nose-to-nose contact between the reactor(s)/IR(s) and the rest of the herd (e.g. reactor milking cows to be kept in a separate shed or field and milked last in the day). Non compliance, in Wales, can result in a reduction in the value of compensated animals.

4.72 Movement restrictions will be imposed and no movement will take place unless a licence is issued by an AHVLA veterinary officer. TB testing will be carried out again at 60 day intervals (up to a maximum of 90 days).

4.73 For reactors, a DNA eartag will be applied at the time of disclosure and a random or targeted number will be followed up by DNA matching samples taken following the slaughter of the reactor.

4.74 If postmortem evidence of *M. bovis* infection cannot be demonstrated (by post-mortem examination and culture) in any of the slaughtered reactors, OTF herd status will remain suspended and may be restored after a single skin test of all the animals over 42 days old in the herd with negative results. That herd test will be carried out at least 60 days after the effective isolation/removal of the reactor animal(s). Additionally, in England, any OTFS breakdown herds that happen to be contiguous to an ongoing OTFW breakdown, or have had their OTF status withdrawn in the preceding three years, will require two (not one) consecutive skin herd tests with negative results before regaining OTF status. Additionally, OTFS TB breakdown herds in Wales which have had their OTF status withdrawn in the previous 3 years and/or are contiguous to a herd with an OTF withdrawn status will be designated as OTFW status, unless Veterinary Risk Assessment determines otherwise.

4.75 In accordance with Directive 64/432/EEC, the OTF status of a herd will be *withdrawn* (OTFW) if typical lesions of TB are seen at post-mortem examination of skin test positive reactors or following the isolation of *M. bovis* from tissue cultures. Where OTF status has been withdrawn; two consecutive herd tests with negative results must be attained before movement restrictions can be lifted and OTF status restored. Additionally, and in accordance with section 2.2.5.3.5 in Annex B of Directive 64/432/EEC, a more severe interpretation of the skin test will be adopted in all OTFW TB breakdowns.

4.76 After regaining OTF status, OTFS and OTFW herds must undergo further skin check tests before going back to the normal area herd testing frequency. In former OTFW herds and the majority of OTFS herds, the first such test will take place 6 months after restoration of OTF status. If that

test is negative, a second check test takes place 12 months thereafter. In England former OTFS herds located in 3 or 4 yearly testing zones will only require one follow up test with negative results between 6 and 12 months after OTF status restoration. During this period, any cattle moved out of the herd will be eligible for PrMT.

4.77 When OTF status is suspended or withdrawn for whatever reason, a **legal notice** (known as 'TB2') putting the herd under movement restrictions will be served on the keeper and copied to the Local Authority for enforcement procedure by their Trading Standards Department in the event of a farmer's non compliance. For public health reasons, whenever OTF status is suspended in a dairy herd the relevant local food authority CEHO will also be notified by AHVLA, to ensure that all the milk sold from those herds is pasteurised and milk from individual reactors does not enter the food chain, as per Council Regulation 853/2004/EC. In addition, where OTF status is withdrawn after disclosure of visible lesions or positive culture results, AHVLA will inform the relevant local medical authorities, i.e. the CCDC in England and Wales (see table in paragraph 4.8).

4.78 In accordance with Annex A of 64/432/EEC, the Tuberculosis (England) Order 2007 and the Tuberculosis (Wales) Order 2010, in herds where OTF status has been suspended**a legal Notice (BT05)** is served on the owner **requiring cleansing and disinfection** (C&D) by a specified date following the removal of any test reactors or 'affected' animals. The AHVLA veterinary inspector will specify the conditions of C&D on the form, but this will normally include thorough disinfection (with a Defra-approved disinfectant) of all parts of the premises where reactors were housed or yarded (since isolation) and ensuring that any pastures previously used by cattle will be left vacant for a minimum period of 60 days before being re-stocked. Attached to the BT05 notice there are guidelines for the completion of C&D, including the disposal of manure on TB infected farms, and a declaration to be completed and signed by the owner and returned to the local AHVLA office at the end of the breakdown. The OTF status of the herd cannot be restored until the AHVLA office has received a copy of the BT05 notice with the herd owner's signed declaration setting out the date of completion of C&D and the type (and dilution rate) of the disinfectant used by the farmer.

4.79 As part of the general TB control requirements, the herd keeper and the haulier contracted by AHVLA to transport the reactors to slaughter will be required to comply with the legislation with regard to the transport of any cattle as set out in Transport of Animals (Cleansing and Disinfection) (England) and (Wales) (No3) (Amendment) Order 2003 (as amended). After unloading the animals, vehicles must be fully cleansed and disinfected as soon as is reasonably practicable, before they are used again and in any case within 24 hours after they are unloaded. Wheels, wheel arches and mud flaps must always be cleansed and disinfected whenever the vehicle is cleansed and disinfected. Livestock vehicles, whether empty or loaded, must also leave market premises "visibly clean" as part of the market licence conditions. Conditions of transport for reactors and contacts slaughtered by AHVLA and other (test-negative) animals in the affected holding are set out on the reverse of the **movement licences (TB24)** issued by AHVLA.

4.80 Drivers leaving a market or slaughterhouse with an empty vehicle that has not been cleansed and disinfected must complete a declaration to say where they will take their vehicle for cleansing and disinfection and give the declaration to the market or slaughterhouse operator.

4.81 In accordance with domestic legislation, AHVLA will arrange removal of all tuberculin and IFN-gamma test reactors and directcontacts to slaughter or disposal, with compensation paid to the owner. All test reactors and direct contacts will be valued before being removed. One of AHVLA's service delivery targets is to remove at least 90% of all such animals to slaughter within 10 working days of their identification, well within the 30-day period allowed under Article 15 of Directive 78/52/EEC. All animals compulsorily slaughtered for TB control purposes will undergo post-mortem examination by the FSA or AHVLA, and the pathological findings will inform subsequent action in the affected herd. Bovine TB infection will be officially confirmed (and OTF herd status withdrawn) by the disclosure of typical visible lesions of TB during post-mortem examination of test reactors and/or culture of *M. bovis* in primary isolation medium (see Section 6.2).

4.82 In every newly disclosed TB breakdown, at least one reactor will be sampled for bacteriological culture and molecular typing. In herd breakdowns with more than one reactor, the maximum number of animals sampled for culture will depend on the identification (or not) of visible lesions. In a newly detected breakdown, tissue specimens will be submitted from up to three representative reactors with visible lesions. If no reactors

show any tuberculous lesions at post-mortem, then samples will be submitted from up to ten non-visible lesion reactors with the largest bovine-avian reaction difference. Where infection with *M. bovis* has already been confirmed in an ongoing TB incident, then any new reactors or contacts disclosed at follow-up herd test will be treated as "infection confirmed" and not sampled. The local AHVLA office may sample additional reactors at their discretion if this is considered essential to support the epidemiological investigations. Please refer to Section 6.2.1 for more details.

Stamping out of heavily infected herds (depopulation)

4.83 Depopulation – whether whole-herd or partial-herd – is one of a number of interventions that may be employed in order to eradicate *Mycobacterium bovis* infection from a cattle herd. It is, by definition, crude relative to the culling of individual animals based on the results of diagnostic testing performed on animals within the herd. It follows that the utility of depopulation comes primarily when other options have proved unable to rid a herd of infection. This remains a relatively rare scenario.

4.84 Inherent in the depopulation of a herd or a sub-set of a herd is acceptance of the fact that a proportion of the animals destroyed will be healthy and not infected with *Mycobacterium bovis*. For such action to be justifiable it is important that other less extreme options have either been exhausted or considered and deemed unsuitable and that the benefits arising from the depopulation are likely to be effective. The criteria that are in place to support decisions regarding whole- or partial-herd depopulation in GB are designed to ensure that this is the case.

4.85 Applications for depopulation of infected holdings must be submitted in writing to the relevant policy team in England or Wales by the AHVLA case veterinary officer on a case by case basis and, where supported by the Regional Veterinary Lead, take into account all of the following factors:

- Prevalence of skin test reactors in the herd or infected cohort (normally exceeding 25% of the total herd size as an indicative rule of thumb);
- Prevalence and severity of post-mortem pathological findings in the slaughtered cattle;
- The presumed source of infection for the herd;

- Risks of herd re-infection from local wildlife and other cattle herds, including the historical incidence of TB herd breakdowns in the locality. In general, whole-herd or significant partial depopulation of infected herds will seldom be considered a viable option in areas of GB with an endemic high TB incidence and an established wildlife reservoir of *M. bovis* infection.;
- Risks posed to the local cattle and wildlife population;
- Herd type and husbandry and compliance with biosecurity good practice guidance; and
- Evidence of ongoing intra-herd spread of infection despite the use of repeat skin testing and ancillary parallel IFN-gamma (and sometimes TB serological) testing. In general, parallel IFN-gamma testing must take place in order to assess the prevalence of residual infection before depopulation may be considered, but this step can be waived for individual breakdowns where only a handful of cattle remain in the affected group (~10% of the initial group size or less) or the severity and extent of infection are so overwhelming that, in the opinion of the case VO, it is not worth applying the blood test.

4.86 Depopulation will involve either the compulsory slaughter of the whole herd, or all the cattle in the herd except for one or more groups of cattle where no reactors have been found and that are not epidemiologically linked to the rest of the herd. Cleansing and disinfection of depopulated holdings will be carried out to prevent reinfection before restocking is licensed. Restocking will only be allowed once the owner has taken positive measures to mitigate the risk of reinfection or a period of time elapsed to reduce risks from residual infection on the holding. Reformed herds following depopulation for TB purposes receive 3 annual check tests and are required to pre-movement test.

4.4.10 Compensation scheme for owners of slaughtered and killed animals

4.87 The Animal Health Act 1981 provides government with the discretion to slaughter any animal, which is affected or suspected of being affected with a specified disease in the interests of protecting human and animal health. This discretion will be coupled with a duty to pay compensation for

animals so slaughtered, with the level of compensation to be determined by each Administration in GB and paid out by AHVLA. Responsibility for meeting the costs of cattle compensation schemes and the removal and slaughter costs will rest with individual Administrations.

4.88 Compensation for cattle compulsorily removed and slaughtered as part of the TB control programme in GB is paid at the market value of that animal. In Wales, compensation may be reduced in cases where herd owners do not comply with TB testing requirements or implement appropriate biosecurity measures as recommended by Veterinary Improvement Notices (see paragraph 4.82 for further information).

4.89 In England, the Cattle Compensation (England) Order 2006 sets out the detailed rules for the table valuation based compensation system for bovine animals affected with bovine TB, Brucellosis and Bovine Leukosis. The Individual Ascertainment of Value (England) Order 2005 provides for individual valuation of affected bovine animals where there is inadequate supporting sales data in a particular month and/or category and when a previously determined table value cannot be used. Individual valuations are now used only in a small minority of cases (less than 1%).

4.90 In Wales, compensation for TB affected cattle will be calculated in accordance with the provisions of the TB (Wales) Order 2010, which came into force in May 2010 and includes measures to link compensation to best farming practice (including appropriate biosecurity measures). Compensation payments to farmers who do not adhere to the regulations, do not follow advice provided in Veterinary Improvement Notices or allow their TB test to become overdue will see their compensation payment reduced. Cattle compensation for tuberculosis affected animals will be at full market value, unless otherwise specified in the legislation, as determined by individual valuations undertaken by professional valuers. Valuations are and will continue to be monitored and reviewed by professional valuers (Monitor Valuers) on a monthly basis and justification sought from valuers as necessary.

4.91 Compensation will not be provided for infected cattle identified in the course of commercial slaughter, or for any TB test positive cattle that die (or have to undergo emergency slaughter) on farm before they can be removed by AHVLA to an approved abattoir or consigned to a rendering plant if

unfit to enter licensed abattoirs. Defra will be consulting interested stakeholder groups on our plans to introduce certain changes to the compensation system in Spring 2012 – namely, reducing compensation for owners of breakdown herds who significantly delayed their TB test and introducing a new table valuation category for young (male) pedigree beef animals.

4.4.11 Control on the implementation of the programme and reporting

4.92 There will be regular reporting and liaison on the delivery of different aspects of the TB programme between AHVLA and the competent authorities in England and Wales including to the UK TB Liaison Group.

4.93 Defra will produce monthly updates of TB statistics for GB which will be published online at http://archive.defra.gov.uk/foodfarm/farmanimal/diseases/atoz/tb/stats/

4.94 Regular reports will be provided to the European Commission on progress of the disease and on the Plan (including in accordance with Article 8 of Council Directive 64/432/EEC).

5. General description benefits

5.1 The programme to control and eradicate bovine TB in GB will have a number of benefits, including:

- The disease will be identified at an earlier stage, thus reducing the numbers of infected cattle and the number of breakdowns.
- The spread of the disease will be controlled and ultimately reduced and eradicated.
- The potential for considerable financial benefits for both the cattle sector and the Government in terms of:
    - Reduction of the production losses incurred by the cattle sector as a result of removal of diseased animals or disruption following the imposition of movement restrictions.
    - Reduced cost burden on the taxpayer by minimising the levels of compensation paid for animals compulsorily slaughtered and reducing future testing costs and AHVLA resources expended on TB issues.
    - In total Government has estimated that each confirmed new breakdown costs on average around £25,000 to the Government in compensation for animals compulsorily slaughtered as reactors or dangerous contacts and in costs of testing, and about £6,500 in costs to farmers from losses of animals, farm costs of testing, and disruption to business through movement restrictions - totalled net of compensation.
- Deriving from these financial benefits will be the maintenance of viable and sustainable beef and dairy sectors through improved consumer confidence in the quality and safety of produce.
- As part of the continued sustainability of the sector, the UK is developing a stronger export market following the lifting of the BSE related export ban with 140,000 cattle exported between 1st June 2006 and 31st May 2007. There is also a strong dairy export market. An improved TB disease situation would enable greater opportunities to strengthen the export trade.
- There will be a further reduction in the, already low, risk to human health posed by *M. bovis*.

- There will be improved animal welfare through the prevention of infection and the wider societal benefits gained from the cessation of interventions relating to wildlife.
- Enhanced biosecurity on premises will have benefits in other areas of disease prevention and control.
- A regional approach according to disease risks will ensure that the measures are tailored to the circumstances and disease epidemiology in particular areas.
- The adoption of such measures will also have benefits in terms of the wider responsibility and cost sharing agenda in particular with farmers taking on a greater level of responsibility for managing the TB risk to their herd.
- An improved disease situation would link into the achievement of the GB Animal Health and Welfare Staregy, the UK's strategic objectives and the EU Animal Health Strategy.

6. Data on the epidemiological evolution during the last five years[5]

6.1. Evolution of the disease

6.1.1. Data on evolution of the disease[6]

6.1.1.1. Data on herds[(a)] (one table per year and per disease/species)

Year: 2006 **Situation on date: 12/02/2009**

Disease[(b)]: Tuberculosis **Animal species: Bovine**

Region(c)	Total number of herds(d)	Total number of herds under the programme	Number of herds checked(e) [1]	Number of positive herds(f) [2]	Number of new positive herds(g) [2][3]	Number of herds depopulated [4]	% positive herds depopulated	INDICATORS		
								% herd coverage	% positive herds	% new positive herds
									Period herd prevalence	Herd incidence
1	2	3	4	5	6	7	8 = (7/5)x100	9 = (4/3)x100	10 = (5/4)x100	11 = (6/4)x100
England	60,536	60,536	36,310	4,533	2,721	5	0.110	59.98	12.48	7.49
Wales	14,749	14,749	10,637	1,273	766	1	0.079	72.12	11.97	7.20
Total	75,285	75,285	46,947	5,806	3,487	6	0.103	62.36	12.37	7.43

5 The data on the evolution of the disease are provided according the tables below where appropriate.

6 Data to provide for Bovine tuberculosis, Bovine brucellosis, IBR/IPV (AI + embryo units), Ovine and caprine brucellosis (B. melitensis), Enzootic bovine leukosis (EBL), Aujeszky's disease, Anthrax, Maedi/Visna and CAEV, IBR/IPV (other types of enterprise), Johnes disease (paratuberculosis), CBPP, African Swine fever, swine vesicular disease, endemic classical swine fever, heartwater transmitted by vector insects in the French overseas departments, babesiosis transmitted by vector insects in the French overseas departments, anaplasmosis transmitted by vector insects in the French overseas departments, Bluetongue in endemic or high risk areas.

[1] Under current reporting methods it is not possible to distinguish between the total number of herds tested and the number of individual herds that have been tested (possibly more than once) during the year, so this figure includes herds which have been tested more than once. Future reporting will be able to identify the numbers of individual herds checked in a given year.

[2] The number of positive and new positive herds includes both "OTFW" and "OTFS" breakdowns.

[3] Standard herd TB incidence calculation in GB are based on "OTFW" incidents only, but for the purposes of this table total new TB incidents ("OTFW" and "OTFS" have been used).

[4] Includes total depopulations of entire cattle holdings and any partial slaughters of identified epidemiological groups within an infected holding.

(a) Herds equal flocks, or holdings as appropriate.
(b) Disease and animal species if necessary.
(c) Region as defined in the eradication programme of the Member State.
(d) Total number of herds existing in the region including eligible herds and non-eligible herds for the programme.
(e) Check means to perform a herd level test under the programme for the respective disease with the purpose of maintaining, upgrading, etc., the health status of the herd. In this column a herd should not be counted twice even if has been checked more than once.
(f) Herds with at least one positive animal during the period independent of the number of times the herd has been checked.
(g) Herds which status in the previous period was Unknown, Not free-negative, Free, Officially Free or suspended and have at least one positive animal in this period.

The same notes appear in the following four years below

Year: 2007 **Situation on date: 12/02/2009**

Disease[b]: Tuberculosis **Animal species: Bovine**

Region(c)	Total number of herds(d)	Total number of herds under the programme	Number of herds checked(e) [1]	Number of positive herds(f) [2]	Number of new positive herds(g) [2] [3]	Number of herds depopulated [4]	% positive herds depopulated	INDICATORS		
								% herd coverage	% positive herds	% new positive herds
									Period herd prevalence	Herd incidence
1	2	3	4	5	6	7	8 = (7/5)x100	9 = (4/3)x100	10 = (5/4)x100	11 = (6/4)x100
England	58,279	58,279	36,814	4,970	3,183	0	0	63.17	13.50	8.65
Wales	13,946	13,946	10,548	1,515	930	0	0	75.63	14.36	8.82
Total	72,225	72,225	47,362	6,485	4,113	0	0	65.58	13.69	8.68

[1] Under current reporting methods it is not possible to distinguish between the total number of herds tested and the number of individual herds that have been tested (possibly more than once) during the year, so this figure includes herds which have been tested more than once. Future reporting will be able to identify the numbers of individual herds checked in a given year.

[2] The number of positive and new positive herds includes both “OTFW” and “OTFS” breakdowns.

[3] Standard herd TB incidence calculation in GB are based on “OTFW” incidents only, but for the purposes of this table total new TB incidents (“OTFW” and “OTFS” have been used).

[4] Includes total depopulations of entire cattle holdings and any partial slaughters of identified epidemiological groups within an infected holding.

Year: 2008 **Situation on date: 02/03/2009**

Disease[b]: Tuberculosis **Animal species: Bovine**

Region(c)	Total number of herds(d)	Total number of herds under the programme	Number of herds checked(e) [1]	Number of positive herds(f) [2]	Number of new positive herds(g) [2] [3]	Number of herds depopulated [4]	% positive herds depopulated	INDICATORS		
								% herd coverage	% positive herds	% new positive herds
									Period herd prevalence	Herd incidence
1	2	3	4	5	6	7	8 = (7/5)x100	9 = (4/3)x100	10 = (5/4)x100	11 = (6/4)x100
England	58,064	58,064	37,889	5,963	3,746	1	0.017	65.25	15.74	9.89
Wales	13,667	13,667	12,201	1,895	1,193	4	0.211	89.27	15.53	9.78
Total	71,731	71,731	50,090	7,858	4,939	5	0.064	69.83	15.69	9.86

[1] Under current reporting methods it is not possible to distinguish between the total number of herds tested and the number of individual herds that have been tested (possibly more than once) during the year, so this figure includes herds which have been tested more than once. Future reporting will be able to identify the numbers of individual herds checked in a given year.

[2] The number of positive and new positive herds includes both “OTFW” and “OTFS” breakdowns.

[3] Standard herd TB incidence calculation in GB are based on “OTFW” incidents only, but for the purposes of this table total new TB incidents (“OTFW” and “OTFS” have been used).

[4] Includes total depopulations of entire cattle holdings and any partial slaughters of identified epidemiological groups within an infected holding.

Addendum - Data on the evolution of the disease over the last three years

Year: 2009 **Situation on date: 31/03/2010**

Disease[(b)]: Tuberculosis **Animal species: Bovine**

Region(c)	Total number of herds(d)	Total number of herds under the programme	Number of herds checked(e) [1]	Number of positive herds(f) [2]	Number of new positive herds(g) [2] [3]	Number of herds depopulated [4]	% positive herds depopulated	INDICATORS		
								% herd coverage	% positive herds	% new positive herds
									Period herd prevalence	Herd incidence
1	2	3	4	5	6	7	8 = (7/5)x100	9 = (4/3)x100	10 = (5/4)x100	11 = (6/4)x100
England	57,495	57,495	31,589	6,189	3,350	1	0.016	59.94	19.59	10.60
TI 1 (annual testing area)	20,296	20,296	20,296	5,267	2,827	0	0	100	25.95	13.93
TI 2 (2-yearly area)	7,762	7,762	3,881	625	342	0	0	50	16.11	8.80
TI 4 (4-yearly area)	29,437	29,437	7,412	297	181	1	0.55	25.18	4.01	2.44
Wales	13,249	13,249	16,092	2,114	1,175	4	0.189	121.46	13.14	7.30
Total	70,744	70,744	47,681	8,303	4,525	5	0.060	67.40	17.41	9.49

[1] Herds tested for TB in England have only been counted once, even if they were checked more than once.

[2] The number of all positive and new positive herds, i.e. includes both “OTFW” and “OTFS” breakdowns.

[3] Total new TB incidents (“OTFW” and “OTFS” have been used.

[4] Includes total depopulations of entire cattle holdings and any partial slaughters of identified epidemiological groups within an infected holding.

(a) Herds equal flocks, or holdings as appropriate.
(b) Disease and animal species if necessary.
(c) Region as defined in the eradication programme of the Member State.
(d) Total number of herds existing in the region including eligible herds and non-eligible herds for the programme.

(e) Check means to perform a herd level test under the programme for the respective disease with the purpose of maintaining, upgrading, etc., the health status of the herd. In this column a herd should not be counted twice even if has been checked more than once.
(f) Herds with at least one positive animal during the period independent of the number of times the herd has been checked.
(g) Herds which status in the previous period was Unknown, Not free-negative, Free, Officially Free or suspended and have at least one positive animal in this period.

