EUROPEAN COMMISSION
HEALTH & CONSUMERS DIRECTORATE-GENERAL

Unit 04 - Veterinary Control Programmes

SANCO/12871/2010

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

Eradication programme of Bovine Tuberculosis

Approved* for 2011 by Commission Decision 2010/712/EU

United Kingdom

* in accordance with Council Decision 2009/470/EC

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: 2011

Year of implementation: 2011

Reference of this document: *TB Submission 2011*

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Date sent to the Commission 15 September 2010

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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.

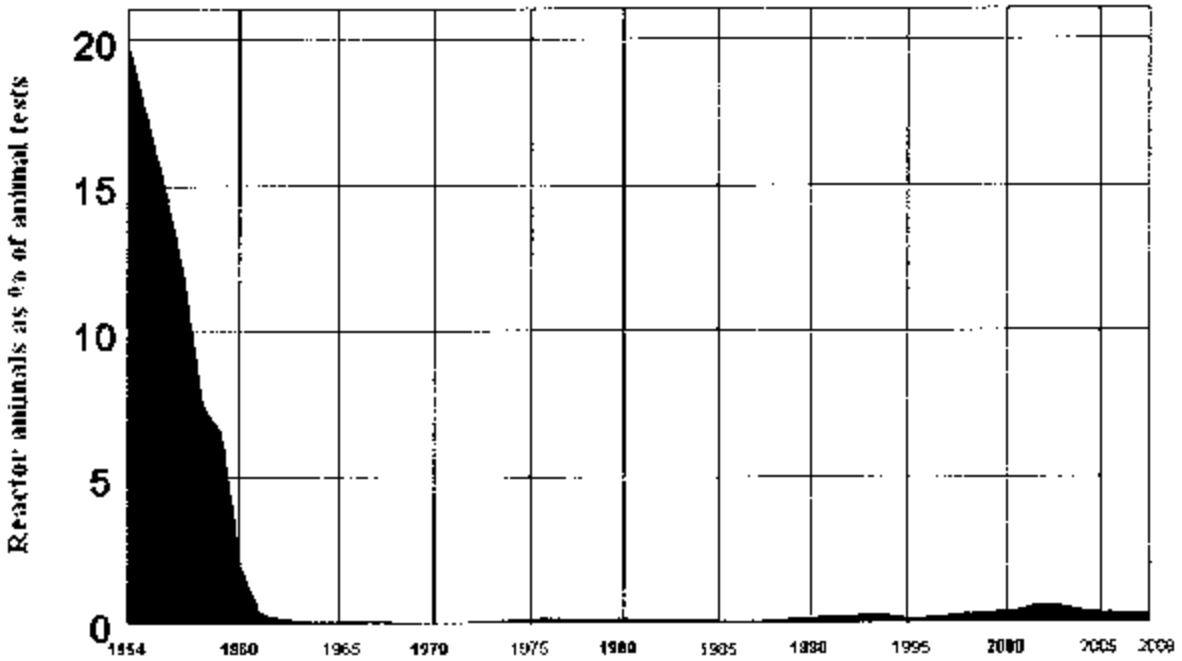
A transitional period between April and August 1959 saw an increase in uptake of voluntary testing and by April 1959 over 50% of NI herds were attested or supervised.

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

Bovine TB in Northern Ireland 1954-2008



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

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

Fig 2 Herd testing intervals in NI 1959 - present

Current Demographics

There are currently 1.6 million cattle in Northern Ireland, distributed among 26,300 active herds. Dairy cows/heifers comprise 22% 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 2009, an increase of 16%. However, the data are strongly skewed to the right and the median was 33 for all TB herd tests in 2009. Over one-half of herds (58%) 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.

Cattle agriculture in NI 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).