The same notes appear in the following two tabless below

Year: 2010 **Situation on date: 28/04/11**

Disease[(b)]: Tuberculosis **Animal species: Bovine**

Region(c)	Total number of herds(d)	Total number of herds under the programme	Number of herds checked(e) [1]	Number of positive herds(f) [2]	Number of new positive herds(g) [2] [3]	Number of herds depopulated [4]	% positive herds depopulated	INDICATORS		
								% herd coverage	% positive herds	% new positive herds
									Period herd prevalence	Herd incidence
1	2	3	4	5	6	7	8 = (7/5)x100	9 = (4/3)x100	10 = (5/4)x100	11 = (6/4)x100
England	56,867	56,867	34,950	6,123	3,622	1	0.02	61.46	17.52	10.36
TI 1 (annual testing area)	25,704	25,704	25,704	5,523	3,263	0	0	100	21.49	12.70
TI 2 (2-yearly area)	5,630	5,630	2,815	343	185	0	0	50	12.18	6.56
TI 4 (4-yearly tarea)	25,533	25,533	6,431	257	174	1	0.58	25.19	4.00	2.70
Wales	13,034	13,034	15,745	1,781	1,036	3	0.17	120.80	11.31	6.58
Total	69,901	69,901	50,695	7,904	4,658	4	0.05	72.52	15.59	9.19

Year: 2011 (provisional annual projections for England- extrapolated from data from the first six months of the year)

Situation on date: 2/11/11

Disease[(b)]: Tuberculosis **Animal species: Bovine**

Region(c)	Total number of herds(d)	Total number of herds under the programme	Number of herds expected to be checked(e) [1]	Number of positive herds(f) [2]	Number of new positive herds(g) [2] [3]	Number of herds depopulated [4]	% positive herds depopulated	INDICATORS		
								% herd coverage	% positive herds	% new positive herds
									Period herd prevalence	Herd incidence
1	2	3	4	5	6	7	8 = (7/5)x100	9 = (4/3)x100	10 = (5/4)x100	11 = (6/4)x100
England	55,756	55,756	34,947	6,300	3,750	3	0.05	62.68	18.03	10.73
TI 1 (annual testing area)	25,922	25,922	25,922	5,809	3,450	0	0.62	100	22.41	13.31
TI 2 (2-yearly area)	6,116	6,116	3,058	290	160	0	0	50	9.48	5.27
TI 4 (4-yearly area)	23,718	23,718	5,967	202	140	3	1.44	25.16	3.38	2.39

ADDENDUM - **OTFW HERD INCIDENCE BY TESTING INTERVAL AREA IN ENGLAND FOR 2010 – 12**

	Incidence of infected herds over...					
2012	**2 YEARS (%)**	**4 YEARS (%)**	**6 YEARS (%)**	**Area testing interval (actual)**	**Area testing interval (required)**	**Herd numbers**
Core Annual	7.41	6.88	6.26	12	12	26171
Biennial Buffer	0.58	0.49	0.42	24	24	4999
Annual Area East Sussex	3.10	3.93	4.65	12	12	111
Biennial Buffer East Sussex	0.00	0.00	0.07	24	48	204
England (rest of)	0.08	0.07	0.08	48	48	23715

	Incidence of infected herds over...					
2011	**2 YEARS (%)**	**4 YEARS (%)**	**6 YEARS (%)**	**Area testing interval (actual)**	**Area testing interval (required)**	**Herd numbers**
Core Annual	7.97	6.74	6.15	12	12	24336
Biennial Buffer	0.56	0.46	0.43	24	24	5950
Annual Area East Sussex	3.05	4.76	5.02	12	12	110
Biennial Buffer East Sussex	0.00	0.12	0.08	24	48	190
England (rest of)	0.09	0.09	0.09	48	48	24614

	Incidence of infected herds over...					
2010	**2 YEARS (%)**	**4 YEARS (%)**	**6 YEARS (%)**	**Area testing interval (actual)**	**Area testing interval (required)**	**Herd numbers**
Core Annual	6.88	6.16	5.71	12	12	23137
Biennial Buffer	1.33	1.18	1.00	24	12	5580
Annual Area East Sussex	4.81	5.47	5.30	12	12	110
Biennial Buffer East Sussex	0.00	0.12	0.08	24	48	190
England (rest of)	0.09	0.10	0.10	48	36	26183

- Area testing interval (required) is the interval calculated as per Directive 64/432/EEC
- Note that "rest of England" = Background four-year testing area. The incidence calculations in this table differ from those in section 6.1.1.1. This is because this table uses only OTFW herds (whereas the tables in section 6.1.1.1 include all herds under restriction, not just OTFW). The tables in section 6.1.1.1 also calculate the incidence against the numbers of herds checked per year in each testing interval area. This table calculates incidence using the total number of herds in a testing interval area, including those which do not require testing in the given year.

6.1.1.2. *Data on animals (one table per year and per disease/species)*

Year: 2006 **Situation on date:**

Disease[(a)]: Tuberculosis **Animal species: Bovine**

Region(b)	Total number of animals(c)	Number of animals(d) to be tested under the programme	Number of animals(d) tested [1]	Number of animals tested individually(e) [1]	Number of positive animals[2]	Slaughtering		INDICATORS	
						Number of animals with positive result slaughtered or culled [2]	Total number of animals slaughtered [2](f)	% coverage at animal level	% positive animals
									Animal prevalence
1	2	3	4	5	6	7	8	9=(4/3)x100	10=(6/4)x100
England	5,378,000	5,378,000	4,131,849	4,131,849	14,585	14,585	16,007	76.83	0.35
Wales	1,323,000	1,323,000	1,097,888	1,097,888	5,241	5,241	6,065	82.98	0.48
Total	6,701,000	6,701,000	5,229,737	5,229,737	19,826	19,826	22,072	78.04	0.38

[1] Under current reporting methods it is not possible to distinguish the numbers of individual animals tested during the year, so this figure includes animals which may have been tested and counted more than once. Future reporting will be able to distinguish the total number of animal tests from the number of animals individually tested, by linking results to Official Animal Identifiers.

[2] Data in columns 6, 7 and 8 include the numbers of skin test reactors, unresolved inconclusive reactors and gamma interferon blood test reactors, regardless of their post-mortem and culture findings.

(a) Disease and animal species if necessary.
(b) Region as defined in the approved eradication programme of the Member State.
(c) Total number of animals existing in the region including eligible herds and non-eligible herds for the programme.
(d) Includes animals tested individually or under bulk level scheme.
(e) Include only animals tested individually, do not include animals tested by bulk level samples (e.g.: milk bulk tank tests).
(f) Include all positive animal slaughtered and also the negative animals slaughtered under the programme.

The same notes appear for the following four years below

Year: 2007 **Situation on date:**

Disease[a]: Tuberculosis **Animal species: Bovine**

Region(b)	Total number of animals(c)	Number of animals(d) to be tested under the programme	Number of animals(d) tested [1]	Number of animals tested individually(e) [1]	Number of positive animals [2]	Slaughtering		INDICATORS	
						Number of animals with positive result slaughtered or culled [2]	Total number of animals slaughtered [2] (f)	% coverage at animal level	% positive animals
									Animal prevalence
1	2	3	4	5	6	7	8	9=(4/3)x100	10=(6/4)x100
England	5,630,015	5,630,015	4,341,180	4,341,180	18,543	18,543	19,794	77.11	0.43
Wales	1,246,334	1,246,334	1,188,606	1,188,606	7,171	7,171	7,913	95.37	0.60
Total	6,876,349	6,876,349	5,529,786	5,529,786	25,714	25,714	27,707	80.42	0.47

[1] Under current reporting methods it is not possible to distinguish the numbers of individual animals tested during the year, so this figure includes animals which may have been tested and counted more than once. Future reporting will be able to distinguish the total number of animal tests from the number of animals individually tested, by linking results to Official Animal Identifiers.

[2] Data in columns 6, 7 and 8 include the numbers of skin test reactors, unresolved inconclusive reactors and gamma interferon blood test reactors, regardless of their post-mortem and culture findings.

Year: 2008 **Situation on date: 02/03/2009**

Disease[a]: Tuberculosis **Animal species: Bovine**

Region(b)	Total number of animals(c)	Number of animals(d) to be tested under the programme	Number of animals(d) tested [1]	Number of animals tested individually(e) [1]	Number of positive animals [2]	Slaughtering		INDICATORS	
						Number of animals with positive result slaughtered or culled [2]	Total number of animals slaughtered [2] (f)	% coverage at animal level	% positive animals
									Animal prevalence
1	2	3	4	5	6	7	8	9=(4/3)x100	10=(6/4)x100
England	5,429,987	5,429,987	4,637,294	4,637,294	26,038	26,038	27,455	85.40	0.56
Wales	1,140,060	1,140,060	1,408,492	1,408,492	10,542	10,542	12,043	123.55	0.75
Total	6,570,047	6,570,047	6,045,786	6,045,786	36,580	36,580	39,498	92.02	0.61

[1] Under current reporting methods it is not possible to distinguish the numbers of individual animals tested during the year, so this figure includes animals which may have been tested and counted more than once. Future reporting will be able to distinguish the total number of animal tests from the number of animals individually tested, by linking results to Official Animal Identifiers.

[2] Data in columns 6, 7 and 8 include the numbers of skin test reactors, unresolved inconclusive reactors and gamma interferon blood test reactors, regardless of their post-mortem and culture findings.

Year: 2009 **Situation on date: 31/03/2010**

Disease[a]: Tuberculosis **Animal species: Bovine**

Region(b)	Total number of animals(c)	Number of animals(d) to be tested under the programme	Number of animals(d) tested [1]	Number of animals tested individually(e) [1]	Number of positive animals [2]	Slaughtering		INDICATORS	
						Number of animals with positive result slaughtered or culled [2]	Total number of animals slaughtered [2] (f)	% coverage at animal level	% positive animals
									Animal prevalence
1	2	3	4	5	6	7	8	9=(4/3)x100	10=(6/4)x100
England	5,465,000	4,465,000	4,645,263	4,645,263	24,500	24,500	25,557	85.00	0.53
Wales	1,117,000	1,117,000	1,409,887	1,409,887	9,951	9,951	10,433	126.22	0.71
Total	6,582,000	6,582,000	6,055,150	6,055,150	34,451	34,451	35,990	92.00	0.57

[1] Under current reporting methods it is not possible to distinguish the numbers of individual animals tested during the year, so this figure includes animals which may have been tested and counted more than once. Future reporting will be able to distinguish the total number of animal tests from the number of animals individually tested, by linking results to Official Animal Identifiers.

[2] Data in columns 6, 7 and 8 include the numbers of skin test reactors, unresolved inconclusive reactors and gamma interferon blood test reactors, regardless of their post-mortem and culture findings.

Year: 2010 **Situation on date: 28/04/2011**

Disease[a]: Tuberculosis **Animal species: Bovine**

Region(b)	Total number of animals(c)	Number of animals(d) to be tested under the programme	Number of animals(d) tested [1]	Number of animals tested individually(e) [1]	Number of positive animals [2]	Slaughtering		INDICATORS	
						Number of animals with positive result slaughtered or culled [2]	Total number of animals slaughtered [2] (f)	% coverage at animal level	% positive animals
									Animal prevalence
1	2	3	4	5	6	7	8	9=(4/3)x100	10=(6/4)x100
England	5,649,802	5,649,802	5,451,752	5,451,752	24,213	24,213	24,899	96.49	0.44
Wales	1,165,041	1,165,041	1,870,732	1,870,732	7,321	7,321	7,690	160.57	0.39
Total	6,814,843	6,814,843	7,322,484	7,322,484	31,534	31,534	32,589	107.45	0.43

[1] Under current reporting methods it is not possible to distinguish the numbers of individual animals tested during the year, so this figure includes animals which may have been tested and counted more than once. Future reporting will be able to distinguish the total number of animal tests from the number of animals individually tested, by linking results to Official Animal Identifiers.

[2] Data in columns 6, 7 and 8 include the numbers of skin test reactors, unresolved inconclusive reactors and gamma interferon blood test reactors, regardless of their post-mortem and culture findings.

6.1.2. Data on evolution of the disease[7] [NOT APPLICABLE]

Year: **Situation on date:**

Animal species: **Disease/infection[(a)]:**

Region	Type of flock[(b)]	Total number of flocks[(c)]	Total number of animals	Total number of flocks under the programme	Total number of animals under the programme	Number of flocks checked[(d)]	Number of positive[(e)] flocks[(a)]			Number of flocks depopulated[(a)]		Total number of animals slaughtered or destroyed [(a)]		Quantity of eggs destroyed (number or kg) [(a)]		Quantity of eggs channelled to egg products (number or kg) [(a)]	
							(a1)	(a2)	(a3)	(a3)	(a4)	(a4)	(a3)	(a4)	(a3)	(a4)	(a3)
Total																	

(a) For zoonotic Salmonella indicate the serotypes covered by the control programmes: (a1) for *Salmonella* Enteritidis, (a2) for *Salmonella* Typhimurium, (a3) for other serotypes-specify as appropriate, (a4) for *Salmonella* Enteritidis or *Salmonella* Typhimurium.

(b) For example, breeding flocks (rearing, adult flocks), production flocks, laying hen flocks, etc. Flocks equals herds or as appropriate

(c) Total number of flocks existing in the region including eligible flocks and non-eligible flocks for the programme

(d) Check means to perform a flock level test under the programme for the presence of salmonella. In this column a flock should not be counted twice even if it has been checked more than once.

(e) If a flock has been checked, in accordance with footnote (d), more than once, a positive sample should be taken into account only once.

[7] Data to provide for salmonellosis (zoonotic salmonella), Salmonella pullorum, Salmonella gallinarum, Mycoplasma gallisepticum, Campylobacteriosis and agents thereof.

6.2. Stratified data on surveillance and laboratory tests

6.2.1. Stratified data on surveillance and laboratory tests (one table per year and per disease/species)

Year: 2012 Disease[(a)]: Tuberculosis Animal species/category[(b)]: Bovine

Description of the used in-vitro tests:

1) The gamma-interferon blood test (Bovigam®) of cell-mediated immunity against *M. bovis* has been used since 2002 as an ancillary parallel test of British herds with confirmed TB breakdowns. This test was initially applied on a voluntary basis, both in the course of a field trial which ran from October 2002 to October 2005, and on an ad hoc basis in herds with confirmed *M. bovis* infection but not eligible for the trial. The figures given in the table below comprise gamma-interferon tests performed under both scenarios (in the three years 2003-2005 approximately 10,000 tests were carried out under the field trial and 14,000 were ad hoc tests). Since October 2006, Bovigam® is primarily being used as a mandatory parallel test alongside the comparative intradermal test to enhance the detection of infected cattle in certain prescribed situations, namely:

- New OTFW TB breakdowns in herds located in 3 or 4 yearly testing zones, after each skin test at which confirmed or standard reactors are identified;
- On skin-test negative cattle in severe OTFW TB breakdowns, to inform decisions on partial or complete depopulation;

It is also an optional parallel test for chronically infected herds that have failed to resolve by repeated short-interval skin testing and fulfil a minimum standard of biosecurity to reduce the risk of re-infection from cattle or wildlife.

2) The VetTB STAT-PAK/Chembio Rapid Test (a non-ELISA serological test that detects antibodies to a set of recombinant *M. bovis* antigens) is occasionally deployed in herds with chronic TB breakdowns where it is suspected that anergy to the skin and IFN-gamma blood test is resulting in cattle-to-cattle spread of infection. A very small number of animals are subjected to serological TB testing each year (figures not shown below).

Description of the microbiological tests used:

All cattle compulsorily slaughtered for TB control purposes in GB (i.e. skin and IFN-gamma test reactors, direct contacts and any voluntarily slaughtered inconclusive reactors) undergo post-mortem examination in one of a group of 22 designated abattoirs across the country. To identify the strain of *Mycobacterium bovis* responsible for a TB outbreak, mycobacterial culture of selected lymph nodes and lesioned tissue from reactor animals is then carried out at one of three 'Category 3' laboratories of the Animal Health and Veterinary Laboratories Agency (Starcross, Sutton Bonington and Weybridge), depending on the location of the abattoir in which the animals were slaughtered and sampled.

Tissue specimens from at least one animal per TB breakdown are submitted for laboratory culture, up to a maximum of three visibly lesioned (VL) reactors and, in the absence of VL reactors, a maximum of 10 non-visibly lesioned (NVL) animals. In the case of VL animals the submission consists of a small piece of a lesion from the affected organ/node. In the case of NVL reactors, the submission is made up of a pool of the lymph nodes that are more likely to harbour the bacterium. All suspect tuberculous lesions detected in the course of routine meat inspection of cattle carcases (the so-called "slaughterhouse cases") are also submitted for culture. Each tissue submission is allocated a reference number and all histology and culture results recorded in the AHVLA laboratory information management system (LIMS), which has an interface with the IT system used by the field offices (iSAM).

Bovine TB infection is confirmed in test reactors by the disclosure of typical visible lesions during post-mortem examination and/or culture of *M. bovis* in primary isolation medium. In other words, a TB breakdown is regarded as OTFW when at least one of the reactor animals in that breakdown is VL and/or yields *M. bovis* on culture. If the breakdown was triggered by a slaughterhouse case, TB is only confirmed (and OTF status withdrawn) upon isolation of *M. bovis* by bacteriological culture from the pathological material.

For cultural examination, approximately 20g of tissue are homogenised in a stomacher with a solution of 10% oxalic acid to decontaminate the sample. The mixture is then centrifuged and the resulting deposit washed and re-suspended in sterile phosphate buffer saline. The suspension is sown (in most cases in duplicate or triplicate) onto a different range of solid media slopes and into liquid media (MGIT, Becton & Dickinson) tubes, depending on the type of specimen (i.e. cattle/non bovine, VL/NVL/atypical lesion, reactor/slaughterhouse case, etc.). The slopes are incubated at 37°C for up to 12 weeks: although colony growth can be observed in many VL submissions only after 3 weeks, results from samples with low bacterial counts ("paucibacillary" specimens) can often take up to 12 weeks.

Additionally, all submissions from slaughterhouse cases, plus any 'atypical' lesions (i.e. those found in unusual organs and/or with irregular appearance) and culture-negative VL reactors are processed separately from NVL samples and undergo full histopathological examination. Approximately $1cm^3$ of lesioned tissue in fixative solution is needed for that purpose. Where there is insufficient tissue for histology (or there is sufficient tissue with histopathology suggestive of TB, but a negative culture), the original inocula are sown again and the original cultures re-incubated for a further six weeks. A direct impression smear of lesioned material may also be made if required. When dried and fixed it can be stained using staining techniques for the presence of alcohol acid-fast bacilli (AAFB). A positive laboratory diagnosis of bovine TB is primarily made on morphological grounds by the characteristic appearance of the mycobacterial colonies on various solid media or, in the case of MGIT, through the detection of AAFB and spoligotyping. Histopathology results and AAFB staining are ancillary methods used to support a diagnosis based on culture observations.

AAFB that do not show growth features typical of *M. bovis* or are not recognised as *M. bovis* by spoligotyping (see below) are tested by multiplex and/or HAIN PCR. The HAIN PCR is used in addition to the multiplex PCR to identify 'atypical' mycobacteria that do not belong to the *Mycobacterium tuberculosis* or *M. avium-intracellulare* complexes, where necessary (e.g. *M. kansasii* in suspect TB lesions from non-bovine host species).

DNA extracted from one *M. bovis* isolate recovered per infectedherd is subjected to genetic fingerprinting. Spoligotyping was the *M. bovis* genotyping technique originally used in GB. However, because two spoligotypes have been found to comprise approximately 70% of all *M. bovis* isolates from cattle in GB, an additional typing method (VNTR – "variable number of tandem repeats") has been routinely adopted by AHVLA more recently to enhance molecular discrimination of isolates of the most common spoligotypes. Each *M. bovis* isolate is thus classified according to its spoligotype and VNTR pattern into a given "genotype" . This information is fed back to the AHVLA case Veterinary Officers in the field to support the epidemiological investigations into the probable origin of each TB breakdown.

Description of the other used tests:

Not applicable

Region[c]	In-vitro tests (Bovigam®)		Microbiological tests (bacteriological culture)		Other tests	
Great Britain	Number of samples tested[d]	Number of positive samples[e]	Number of samples tested[d]	Number of positive samples[e]	Number of samples tested[d]	Number of positive samples[e]
2010	24,026	1,057	11,311	5,318		
2009	30,624	3,261	13,939	5,119		
2008	22,344	2,714	18,996	5,981		
2007	30,644	2,773	15,237	4,765		
2006	7,979	463	14,013	4,857		
Total	115,617	10,268	73,496	26,040		

(a) Disease and animal species if necessary.

(b) Breeders, laying hens, etc, when appropriate

(c) Region as defined in the approved eradication programme of the Member State.

(d) Number of samples tested, all confounded.

(e) Number of positive samples, all confounded

6.3. Data on infection (one table per year and per disease/species)

[1] This includes the numbers of OTFW and OTFS breakdowns.
[2] Data includes skin test and gamma interferon test reactors, regardless of post-mortem and tissue culture results.

(a) Disease and animal species if necessary.
(b) Region as defined in the eradication programme of the Member State.
(c) Herds equal flocks, or holdings as appropriate.

Year: 2006 **Disease[(a)]: Tuberculosis** **Animal species: Bovine**

Region(b)	Number of herds infected [1] (c)	Number of animals infected [2]
England	2,721	14,585
Wales	766	5,241
Total	3,487	19,826

Year: 2007 **Disease[(a)]: Tuberculosis** **Animal species: Bovine**

Region(b)	Number of herds infected [1] (c)	Number of animals infected [2]
England	3,183	18,543
Wales	930	7,171
Total	4,113	25,714

Year: 2008 **Disease[a]: Tuberculosis** **Animal species: Bovine**

Region(b)	Number of herds infected [1](c)	Number of animals infected [2]
England	3,746	26,038
Wales	1,193	10,542
Total	4,939	36,580

Year: 2009 **Disease[a]: Tuberculosis** **Animal species: Bovine**

Region(b)	Number of herds infected [1](c)	Number of animals infected [2]
England	3,350	24,500
Wales	1,175	9,951
Total	4,525	34,451

Year: 2010 **Disease[a]: Tuberculosis** **Animal species: Bovine**

Region(b)	Number of herds infected [1](c)	Number of animals infected [2]
England	3,622	24,213
Wales	1,036	7,321
Total	4,658	31,534

6.4. Data on the status of herds at the end of each year[8]

Year: 2006 **Disease(a):Tuberculosis** **Animal species: Bovine**

Region(b)	Status of herds and animals under the programme(c)													
	Total number of herds and animals under the programme		Unknown(d)		Not free or not officially free				Free or officially free suspended(g)		Free(h)		Officially free (i)	
					Last check positive(e)		Last check negative(f)							
	Herds	Animals(j)	Herds	Animals(j)	Herds	Animals(j)	Herds	Animals(j)	Herds [1]	Animals(j) [2]	Herds	Animals(j)	Herds [1]	Animals(j) [2]
England	60,536	5,378,000	n/a	n/a	n/a	n/a	n/a	n/a	4,433	n/a	n/a	n/a	56,103	n/a
Wales	14,749	1,323,000	n/a	n/a	n/a	n/a	n/a	n/a	1,989	n/a	n/a	n/a	12,760	n/a
Total	75,285	6,701,000	n/a	n/a	n/a	n/a	n/a	n/a	6,422	n/a	n/a	n/a	68,863	n/a

[1] Total number of herds under TB2 restrictions (herds where OTF status has been withdrawn or suspended either because of reactors disclosed or other reasons (for example overdue tests)) at the end of the reported period.

[2] Data reports are currently not able to distinguish the numbers of animals (since tests are not linked to Official Animal Identifiers), or herds by the classifications provided in 2010. However, future reporting will make these distinctions.

(a) Disease and species if necessary

(b) Region as defined in the approved eradication programme of the Member State
(c) At the end of the year
(d) Unknown: No previous checking results available
(e) Not free and last check positive: Herd checked with at least one positive result in the latest check.
(f) Not free and last check negative: Herd checked with negative results in the latest check but not being “free” or “officially free”
(g) Suspended as defined in Community or national legislation for the respective disease at the end of the reporting period.
(h) Free herd as defined in Community or national legislation for the respective disease.
(i) Officially free herd as defined in Community or National legislation for the respective disease .
(j) Include animals under the programme in the herds with the referred status (left column).

[8] Data to provide for Bovine tuberculosis, Bovine brucellosis, IBR/IPV (AI + embryo units), Ovine and caprine brucellosis (B. melitensis), Enzootic bovine leukosis (EBL), Aujeszky's disease, Maedi/Visna and CAEV, IBR/IPV (other types of enterprise), Johnes disease (paratuberculosis).

Year: 2007 **Disease(a):Tuberculosis** **Animal species: Bovine**

Region(b)	Status of herds and animals under the programme(c)													
	Total number of herds and animals under the programme		Unknown(d)		Not free or not officially free				Free or officially free suspended(g)		Free(h)		Officially free (i)	
					Last check positive(e)		Last check negative(f)							
	Herds	Animals(j)	Herds	Animals(j)	Herds	Animals(j)	Herds	Animals(j)	Herds [1]	Animals(j) [2]	Herds	Animals(j)	Herds[1]	Animals(j) [2]
England	58,279	5,630,015	n/a	n/a	n/a	n/a	n/a	n/a	5,425	n/a	n/a	n/a	52,854	n/a
Wales	13,946	1,246,334	n/a	n/a	n/a	n/a	n/a	n/a	2,078	n/a	n/a	n/a	11,868	n/a
Total	72,225	6,876,349	n/a	n/a	n/a	n/a	n/a	n/a	7,503	n/a	n/a	n/a	64,722	n/a

[1] Total number of herds under TB2 restrictions (herds where OTF status has been withdrawn or suspended either because of reactors disclosed or other reasons (for example overdue tests)) at the end of the reported period.

[2] Data reports are currently not able to distinguish the numbers of animals (since tests are not linked to Official Animal Identifiers), or herds by the classifications provided in 2010. However, future reporting will make these distinctions.

Situation on date: 02/03/2009

Year: 2008 **Disease(a):Tuberculosis** **Animal species: Bovine**

Region(b)	Status of herds and animals under the programme(c)													
	Total number of herds and animals under the programme		Unknown(d)		Not free or not officially free				Free or officially free suspended(g)		Free(h)		Officially free (i)	
					Last check positive(e)		Last check negative(f)							
	Herds	Animals(j)	Herds	Animals(j)	Herds	Animals(j)	Herds	Animals(j)	Herds [1]	Animals(j) [2]	Herds	Animals(j)	Herds [1]	Animals(j) [2]
England	58,064	5,429,987	n/a	n/a	n/a	n/a	n/a	n/a	5,602	n/a	n/a	n/a	52,462	n/a
Wales	13,667	1,140,060	n/a	n/a	n/a	n/a	n/a	n/a	1,160	n/a	n/a	n/a	12,507	n/a
Total	71,731	6,570,047	n/a	n/a	n/a	n/a	n/a	n/a	6,762	n/a	n/a	n/a	64,969	n/a

[1] Total number of herds under TB2 restrictions (herds where OTF status has been withdrawn or suspended either because of reactors disclosed or other reasons (for example overdue tests)) at the end of the reported period.

[2] Data reports are currently not able to distinguish the numbers of animals (since tests are not linked to Official Animal Identifiers), or herds by the classifications provided in 2010. However, future reporting will make these distinctions.

Situation on date: 31/03/2010
Year: 2009 **Disease(a):Tuberculosis** **Animal species: Bovine**

Region(b)	Status of herds and animals under the programme(c)													
	Total number of herds and animals under the programme		Unknown(d)		Not free or not officially free				Free or officially free suspended(g)		Free(h)		Officially free (i)	
					Last check positive(e)		Last check negative(f)							
	Herds	Animals(j)	Herds	Animals(j)	Herds	Animals(j)	Herds	Animals(j)	Herds [1]	Animals(j) [2]	Herds	Animals(j)	Herds [1]	Animals(j) [2]
England	57,495	5,465,000	n/a	n/a	n/a	n/a	n/a	n/a	3,694	n/a	n/a	n/a	53,801	n/a
Wales	13,249	1,117,000	n/a	n/a	n/a	n/a	n/a	n/a	1,240	n/a	n/a	n/a	12,009	n/a
Total	70,744	6,582,000	n/a	n/a	n/a	n/a	n/a	n/a	4,934	n/a	n/a	n/a	65,810	n/a

[1] Total number of herds under TB2 restrictions (herds where OTF status has been withdrawn or suspended either because of reactors disclosed or other reasons (for example overdue tests)) at the end of the reported period.

[2] Data reports are currently not able to distinguish the numbers of animals (since tests are not linked to Official Animal Identifiers), or herds by the classifications provided in 2010. However, future reporting will make these distinctions.

Situation on date: 28/04/2011
Year: 2010 **Disease(a):Tuberculosis** **Animal species: Bovine**

Region(b)	Status of herds and animals under the programme(c)													
	Total number of herds and animals under the programme		Unknown(d)		Not free or not officially free				Free or officially free suspended(g)		Free(h)		Officially free (i)	
					Last check positive(e)		Last check negative(f)							
	Herds	Animals(j)	Herds	Animals(j)	Herds	Animals(j)	Herds	Animals(j)	Herds [1]	Animals(j) [2]	Herds	Animals(j)	Herds [1]	Animals(j) [2]
England	56,867	5,649,802	n/a	n/a	n/a	n/a	n/a	n/a	4,602	n/a	n/a	n/a	52,265	n/a
Wales	13,034	1,165,041	n/a	n/a	n/a	n/a	n/a	n/a	1,370	n/a	n/a	n/a	11,664	n/a
Total	69,901	6,814,843	n/a	n/a	n/a	n/a	n/a	n/a	5,972	n/a	n/a	n/a	63,929	n/a

[1] Total number of herds under TB2 restrictions (herds where OTF status has been withdrawn or suspended either because of reactors disclosed or other reasons (for example overdue tests)) at the end of the reported period.

[2] Data reports are currently not able to distinguish the numbers of animals (since tests are not linked to Official Animal Identifiers), or herds by the classifications provided in 2010. However, future reporting will make these distinctions.

6.5. Data on vaccination or treatment programmes[9] *[NOT APPLICABLE]*

Year: **Disease[(a)]:** **Animal species:**

Description of the used vaccination, therapeutic or other scheme:

Region[(b)]	Total number of herds[(c)]	Total number of animals	Information on vaccination or treatment programme					
			Number of herds[(c)] in vaccination or treatment programme	Number of herds[(c)] vaccinated or treated	Number of animals vaccinated or treated	Number of doses of vaccine or treatment administered	Number of adults[(d)] vaccinated	Number of young[(d)] animals vaccinated
Total								

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State
(c) Herds equal flocks, or holdings as appropriate
(d) Only for Bovine brucellosis, Ovine and caprine brucellosis (B. melitensis) and zoonotic salmonella, and as defined in the programme

9 Data to provide, where appropriate for Bovine brucellosis, IBR/IPV (AI + embryo units), Ovine and caprine brucellosis (B. melitensis), Aujeszky's disease, Salmonella pullorum, Salmonella gallinarum, Anthrax, IBR/IPV (other types of enterprise), Johnes disease (paratuberculosis), Mycoplasma gallisepticum, heartwater transmitted by vector insects in the French overseas departments, babesiosis transmitted by vector insects in the French overseas departments, anaplasmosis transmitted by vector insects in the French overseas departments, Bluetongue in endemic or high risk areas, Rabies, Echinococcosisand salmonellosis (zoonotic salmonella) and agents thereof.

6.6. Data on wildlife[10]

6.6.1. Estimation of wildlife population

Year: 1994-2002 **Method of estimation[(a)]:**

Regions(b)	Estimation of the population of the concerned wild species						
	Species :Badger 1994-1997	Species: Deer (Red)	Species: Deer (Fallow)	Species: Deer (Sika)	Species: Deer (Roe)	Species: Deer (Muntjac)	Species: Deer (Chinese water deer)
England	234,000						
Wales	42,000						
Total	276,000	400,000	110,000	29,300	620,000	100,000	650

(a) The hunting bag is considered to be the standard method of estimation. If other method is used, explain

(b) Region as defined in the approved eradication programme of the Member State

[10] Data to provide for Bovine brucellosis, Ovine and caprine brucellosis (B. melitensis), Aujeszky's disease, African Swine fever, swine vesicular disease, endemic classical swine fever, Rabies, Echinococcosis and trichinellosis and agents thereof.

6.6.2. Monitoring of wildlife (one table per year and per disease/species)

Year: **Disease[(a)]:** **Animal species:**

Description of the used serological tests:

Description of the used microbiological or virological tests:

Description of the other used tests:

Region[(b)]	Microbiological or virological tests		Serological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a
Total						

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State

6.6.3. Data on vaccination or treatment of wildlife

Year: 2011 **Disease[(a)]: Bovine tuberculosis** **Animal species: Badger vaccination**

Description of the used vaccination, therapeutic or other scheme Badger BCG licensed in March 2010 has been used as part of the Badger Vaccine Deployment Project to build farmer confidence in vaccines as a key tool in an eradication programme; build a core of trained lay vaccinators with practical experience in identifying, trapping and vaccinating badgers which could be used for a broader roll out of injectable or oral vaccines.

Region[(b)]	Square km	Vaccination or treatment programme		
		Number of doses of vaccine or treatment to be administered	Number of campaigns	Total number of doses of vaccine or treatment administered
Gloucestershire (North West of Stroud, towards the Severn Valley)	100	625	1	1 for each of the 625 badgers vaccinated
Total	100	625	1	625

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State

7. Targets

7.1. Targets related to testing

7.1.1. Targets on diagnostic tests

7.1.1.1. Number and specification of tests

Disease[(a)]: Bovine Tuberculosis **Animal species: Bovine**

Region[(b)]	***Type of the test***[(c)]	***Target population***[(d)]	***Type of sample***[(e)]	***Objective***[(f)]	***Number of planned tests***
Great Britain	Tuberculin skin test	All bovines		Programme implementation (Primary screening test - surveillance, qualification and elimination of infection from herds)	7,490,000 [1]
	Gamma Interferon Assay	Bovines	Heparinised Blood	Programme implementation (Ancillary parallel test - elimination of infection from herds)	25,000
Total					

[1] This figure is taken to be the number of all types of tests to be carried out (including testing for surveillance, qualification and elimination of infection from herds) so some herds may be counted more than once.

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State
(c) Description of the test (e.g. SN-test, AB-Elisa, RBT, …)
(d) Specification of the targeted species and the categories of targeted animals (e.g. sex, age, breeding animal, slaughter animal, …).
(e) Description of the sample (e.g. blood, serum, milk, …)
(f) Description of the objective (e.g. qualification, surveillance, confirmation of suspected cases, monitoring of campaigns, seroconversion, control on deleted vaccines, testing of vaccine, control of vaccination, …)

7.1.1.2. Testing scheme(s)[11]:*7.1.2. Targets on testing herds and animals*[12]

7.1.2.1 Targets on the testing of herds[(a)]

Disease[(b)]: Bovine Tuberculosis **Animal species: Bovine**

Region[(c)]	Total number of herds[(d)]	Total number of herds under the programme	Number of herds expected to be checked [(e)]	Number of expected positive herds [1][(f)]	Number of expected new positive herds [1][(g)]	Number of herds expected to be depopulated	% positive herds expected to be depopulated	TARGET INDICATORS		
								Expected % herd coverage	% positive herds Expected period herd prevalence	% new positive herds Expected herd incidence
1	2	3	4	5	6	7	8 = (7/5)x100	9 = (4/3)x100	10 = (5/4)x100	11 = (6/4)x100
England	56,000	56,000	37,150	6,200	3,600	10	0.16	66	17	10
TI 1 (annual testing area)	27350	27350	27350	5700	3300	2	0.04	100	21	12
TI 2 (2-yearly t. area)	5300	5300	3300	350	200	2	0.57	62	11	6
TI 4 (4-yearly t. area) [3]	23350	23350	6500	150	100	6	4.00	28	2	2
Wales	12,893	12,893	12,893	1,800	1,050	4	0.22	100 [3]	13.96	8.14
Total	68,893	68,893	50,043	8,000	4,650	14	0.17	73	16	9

[1] This figure includes all TB breakdowns (OTF-S and OTF-W)
[2] All eligible herds expected to be tested as part of routine herd surveillance testing.
[3] This reflects the three main testing areas in England – core annual, two-year buffer and background four-yearly, so there is no TI 3 area.

11 Describe the testing scheme according the different categories if appropriate (which herds and animals, the number of animals per herd, the frequency and the interval of sampling) with reference to the national and Community legislation where appropriate.

12 Data to provide for Bovine tuberculosis, Bovine brucellosis, IBR/IPV (AI + embryo units), Ovine and caprine brucellosis (B. melitensis), Enzootic bovine leukosis (EBL), Aujeszky's disease, Anthrax, Maedi/Visna and CAEV, IBR/IPV (other types of enterprise), Johnes disease (paratuberculosis), CBPP, African Swine fever, swine vesicular disease, endemic classical swine fever, heartwater transmitted by vector insects in the French overseas departments, babesiosis transmitted by vector insects in the French overseas departments, anaplasmosis transmitted by vector insects in the French overseas departments, Bluetongue in endemic or high risk areas.

(a) Herds equal flocks, or holdings as appropriate.
(b) Disease and animal species if necessary.
(c) Region as defined in the approved eradication programme of the Member State.
(d) Total number of herds existing in the region including eligible herds and non-eligible herds for the programme.
(e) Check means to perform a herd level test under the programme for the respective disease with the purpose of maintaining, upgrading, etc., the health status of the herd. In this column a herd should not be counted twice even if has been checked more than once.
(f) Herds with at least one positive animal during the period independent of the number of times the herd has been checked.
(g) Herds which status in the previous period was Unknown, Not free-negative, Free, Officially Free or suspended and have at least one positive animal in this period.

7.1.2.2. Targets on the testing of animals

Disease[(a)]: Bovine Tuberculosis **Animal species: Bovine**

Region[(b)]	Total number of animals[(c)]	Number of animals[(d)] under the programme	Number of animals[(d)] expected to be tested [1]	Number of animals to be tested individually [1] [(e)]	Number of expected positive animals [2]	Slaughtering		TARGET INDICATORS	
						Number of animals with positive result expected to be slaughtered or culled	Total number of animals expected to be slaughtered[(f)]	Expected % coverage at animal level	% positive animals (Expected animal prevalence)
1	2	3	4	5	6	7	8	9=(4/3)x100	10=(6/4)x100
England	5,600,000	5,600,000	5,900,000	5,900,000	27,000	27,000	27,800	105	0.46
TI 1	2,700,000	2,700,000	4,800,000	4,800,000	25,500	25,500	25,900	178	0.53
TI 2	550,000	550,000	500,000	500,000	1,000	1,000	1,100	91	0.20
TI 4 [3]	2,350,000	2,350,000	600,000	600,000	500	500	800	26	0.08
Wales	1,138,000	1,138,000	1,800,000	1,800,000	8,000	8,000	8,000	158.17	0.44
Total	6,738,000	6,738,000	7,700,000	7,700,000	35,000	35,000	35,800	114	0.45

[1] This figure is taken to be the number of animals tested under all test types (including testing for surveillance, qualification and elimination of infection from herds), so some animals may be counted more than once.

[2] I.e. total number of tuberculin skin test and gamma-interferon test reactors, regardless of post-mortem and laboratory findings.

[3] This reflects the three main testing areas in England – core annual, two-year buffer and background four-yearly, so there is no TI 3 area.

(a) Disease and animal species if necessary.
(b) Region as defined in the approved eradication programme of the Member State.
(c) Total number of animals existing in the region including eligible herds and non-eligible herds for the programme.
(d) Includes animals tested individually or under bulk level scheme.
(e) Include only animals tested individually, do not include animals tested by bulk level samples (e.g.: milk bulk tank tests).
(f) Include all positive animal slaughtered and also the negative animals slaughtered under the programme.

7.1.3. Targets on testing of flocks[13] (N/A)

Year: **Situation on date:**

Animal species: **Disease/infection[(a)]:**

Region	Type of flock[(b)]	Total number of flocks[(c)]	Total number of animals	Total number of flocks under the programme	Total number of animals under the programme	Expected number of flocks to be checked[(d)]	Number of flocks[(e)] expected to be positive [(a)]			Number of flocks expected to be depopulated[(a)]		Total number of animals expected to be slaughtered or destroyed [(a)]		Expected quantity of eggs to be destroyed (number or kg) [(a)]		Expected quantity of eggs channelled to egg products (number or kg) [(a)]	
							(a1)	(a2)	(a3)	(a4)	(a3)	(a4)	(a3)	(a4)	(a3)	(a4)	(a3)
Total																	

(a) For zoonotic salmonella indicate the serotypes covered by the control programmes: (a1) for *Salmonella* Enteritidis, (a2) for *Salmonella* Typhimurium, (a3) for other serotypes-specify as appropriate, (a4) for *Salmonella* Enteritidis or *Salmonella* Typhimurium.

(b) For example, breeding flocks (rearing, adult flocks), production flocks, laying hen flocks, etc. Flocks equals herds or as appropriate

(c) Total number of flocks existing in the region including eligible flocks and non-eligible flocks for the programme

(d) Check means to perform a flock level test under the programme for the presence of salmonella. In this column a flock should not be counted twice even if it has been checked more than once.

(e) If a flock has been checked, in accordance with footnote (d), more than once, a positive sample should be taken into account only once.

[13] Data to provide for salmonellosis (zoonotic salmonella), Salmonella pullorum, Salmonella gallinarum, Mycoplasma gallisepticum, Campylobacteriosis and agents thereof.

7.2. Targets on qualification of herds and animals[14]

Disease[(a)]: Bovine Tuberculosis **Animal species: Bovine**

Region[(b)]	Total number of herds and animals under the programme		Targets on the status of herds and animals under the programme[(c)]											
			Expected unknown[(d)]		Expected not free or not officially free				Expected free or officially free suspended[(g)]		Expected free[(h)]		Expected officially free [(i)]	
					Last check positive[(e)]		Last check negative[(f)]							
	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
England	56,099	5,542,000	n\a	n\a	6,300	n\a	n/a	n\a	1,400	n\a	n\a	n\a	48,399	n\a
Wales	12,893	1,138,000	0	0	1,800	n\a	n/a	n\a	540	n\a	n\a	n\a	10,553	n\a
Total	68,992	6,680,000	n\a	n\a	8,100	n\a	n/a	n\a	1,940	n\a	n\a	n\a	58,952	n\a

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State
(c) At the end of the year
(d) Unknown: No previous checking results available
(e) Not free and last check positive: Herd checked with at least one positive result in the latest check
(f) Not free and last check negative: Herd checked with negative results in the latest check but not being “free” or “officially free”
(g) Suspended as defined for the respective disease in Community or national legislation where appropriate or according national legislation.
(h) Free herd as defined for the respective disease where appropriate in Community or national legislation where appropriate or according national legislation
(i) Officially free herd as defined for the respective disease where appropriate in Community or national legislation where appropriate or according national legislation
(j) Include animals under the programme in the herds with the referred status (left column)

[14] Data to provide for Bovine tuberculosis, Bovine brucellosis, IBR/IPV (AI + embryo units), Ovine and caprine brucellosis (B. melitensis), Enzootic bovine leukosis (EBL), Aujeszky's disease, Maedi/Visna and CAEV, IBR/IPV (other types of enterprise), Johnes disease (paratuberculosis).

7.3. Targets on vaccination or treatment N/A

7.3.1. Targets on vaccination or treatment[15] - N/A

Vaccine(s) and vaccination scheme or treatment and treatment scheme[16]:

Disease[(a)]: **Animal species:**

Region[(b)]	Total number of herds[(c)] in vaccination or treatment programme	Total number of animals in vaccination or treatment programme	Targets on vaccination or treatment programme					
			Number of herds[(c)] in vaccination or treatment programme	Number of herds[(c)] expected to be vaccinated or treated	Number of animals expected to be vaccinated or treated	Number of doses of vaccine or treatment expected to be administered	Number of adults[(d)] expected to be vaccinated	Number of young[(d)] animals expected to be vaccinated
Total								

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State
(c) Herds equal flocks, or holdings as appropriate
(d) Only for Bovine brucellosis and Ovine, caprine brucellosis (B. melitensis) and zoonotic salmonella and as defined in the programme

15 Data to provide for Bovine brucellosis, IBR/IPV (AI + embryo units), Ovine and caprine brucellosis (B. melitensis), Aujeszky's disease, Salmonella pullorum, Salmonella gallinarum, Anthrax, IBR/IPV (other types of enterprise), Johnes disease (paratuberculosis), Mycoplasma gallisepticum, heartwater transmitted by vector insects in the French overseas departments, babesiosis transmitted by vector insects in the French overseas departments, anaplasmosis transmitted by vector insects in the French overseas departments, Bluetongue in endemic or high risk areas, Rabies, Echinococcosis, salmonellosis (zoonotic salmonella) and agents thereof.

16 Specify the vaccine and the vaccination scheme (which herds and animals, the frequency and the interval of vaccination) with reference to the national legislation.

7.3.2. Targets on vaccination or treatment[17] of wildlife (Badgers)

Year: 2012 **Disease[(a)]: Bovine Tuberculosis** **Animal species: Badger**

Description of the used vaccination, therapeutic or other scheme:

Other than Badger Vaccine Deployment Project not possible to provide a view on targets as strategy for using vaccines to be determined.

Region[(b)]	Square km	Vaccination or treatment programme		
		Number of doses of vaccine or treatment to be administered*	Number of campaigns*[2]	Total number of doses of vaccine or treatment administered
Gloucestershire (North West of Stroud, towards the Severn Valley)	100	600	1	600 (Estimate)
Total				

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State

* Assuming 600 badgers based on 2011 results.

*[2]Assuming a campaign = one year vaccination

[17] Data to provide for Bovine brucellosis, Ovine and caprine brucellosis (B. melitensis), Aujeszky's disease, , African Swine fever, swine vesicular disease, endemic classical swine fever, Rabies, Echinococcosis and trichinellosis and agents thereof.

7.4 TB situation in England beyond 2012

7.1 Eradication of TB is the long-term goal of the UK Government. In England we expect this will take several decades to achieve. TB is a chronic infectiousand insidious disease and in the UK has more than one maintenance host/reservoir with multiple routes of transmission. International experience from other countries (e.g. Ireland, New Zealand, Australia, USA) shows that this is one of the most difficult diseases to eradicate, in particular where there is also a significant wildlife reservoir of *M. Bovis.*

7.2 Over the next 5 years we anticipate continued initial spread to new areas and continued high incidence levels in the endemic area until we are able to make progress on tackling the wildlife reservoir through culling and/or vaccination of badgers, alongside the comprehensive package of current and new cattle-based control measures which will also start to have an impact. We have already significantly strengthened the Eradication Plan in England in a number of ways:

- Annual herd testing in the whole of the high incidence endemic area and a large proportion of the national herd on annual testing from 2012.
- A wide buffer of two-yearly herd testing in the lower incidence areas around this to help protect the clean, low incidence areas of England.
- Badger culling– subject to a final ministerial decision before the end of 2011, it is proposed that this will start with two pilot areas initially in 2012 and, subject to a successful evaluation, would then be rolled out more widely.
- Further development and deployment of our licensed injectable TB badger vaccine.
- Development and implementation of a strategy to tackle disease spread at the edge of the endemic area during 2012.
- Removal of some domestic pre-movement testing exemptions and further tightening of movement controls in early 2012.
- Reduced compensation payments for overdue tests in early 2012.

- Improved surveillance for bovine TB in slaughterhouses.

7.3 We need to recognise that it will take time for these strengthened measures to take full effect and reverse the trend of slowly increasing incidence. Our objectives over the next five years are therefore to:

- Continue to protect the 'clean' (4-yearly testing) areas of England and deal effectively with any incursions (and maintain very low incidence of TB in those areas). Also reducing the risk of spread at the edge of the endemic areas and therefore achieving a levelling off and eventual reduced incidence of TB in the two-year testing buffer.
- Prevent worsening of the disease situation in the endemic area – as a result of existing and new measures we would expect to see a reduction in new incidents by the end of this period in the annual testing area.

7.4 We do not rule out a further expansion over the next 2 -3 years in annual and two-year testing coverage in support of these objectives until measures to tackle spread into clean areas take effect, after which we would expect testing areas and frequencies to stabilise. If this expansion were at the same rate as the last couple of years it would mean around a 4% increase per year in the number of herds on annual testing (in 2012 about 27,000 herds, or nearly half of all herds will be on annual testing). However the case for any further expansion will continue to be determined through our annual review of routine testing, based on incidence and a range of other epidemiological indicators.

8. Detailed analysis of the cost of the programme[1]

Costs related to	*Specification*	*Number of units*	*Unitary cost in €*	*Total amount in €* [2]	*Community funding requested (yes/no)* [1]
1. Testing					
1.1. Cost of the analysis	***Test: Tuberculin test***	***62,393 (herds)***	***423 (average)***	***26,392,239***	***Yes***
	Purchase of tuberculin	***1362 litres bovine*** ***1361 litres avian*** ***(2,723 litres in total)***	***930***	***2,533,793***	
	Test: Gamma Interferon[2]	***21,000 tests***	***29***	***609,000***	***Yes***
1.1.1 Tuberculin income arising from the distribution of tuberculin to Northern Ireland		***360 litres bovine, 360 litres avian*** ***(720 litres in total)***	***1064***	***765,993***	
1.2. Cost of sampling	***Includes cost of culture and sampling work for cattle test reactors and suspect TB submissions from slaughterhouse surveillance cases.***	***16,000***	***168 (average)***	***2,695,003***	

1.3. Other costs	***Food Standards Agency***	***Unknown***	***Unknown***	***200,000 (annual average)***	
2. Vaccination or treatment for badgers					
2.1. Purchase of vaccine/treatment		***1,000***	***24***	***24,300***	
3. Slaughter and destruction					
3.1. Compensation of animals	*England*	*30,000*	*1,315 (average)*	*39,450,000*	
	Wales	*8,000*	*2,110 (average)*	*16,882,000*	
	Total	***38,000***	***1,713 (average)***	***56,332,000***	***Yes***
3.2. Transport costs (Haulage)	***Haulage plus destruction costs for England and Wales.***				
	England	*30,000*	*47 (average)*	*1,410,000*	

	Wales	*8,000*	*58 (average)*	*460,000*	
	Total	***38,000***	***52.5 (average)***	***1,870,000***	
3.3. Destruction costs					
3.4. Loss in case of slaughtering					
3.5 Costs from treatment of products (milk, eggs, hatching eggs, etc)					
Income from sale of carcases	*England*	***30,000***	***180 (average)***	***5,400,000***	
	Wales	***7,400***	***276 (average)***	***2,343,000***	
	Total	***37,400***	***228 (average)***	***7,743,000***	
4. Cleaning and disinfection					

***5. Salaries** (staff contracted for the programme only, includes T&S)*	***England***	***28***	***66,486(average)***	***1,861,613***	
	Wales	***45***	***75,248(average)***	***3,386,158***	
	Total	***73***	***70,867***	***5,247,771***	
6. Consumables and specific equipment					
	Direct tests	***7700***	***4.74***	***36,471***	
	Gamma only	***1650***	***53 (average)***	***87,530***	
7. Other costs –valuers fees, travel and subsistence	***Valuers fees***				
	England	*290*	*84 (average)*	*24,300*	
	Wales	*9,000*	*46 (average)*	*431,250*	
	Total	***9,290***	***65 (average)***	***455,550***	
TOTAL to be applied for				***83,333,239***	

Footnote:

[1] Costs are provisional and subject to change

[2] Exchange rate used 1.15 Financial Times 9th September 2011

ANNEX II

Standard requirements for the submission of programmes of monitoring, eradication and control of animal diseases co-financed by the Community

1. Identification of the programme

Member State: *United Kingdom (Northern Ireland)*

Disease(s)[1]: *Bovine Tuberculosis*

Request of Commission Co-financing for: 2012

Year of implementation: 2012

Reference of this document: *TB Submission 2012*

Contact Ian McKee, Tel 028 905 24551, Fax: 028 905 24305, E-mail: ian.mckee@dardni.gov.uk

Date sent to the Commission 15 April 2011

1

2. Historical data on the epidemiological evolution of the disease(s) [2]:

In 1949, Northern Ireland (NI) introduced the Tuberculosis (Attested Herds) Scheme designed to encourage the establishment in NI of cattle herds officially certified as free of bovine tuberculosis. The objective then, as now, was the eradication of bovine TB from the NI herd. A voluntary register of attested herds was established. Two consecutive negative intradermal tests at two months interval were necessary to register.