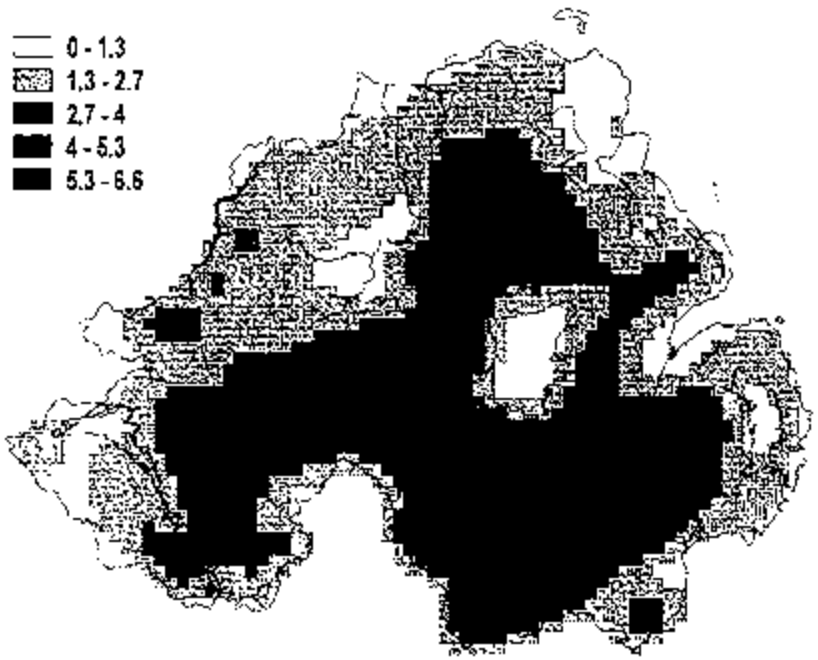


Figure 3 Herd Density: Herds Per Square Kilometre

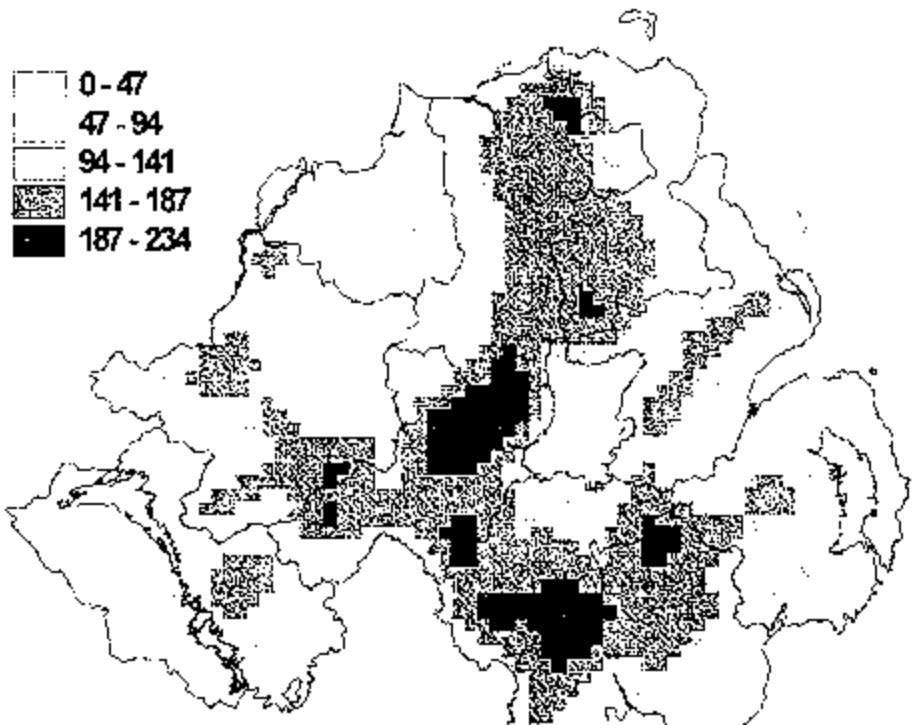


Figure 4 Cattle Density: number of Cattle Per Square Kilometre

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, 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 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. 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