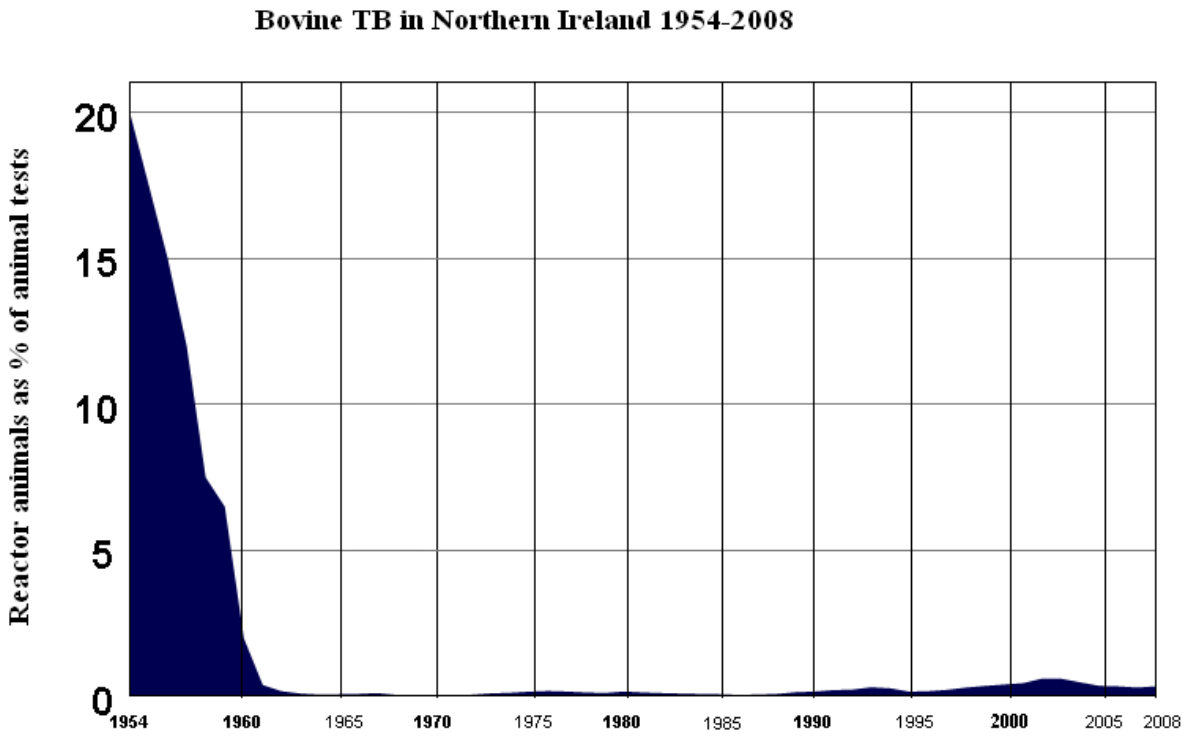
By 1956, 1,209 herds were registered. Lists of attested herds were published to guide herdkeepers who wished to purchase such certified cattle.

Even with these limited measures, the incidence of bTB decreased steadily and the Voluntary Attested Herds Scheme was ended and eradication areas declared where compulsory testing would be carried out.

A transitional period between April and August 1959 saw an increase in uptake of voluntary testing. In April 1959 over 50% of NI herds were attested or supervised, by March 1960, 88% of cattle in NI were attested and on 25 November 1960, NI was declared an attested area.

Since the introduction of compulsory testing in 1959, bovine tuberculosis has been reduced to, and maintained at, a much lower level, but not eradicated. See Fig.1

Fig. 1



2

Herd testing in NI has been subject to differing test intervals. It has, however, been applied uniformly throughout the country with no areas of reduced testing at any time. During the period of 1966 to 1976, levels of disease were low enough to warrant a reduction of intensity of the live animal surveillance programme. Later disease increase was responded to by reducing the inter-test interval. See Fig. 2

Note: that the full PME surveillance remained unchanged throughout.

Note: that NI has been on annual testing entirely since 1983

Fig 2 Herd testing intervals in NI 1959 - present

Year	Type of herd testing
1959-1965	Annual testing
1966-1971	Biennial testing
1972-1976	Triennial testing
1977-1982	Biennial testing
1983- To date	Annual testing

Current Demographics

There are currently 1.58 million cattle in Northern Ireland, distributed among 25,930 active herds. Dairy cows/heifers comprise 21% of the national herd while beef cows/heifers account for 18%. Based on cattle TB tested in herds, the mean herd size has increased from 56 cattle in 1990 to 65 in 2010, an increase of 16%. However, the data are strongly skewed to the right and the median was 33 for all TB herd tests in 2010. Almost two-thirds of herds (63%) in Northern Ireland have fewer than 50 cattle.

The cattle population increased by 50% in the forty years before 1989 and by approximately 6% thereafter. These increases preceded a significant rise in the incidence of bovine tuberculosis, suggesting an association with high stocking density.

The cattle agricultural industry in Northern Ireland is largely grass based with feed conservation and winter housing as significant features.

Herd and cattle density is highest in the south and west, with the highest concentration, 6.6 herds per square kilometre in Counties Armagh and Down (Figures 3 and 4 (overleaf)– Method = Kernel Smoothing; bandwidth = 10km). Herds in the north and east tend to be larger than those in the south or west (median 20.4 and 15.2 eligible cattle respectively).

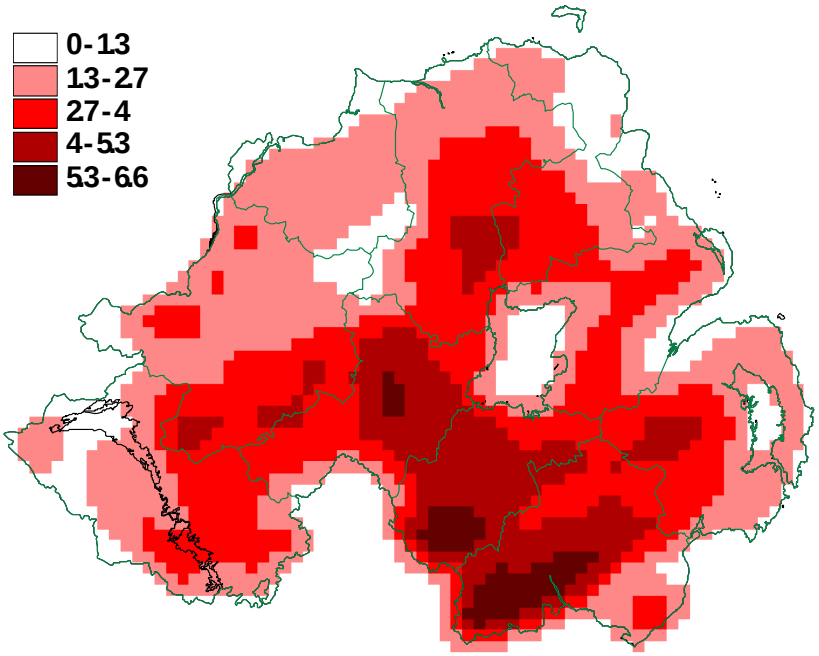


Figure 3 Herd Density: Herds Per Square Kilometre

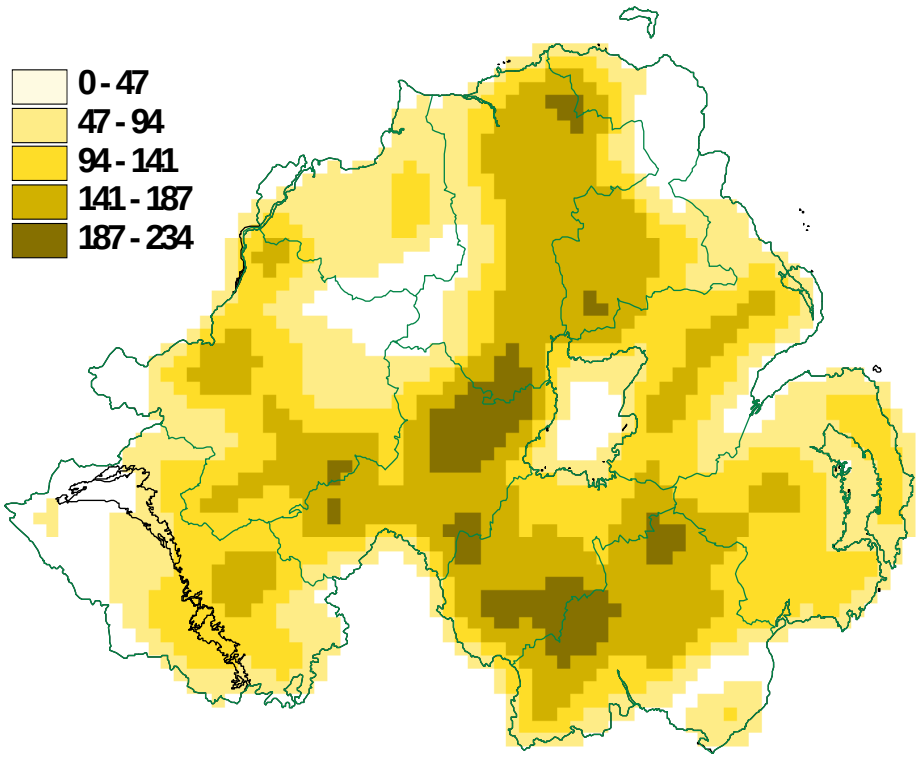


Figure 4 Cattle Density: number of Cattle Per Square Kilometre

Epidemiological Unit

A herd is described in domestic legislation as “a group of animals kept, managed, or housed together, on a holding in such a manner and under such conditions as will, in the opinion of a veterinary inspector, minimize the possibility of infection to any other animals whether kept on the same holding or another holding.” [Tuberculosis Control Order (NI) 1999 (as amended), Part 1 S2 (1)].

Due to the small average herd size and fragmentation of land parcels, disease control measures have been developed to accommodate these features of NI agriculture and minimise disease risk accordingly.

Several cattle groups with possibly different owners, may be maintained in such a manner that contact exists that will increase the risk of disease spread. These groupings may range from routine and permanent to the transitory. Each herd will have a unique herd number and identified keeper.

When cattle have such contact, the herds will be termed “associated” and recorded on APHIS (Animal and Public Health Information System, the DARD real-time computer database) and, significantly, will be subject to the same level of status, movement control and epidemiological investigation as the group with the lowest status. Any movement restriction and status will remain until all component parts of the herd have completed any required regime and herds may not be disassociated until all have regained OTF.

Disease statistics record each herd separately, therefore an epidemiological episode at one holding with several associated diseased herds will be recorded as several episodes.

Farm fragmentation is a considerable feature of cattle agriculture in NI including the temporary leasing of land for summer grazing. Parcels of land remote from the home farm, no matter the distance or ownership, are regarded as part of the holding and are subject to identical restriction and epidemiological investigation as the rest of the holding.

1995- Present, Recent Disease Trends

The period of the late 1990s saw, as a trend, a steady increase in herd incidence, to a peak in 2002/2003. Since 2004 there was a steady trend in reducing herd incidence until 2007. Since then the trend has remained reasonably level until late 2010. There was a steady reduction in animal incidence from late 2009.

Note that NI had an FMD episode during 2001 during which there was a suspension of both routine farming practices and routine tuberculin testing. See Figs 5& 6

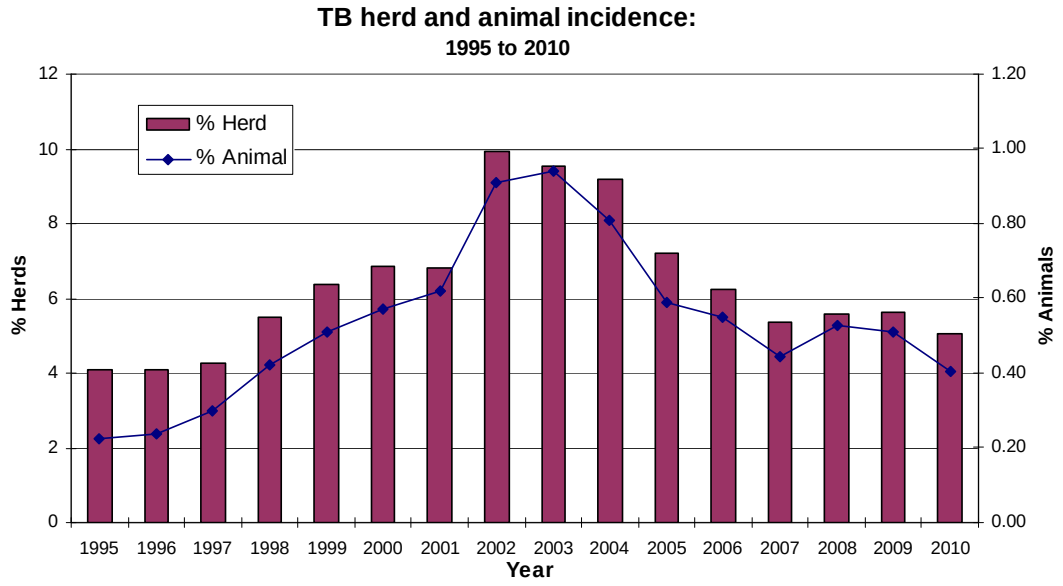


Fig. 5

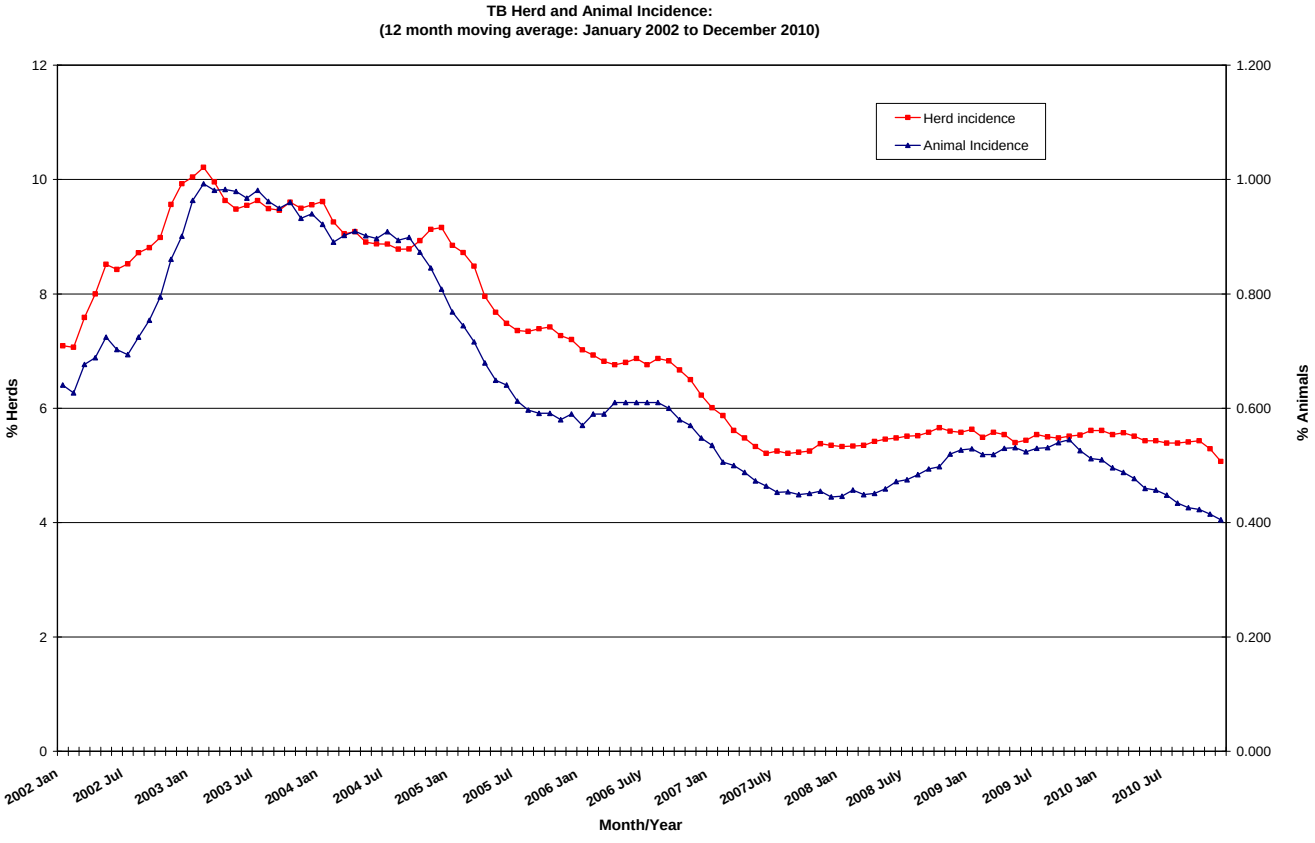
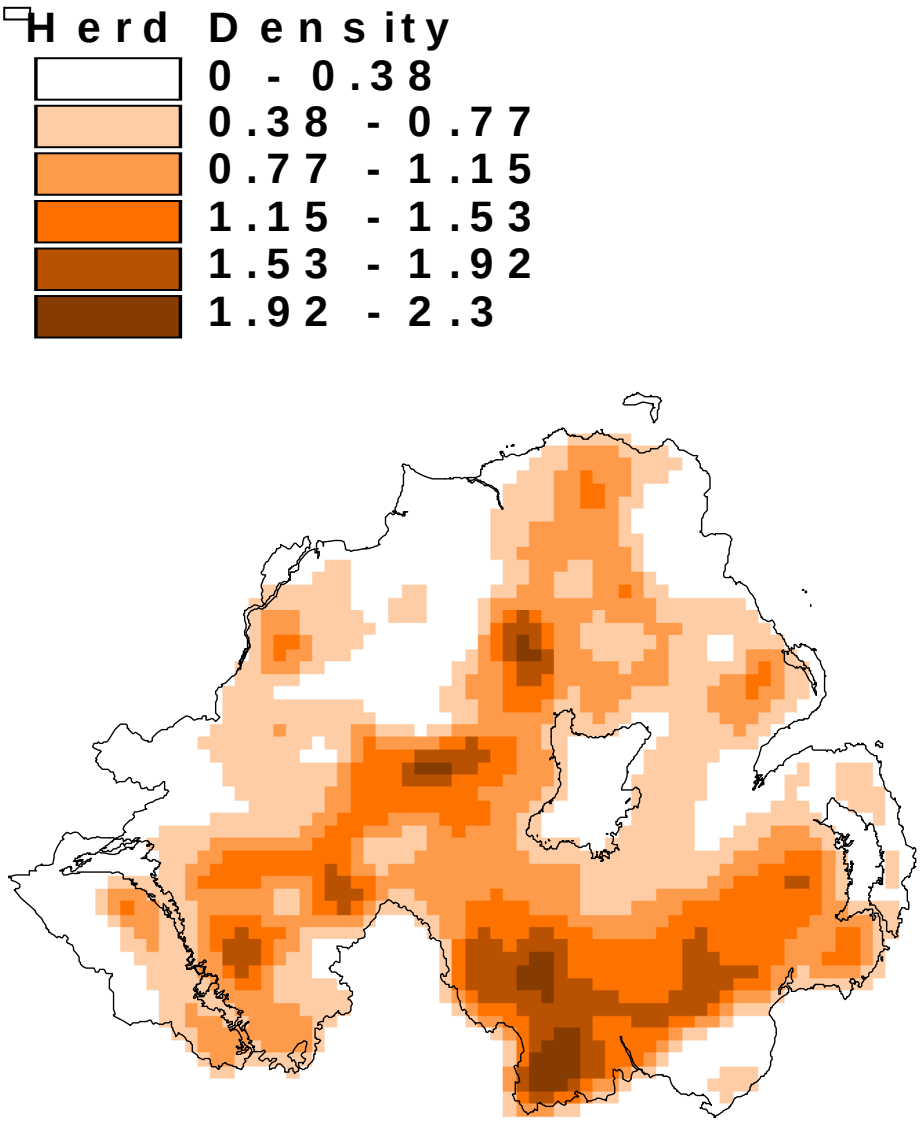


Fig 6

Although breakdowns are distributed throughout NI, traditionally the preponderance of infection has been in the southern parts of NI. Reasons for this are presently unclear: spatial analysis has demonstrated that the concentration of infection in the southern part is not entirely explained by the underlying distribution of herds and cattle. Fig. 7

Fig 7 Herd Density, based on TB-Positive Herds, Cumulative, 1995 to 2004, herds/km^2



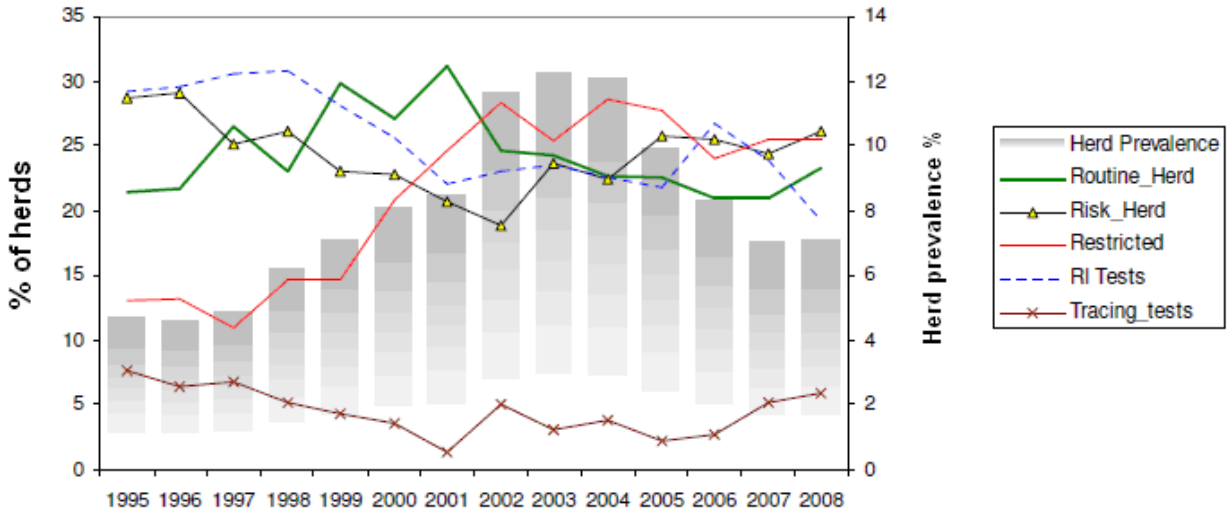
Approximately 80% of reactors are removed under standard interpretation of the Single Intradermal Comparative Cervical Test (SICCT), 14% under severe interpretation, while the remaining 6% are taken using epidemiological data and stricter interpretation criteria. All reactors are removed by government-contracted hauliers to one specific abattoir where they are examined for evidence of TB infection.

TB tests on APHIS are labelled according to the reason for the test. There are specific test type categories for each type of test, allowing the data to be examined in different ways. One example is the division of tests into routine, restricted or risk type. "Routine" tests are those conducted in Officially Tuberculosis Free herds where there is no discernible risk of infection.

"Restricted" tests apply to herds with infection, while "Risk" tests are those where cattle have some potential link to infection.

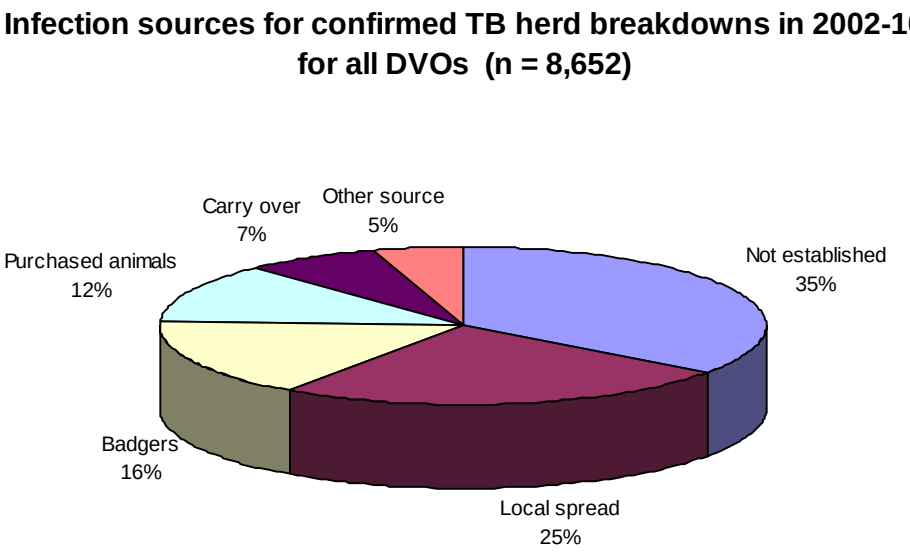
Fig. 8

Graph showing both % test positive herds by test type and % herd prevalence



Contiguous tests are undertaken in herds that are in close proximity to infected herds, usually neighbouring them, and the higher prevalence for both reactors and lesions confirms the importance of this type of testing. This is consistent with the results from epidemiological consideration undertaken by local Veterinary Officers who attribute 25% of breakdowns to "Local Spread" (Figure 9). This is not, however, prescriptive as to the source of the outbreak in that no investigation is undertaken of infection levels or the role of badgers in the outbreak. The badger (*Meles meles*) is a protected species in Northern Ireland and no culling or disturbance of them, without licence, is permitted. Thus the term "local spread" merely refers to infection being disclosed in a herd that is in proximity to another diseased herd, with little certainty in most cases as to the means of spread.

Fig. 9 Putative Infection Sources Field Recorded (with >80% confidence) cumulative 2002-2010

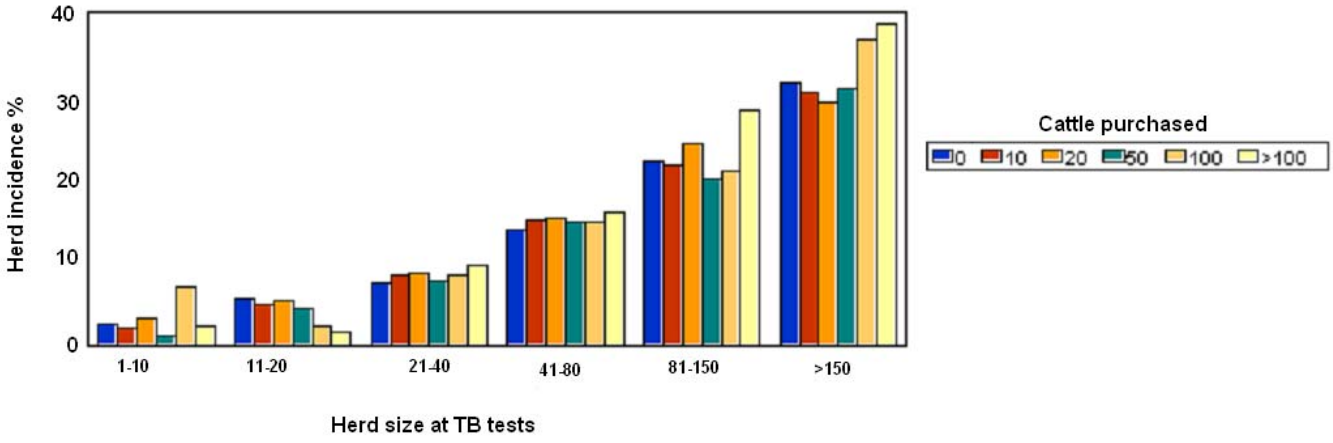


Various factors are thought to have contributed to the rise in disease incidence from 1990 to 2003. These include the following:

- The nature of farming in Northern Ireland and recent changes therein
- The role of wildlife, in particular, the Eurasian badger *Meles meles*
- Programme-related factors

The farming industry in Northern Ireland is traditionally characterised by high movement of cattle between and within herds; small, fragmented farms; and a high dependency on rented pasture ("conacre"). Between-herd movement is a marked feature of the cattle industry and is regulated. In 2000, 563,000 cattle, equivalent to 33% of the national herd, were recorded on the database as having moved between herds or to markets. Figure 10 shows the risk of a breakdown after adjusting for the confounding effect of herd size. There is a clear increase in risk associated with increased herd size, but the effect of purchases is equivocal in small to medium herds, which comprise the majority of herds in Northern Ireland. The extent of cattle movement between premises used by a herd – so-called "within-herd" movement - has been the subject of a field study involving a year-long monitoring of all within-herd movements in a random sample of herds. The role of within-herd movement in TB epidemiology is unclear but it is likely that such movement, together with increased stocking densities and the poor economic status of farming in recent years, must play some role in disease maintenance and spread. It should be noted that all fragments of land used by a herd that becomes a breakdown are subject to the same disease control procedures including those covering lateral risk.

Fig. 10 Risk of breakdown in the period January 2001-August 2002, stratified by the number of cattle purchased in the year 2000



Programme Development

Although the TB Programme has been in existence for many decades, it is not static. It develops strategically in response to disease levels, resource, epidemiological and novel scientific information. To ensure strategic direction is given to the programme a new management structure is now in place, comprising of :-

- TB Steering Group – to oversee strategic direction.
- TB Policy Development Group – to develop proposals / manage specific projects.
- TB Programme Delivery Group – to ensure effective delivery of this programme and monitor key performance indicators

This new structure brings together key persons from policy, veterinary and scientific research to give a coherence to TB policy development and delivery.

A number of Programme critical control points have been recognised and developed into Key Performance Indicators. These are designed to identify if there are areas that need development or resourcing. Parameters are measured monthly and delivery achievement is illustrated in a matrix and overall format.

DARD has in place a robust formal field assessment of delivery of test performance by private veterianarians under the Programme. This monitoring has been extended to those veterinarians directly employed by the Department of Agriculture and Rural Development in Northern Ireland (DARD).

To strengthen our ability to counter fraud and to establish if a cattle identity has been altered following disclosure of a reactor, DNA sampling for comparative examination may be used.

Routine DNA sampling of reactors is being rolled out by the application of a DNA identity ear tag at valuation. This allows for the taking of a tissue sample from the animal's ear which is stored in a tamper-proof container and stored in a freezer. This allows comparison with an animal bearing the same identity presented for slaughter under the Programme, should there be any subsequent query about the identity of an animal. Routine surveillance to cross-check the DNA from an animal at slaughter with DNA of an animal valued has been introduced.

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Wildlife

Mycobacterium bovis has been isolated from deer and badgers in Northern Ireland. It has also been isolated from the otter (*Lutra lutra*).

Deer

There are 3 species of wild or feral deer in Northern Ireland: *Dama dama* (fallow deer), *Cervus nippon* (sika deer) and *Cervus elaphus* (red deer). A proportion of the red deer are enclosed. A survey carried out in 1995, in which deer of the three species were sampled, demonstrated a prevalence of 5.8% (397 deer sampled). A small surveillance exercise carried out in 2009, in which fallow and sika deer were sampled, revealed a prevalence of 2% (146 deer sampled). The low number of deer (less than 3,500 estimated), their restricted range, limited contact with cattle, and the enteric nature of the infection, suggests that their role in the epidemiology of bovine TB is likely to be limited if not entirely insignificant.

Badger

DARD recognises that the involvement of wildlife, mainly badgers, must be addressed if eradication is to be achieved although the extent of the badger contribution to the incidence of disease has not been quantified.

A Badger Stakeholder Group was formed in 2004 in NI, which was tasked with assessing the available information and considering the potential need for a badger management strategy within NI.

Following consideration by the Badger Stakeholder Group of the evidence available from the completion of various extensive trials elsewhere (most notably the Randomised Badger Culling Trial in GB) and the adoption of lethal intervention as a policy to control bovine TB in cattle in another Member State (the Republic of Ireland (ROI)), it was concluded in their report, published February 2008, that no recommendation could be made on the way forward for Northern Ireland without first undertaking work to gather information specific to the Northern Ireland situation. The Badger Stakeholder Group agreed that this should include:-

i. a survey of the badger population in Northern Ireland to determine the number and distribution of badgers,

ii. developing a proposal for a study of the prevalence of bTB infection in badgers,

iii. assessing the available evidence in relation to the role of badgers in bovine TB to inform an appropriate course of action in NI, including whether it is appropriate to run a badger culling pilot,

iv. considering participation in a vaccination trial, and

v. undertaking a cost benefit assessment of the future options for any proposed badger management strategy in NI, once the information arising from the above actions is available.

The assessment of available scientific evidence was conducted in 2008 and it was concluded that there is robust evidence that badgers are involved in the transmission of infection and contribute to the incidence of disease. However, there is little evidence upon which to base an estimate of the magnitude of the badgers' contribution to disease incidence. Evidence that intervention in badger populations is likely to achieve a cost effective overall reduction in disease incidence is weak. It was concluded that there was enough evidence to rule out a proactive cull of badgers as a cost effective means of reducing disease levels in cattle.

Following the completion of the work of the Badger Stakeholder Group, DARD established new arrangements for engaging with stakeholders on all aspects of TB policy. Since summer 2008, the Department has been working in partnership with leaders of key industry and veterinary organisations in the TB Core Stakeholder Working Group to identify more clearly what could be done to move further towards the eradication of TB in NI. Key wildlife interests have been engaged as part of this process. This has been a new partnership approach to this very complex and difficult disease problem. The work undertaken through these new stakeholder arrangements informed the Ministerial statement on the way forward on TB.

In December 2008 the Minister of Agriculture and Rural Development made a statement outlining the way forward for TB. The long term goal is eradication and, as TB is a complex multifaceted disease, a holistic approach is to be adopted. There are 3 main strands that will be addressed in the strategy, including addressing the wildlife factor. From the wildlife perspective the priority for the first 5 year phase of the strategy will be to pursue the necessary information gathering actions and research to fill the critical knowledge gaps and build the evidence we need to make informed policy decisions about wildlife intervention in Northern Ireland.

Among the information gathering actions in phase one of the Ministerial TB strategy, each of which will contribute to the evidence required are:-

- undertake a Badger Population Survey (see below, completed 2008)
- progress plans for a Badger Prevalence Survey (see below)
- progress plans for a TB Biosecurity Study to evaluate cattle and badger-related risk factors on both TB infected and clean farms in a TB high incidence area (see below)
- develop plans for a Badger Removal Trial
- support the development of vaccine for badgers (in communication with GB and ROI).

These actions will be subject to the agreement of the Minister for the Environment, where necessary, and to a business case and bids for the substantial additional funding that will be required.

Badger Population

To date, two country-wide surveys have been completed to allow a fuller understanding of the number and distribution of the undisturbed badger population in NI.

The first survey was in 1994. The badger population in Northern Ireland was estimated in 1994 at 38,000 with a mean sett density of 3.51/km^2. It was found that a high preponderance of setts occurs in hedgerows and it was postulated that this increases the proximity of badgers to cattle, and therefore, the potential for inter-species transmission[3].

The second survey was in 2007/2008. The badger population in NI during 2007/2008 is estimated at 33,500 animals in 7,500 social groups giving a mean estimated density of such groups as 0.56 per square kilometre. It was observed that there was a positive association between areas of improved grassland and arable agriculture, and cover. Density was correlated with land class, the highest densities found in drumlin farmland areas and marginal uplands. Due to the prevalence of favourable landscape features, Counties Down and Armagh had the highest density of badger social groups.

Badger Road Traffic Accident Survey

Badgers are a protected species in Northern Ireland and culling for TB control purposes is not permitted. *Ad hoc* surveys, using badgers killed by cars, have been undertaken in the past but a province-wide survey has been ongoing since the mid 1990's. An interim report has been published which noted the following:

- The prevalence of *M. bovis* in badgers was 17%.
- TB infection is geographically widespread in badgers with no evidence of clustering and no apparent association, *at regional level*, with the distribution of infection in cattle.
- Herds immediately adjacent to infected badger carcases did not have a higher risk of infection compared to those adjacent to TB-negative animals. However, a higher proportion of herds within 3km of a positive carcase had TB compared to those within 3 km of a negative carcase and the difference was statistically significant.

The provisional conclusions arising from the survey was that there did appear to be a link between the distribution of infection in both species, although this did not indicate causality, i.e. direction of spread.

Badger Prevalence Survey

The main aims of this survey are to provide baseline information on the level of *M. bovis* infection in badgers, against which the effectiveness of any possible future intervention (e.g. vaccination, removal, changes in biosecurity or a combination of these) may be measured and to establish the geographic distribution of bTB infection in the species. In addition it is also intended that the Survey will:-

- assess the extent of bias in the Road Traffic Accident survey;
- assess the association between *M. bovis* strain types in badgers and cattle through strain typing;
- estimate the within-sett prevalence in badgers;

[3] Feore S.M. (1994) The distribution and abundance of the Badger *Meles meles* in Northern Ireland. PhD thesis. Queens University of Belfast.

- assess the efficacy of diagnostic blood tests for TB in badgers;
- determine *M. bovis* lesion and infection distribution in badgers; and
- gather more information on the number and spatial distribution of badger setts across NI building upon work already undertaken.

Northern Ireland is in a unique position to be able to conduct this survey on an undisturbed badger population and it is anticipated that the findings will be of significant use both within Northern Ireland and further afield.

An Economic Appraisal for the Badger Prevalence Survey was approved by the Department of Finance and Personnel (DFP) in December 2009. Preparatory work for the Survey is ongoing and significant additional funding for the 2-year period of the project has been secured.

Other evidence gathering projects

A TB Biosecurity Study is currently underway in a TB high incidence area in Co. Down. The Study is designed to compare farm characteristics in both herds that have recently had a TB breakdown and those that have had no recent history of a breakdown in this TB high incidence area. Consideration of selected cattle and wildlife risk factors are key elements of this research. As well as establishing relevant farm business information, a survey of on-farm buildings and a farm boundary survey are being carried out. Radial badger sett survey work on and around the main farm buildings of participating farms is also being undertaken. The findings of the Study should be available by the end of 2011. The conclusions will inform evidence-based biosecurity advice to be provided to livestock farmers and will inform policy decisions.

DARD continues to develop collaborative links with work ongoing in England and ROI regarding the development and trialling of vaccines for bovine TB in badgers. Vaccines developed for badgers may be the most feasible solution in the long term. Northern Ireland continues to learn from experiences in other regions of the UK. For example, Northern Ireland is learning from Scotland as to how they attained official TB free status; from Wales as to their Intensive Action Area which includes a proposed badger cull alongside stricter cattle measures; from England as to their Badger Vaccine Deployment Project and from their commitment to develop affordable options for a carefully-managed and science-led policy of badger control in areas with high and persistent levels of bovine TB in cattle; and from the ROI as to their badger vaccine development and deployment. We are also interested to see how the Welsh and English badger control strategies evolve and are implemented and whether they successfully withstand legal challenge, following their recent consultation exercises.

DARD continues to work in partnership with the NI Agri-Food and Biosciences Institute (AFBI) to establish critical knowledge gaps in relation to TB and to identify and explore further research and development options that would complement and assist current research. DARD has commissioned AFBI and DARD's Veterinary Epidemiology Unit (VEU) to conduct a number of literature reviews which will help identify and fill our critical knowledge gaps in relation to bovine TB generally and also to wildlife in particular. The outcomes of these literature reviews should be available in the first half of 2011. The TB literature reviews being carried out by AFBI are: (i) cattle to cattle transmission; (ii) badger to cattle transmission; (iii) cattle bTB tests and effective deployment; and (iv) bTB tests in badgers. In addition, DARD's VEU is currently conducting a literature review on badger vaccines. It is

anticipated that these reviews will better inform DARD in relation to future TB R&D projects.

AFBI have also been commissioned to carry out a review of the gamma interferon blood test so that we can ensure we are making the best use of it in the TB programme. It is expected that early results from this data analysis will be available in 2011/12.

As part of the Budget 2010 process, which establishes departmental funding for the next 4 financial years, a substantial bid was submitted for TB and wildlife studies, which has been successful. Decisions will be made during 2011 on which additional TB and wildlife projects will be progressed over the next 4 years.

Wildlife Advice

Herdkeepers, both during a disease episode and as part of a broader biosecurity education programme, are given advice, both oral and written, on non-lethal biosecurity measures to adopt to reduce potential contact between infected wildlife and cattle. All herdkeepers are sent an advisory booklet on biosecurity including this advice (see web link below)

http://www.dardni.gov.uk/biosecurity-code-booklet

In conclusion, DARD is taking an evidence based approach to the wildlife strand of its TB strategy, the outcome of which will be informed policy decisions on wildlife intervention in Northern Ireland.

Programme Related Factors

During the last 14 years, Northern Ireland has experienced a Newcastle Disease epidemic (1997), Foot and Mouth Disease epidemic (2001) and BSE. All 3 diseases, but particularly BSE due to the long duration, have resulted in re-prioritisation and diversion of resources for varying periods. Although the effect of these diseases on TB prevalence is difficult to determine or define, they are likely to have had a negative impact.

3. Description of the submitted programme[4]:

The targets:

Ministerial Direction

- In 2008, the Minister of Agriculture and Rural Development made a statement that confirmed that the aspiration of the policy remains the eradication of bovine TB, and recognised the necessity of taking a phased strategic approach. Fundamental to the achievement of this aspiration is the recognition that it is necessary to take a holistic view, seen as a three-stranded approach to (1) control cattle to cattle spread, (2) address any wildlife component, and (3) create a partnership with the agricultural industry in the delivery of the strategy. The first period of five years will, through partnership working with an established core group of stakeholders, lay the foundations for future phases. Early goals are to maintain compliance with EU legislative requirements and produce more effective and efficient ways to reduce transmission from both cattle and wildlife.

DARD strategy and aim for bovine TB control in cattle in NI are contained within two published documents.

a) DARD Strategic Plan 2006-2011

Goal 3 : “to enhance animal, fish and plant health and welfare”

b) DARD Veterinary Service Business Plan 2010/2011:

A key objective in this business plan, contributing to Goal three of the DARD Strategic Plan 2006-2011, is to

“Eradicate or considerably reduce the level of animal diseases that have public health or economic importance”.

Plans for 2012 and beyond have still to be drafted and agreed, but there is no expectation that there will be any reduction in the commitment to address animal diseases.

Control Procedures

Northern Ireland (NI) BTB presents a distinct epidemiological picture to that in GB and it has had a separate control programme since the inception of controls. It therefore has a distinct and stand alone NI TB Eradication Plan 2012, presented under the auspices of the UK Plan.

Current Procedures

(a) DARD has a surveillance, compulsory removal and compensation programme. Surveillance is organised in two fully integrated approaches: PME; and live surveillance.

(b) All animals slaughtered for human consumption undergo Post Mortem Examination (PME) as required by Council Directive 64/433 EEC. All such PMEs are completed by DARD staff. Results are available on APHIS immediately. Full integration allows immediate action to be taken by field staff, such as suspension of trading status, movement controls applied and further epidemiological measures to be instigated. Further laboratory investigations pursuant to PME findings are also fully integrated, ensuring continuity of information and security of actions. Such further investigations are carried out by the Agri-Food and Biosciences Institute (AFBI) Veterinary Sciences Division (VSD) laboratory, with full integration of results on APHIS. This surveillance approach includes the population of animals at routine slaughter and the population of reactor animals removed under the programme. AFBI is a DARD sponsored non-departmental public body.

(c) Live animal surveillance is undertaken using three methods.

- Export certification uses the Single Intradermal Test and interpretation as required by CD 64/432 EEC. Results are recorded on APHIS.

- Herd and animal testing, outside export certification as above, uses the single comparative intradermal tuberculin test (SCITT) as described in CD 64/432 EEC. Results are recorded on APHIS. More severe interpretation of the SCITT results is used where considered epidemiologically necessary, and in any case where disease is confirmed.

- Gamma interferon assay as described in CD 64/432 EEC (as amended by Regulation 1126/2002 EC) is used where considered epidemiologically necessary. It is always used as a supplementary test to the SCITT in these situations. Results are recorded on APHIS.

All skin testing is carried out by DARD veterinarians or DARD approved private veterinarians contracted to do so by DARD in the case of surveillance, or by the herd keeper for export certification.

All herds in NI at all times are allocated an OT herd status, a herd status reason, and a next test type. The herd status may only be officially tuberculsosis free (OTF), officially tuberculosis suspended (OTS), or officially tuberculosis withdrawn (OTW). These statuses are as defined in CD 64/432 EEC. In addition to CD 64/432 EEC requirements, where any herd in NI discloses more than five skin reactors without regard to confirmation, or where considered otherwise epidemiologically prudent, the herd is made OTW. The status reason describes the specific details of why the herd has the status allocated. The next test type describes the test that is set and best describes the test type requirement.

Movement control from all herds, at all times, is controlled by a combination of the herd status and status reason applicable to the herd. As all movements must be recorded on APHIS, including those to market and abattoir, immediate movement control is applied.

(d) All herds in NI are tested annually as a minimum. All animals over 6 weeks of age must be presented for test in OTF herds. Failure to test results in the OTF status being suspended immediately in all cases. Therefore NI is fully compliant with CD 64/432EEC in that any herd that has not been subject to an annual test loses OTF status immediately. Further delay in testing will result in automatic increased movement sanctions and downgrading the herd status to OTW.

(g) Herds may also undergo increased frequency of testing. This is in accordance with CD 64/432 EEC where a herd is suspected of being diseased or had disease confirmed. In addition, herds may be subject to increased testing frequency where epidemiological investigations disclose an increased disease risk, such as tracing or contiguity. For example, some 26.1% of herds in NI had more than one TB test in 2010.

(h) Animals may not move out of a herd during performance of a test except, with the permission of the competent authority, directly to slaughter in NI.

(i) There are no exemptions to the above testing programme at either animal level or herd level.

4. Measures of the submitted programme

4.1. Summary of measures under the programme

Duration of the programme: A voluntary Tuberculosis (attested herd) scheme was introduced in 1949 and in 1959 compulsory Tuberculin Testing was introduced. This programme has been constantly applied and developed since.

The table below details the history of testing bovines for Tuberculosis in Northern Ireland.

☐ **Control**	□ **Eradication**
☐ **Testing**	☐ **Testing**
☐ **Slaughter of positive animals**	☐ **Slaughter of positive animals**
☐ **Killing of positive animals**	□ **Killing of positive animals**
□ Vaccination	□ **Extended slaughter or killing**
□ Treatment	☐ **Disposal of products**
☐ **Disposal of products**	

□ **Monitoring or surveillance**

☐ **Other measures *(specify)*:**

All cattle in NI routinely slaughtered for human consumption receive a post-mortem inspection in EU approved establishments. All lesions suggestive of TB are sampled and forwarded to AFBI for appropriate laboratory analysis. All information obtained is passed to the field veterinarian responsible for the farm of origin of the slaughtered animal. This transfer of data is in realtime and fully integrated on APHIS.

4.2 Organisation, supervision and role of all stakeholders involved in the Programme:

The Veterinary Service of the Department of Agriculture and Rural Development (DARD) is the designated Competent Authority for the control of bovine tuberculosis in Northern Ireland under Council Directive 64/432/EC.

Policy responsibility in DARD lies with the Animal Health and Welfare Policy Division which is part of the Central Policy Group. Delivery responsibility belongs to Veterinary Service, with Veterinary Service Headquarters managing compensation payments and contract management.

A TB HQ Team has a range of functions including monitoring of the programme, project management, change management and the provision of veterinary advice. Veterinary Service Field side is divided into 10 areas, called Divisions, which are further subdivided into patches. Each Patch has a nominated VO. Field staff involved in tuberculosis control are: administrative staff, Veterinary Officers, Animal Health and Welfare Inspectors and Valuation Officers.

A DARD Veterinary Epidemiology Unit, an Enforcement Unit and other specialist advice is available as required in the programme.

PME surveillance and sampling is undertaken in abattoirs. All such examination and sampling is conducted by DARD staff. Reporting is direct and immediate through APHIS.

TB testing is undertaken only by DARD approved Veterinary Surgeons, using the Single Intradermal Comparative Cervical Test (SICCT) for internal control. Most testing is carried out by PVPs under contract to DARD but the Department also uses contract-based specialist vets and VOs in specific instances.

Herdkeepers nominate a PVP for tests that are not directly completed by DARD. All PVPs must be DARD approved to TB test.

Approval of testing veterinarians requires the completion of field training, field practical examination and attendance at a training seminar. PVPs and directly employed TB testers are subject to routine audit of performance. This includes audit of technical application of the test under field conditions.

Laboratory testing for tuberculosis control is currently carried out at Veterinary Sciences Division, part of the Agri-Food and Biosciences Institute (AFBI), Northern Ireland.

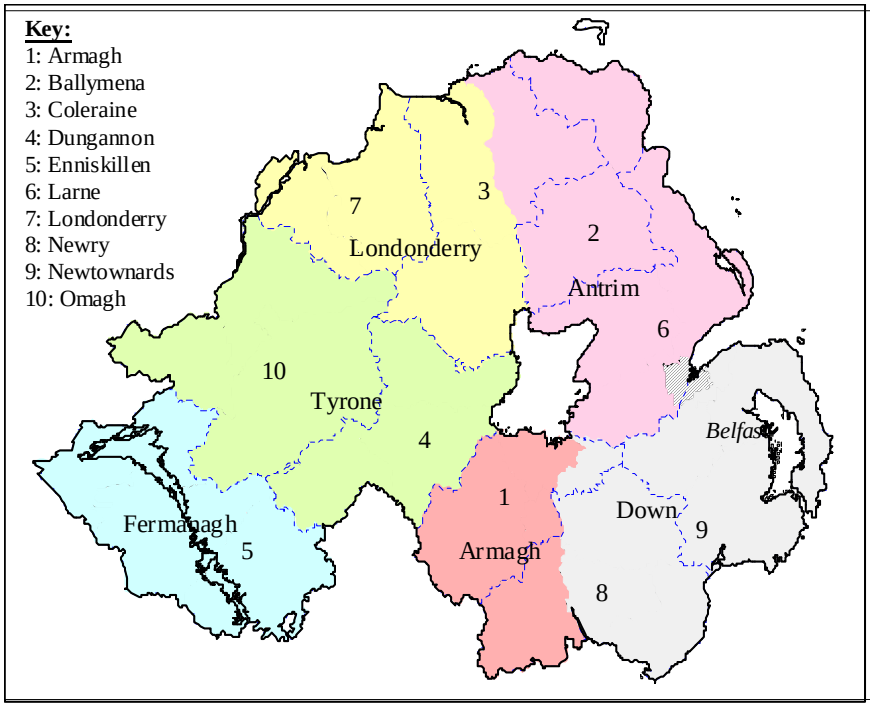
Herdkeepers are legally obliged to notify suspicion of the disease and present all animals for testing as required. Any interference with testing or control measures is an offence.