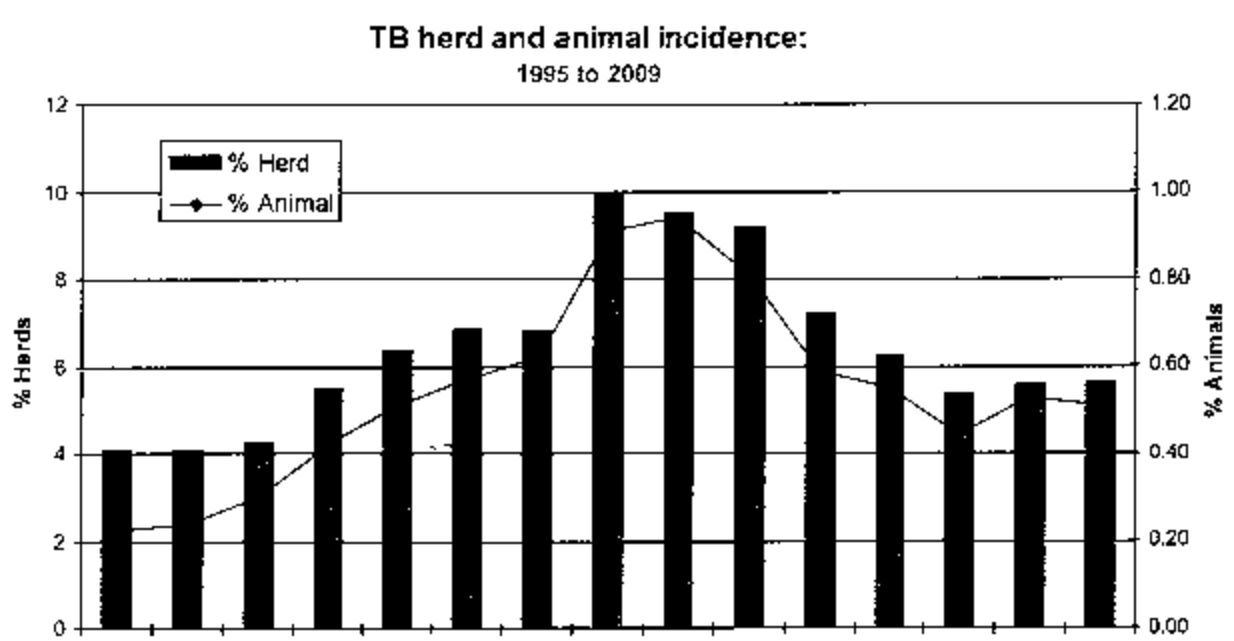


Fig. 5

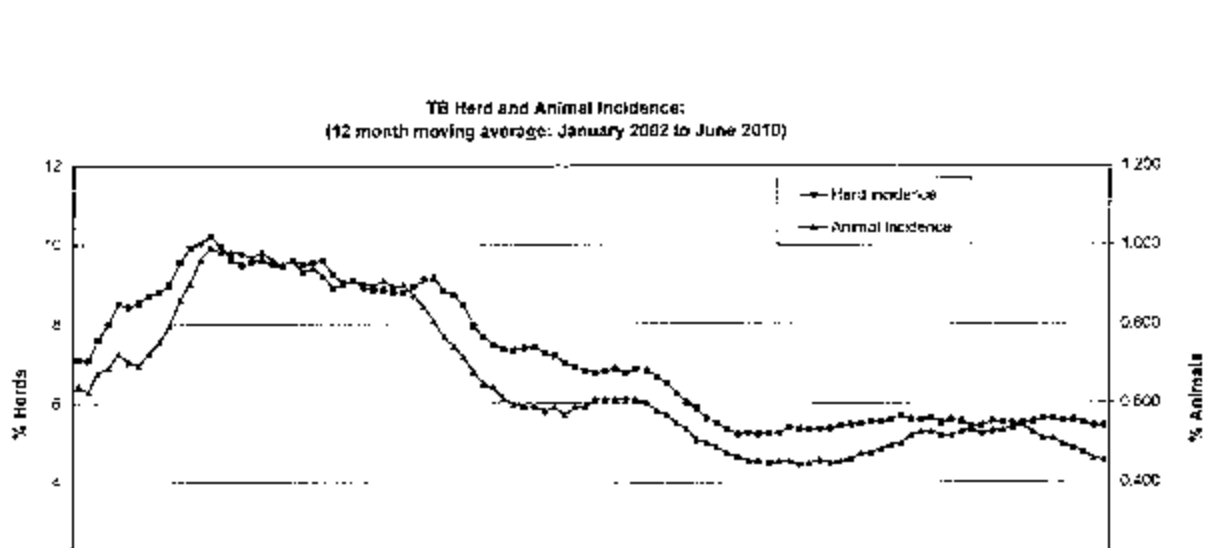


Fig 6

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

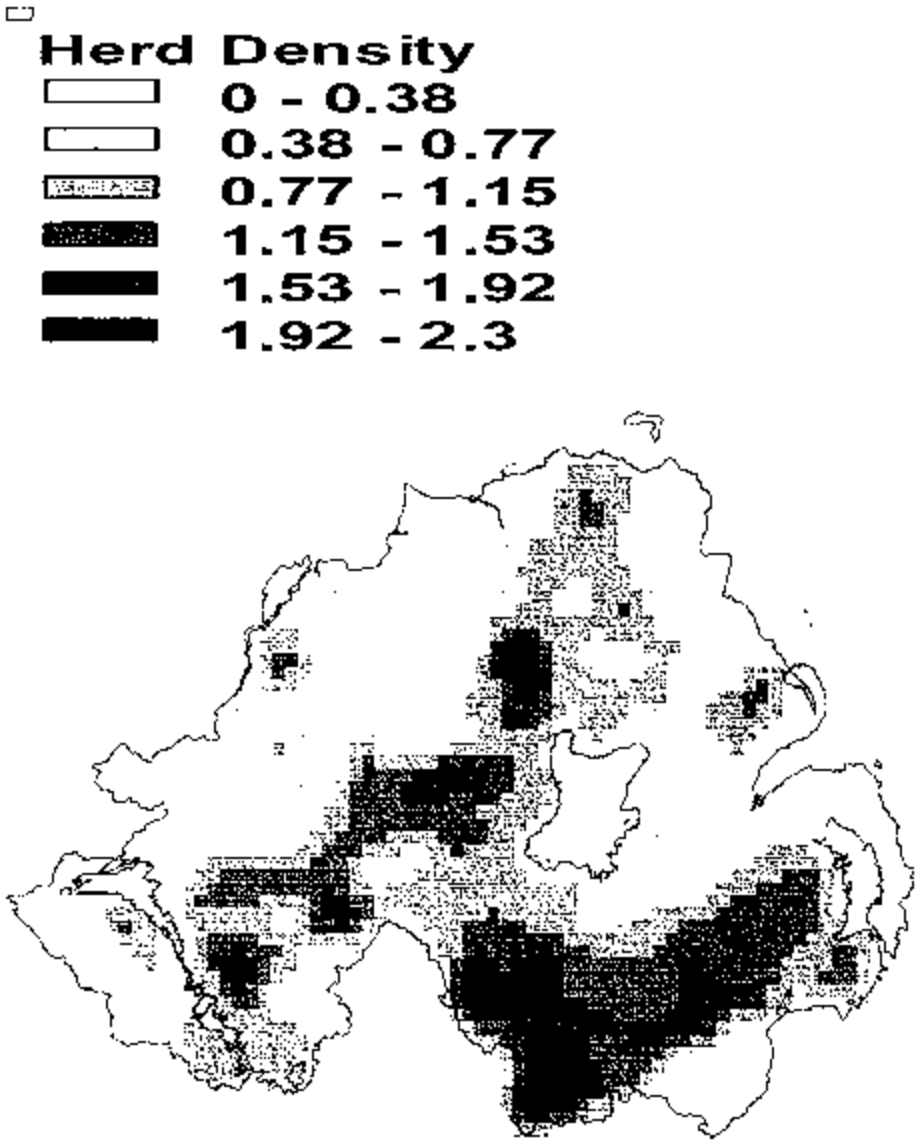


Fig 7 **Herd Density, based on TB-Positive Herds, Cumulative, 1995 to 2004, herds/km^2**