4.3 Description and demarcation of the geographical and administrative areas in which the programme is to be implemented:

For DARD Veterinary Service purposes, NI is divided into 10 administrative regions, each with a Divisional Veterinary Office. The regions are sub-divided into "patches", each managed by a veterinary officer (VO) supported by a team of technical officers. All are subject to common direction from DARD Headquarters through staff instructions and IT development. A centralised live animal health database ("APHIS"), incorporating an animal movement and test management system is used for all aspects of TB disease control. Aphis capability is used to administer between-herd movement of cattle, captured using a movement notification system and permissible movement matrix, facilitated by input at markets, abattoirs and directly via the internet to herdkeepers. It facilitates management of herd-level and animal-level tests, with results recorded at animal level.

Entry of test results is virtually exclusively by direct link with the testing veterinarian via a web based system onto APHIS. Abattoir and laboratory results are similarly reported immediately on APHIS.

Fig 11: Illustration of Divisional Veterinary Office areas and Counties in Northern Ireland



4.4 **Description of the measures of the programme**:

Tuberculosis is controlled in NI by the use of live animal surveillance, routine post mortem surveillance, compulsory removal of epidemiologically significant animals with compensation for removed animals and movement control.

4.4.1 Notification of the Disease:

Notification may arise from:

- Declaration of a suspect clinical case
- Disclosure at an abattoir of a suspect TB lesion at routine slaughter
- Disclosure of a non-negative skin test result

The herd is declared OTS until the results of confirmatory tests, PME, other epidemiologically relevant information, or more than 5 skin reactors, requires the herd to be declared OTW.

4.4.2 Target animals and animal population

The programme extends to the entire region of Northern Ireland. All animals except those that are less than 6 weeks old and retained in their natal herd are required to be routinely tested for TB in NI. All animals are required to be tested in restricted herds.

Current Demographics

There are currently 1.58 million cattle in Northern Ireland, distributed among 25,930 active herds. Dairy cows/heifers comprise 21% of the national herd while beef cows/heifers account for 18%. Based on cattle TB tested in herds, the mean herd size has increased from 56 cattle in 1990 to 65 in 2010, an increase of 16%. However, the data are strongly skewed to the right and the median was 33 for all TB herd tests in 2010. Almost two-thirds of herds (63%) in Northern Ireland have fewer than 50 cattle.

There are no exceptions to control measures for sporting or cultural animals.

4.4.3 **Identification of animals and registration of holdings**:

All cattle herds in Northern Ireland are registered with the central authority and each has been allocated a unique herd number to facilitate tracing of animal movements. All registered premises are recorded on a central computer database. Full details of the testing programme are maintained on the database.

Under Council Regulation (EC) No 1760/2000 cattle are identified by means of a unique identification number authorised by the Department. All cattle born after 1 January 1998 are identified with an ear tag in each ear bearing the same unique identification number, which will remain with the animal throughout its life. All cattle born after 1 January 2000 must be tagged using the new all numeric tags.

Each animal's test results and movement details are held and are readily accessed on a computer database. Epidemiological investigation and full tracing procedures in compliance with Council Regulation 1760/2000 are instigated following the detection of a diseased animal.

4.4.4 **Qualifications of animals and herds**

All herds in NI at all times are allocated an OT herd status, a herd status reason, and a next test type. The herd status may only be officially tuberculsosis free (OTF), officially tuberculosis suspended (OTS), or officially tuberculosis withdrawn (OTW). These statuses are as defined in CD 64/432 EEC. In addition to CD 64/432 EEC requirements, where any herd in NI discloses more than five skin reactors without regard to disease confirmation, or where considered otherwise epidemiologically prudent, the herd is made OTW. The status reason describes the specific details of why the herd has the status. The next test type describes the test that is set and best describes the test type requirement.

OTW status is applied to a herd where:

- Disease is confirmed by PME and/or laboratory procedures.
- When disease has not been confirmed, OTW status is applied where a Veterinary Officer has considered it to be epidemiologically prudent, for example recent movement out of a herd of an animal that is disclosed as a reactor in another herd. This decision is at the discretion of the patch VO and will be based on their knowledge of the breakdown, the area and any other relevant epidemiological evidence available to them.
- In any case, where there are more than five reactors disclosed at a skin test OTW status is routinely applied.

OTW status is removed from a herd where

- Two consecutive clear herd skin tests have been completed in accordance with CD 64/32 Annex A (3B), and
- Cleansing and disinfection procedures are completed as required. All OTW herds (due to disease) in NI are subject to DARD cleansing and disinfection inspection. No such herd will regain OTF status unless cleansing and disinfection is inspected and is approved.

OTS status is applied to a herd where:

- A suspect tuberculous lesion is disclosed at abattoir.
- Disclosure of an inconclusive reactor.
- A herd test is overdue.
- 5 or less reactors are disclosed at a test, with no PME or laboratory confirmation.
- And when, in the judgment of the patch VO, there is no over riding epidemiological reasons to apply OTW status (see OTW, above).

OTS status is removed from a herd where

- The Veterinary Officer is content that there are no epidemiological factors that indicate the herd status should be retained or made OTW (see OTW above)
- Testing is completed in accordance with CD 64/432 Annex A (3A)

  or, where applicable,

- The inconclusive animal is resolved by testing or slaughter with negative PME and laboratory results.
- Cleansing and disinfection procedures are completed as required. All OTS herds (due to disease) in NI are subject to DARD cleansing and disinfection inspection. No such herd will regain OTF status unless cleansing and disinfection is inspected and is approved.

4.4.5 Rules on the Movement of Animals

4.4.5 Rules on the Movement of Animals

In accordance with Council Regulation EC No 1760/2000 all calves born after 1 January 1998 must be identified with an ear tag in each ear within 20 days from the birth of the animal. All cattle identification numbers are authorised by DARD and recorded on the Animal and Public Health Information System (APHIS) computer database so that no duplication should be possible. The birth of a calf must be notified to the Department within 7 days of tagging, 27 days of birth and in any case before the animal leaves the holding of birth. All herd keepers must maintain a register of cattle born or moved into the herd. The register must show the identification number of the animal and details of replacement tags/retags. Herd keepers must also record in their register the colour, breed type, sex, date of birth and the dam's identification number (for animals born in their herd). Their register must also show the date and means of acquisition of stock, the date of movement off the

holding, the address of premises to which the animal moved, or if it has died, the date and manner of disposal. These records must be retained for 10 years. From 1 January 2000 the movement permit system was replaced by movement control documents requiring a producer to notify the Department within 7 days of an animal either leaving or arriving on his/her farm. Markets are required to notify movements on and off to the Department by the end of the next working day. However, in the case of a restricted animal the producer is required to obtain a movement licence from the Department in advance of moving the animal out of his/her herd. All movements are recorded and can be traced on APHIS. All stock on farms are checked against official records at Cattle Identification Inspections, and Tuberculosis and Brucellosis herd tests which occur at least annually, and when presented at markets or slaughterhouses**.** Discrepancies between the description of the animal and the details recorded on APHIS are investigated. If the discrepancy is not satisfactorily resolved a status is placed against the animal on APHIS which restricts its movement. Where the identification and traceability of an animal cannot be established at point of slaughter, the carcase will be removed from the human food chain. In the field, where the disease status of an animal cannot be clearly established from the database, the animal will be isolated and tested.

Herds with either OTS and OTW status applied are both subject to movement restrictions immediately. This is controlled through APHIS.

NI does not permit movement out of OTS or OTW herds unless direct to slaughter within NI. NI does allow live movement within the MS from herds where OTS status is applied due to an unresolved inconclusive animal where no history of BTB within three years (as per derogation under CD 64/432 Annex A 3.A (d))

NI allows movement into OTS or OTW herds except where the official veterinarian considers it epidemiologically prudent to prohibit such movements and, in any case, if there is delay in testing.

A matrix of movement restrictions is applied that is relevant to the status and status reason applied to the herd.

OTW status movement

- No live animal movements out except directly to slaughter in NI.
- Note: the movement restrictions described above may, where considered epidemiologically necessary, be increased to prevent any movement off farm even to direct slaughter or cease movement onto farm.

OTS status movement

- No live movement out except directly to slaughter in NI.
- Note: OTS herds with the status reason “RI (inconclusive) but no TB confirmed within three years” are derogated under CD 64/432EEC Annex A 3.A(d) to allow local live movement within UK. However, animals from the herd or those that have originated in the herd since the last clear herd test are not allowed to be exported to another MS.
- Note: the movement restrictions described above may, where considered epidemiologically necessary, be increased to prevent any movement off farm even to direct slaughter or cease movement onto farm.

There are no herds of unknown status in NI as all herds have a testing history. New herds may only purchase from OTF herds and as a result the status of the animals added to a new herd is known.

Overdue Tests:

Where a test becomes overdue, increasingly stringent movement controls are applied routinely as below:

- Immediately overdue, no live moves to market, export, or other holdings.
- 1 month overdue, no live moves to market, export, other holdings or slaughter. No moves in are allowed except one breeding bull on exceptional licence.

4.4.6 **Tests used and sampling schemes**:

- The DARD programme comprises surveillance, compulsory removal and compensation for compulsorily removed animals. The surveillance is organised in two fully integrated sections, PME and live surveillance.
- All animals slaughtered for human consumption undergo PME as required by CD 64/433 EEC. All such PMEs are completed by DARD staff. Results of PME are available on APHIS immediately. Full integration allows immediate action to be taken by

field staff, such as suspension of trading status, movement controls applied and further epidemiological measures to be instigated. Further laboratory investigations pursuant to PME findings are also fully integrated, ensuring continuity of information and security of actions. Such further investigations are carried out by AFBI, (a DARD sponsored non-departmental public body) with full integration of results on APHIS. This surveillance includes both animals at routine slaughter and reactor animals removed under the programme.

Live animal surveillance is undertaken using three methods.

- Export certification uses the SIT test and interpretation as required by CD 64/432 EEC and may only be performed with the express permission of DARD. Results are recorded on APHIS.

- Herd and animal testing outside export certification uses the SCITT as described in EC 64/432 EEC. Results are recorded on APHIS. More severe interpretations of the SCITT results are used where considered epidemiologically necessary at the discretion of the patch VO, and in any case where disease is confirmed.

- Gamma interferon testing as described in CD 64/432 EEC is used where considered epidemiologically necessary. It is always used as a supplementary test to the SCITT in these situations. Results are recorded on APHIS.

Inconclusive SCITT Results:

In NI, animals are allowed one skin test with an inconclusive result without compulsory removal.

A non-negative result at a second consecutive test results in mandatory removal as a reactor animal.

Herdkeepers may be advised to slaughter the animal at any time during this period.

At a restricted herd test, where standard and/ or severe interpretation may be used for disease control, any animal with an immediate previous inconclusive result is removed as a reactor if the next test result is not negative.

Pre-movement Testing

NI is fully compliant with the current requirements of pre-movement testing under CD 64/432 EEC.

All animals over 42 days are subject to the single intradermal test and interpretation within 30 days of export as required.Otherwise NI avails of the derogation available in CD64/432EEC Annex A 1.1(c) for intra MS movements where animals from an OTF herd are not required to be pre-movement tested.

In addition to CD64/432 EEC requirements, in NI any animal that has not undergone a test outwith a period of 15 months must undergo a pre-movement test before live movement except directly to slaughter in NI.

Supplementary Testing

CD 64/432 EEC at Annex B Art 3 allows supplementary testing.

In NI these are

- 6 monthly test post regaining OTF status following all OTS or OTW status for disease reasons.
- Lateral check tests of contiguous herds.
- Area testing where considered epidemiologically appropriate.
- Gamma interferon testing.
- Strain typing of isolates.

Gamma Interferon Testing in NI

NI has conducted significant GIFN testing in advance of EU approval of supplementary tests. In 1990s approximately 100,000 cattle were GIFN tested in NI . Review of the results of this extensive trialling concluded that the test was best employed as a supplementary test to the skin test.

At present GIFN testing is available to herds throughout NI where it is considered by DARD that the supplementary test will remove diseased animals more rapidly in the disease process and thereby increase the speed of resolution.

Herds currently selected are those with recent confirmed disease or confirmed lesion at slaughter following a recent negative skin test. Herd keepers with GIFN positive animals that are skin negative are offered compensation. Participation with the GIFN test programme element is voluntary.

Research continues to allow further development of the assay under field conditions and the test application is kept under review.

Strain Typing of Isolates

Since 2003 VNTR (Variable Number Tandem Repeat) has been used to strain type each breakdown episode, with all cultured reactors strain typed since mid 2009. This information is available to VOs to facilitate epidemiological decisions.

Atypical, or Possibly Fraudulent, Results

- Where DARD considers the result of a test to be atypical, or possibly fraudulent, it may conduct further investigations and may, as a result, consider the result of the test null and void.
- Such results may be suggested, inter alia, by test history, veterinary observation or epidemiological information.

4.4.7 Vaccines used and vaccination schemes.

The TB Control Order (Northern Ireland) 1999 prohibits Vaccination against bovine tuberculosis in NI.

4.4.8 Information and assessment on bio-security measures management and infrastructure in place in the holdings involved:

All herd owners in Northern Ireland have been issued with the DARD production “Biosecurity Code for Northern Ireland farmers and guidance for official visitors to farm properties and recreational users of farmland.” This book describes the reasons for having a code, legal requirements, notifiable disease and reducing risks of allowing disease on to premises.

Veterinary Service officials advise herdkeepers on movements and segregation of cattle in breakdown premises, particularly in relation to preventing spread of disease to contiguous herds. Movements of personnel and equipment that have the potential to carry disease are investigated and appropriate biosecurity advice given. Herds contiguous to breakdowns also receive biosecurity advice.

4.4.9 Measures in case of a positive result:

Immediately a notification of suspect TB is made to a local DVO, the herd OTF status is removed.

This notification may arise from:

- Declaration of a suspect clinical case.
- Disclosure at an abattoir of a suspect TB lesion at routine slaughter.
- Disclosure of a non-negative skin test result.

The herd is declared OTS until the results of confirmatory tests, PME, other epidemiologically relevant information, or more than 5 skin reactors, requires the herd to be declared OTW.

OTS and OTW herds are both subject to movement restrictions immediately. This is controlled through APHIS.

A matrix of movement restrictions is applied that is relevant to the status and status reason applied to the herd.

NI does not permit movement out of OTS or OTW herds except directly to slaughter in NI. However, where a herd has OTS status due to an unresolved inconclusive with no history of BTB within three years, NI avails of the derogation in CD 64/432 Annex A 3.A (d), where intra MS movements are allowed.

Relevant laboratory tests are established and reported via APHIS.

The test regime is modified on APHIS.

The test, if applicable, is interpreted by the patch VO who may remove test negative animals considered at epidemiologically increased risk. This may include full herd depopulation if considered necessary.

Removal procedures are put into immediate action, including the legal requirement to immediately isolate the diseased animal(s). Isolation advice specific to the circumstances is given by the official veterinarian and enforced by legal notice. Compliance with isolation advice is monitored and any breaches may lead to enforcement action.

All reactors are removed by DARD subcontracted hauliers for immediate slaughter.

Where the welfare of the animals precludes live removal, it may be euthanased on farm. PME is available where confirmation of disease in the episode has not yet been established or where otherwise considered epidemiologically necessary by the patch VO.

Following a confirmed TB breakdown (OTW) adjoining at risk herdkeepers are alerted and their herds are allocated a contiguous herd test (Lateral Check Test, LCT). If the test is not completed on time, these herds are downgraded to OTS and movement restricted. They are further tested at regular 4 monthly intervals until the infected herd has been cleared or until no further risk of lateral spread.

Tracing forward of animals that carry a disease risk is carried out. If it is not possible to test the traced animal then a herd level test may be set (Forward Check Test, FCT). Tracing parameters such as putative exposure windows are at VO discretion.

Note: where the traced animal has been exported live, DARD informs DEFRA (UK MS Competent Authority) of the relevant details.

Where VO discretion considers it relevant, the herds from which a TB reactor has originated or moved through are tested. These backward traced herds are downgraded to OTS or OTW until testing is completed.

A notice requiring cleansing and disinfection as the patch VO considers necessary is served and, on completion, the herdkeeper is required to notify the Divisonal Veterinary Office. Advice on cleansing and disinfection is given by the VO at a farm visit and in writing, including a list of Approved Disinfectants. Completion of cleansing and inspection is inspected by DARD staff. No such herd will regain OTF status unless cleansing and disinfection is inspected and is approved.

Specific advice on the breakdown epidemiology, public health and improvement of biosecurity is given directly by the patch VO to the herdkeeper. In addition, written advice is provided.

Case conferences may be held to avail of specialist knowledge, such as advice from the Veterinary Epidemiology Unit or AFBI, where the patch VO considers it necessary.

The option exists to depopulate either fully or partially any herd when it is considered epidemiologically necessary by the DARD field veterinarians.

In the case of total herd depopulations the following action is taken:

- No animals are allowed to move into the premises for one month following the depopulation.

- A full Cleansing and Disinfection is required after depopulation.
- The herdkeeper is advised of the control of risk from slurry.
- Two months after re-stocking a TB test is required. If this test occurs within a year of the breakdown it is classed as reactor (RH1) test. If the RH1 is clear the restriction is removed and then a post restriction test (CHT) is set for six months later and an Annual Herd Test set twelve months after the completion of the post–restriction test. If a farm premises is depopulated for more that 12 months then the restriction is removed at 12 months and the test following the purchase of animals is classed as an Annual Herd Test.

4.4.10 Compensation scheme for owners of slaughtered and killed animals:

Reactor animals and any relevant in contact animals are valued by DARD Valuation Unit on farm prior to slaughter.

Compensation is made at 100% of market valuation directly to the herdkeeper for all classes of animals removed.

Where a herd keeper disputes a valuation, they may seek an independent valuation by an independent valuer from a DARD approved list of valuers.

This independent valuation is not final and binding, and so the herdkeeper or DARD may appeal a valuation to an independent valuation appeal panel.

In any case the animal is removed without delay.

Salvage value is paid to the competent authority.

No consequential loss compensation is made.

4.4.11 Control on the implementation of the programme and reporting:

The Bovine TB Control Scheme in Northern Ireland is run as a programme by the Veterinary Service of DARD. This is led by a Senior Principal Veterinary Officer supported by a dedicated team at HQ. This is supplemented with input from the in-house Veterinary Epidemiology Team and other sources as required. Implementation is primarily in-house at Divisional Veterinary Office level with extensive testing contracted to private veterinary practitioners (PVP). One of the roles of the Programme team is to conduct audit of work carried out by PVPs, assessing the work contracted for against required delivery targets. Some of the monitoring may be done remotely using the APHIS. For example, reactor removal times are closely monitored to ensure meeting of the in-house target that is set at less than EU requirement, and notification times for test results. Further, specialist teams of audit Veterinary Officers conduct field test audits. This includes audit of the test procedure in the field. Failure to comply fully with contractual requirements will attract sanctions as described in a formal protocol.

Further reporting is achieved through a traffic light Key Performance Indicator system that monitors, on a monthly basis, progress against targets in the Veterinary Service Business Plan.

Detailed disease statistics are published monthly at http://www.dardni.gov.uk/index/dard-statistics/animal-disease-statistics.htm

5. Benefits of the Programme:

The main benefits of the TB programme are indicated below.

The overall benefit to the NI farming and processing sectors is that the TB programme has been successful in reducing TB in cattle and in supporting trade in live cattle and products. The export trade in cattle, beef, milk and by-products, which was worth £1,156.6m here in 2009, is dependent on the effective implementation of the programme.

This figure is made up as follows:

live cattle exports - £20.6m (including to GB)

animal by-products	- £16.0m (including to GB) cannot separate cattle data from other animals
beef and sheep meat	- £546.0m (including to GB) cannot separate data
milk and milk products	- £574.0m (including to GB)

In 2010, the live cattle export market was valued at approximately £17m. 2008 is the latest year that information is available on the external sales destinations of the food processing sector. In 2008 the export trade in cattle, beef, milk and by-products was worth £1,130m and if exports to GB are removed the value of this trade was £460m.

The vast majority of herds in NI are able to participate fully in export trade because of the programme. In the absence of an effective programme, access to export markets would not be possible. Maintenance of a programme continues to be essential to provide the guarantees necessary to enable NI cattle and their products to access EU and third country markets.

Trade in live animals is governed by Directive 64/432. Bovine animals for export to another MS must originate from an OTF herd and have been submitted to a pre-movement test for TB.

Trade in milk is governed by Council Directive 2004/41/EC and by Regulation 2004/853/EC which establish that milk originating from herds that do not have OTF status must be heat-treated and that milk from animals showing a positive reaction must not be used for human consumption.

Trade in animal products for human consumption is governed by Directive 2004/41/EC and Regulations 2004/853 and 2004/854. Meat from animals with generalized TB must not be declared fit for human consumption. In cases where lesions are confined to the lymph nodes or only one organ or only one part of the carcase, only the affected part need be declared unfit for human consumption.

Maintaining access to third country markets depends on NI continuing to comply with the relevant requirements of the OIE and such conditions as may be imposed bilaterally by our trading partners.

Human Health

In terms of human health, control of TB was one of the great public health success stories of the twentieth century. In the late 19th century TB caused 1 in 5 of deaths in the UK and even as late as the pre and post World War II period there were 50,000 TB notifications in England and Wales. Before WWII, 2,000 children died in the UK every year due to bTB. The implementation of BCG vaccines, pasteurisation of milk, and the reduction of the incidence of the disease in the cattle population contributed to the effective elimination of the disease as a major health issue in the developed countries. There were 12 cases of bTB in humans in NI from 2000-2005.

Were there to be a return to past levels of infection, the risk to the general public would be limited because of the use of BCG and pasteurisation of milk. For farm families who might consume unpasteurised milk or contract the disease through direct transmission, the risks could be significant.

Animal Welfare

If the disease were to re-emerge there could be significant animal welfare problems. It is not likely that these would be acceptable to a population increasingly seeking high welfare standards.

This analysis of programme benefits suggests that although precise estimates cannot be made there are a number of significant benefits relative to a “no control situation”.

6. Data on the epidemiological evolution during the last five years

6.1 Evolution of the disease

6.1.1. Data on herds[(a)] (one table per year and per disease/species)

Year: 2010 **Situation on date: 1 April 2011**

Disease[(b)]: TUBERCULOSIS **Animal species: BOVINE**

Region[(c)]	Total number of herds[(d)]	Total number of herds under the programme	Number of herds checked[(e)]	Number of positive herds[(f)]	Number of new positive herds[(g)]	Number of herds depopulated	% positive herds depopulated	INDICATORS		
								% herd coverage	% positive herds Period herd prevalence	% new positive herds Herd incidence
1	2	3	4	5	6	7	8 = (7/5)x100	9 = (4/3)x100	10 = (5/4)x100 [v]	11 = (6/4)x100 [v]
N. Ireland	25,933 [i]	25,933 [i]	23,595 [ii]	1,484 [iv]	1,150 [iv]	16	1.1%	91%	6.55 [iii]	5.07 [iii]
Total	25,933 [i]	25,933 [i]	23,595 [ii]	1,484 [iv]	1,150 [iv]	16	1.1%	91%	6.55 [iii]	5.07 [iii]

[i] Number of cattle herds in which cattle were presented at a TB herd test during the last 4 years

[ii] Herds with a herd level TB test where number of cattle >= 0 (22,666 herds had a herd test where cattle were presented cf. 23,031 in same period of 2009). Also, see also [iii] below

[iii] Prevalence and incidence figures were calculated using the herds which presented cattle at a herd test.