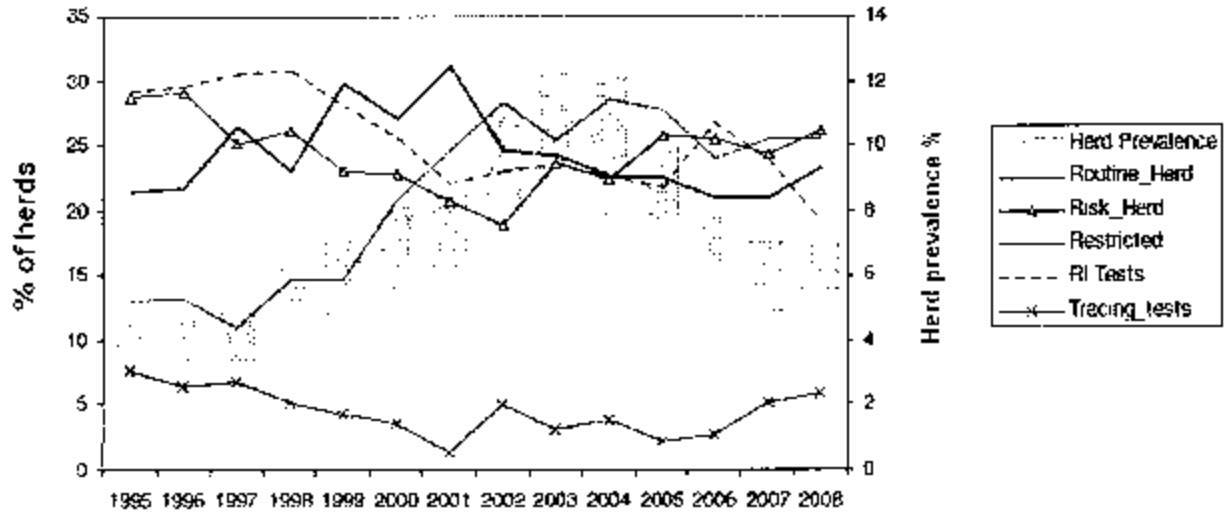
80% of reactors are removed under standard interpretation of the Single Intradermal Comparative Cervical Test (SICCT), 14% under severe interpretation, while the remaining 6% are taken using epidemiological data and stricter interpretation criteria. All reactors are removed by government-contracted hauliers 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

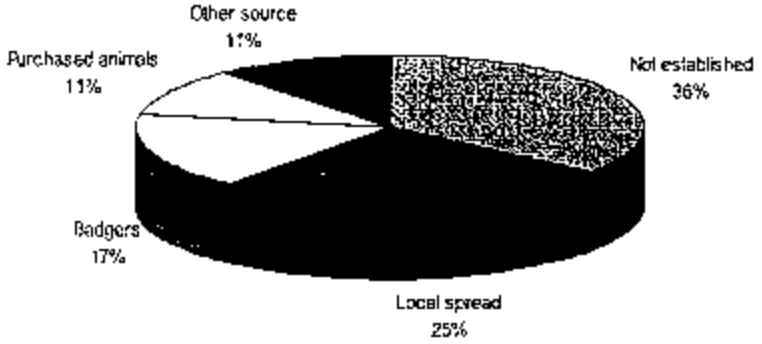
Graph showing both % test positive herds by test type and % herd prevalence



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 02-08

Infection sources for confirmed TB herd breakdowns in 2002-08 for all DVOs (n = 6,981)

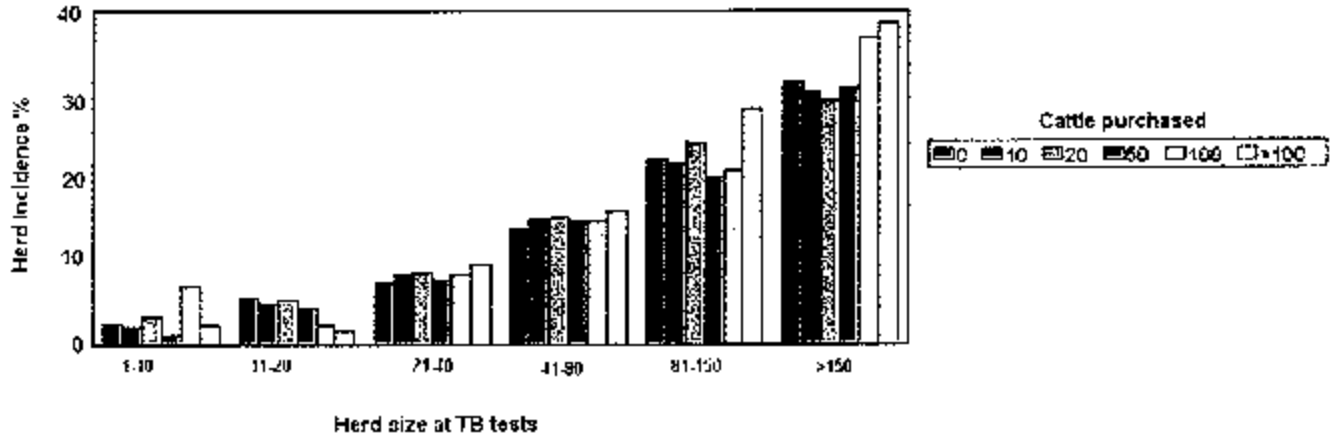


Various factors are thought to have contributed to the rise in disease incidence from 1990 to 2003. These include the following:

- 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.

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



Strategic Measures introduced as part of the TB Scheme.

Figure 11 and table 2 below summarise the main measures that were introduced as part of the ongoing management and refinement of the TB Scheme, specifically between 2000 and 2005. The letters in Figure 11 correspond with the letters and description in Table 2 overleaf.