[iv] Herds with TB reactors

6.1.1. Data on herds[(a)] (one table per year and per disease/species)

Year: 2009 **Situation on date: 1 March 2010**

Disease[(b)]: TUBERCULOSIS **Animal species: BOVINE**

Region[(c)]	Total number of herds[(d)]	Total number of herds under the programme	Number of herds checked[(e)]	Number of positive herds[(f)]	Number of new positive herds[(g)]	Number of herds depopulated	% positive herds depopulated	INDICATORS		
								% herd coverage	% positive herds Period herd prevalence	% new positive herds Herd incidence
1	2	3	4	5	6	7	8 = (7/5)x100	9 = (4/3)x100	10 = (5/4)x100 [v]	11 = (6/4)x100 [v]
N. Ireland	26,287 [i]	26,287 [i]	24,023 [ii]	1,608 [iv]	1,293 [iv]	12	0.7	91.4	7.0 [iii]	5.61 [iii]
Total	26,287 [i]	26,287 [i]	24,023 [ii]	1,608 [iv]	1,293 [iv]	12	0.7	91.4	7.0 [iii]	5.61 [iii]

[i] Number of cattle herds in which cattle were presented at a TB herd test during the last 4 years

[ii] Herds with a herd level TB test where number of cattle >= 0 (23,031 herds had a herd test where cattle were presented cf. 20,328 in same period of 2008). Also, see also [iii] below

[iii] Prevalence and incidence figures were calculated using the herds which presented cattle at a TB herd test.

[iv] Herds with TB reactors.

6.1.1. Data on herds[(a)] (one table per year and per disease/species)

Year: 2008 **Situation on date: 15 June 2009**

Disease[(b)]: TUBERCULOSIS **Animal species: BOVINE**

Region[(c)]	Total number of herds[(d)]	Total number of herds under the programme	Number of herds checked[(e)]	Number of positive herds[(f)]	Number of new positive herds[(g)]	Number of herds depopulated	% positive herds depopulated	INDICATORS		
								% herd coverage	% positive herds Period herd prevalence	% new positive herds Herd incidence
1	2	3	4	5	6	7	8 = (7/5)x100	9 = (4/3)x100	10 = (5/4)x100 [v]	11 = (6/4)x100 [v]
N. Ireland	26,780 [i]	26,780 [i]	23,922 [ii]	1,598 [iv]	1,273 [iv]	10	0.6	89.1	7.0 [iii]	5.57 [iii]
Total	26,780 [i]	26,780 [i]	23,922 [ii]	1,598 [iv]	1,273 [iv]	10	0.6	89.1	7.0 [iii]	5.57 [iii]

[i] Number of cattle herds in which cattle were presented at a TB herd test during the last 4 years

[ii] Herds with a herd level TB test where number of cattle >= 0 (22,835 herds had a herd test where cattle were presented). Also, see also [iii] below

[iii] Prevalence and incidence figures were calculated using the herds which presented cattle at a TB herd test.

[iv] Figures currently only indicate herds where TB skin reactors were detected.

6.1.1. Data on herds[(a)] (one table per year and per disease/species)

Year: 2007 **Situation on date: 15 June 2009**

Disease[(b)]: TUBERCULOSIS **Animal species: BOVINE**

Region[(c)]	Total number of herds[(d)]	Total number of herds under the programme	Number of herds checked[(e)]	Number of positive herds[(f)]	Number of new positive herds[(g)]	Number of herds depopulated	% positive herds depopulated	INDICATORS		
								% herd coverage	% positive herds Period herd prevalence	% new positive herds Herd incidence
1	2	3	4	5	6	7	8 = (7/5)x100	9 = (4/3)x100	10 = (5/4)x100 [v]	11 = (6/4)x100 [v]
N. Ireland	26,915 [i]	26,915 [i]	24,820 [ii]	1,633 [iv]	1,264 [iv]	5	0.3	89.3	6.9 [iii]	5.35 [iii]
Total	26,915 [i]	26,915 [i]	24,820 [ii]	1,633 [iv]	1,264 [iv]	5	0.3	89.3	6.9 [iii]	5.35 [iii]

[i] Number of cattle herds in which cattle were presented at a TB herd test during the last 4 years

[ii] Herds with a herd level TB test where number of cattle >= 0 (23,642 herds had a herd test where cattle were presented). Also, see also [iii] below

[iii] Prevalence and incidence figures were calculated using the herds which presented cattle at a TB herd test.

[iv] Figures currently only indicate herds where TB skin reactors were detected.

6.1.1. Data on herds[(a)] (one table per year and per disease/species)

Year: 2006 **Situation on date: 15 June 2009**

Disease[(b)]: TUBERCULOSIS **Animal species: BOVINE**

Region[(c)]	Total number of herds[(d)]	Total number of herds under the programme	Number of herds checked[(e)]	Number of positive herds[(f)]	Number of new positive herds[(g)]	Number of herds depopulated	% positive herds depopulated	INDICATORS		
								% herd coverage	% positive herds Period herd prevalence	% new positive herds Herd incidence
1	2	3	4	5	6	7	8 = (7/5)x100	9 = (4/3)x100	10 = (5/4)x100 [v]	11 = (6/4)x100 [v]
N. Ireland	27,694 [i]	27,694 [i]	25,814 [ii]	1,998 [iv]	1,513 [iv]	7	0.35	93.2	8.2 [iii]	6.23 [iii]
Total	27,694 [i]	27,694 [i]	25,814 [ii]	1,998 [iv]	1,513 [iv]	7	0.35	93.2	8.2 [iii]	6.23 [iii]

[i] Number of cattle herds in which cattle were presented at a TB herd test during the last 4 years

[ii] Herds with a herd level TB test where number of cattle >= 0 (24,301 herds had a herd test where cattle were presented). Also, see also [iii] below

[iii] Prevalence and incidence figures were calculated using the herds which presented cattle at a TB herd test.

[iv] Figures currently only indicate herds where TB skin reactors were detected.

6.1.2. Data on animals (one table per year and per disease/species)

Year:2010 **Situation on date: 1 April 2011**

Disease[a]:TUBERCULOSIS **Animal species: BOVINE**

Region[b]	Total number of animals[c]	Number of animals[d] to be tested under the programme	Number of animals[d] tested	Number of animals tested individually[e]	Number of positive animals	Slaughtering		INDICATORS	
						Number of animals with positive result slaughtered or culled	Total number of animals slaughtered[f]	% coverage at animal level	% positive animals Animal prevalence
1	2	3	4	5	6	7	8	9=(4/3)x100	10=(6/4)x100
N. Ireland	1,604,356[i]	1,583,229[ii]	1,582,878	1,582,878	6,404 [iii]	6,404 [iii]	7,144	100.0%	0.405
Total	1,604,356[i]	1,583,229[ii]	1,582,878	1,582,878	6,404 [iii]	6,404 [iii]	7,144	100.0%	0.405

(a) Disease and animal species if necessary.
(b) Region as defined in the approved eradication programme of the Member State.
(c) Total number of animals existing in the region including eligible herds and non-eligible herds for the programme.
(d) Includes animals tested individually or under bulk level scheme.
(e) Include only animals tested individually, do not include animals tested by bulk level samples (e.g.: milk bulk tank tests).
(f) Include all positive animal slaughtered and also the negative animals slaughtered under the programme.

i From June Agricultural Census
ii Based on the average number of cattle presented at TB herd tests over the last 4 years.
iii Figures currently only indicate TB skin reactors

6.1.2 Data on animals (one table per year and per disease/species

Year:2009 **Situation on date: 1 April 2010**

Disease[a]:TUBERCULOSIS **Animal species: BOVINE**

Region[b]	Total number of animals[c]	Number of animals[d] to be tested under the programme	Number of animals[d] tested	Number of animals tested individually[e]	Number of positive animals	Slaughtering		INDICATORS	
						Number of animals with positive result slaughtered or culled	Total number of animals slaughtered[f]	% coverage at animal level	% positive animals Animal prevalence
1	2	3	4	5	6	7	8	9=(4/3)x100	10=(6/4)x100
N. Ireland	1,612,813[i]	1,599,025[ii]	1,601,500	1,601,500	8,198 [iii]	8,198	8,905	100.2	0.512
Total	1,612,813[i]	1,599,025[ii]	1,601,500	1,601,500	8,198 [iii]	8,198	8,905	100.2	0.512

(a) Disease and animal species if necessary.
(b) Region as defined in the approved eradication programme of the Member State.
(c) Total number of animals existing in the region including eligible herds and non-eligible herds for the programme.
(d) Includes animals tested individually or under bulk level scheme.
(e) Include only animals tested individually, do not include animals tested by bulk level samples (e.g.: milk bulk tank tests).
(f) Include all positive animal slaughtered and also the negative animals slaughtered under the programme.

[i] From June Agricultural Census 2008
[ii] Based on the average number of cattle presented at TB herd tests over the last 4 years.
[iii] Figures currently only indicate TB skin reactors

6.1.2 Data on animals (one table per year and per disease/species

Year:2008 **Situation on date: 15 June 2009**

Disease[a]:TUBERCULOSIS **Animal species: BOVINE**

Region[b]	Total number of animals[c]	Number of animals[d] to be tested under the programme	Number of animals[d] tested	Number of animals tested individually[e]	Number of positive animals	Slaughtering		INDICATORS	
						Number of animals with positive result slaughtered or culled	Total number of animals slaughtered[f]	% coverage at animal level	% positive animals Animal prevalence
1	2	3	4	5	6	7	8	9=(4/3)x100	10=(6/4)x100
N. Ireland	1,622,541[i]	1,647,300[ii]	1,592,213	1,592,213	8,390[iii]	8,390	9,001	96.7	0.53
Total	1,622,541[i]	1,647,300[ii]	1,592,213	1,592,213	8,390[iii]	8,390	9,001	96.7	0.53

(a) Disease and animal species if necessary.
(b) Region as defined in the approved eradication programme of the Member State.
(c) Total number of animals existing in the region including eligible herds and non-eligible herds for the programme.
(d) Includes animals tested individually or under bulk level scheme.
(e) Include only animals tested individually, do not include animals tested by bulk level samples (e.g.: milk bulk tank tests).
(f) Include all positive animal slaughtered and also the negative animals slaughtered under the programme.

[i] From June Agricultural Census 2008
[ii] Based on the average number of cattle presented at TB herd tests over the last 4 years.
[iii] Figures currently only indicate TB skin reactors

6.1.2. Data on animals (one table per year and per disease/species)

Year:2007 **Situation on date: 15 June 2009**

Disease[(a)]:TUBERCULOSIS **Animal species: BOVINE**

Region[(b)]	Total number of animals[(c)]	Number of animals[(d)] to be tested under the programme	Number of animals[(d)] tested	Number of animals tested individually[(e)]	Number of positive animals	Slaughtering		INDICATORS	
						Number of animals with positive result slaughtered or culled	Total number of animals slaughtered[(f)]	% coverage at animal level	% positive animals Animal prevalence
1	2	3	4	5	6	7	8	9=(4/3)x100	10=(6/4)x100
N. Ireland	1,643,458[i]	1,464,025[i]	1,640,552	1,640,552	7,299 [iii]	7,299	7,888	112.1[iv]	0.45
Total	1,643,458[i]	1,464,025[i]	1,640,552	1,640,552	7,299 [iii]	7,299	7,888	112.1[iv]	0.45

(a) Disease and animal species if necessary.
(b) Region as defined in the approved eradication programme of the Member State.
(c) Total number of animals existing in the region including eligible herds and non-eligible herds for the programme.
(d) Includes animals tested individually or under bulk level scheme.
(e) Include only animals tested individually, do not include animals tested by bulk level samples (e.g.: milk bulk tank tests).
(f) Include all positive animal slaughtered and also the negative animals slaughtered under the programme.

[i] From June Agricultural Census 2007
[ii] Based on the average number of cattle presented at TB herd tests over the last 4 years.
[iii] Figures currently only indicate TB skin reactors
[ii] >100% because of repeat herd testing and births & deaths through the year. Denominator also an estimate based on average herd size over last 4 years

6.1.2. Data on animals (one table per year and per disease/species)

Year:2006 **Situation on date: 15 June 2009**

Disease[(a)]:TUBERCULOSIS **Animal species: BOVINE**

Region[(b)]	Total number of animals[(c)]	Number of animals[(d)] to be tested under the programme	Number of animals[(d)] tested	Number of animals tested individually[(e)]	Number of positive animals	Slaughtering		INDICATORS	
						Number of animals with positive result slaughtered or culled	Total number of animals slaughtered[(f)]	% coverage at animal level	% positive animals Animal prevalence
1	2	3	4	5	6	7	8	9=(4/3)x100	10=(6/4)x100
N. Ireland	1,635,727[i]	1,676,640[ii]	1,711,870	1,711,870	9,383[iii]	9,383	10,072	102.1[iv]	0.55
Total	1,635,727[i]	1,676,640[ii]	1,711,870	1,711,870	9,383[iii]	9,383	10,072	102.1[iv]	0.55

(a) Disease and animal species if necessary.
(b) Region as defined in the approved eradication programme of the Member State.
(c) Total number of animals existing in the region including eligible herds and non-eligible herds for the programme.
(d) Includes animals tested individually or under bulk level scheme.
(e) Include only animals tested individually, do not include animals tested by bulk level samples (e.g.: milk bulk tank tests).
(f) Include all positive animal slaughtered and also the negative animals slaughtered under the programme.

i From June Agricultural Census 2006
ii Based on the average number of cattle presented at TB herd tests over the last 4 years.
iii Figures currently only indicate TB skin reactors
ii >100% because of repeat herd testing and births & deaths through the year. Denominator also an estimate based on average herd size over last 4 years

Stratified data on surveillance and laboratory tests

6.2.1. Stratified data on surveillance and laboratory tests (one table per year and per disease/species)

Year: 2010 **Disease[a]: *Tuberculosis*** **Animal species/category[b]: Bovine**

Description of the used serological tests: gamma interferon assay

Description of the used microbiological or virological tests: Lowenstein-Jensen and Stonebrinks solid culture media and Bactec MGIT 960 liquid culture system, Molecular confirmation of culture by spoligotype

Description of the other used tests: VNTR

Region[c]	Serological tests		Microbiological or virological tests		Other tests	
	Number of samples tested[d]	Number of positive samples[e]	Number of samples tested[d]	Number of positive samples[e]	Number of samples tested[d]	Number of positive samples[e]
Northern Ireland	13,520	661	3,887	751	VNTR - 781	742
Total	13,520	661	3,887	751	781	742

(a) Disease and animal species if necessary.
(b) Breeders, laying hens, etc, when appropriate
(c) Region as defined in the approved eradication programme of the Member State.
(d) Number of samples tested, all confounded.
(e) Number of positive samples, all confounded
The number of samples done for VNTR exceeds the number of positives. This is because these figures include the visible lesioned reactors, the culture results of which are not put on Aphis and are therefore not on our database.

6.2.1. *Stratified data on surveillance and laboratory tests (one table per year and per disease/species)*

Year: 2009 **Disease[a]: *Tuberculosis*** **Animal species/category[b]: Bovine**

Description of the used serological tests: gamma interferon assay

Description of the used microbiological or virological tests: Lowenstein-Jensen culture media and Bactec MGIT 960 system, Molecular confirmation of culture

Description of the other used tests: VNTR

Region[c]	Serological tests		Microbiological or virological tests		Other tests	
	Number of samples tested[d]	Number of positive samples[e]	Number of samples tested[d]	Number of positive samples[e]	Number of samples tested[d]	Number of positive samples[e]
Northern Ireland	14,657	1,279	6,234	992	VNTR - 992	977
Total	14,657	1,279	6,234	992	992	977

(a) Disease and animal species if necessary.
(b) Breeders, laying hens, etc, when appropriate
(c) Region as defined in the approved eradication programme of the Member State.
(d) Number of samples tested, all confounded.
(e) Number of positive samples, all confounded
The number of samples done for VNTR exceeds the number of positives. This is because these figures include the visible lesioned reactors, the culture results of which are not put on Aphis and are therefore not on our database.

6.2.1. *Stratified data on surveillance and laboratory tests (one table per year and per disease/species)*

Year: 2008 **Disease[(a)]: *Tuberculosis*** **Animal species/category[(b)]: Bovine**

Description of the used serological tests: gamma interferon assay

Description of the used microbiological or virological tests: Lowenstein-Jensen culture media and Bactec MGIT 960 system, Molecular confirmation of culture

Description of the other used tests: Histology, VNTR

Region[(c)]	Serological tests		Microbiological or virological tests		Other tests	
	Number of samples tested[(d)]	Number of positive samples[(e)]	Number of samples tested[(d)]	Number of positive samples[(e)]	Number of samples tested[(d)]	Number of positive samples[(e)]
Northern Ireland	13956	805	3286	928	Histology – 3132	2635
					VNTR - 2780	2752
Total	13956	805	3286	928	5912	5387

(a) Disease and animal species if necessary.
(b) Breeders, laying hens, etc, when appropriate
(c) Region as defined in the approved eradication programme of the Member State.
(d) Number of samples tested, all confounded.
(e) Number of positive samples, all confounded
The number of samples done for VNTR exceeds the number of positives. This is because these figures include the visible lesioned reactors, the culture results of which are not put on Aphis and are therefore not on our database.

6.2.1. Stratified data on surveillance and laboratory tests (one table per year and per disease/species)

Year: 2007 **Disease[(a)]: *Tuberculosis*** **Animal species/category[(b)]: Bovine**

Description of the used serological tests: gamma interferon assay

Description of the used microbiological or virological tests: Lowenstein-Jensen culture media and Bactec MGIT 960 system, Molecular confirmation of culture

Description of the other used tests: Histology, VNTR

Region[(c)]	Serological tests		Microbiological or virological tests		Other tests	
	Number of samples tested[(d)]	Number of positive samples[(e)]	Number of samples tested[(d)]	Number of positive samples[(e)]	Number of samples tested[(d)]	Number of positive samples[(e)]
Northern Ireland	8513	653	2953	946	Histology – 2896	2539
					VNTR - 2624	2598
Total	8513	653	2953	946	5520	5137

(a) Disease and animal species if necessary.
(b) Breeders, laying hens, etc, when appropriate
(c) Region as defined in the approved eradication programme of the Member State.
(d) Number of samples tested, all confounded.
(e) Number of positive samples, all confounded
The number of samples done for VNTR exceeds the number of positives. This is because these figures include the visible lesioned reactors, the culture results of which are not put on Aphis and are therefore not on our database.

6.2.1. Stratified data on surveillance and laboratory tests (one table per year and per disease/species)

Year: 2006 **Disease[a]: *Tuberculosis*** **Animal species/category[b]: Bovine**

Description of the used serological tests: gamma interferon assay

Description of the used microbiological or virological tests: Lowenstein-Jensen culture media and Bactec MGIT 960 system, Molecular confirmation of culture

Description of the other used tests: Histology, VNTR

Region[c]	Serological tests		Microbiological or virological tests		Other tests	
	Number of samples tested[d]	Number of positive samples[e]	Number of samples tested[d]	Number of positive samples[e]	Number of samples tested[d]	Number of positive samples[e]
Northern Ireland	13256	639	3567	1006	Histology – 2776	2556
					VNTR - 2729	2701
Total	13256	639	3567	1006	5509	5257

(a) Disease and animal species if necessary.
(b) Breeders, laying hens, etc, when appropriate
(c) Region as defined in the approved eradication programme of the Member State.
(d) Number of samples tested, all confounded.
(e) Number of positive samples, all confounded
The number of samples done for VNTR exceeds the number of positives. This is because these figures include the visible lesioned reactors, the culture results of which are not put on Aphis and are therefore not on our database.

6.3. Data on infection (one table per year and per disease/species)

Year:2010 **Disease[a]: TUBERCULOSIS** **Animal species: BOVINE**

Region[b]	Number of herds infected[c]	Number of animals infected
N. Ireland	1229	3393^
Total		

(a) Disease and animal species if necessary.
(b) Region as defined in the eradication programme of the Member State.
(c) Herds equal flocks, or holdings as appropriate.

^ Number of TB reactors that were confirmed during the year by the presence of visible lesions at slaughter and/or by laboratory confirmation (histopathology and/or culture) plus the number of animals where *M. bovis* was cultures from TB-like lesions found at routine slaughter (LRS) during the year that were not identified as TB reactor animals (as of 11 March 2011)

6.3. Data on infection (one table per year and per disease/species)

Year:2009 **Disease[a]: TUBERCULOSIS** **Animal species: BOVINE**

Region[b]	Number of herds infected[c]	Number of animals infected
N. Ireland	1346	3972^
Total	1346	3972

(a) Disease and animal species if necessary.
(b) Region as defined in the eradication programme of the Member State.
(c) Herds equal flocks, or holdings as appropriate.

^ Number of TB reactors that were confirmed during the year by the presence of visible lesions at slaughter and/or by laboratory confirmation (histopathology and/or culture) plus the number of animals where *M. bovis* was cultures from TB-like lesions found at routine slaughter (LRS) during the year that were not identified as TB reactor animals (as of 8th April 2010)

6.3. Data on infection (one table per year and per disease/species)

Year:2008 **Disease[a]: TUBERCULOSIS** **Animal species: BOVINE**

Region[b]	Number of herds infected[c]	Number of animals infected
N. Ireland	1866^	3936^
Total	1866^	3936^

(a) Disease and animal species if necessary.
(b) Region as defined in the eradication programme of the Member State.

(c) Herds equal flocks, or holdings as appropriate.

^ Based on visible lesions in TB skin reactors, culture confirmation in animals with lesions at routine slaughter or TB skin reactors confirmed by histopathology and/or culture

6.3. Data on infection (one table per year and per disease/species)

Year:2007 **Disease[a]: TUBERCULOSIS** **Animal species: BOVINE**

Region[b]	Number of herds infected[c]	Number of animals infected
N. Ireland	1990^	3899^
Total	1990^	3899^

(a) Disease and animal species if necessary.
(b) Region as defined in the eradication programme of the Member State.
(c) Herds equal flocks, or holdings as appropriate.

^ Based on visible lesions in TB skin reactors, culture confirmation in animals with lesions at routine slaughter or TB skin reactors confirmed by histopathology and/or culture.

6.3. Data on infection (one table per year and per disease/species)

Year:2006 **Disease[a]: TUBERCULOSIS** **Animal species: BOVINE**

Region[b]	Number of herds infected[c]	Number of animals infected
N. Ireland	2225^	4620^

Total	2225^	4620^

(a) Disease and animal species if necessary.
(b) Region as defined in the eradication programme of the Member State.
(c) Herds equal flocks, or holdings as appropriate.

^ Based on visible lesions in TB skin reactors, culture confirmation in animals with lesions at routine slaughter or TB skin reactors confirmed by histopathology and/or culture

6.4. Data on the status of herds at the end of each year[5]

Year:2010 **Disease[(a)]: TUBERCULOSIS** **Animal species: BOVINE**

Region[(b)]	Status of herds and animals under the programme[(c)]													
	Total number of herds and animals under the programme		Unknown[(d)]		Not free or not officially free from disease				Free or officially free from disease status suspended[(g)]		Free from disease[(h)]		Officially free from disease [(i)]	
					Last check positive[(e)]		Last check negative[(f)]							
	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]
N. Ireland	25,933[i]	1,583,229[ii]	0	0	245	59,274	741	90,811	1,872	148,740	n/a	n/a	23,075	1,284,404
Total	25,933[i]	1,583,229[ii]	0	0	245	59,274	741	90,811	1,872	148,740	n/a	n/a	23,075	1,284,404

[i] Number of cattle herds in which cattle were presented at a TB herd test during the last 4 years

[ii] Based on the average number of cattle presented at TB herd tests over the last 4 years.
n/a = not applicable

5 Data to provide for Bovine tuberculosis, Bovine brucellosis, IBR/IPV (AI + embryo units), Ovine and caprine brucellosis (B. melitensis), Enzootic bovine leukosis (EBL), Aujeszky's disease, Maedi/Visna and CAEV, IBR/IPV (other types of enterprise), Johnes disease (paratuberculosis).

Year:2009 **Disease[a]: TUBERCULOSIS** **Animal species: BOVINE**

Region[b]	Status of herds and animals under the programme[c]													
	Total number of herds and animals under the programme		Unknown[d]		Not free or not officially free from disease				Free or officially free from disease status suspended[g]		Free from disease[h]		Officially free from disease [i]	
					Last check positive[e]		Last check negative[f]							
	Herds	Animals[j]	Herds	Animals[j]	Herds	Animals[j]	Herds	Animals[j]	Herds	Animals[j]	Herds	Animals[j]	Herds	Animals[j]
N. Ireland	26,287[i]	1,599,025[ii]	0	0	412	78,238	673	76,759	1,985	174,685	n/a	n/a	23,201	1,269,343
Total	26,287[i]	1,599,025[ii]	0	0	412	78,238	673	76,759	1,985	174,685	n/a	n/a	23,201	1,269,343

[i] Number of cattle herds in which cattle were presented at a TB herd test during the last 4 years

[ii] Based on the average number of cattle presented at TB herd tests over the last 4 years.

n/a = not applicable

6.4. Data on the status of herds at the end of each year[6]

Year:2008 **Disease[(a)]: TUBERCULOSIS** **Animal species: BOVINE**

Region[(b)]	Status of herds and animals under the programme[(c)]													
	Total number of herds and animals under the programme		Unknown[(d)]		Not free or not officially free from disease				Free or officially free from disease status suspended[(g)]		Free from disease[(h)]		Officially free from disease [(i)]	
					Last check positive[(e)]		Last check negative[(f)]							
	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]
N. Ireland	26,780[i]	1,647,300[ii]	0	0	344	60,193	771	86,570	2,087	167,387	n/a	n/a	23,578	1,333,150
Total	26,780[i]	1,647,300[ii]	0	0	344	60,193	771	86,570	2,087	167,387	n/a	n/a	23,578	1,333,150

[i] Number of cattle herds in which cattle were presented at a TB herd test during the last 4 years

[ii] Based on the average number of cattle presented at TB herd tests over the last 4 years.
n/a = not applicable

6 Data to provide for Bovine tuberculosis, Bovine brucellosis, IBR/IPV (AI + embryo units), Ovine and caprine brucellosis (B. melitensis), Enzootic bovine leukosis (EBL), Aujeszky's disease, Maedi/Visna and CAEV, IBR/IPV (other types of enterprise), Johnes disease (paratuberculosis).

6.4. Data on the status of herds at the end of each year[7]

Year:2007 **Disease[(a)]: TUBERCULOSIS** **Animal species: BOVINE**

Region[(b)]	Status of herds and animals under the programme[(c)]													
	Total number of herds and animals under the programme		Unknown[(d)]		Not free or not officially free from disease				Free or officially free from disease status suspended[(g)]		Free from disease[(h)]		Officially free from disease [(i)]	
					Last check positive[(e)]		Last check negative[(f)]							
	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]
N. Ireland	26,915[i]	1,464,025[ii]	0	0	356	54,722	811	87,101	1,932	158,622	n/a	n/a	23,816	1,163,580
Total	26,915[i]	1,464,025[ii]	0	0	356	54,722	811	87,101	1,932	158,622	n/a	n/a	23,816	1,163,580

[i] Number of cattle herds in which cattle were presented at a TB herd test during the last 4 years

[ii] Based on the average number of cattle presented at TB herd tests over the last 4 years.
n/a = not applicable

7 Data to provide for Bovine tuberculosis, Bovine brucellosis, IBR/IPV (AI + embryo units), Ovine and caprine brucellosis (B. melitensis), Enzootic bovine leukosis (EBL), Aujeszky's disease, Maedi/Visna and CAEV, IBR/IPV (other types of enterprise), Johnes disease (paratuberculosis).

6.4. Data on the status of herds at the end of each year[8]

Year:2006 **Disease[(a)]: TUBERCULOSIS** **Animal species: BOVINE**

Region[(b)]	Status of herds and animals under the programme[(c)]													
	Total number of herds and animals under the programme		Unknown[(d)]		Not free or not officially free from disease				Free or officially free from disease status suspended[(g)]		Free from disease[(h)]		Officially free from disease [(i)]	
					Last check positive[(e)]		Last check negative[(f)]							
	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]
N. Ireland	27,694[i]	1,676,640[ii]	0	0	441	67,847	612	83,390	1,480	73,623	n/a	n/a	25,161	1,451,780
Total	27,694[i]	1,676,640[ii]	0	0	441	67,847	612	83,390	1,480	73,623	n/a	n/a	25,161	1,451,780

[i] Number of cattle herds in which cattle were presented at a TB herd test during the last 4 years

[ii] Based on the average number of cattle presented at TB herd tests over the last 4 years.
n/a = not applicable

8 Data to provide for Bovine tuberculosis, Bovine brucellosis, IBR/IPV (AI + embryo units), Ovine and caprine brucellosis (B. melitensis), Enzootic bovine leukosis (EBL), Aujeszky's disease, Maedi/Visna and CAEV, IBR/IPV (other types of enterprise), Johnes disease (paratuberculosis).

6.5. Data on vaccination or treatment programmes[9] (NOT APPLICABLE) No vaccination or treatment

Year: **Disease[(a)]:** **Animal species:**

Description of the used vaccination, therapeutic or other scheme:

Region[(b)]	Total number of herds[(c)]	Total number of animals	Information on vaccination or treatment programme					
			Number of herds[(c)] in vaccination or treatment programme	Number of herds[(c)] vaccinated or treated	Number of animals vaccinated or treated	Number of doses of vaccine or treatment administered	Number of adults[(d)] vaccinated	Number of young[(d)] animals vaccinated
Total								

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State
(c) Herds equal flocks, or holdings as appropriate
(d) Only for Bovine brucellosis, Ovine and caprine brucellosis (B. melitensis) and zoonotic salmonella, and as defined in the programme

9 Data to provide, where appropriate for Bovine brucellosis, IBR/IPV (AI + embryo units), Ovine and caprine brucellosis (B. melitensis), Aujeszky's disease, Salmonella pullorum, Salmonella gallinarum, Anthrax, IBR/IPV (other types of enterprise), Johnes disease (paratuberculosis), Mycoplasma gallisepticum, heartwater transmitted by vector insects in the French overseas departments, babesiosis transmitted by vector insects in the French overseas departments, anaplasmosis transmitted by vector insects in the French overseas departments, Bluetongue in endemic or high risk areas, Rabies, Echinococcosisand salmonellosis (zoonotic salmonella) and agents thereof.

6.6. Data on wildlife[10]

6.6.1. Estimation of wildlife population

Year: 2005-2009 **Method of estimation[(a)]: scientific field survey and analysis 07/08**

Regions[(b)]	Estimation of the population of the concerned wild species			
	Badger Meles meles	Species:	Species:	Species:
N.Ireland	33500 (95%CI 26-41.2k)			
Total	33500			

(a) The hunting bag is considered to be the standard method of estimation. If other method is used, explain
(b) Region as defined in the approved eradication programme of the Member State

[10] Data to provide for Bovine brucellosis, Ovine and caprine brucellosis (B. melitensis), Aujeszky's disease, African Swine fever, swine vesicular disease, endemic classical swine fever, Rabies, Echinococcosis and trichinellosis and agents thereof.

6.6.2. Monitoring of wildlife (one table per year and per disease/species)

Year: 2010 **Disease[(a)]: Bovine Tuberculosis** **Animal species: badger Meles meles**

Description of the used serological tests:

Description of the used microbiological or virological tests: Lowenstein-Jensen culture media and Bactec MGIT 960 system. Molecular confirmation of culture positive samples

Description of the other used tests: Post mortem examination, Spoligotyping

Region[(b)]	Microbiological or virological tests		Serological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
N Ireland	501	19	0	0	Histology – 17	0
					Spoligo – 35	19
					Post mortem – 101	10
Total	501	19	0	0	153	29

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State

6.6.2. Monitoring of wildlife (one table per year and per disease/species)

Year: 2009 **Disease[(a)]: Bovine Tuberculosis** **Animal species: badger Meles meles**

Description of the used serological tests:

Description of the used microbiological or virological tests: Lowenstein-Jensen culture media and Bactec MGIT 960 system . Molecular confirmation of culture positive samples

Description of the other used tests: Post mortem examination, Spoligotyping

Region[(b)]	Microbiological or virological tests		Serological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
N Ireland	530[i]	13	0	0	Histology – 11	0
					Spoligo – 13	11
					Post mortem – 102	N/A
Total	530	13	0	0	126	11

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State

(i) Refers to nos of samples taken rather than nos of animals

6.6.2. Monitoring of wildlife (one table per year and per disease/species)

Year: 2008 **Disease[(a)]: Bovine Tuberculosis** **Animal species: badger Meles meles**

Description of the used serological tests:

Description of the used microbiological or virological tests: Lowenstein-Jensen culture media and Bactec MGIT 960 system . Molecular confirmation of culture positive samples

Description of the other used tests: Post mortem examination, Spoligotyping

Region[(b)]	Microbiological or virological tests		Serological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
N Ireland	540	31	0	0	Histology - 4	2
					Spoligo - 31	31
					Post mortem – 100	14
Total	540	31	0	0	135	33

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State

6.6.2. Monitoring of wildlife (one table per year and per disease/species)

Year: 2007 **Disease[(a)]: Bovine Tuberculosis** **Animal species: badger Meles meles**

Description of the used serological tests:

Description of the used microbiological or virological tests: Lowenstein-Jensen culture media and Bactec MGIT 960 system. Molecular confirmation of culture positive samples

Description of the other used tests: Post mortem examination, Spoligotyping

Region[(b)]	Microbiological or virological tests		Serological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
N Ireland	363	12	0	0	Histology – 0	0
					Spoligo - 10	10
					Post mortem - 70	10
Total	363	12	0	0	80	10

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State

6.6.2. Monitoring of wildlife (one table per year and per disease/species)

Year: 2006 **Disease[(a)]: Bovine Tuberculosis** **Animal species: badger Meles meles**

Description of the used serological tests:

Description of the used microbiological or virological tests: Lowenstein-Jensen culture media and BACTEC midget 960 system

Description of the other used tests: Post mortem examination, Spoligotyping

Region[(b)]	Microbiological or virological tests		Serological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
N Ireland	537	22	0	0	Histology – 0	0
					Spoligo - 22	13
					Post mortem - 99	10
Total	537	22	0	0	121	13

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State

6.6.2. Monitoring of wildlife (one table per year and per disease/species)

Year: 2010 **Disease[(a)]: Bovine Tuberculosis** **Animal species: Wild Deer**

Description of the used serological tests:

Description of the used microbiological or virological tests: Lowenstein-Jensen culture media and Bactec MGIT 960 system. Molecular confirmation of culture positive samples

Description of the other used tests: Post mortem examination, Histology

Region[(b)]	Microbiological or virological tests		Serological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
N Ireland	2	0	0	0	Histology – 0	0
					Spoligo – 0	0
Total	2	0	0	0	0	0

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State

6.6.2. Monitoring of wildlife (one table per year and per disease/species)

Year: 2009 **Disease[(a)]: Bovine Tuberculosis** **Animal species: Wild deer**

Description of the used serological tests:

Description of the used microbiological or virological tests: Lowenstein-Jensen culture media and Bactec MGIT 960 system . Molecular confirmation of culture positive samples

Description of the other used tests: Post mortem examination, Histology

Region[(b)]	Microbiological or virological tests		Serological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
N Ireland	451[i]	5	0	0	Histology -5	3
					Spoligo – 5	4
Total	451	5	0	0	10	7

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State

(i) Refers to nos of samples taken rather than nos of animals

6.6.2. Monitoring of wildlife (one table per year and per disease/species)

Year: 2008 **Disease[a]: Bovine Tuberculosis** **Animal species: Wild deer**

Description of the used serological tests:

Description of the used microbiological or virological tests: Lowenstein-Jensen culture media and Bactec MGIT 960 system . Molecular confirmation of culture positive samples

Description of the other used tests: Post mortem examination, Histology

Region[b]	Microbiological or virological tests		Serological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
N Ireland	0	0	0	0	0	0
Total	0	0	0	0	0	0

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State

6.6.2. Monitoring of wildlife (one table per year and per disease/species)

Year: 2007 **Disease[(a)]: Bovine Tuberculosis** **Animal species: Wild Deer**

Description of the used serological tests:

Description of the used microbiological or virological tests: Lowenstein-Jensen culture media and Bactec MGIT 960 system. Molecular confirmation of culture positive samples

Description of the other used tests: Post mortem examination, Histology

Region[(b)]	Microbiological or virological tests		Serological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
N Ireland	0	0	0	0	0	0
Total	0	0	0	0	0	0

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State

6.6.2. Monitoring of wildlife (one table per year and per disease/species)

Year: 2006 **Disease[(a)]: Bovine Tuberculosis** **Animal species: Wild Deer**

Description of the used serological tests:

Description of the used microbiological or virological tests: Lowenstein-Jensen culture media and Bactec MGIT system. Molecular confirmation of culture positive samples

Description of the other used tests: Post mortem examination,Histology

Region[(b)]	Microbiological or virological tests		Serological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
N Ireland	0	0	0	0	0	0
Total	0	0	0	0	0	0

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State

6.6.2. Monitoring of wildlife (one table per year and per disease/species)

Year: 2010 **Disease[(a)]: Bovine Tuberculosis** **Animal species: Otter Lutra Lutra**

Description of the used serological tests:

Description of the used microbiological or virological tests: Lowenstein-Jensen culture media and Bactec MGIT 960 system. Molecular confirmation of culture positive samples

Description of the other used tests: Post mortem examination, VNTR

Region[(b)]	Microbiological or virological tests		Serological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
N Ireland	2	0	0	0	0	0
Total	2	0	0	0	0	0

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State

6.6.2. Monitoring of wildlife (one table per year and per disease/species)

Year: 2009 **Disease[(a)]: Bovine Tuberculosis** **Animal species: Otter Lutra Lutra**

Description of the used serological tests:

Description of the used microbiological or virological tests: Lowenstein-Jensen culture media and Bactec MGIT 960 system . Molecular confirmation of culture positive samples

Description of the other used tests: Post mortem examination, VNTR

Region[(b)]	Microbiological or virological tests		Serological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
N Ireland	0	0	0	0	0	0
Total	0	0	0	0	0	0

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State

6.6.2. Monitoring of wildlife (one table per year and per disease/species)

Year: 2008 **Disease[(a)]: Bovine Tuberculosis** **Animal species: Otter Lutra Lutra**

Description of the used serological tests:

Description of the used microbiological or virological tests: Lowenstein-Jensen culture media and Bactec MGIT 960 system . Molecular confirmation of culture positive samples

Description of the other used tests: Post mortem examination, VNTR

Region[(b)]	Microbiological or virological tests		Serological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
N Ireland	4	2	0	0	VNTR – 2	2
Total	4	2	0	0	2	2

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State

6.6.2. Monitoring of wildlife (one table per year and per disease/species)

Year: 2007 **Disease[(a)]: Bovine Tuberculosis** **Animal species: Otter Lutra Lutra**

Description of the used serological tests:

Description of the used microbiological or virological tests: Lowenstein-Jensen culture media and Bactec MGIT 960 system. Molecular confirmation of culture positive samples

Description of the other used tests: Post mortem examination, VNTR

Region[(b)]	Microbiological or virological tests		Serological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
N Ireland	0	0	0	0	0	0
Total	0	0	0	0	0	0

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State

6.6.2. Monitoring of wildlife (one table per year and per disease/species)

Year: 2006 **Disease[(a)]: Bovine Tuberculosis** **Animal species: Otter Lutra Lutra**

Description of the used serological tests:

Description of the used microbiological or virological tests: Lowenstein-Jensen culture media and Bactec MGIT 960 system Molecular confirmation of culture positive samples

Description of the other used tests: Post mortem examination, VNTR

Region[(b)]	Microbiological or virological tests		Serological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
N Ireland	0	0	0	0	0	0
Total	0	0	0	0	0	0

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State

6.6.3. Data on vaccination or treatment of wildlife **(NOT APPLICABLE)**

Year: **Disease[(a)]:** **Animal species:**

Description of the used vaccination, therapeutic or other scheme:

Region[(b)]	Square km	Vaccination or treatment programme		
		Number of doses of vaccine or treatment to be administered	Number of campaigns	Total number of doses of vaccine or treatment administered
Total				

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State

7. Targets

7.1. Targets related to testing 2012

7.1. Targets on diagnostic tests

Disease[(a)]: tuberculosis **Animal species:Bovine**

Region[(b)]	***Type of the test***[(c)]	***Target population***[(d)]	***Type of sample***[(e)]	***Objective***[(f)]	***Number of planned tests***
N Ireland	Tuberculin skin test	All bovines		surveillance	2,550,000
	Gamma Interferon Assay	bovines	Heparinised blood	surveillance	25,000
Total					2,575,000

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State
(c) Description of the test (e.g. SN-test, AB-Elisa, RBT, …)
(d) Specification of the targeted species and the categories of targeted animals (e.g. sex, age, breeding animal, slaughter animal, …).
(e) Description of the sample (e.g. blood, serum, milk, …)
(f) Description of the objective (e.g. qualification, surveillance, confirmation of suspected cases, monitoring of campaigns, seroconversion, control on deleted vaccines, testing of vaccine, control of vaccination, …)

* high risk tests

7.1.2. Targets on testing herds and animals[11]

7.1.2.1 Targets on the testing of herds[(a)]

Disease[(b)]: tuberculosis **Animal species: Bovine**

Region[(c)]	Total number of herds[(d)]	Total number of herds under the programme	Number of herds expected to be checked[(e)]	Number of expected positive herds[(f)]	Number of expected new positive herds[(g)]	Number of herds expected to be depopulated	% positive herds expected to be depopulated	TARGET INDICATORS		
								Expected % herd coverage	% positive herds Expected period herd prevalence	% new positive herds Expected herd incidence
1	2	3	4	5	6	7	8 = (7/5)x100	9 = (4/3)x100	10 = (5/4)x100	11 = (6/4)x100
N. Ireland	26,000	26,000	23,595	1365	1058	10	0.7	91	5.8	4.5
Total	26,000	26,000	23,595	1365	1058	10	0.7	91	5.8	4.5

(a)

11 Data to provide for Bovine tuberculosis, Bovine brucellosis, IBR/IPV (AI + embryo units), Ovine and caprine brucellosis (B. melitensis), Enzootic bovine leukosis (EBL), Aujeszky's disease, Anthrax, Maedi/Visna and CAEV, IBR/IPV (other types of enterprise), Johnes disease (paratuberculosis), CBPP, African Swine fever, swine vesicular disease, endemic classical swine fever, heartwater transmitted by vector insects in the French overseas departments, babesiosis transmitted by vector insects in the French overseas departments, anaplasmosis transmitted by vector insects in the French overseas departments, Bluetongue in endemic or high risk areas.

7.1.2.2. Targets on the testing of animals

Disease[a]: Tuberculosis **Animal species:**

Region[b]	Total number of animals[c]	Number of animals[d] under the programme	Number of animals[d] expected to be tested	Number of animals to be tested individually[e]	Number of expected positive animals	Slaughtering		TARGET INDICATORS	
						Number of animals with positive result expected to be slaughtered or culled	Total number of animals expected to be slaughtered[f]	Expected % coverage at animal level	% positive animals (Expected animal prevalence)
1	2	3	4	5	6	7	8	9=(4/3)x100	10=(6/4)x100
N Ireland	1,600,000	1,585,000	1,585,000	1,585,000	5,900	5,900	6,400	100	0.37
Total	1,600,000	1,585,000	1,585,000	1,585,000	5,900	5,900	6,400	100	0.37

(a) Disease and animal species if necessary.
(b) Region as defined in the approved eradication programme of the Member State.
(c) Total number of animals existing in the region including eligible herds and non-eligible herds for the programme.
(d) Includes animals tested individually or under bulk level scheme.
(e) Include only animals tested individually, do not include animals tested by bulk level samples (e.g.: milk bulk tank tests).
(f) Include all positive animal slaughtered and also the negative animals slaughtered under the programme.

7.2. Targets on qualification of herds and animals[12]

Disease[(a)]:Tuberculosis **Animal species:Bovine**

Region[(b)]	Total number of herds and animals under the programme		Targets on the status of herds and animals under the programme[(c)]											
			Expected unknown[(d)]		Expected not free or not officially free from disease				Expected free or officially free from disease status suspended[(g)]		Expected free from disease[(h)]		Expected officially free from disease [(i)]	
					Last check positive[(e)]		Last check negative[(f)]							
	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]	Herds	Animals[(j)]
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
N. Ireland	26,000	1,600,000	0	0	211	36,800	755	64,400	1334	103,040	23,700	1,445,800	23,700	1,445,800
Total	26,000	1,600,000	0	0	211	36,800	755	64,400	1334	103,040	23,700	1,445,800	23,700	1,445,800

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State
(c) At the end of the year
(d) Unknown: No previous checking results available
(e) Not free and last check positive: Herd checked with at least one positive result in the latest check
(f) Not free and last check negative: Herd checked with negative results in the latest check but not being “free” or “officially free”
(g) Suspended as defined for the respective disease in Community or national legislation where appropriate or according national legislation.
(h) Free herd as defined for the respective disease where appropriate in Community or national legislation where appropriate or according national legislation
(i) Officially free herd as defined for the respective disease where appropriate in Community or national legislation where appropriate or according national legislation
(j) Include animals under the programme in the herds with the referred status (left column)

[12] Data to provide for Bovine tuberculosis, Bovine brucellosis, IBR/IPV (AI + embryo units), Ovine and caprine brucellosis (B. melitensis), Enzootic bovine leukosis (EBL), Aujeszky's disease, Maedi/Visna and CAEV, IBR/IPV (other types of enterprise), Johnes disease (paratuberculosis).

7.3. Targets on vaccination or treatment (NOT APPLICABLE)

7.3.1. Targets on vaccination or treatment[13]

Vaccine(s) and vaccination scheme or treatment and treatment scheme[14]:

Disease[(a)]: **Animal species:**

Region[(b)]	Total number of herds[(c)] in vaccination or treatment programme	Total number of animals in vaccination or treatment programme	Targets on vaccination or treatment programme					
			Number of herds[(c)] in vaccination or treatment programme	Number of herds[(c)] expected to be vaccinated or treated	Number of animals expected to be vaccinated or treated	Number of doses of vaccine or treatment expected to be administered	Number of adults[(d)] expected to be vaccinated	Number of young[(d)] animals expected to be vaccinated
Total								

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State
(c) Herds equal flocks, or holdings as appropriate
(d) Only for Bovine brucellosis and Ovine, caprine brucellosis (B. melitensis) and zoonotic salmonella and as defined in the programme

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13 Data to provide for Bovine brucellosis, IBR/IPV (AI + embryo units), Ovine and caprine brucellosis (B. melitensis), Aujeszky's disease, Salmonella pullorum, Salmonella gallinarum, Anthrax, IBR/IPV (other types of enterprise), Johnes disease (paratuberculosis), Mycoplasma gallisepticum, heartwater transmitted by vector insects in the French overseas departments, babesiosis transmitted by vector insects in the French overseas departments, anaplasmosis transmitted by vector insects in the French overseas departments, Bluetongue in endemic or high risk areas, Rabies, Echinococcosis, salmonellosis (zoonotic salmonella) and agents thereof.

14 Specify the vaccine and the vaccination scheme (which herds and animals, the frequency and the interval of vaccination) with reference to the national legislation.

7.3.2. Targets on vaccination or treatment[15] of wildlife **(NOT APPLICABLE)**

Disease[(a)]: **Animal species:**

Region[(b)]	Square km	Targets on the vaccination or treatment programme		
		Number of doses of vaccine or treatments expected to be administered in the campaign	Expected number of campaigns	Total number of doses of vaccine or treatment expected to be administered
Total				

(a) Disease and species if necessary
(b) Region as defined in the approved eradication programme of the Member State

[15] Data to provide for Bovine brucellosis, Ovine and caprine brucellosis (B. melitensis), Aujeszky's disease, , African Swine fever, swine vesicular disease, endemic classical swine fever, Rabies, Echinococcosis and trichinellosis and agents thereof.

8. Detailed analysis of the cost of the programme[16]

Costs related to	*Specification*	*Number of units*	*Unitary cost in £*	*Total amount in £*	*Community funding requested (yes/no)*
1. Testing					
1.1. Cost of the analysis	***Test: Tuberculin- by Private Veterinary Practitioner***	***2,037,500***	***3.57***	***7,273,875***	***YES***
	Test: Tuberculin – by Temporary Veterinary Officer	***512,500***	***2.88***	***1,476,000***	***YES***
	Test: TB Culture (Staff Costs)	***3,987***	***108.45***	***432,390***	***Not applicable***
	Test: TB Culture (Non-Staff Costs)	***3,987***	***17.50***	***69,773***	***Not applicable***
	Test: Gamma Interferon (Staff Costs)	***25,000***	***17.85***	***446,250***	***YES***
	Test: Gamma Interferon (Non-Staff Costs)	***25,000***	***13.97***	***349,250***	***YES***
	Test: Histopathology	***2261***	***28.26***	***63,896***	***Not applicable***
1.2. Cost of sampling	***Not applicable***				
1.3. Other costs	***Not applicable***				
2. Vaccination or treatment					
2.1. Purchase of vaccine/treatment	***Not applicable***				

16 Fixed costs should not be included. All amounts are VAT excluded.

2.2. Distribution costs	***Not applicable***				

2.3. Administering costs	***Not applicable***				
2.4. Control costs	***Not applicable***				
3. Slaughter and destruction					
3.1. Compensation of animals		***6,400***	***1191***	***7,622,400***	***YES***
3.2. Transport costs		***6,400***	***7.50***	***48,000***	***Not applicable***
3.3. Destruction costs	***Data not available***				
3.4. Loss in case of slaughtering	***The contract for slaughter of cattle results in the contractor paying a salvage price for the carcases. The cost of slaughter is built into this and can't be broken down.***				
3.5 Costs from treatment of products (milk, eggs, hatching eggs, etc)	***Not applicable***				
4. Cleaning and disinfection	***Data not available***				

***5. Salaries** (staff contracted for the programme only)*	***Total shown excludes staff costs detailed at 1.1 above***			***4,158,220***	***Not applicable***
6. Consumables and specific equipment	***Not Applicable***				
7. Other costs					
Tuberculin		***360 litres avian+ 360 litres bovine = 720 litres***	***927.46 per litre***	***667,771***	***Yes***
DARD Funded Research				***272,857***	***Not applicable***
Salvage		***6,400***	***104.80***	***-670,720***	***Not applicable***
TOTAL				***22,209,962***	