Fig. 11

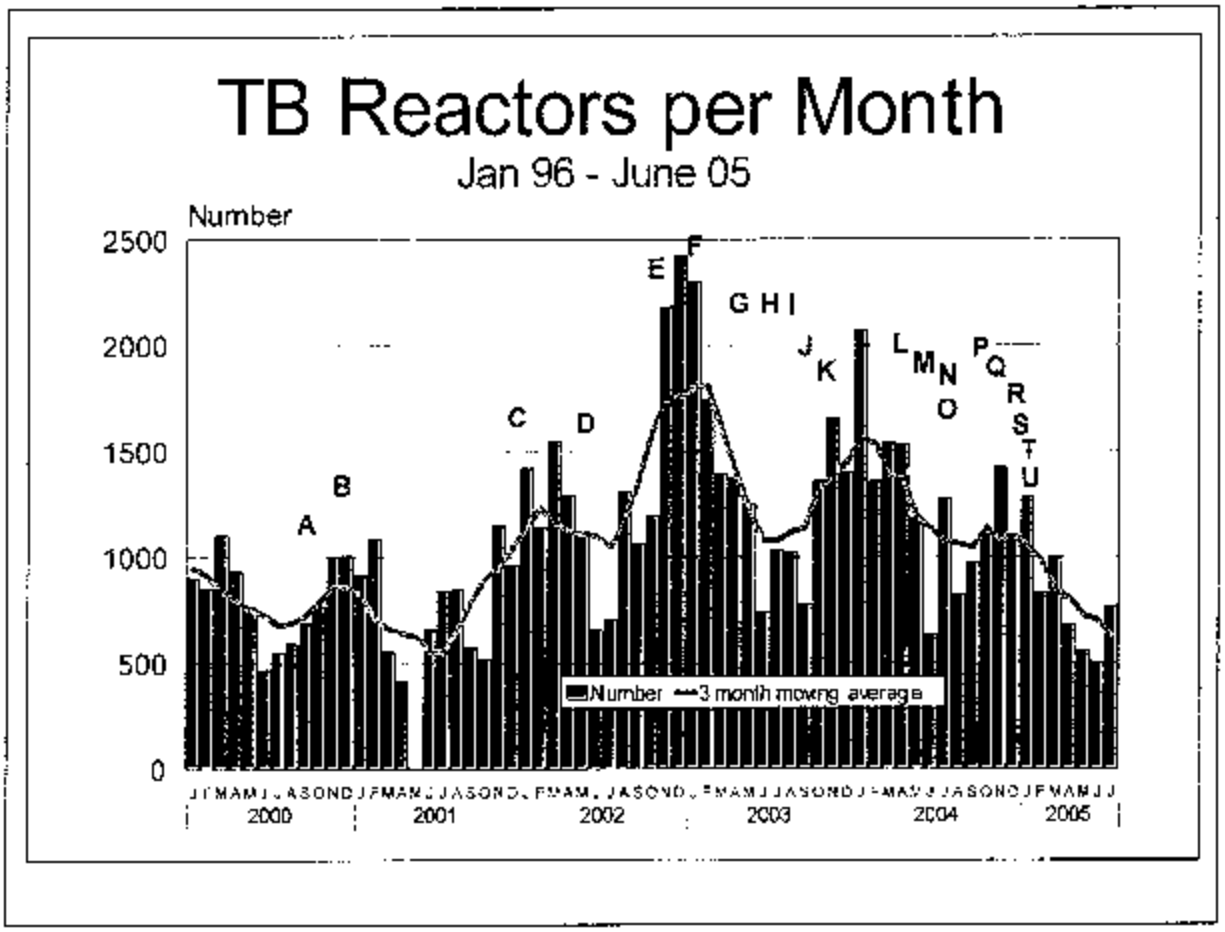


Table 2

Code on Graph	Measure	Objective	First Introduced
A.	Regular annual PVP workshops for new PVPs.	Enhance and standardise training for PVPs doing TB testing	Sep-00
B.	Major update in Staff Instructions (subsequent versions also produced since - versions 8,9,10, and 11 issued since	Ensure that all staff have access to comprehensive up-to-date instructions in relation to the TB Scheme	Nov-01
C.	On line electronic TB investigation database	Standardise Tb breakdown investigation on-line and allow summary management information	Jan-02
D.	PVP supervision teams introduced, with increased supervisions	Improve testing standards by PVPs to enhance reactor detection	Jun-02
E.	TB booklet for Herd keepers available on the internet	Increase information available to HKs on how to deal with TB in their herd.	Nov-02
F.	DVO Audit visits	Audit of procedures in Field Offices	Jan 03
G.	PVP meetings, e.g. joint DEFRA/DAF/DARD VS April 2003, a series of meeting with all PVPs	Update PVPs and engage them in discussion on TB priorities	Apr-03
H.	Written herd keeper guidance on minimising transmission from wildlife	Increase HK awareness of what they can do to address spread from badgers	Jun-03
I.	Electronic TB test processing system for PVPs (e-PVP)	Computerise PVP TB paperwork. Resulting in resource savings and faster processing	Sep-03
J.	Pilot DNA biopsy tags for TB pilot and BR reactors.	Pilot of DNA technology to deter animal identity fraud in relation to TB	Oct 03
K.	Increased allocation of Field resources to TB	Increase the percentage of TB Scheme tasks that are completed	Oct-03
L.	Specific disease control targets in the higher incidence divisions of Enniskillen and Newtownards (Gap targets)	Focus attention on high incidence Divisional Veterinary Office areas	Apr-04
M.	Biosecurity booklet distributed to all HKs	Increase general biosecurity awareness of all HKs	May-04
N.	Interferon gamma use in two high incidence DVOs.	Pilot the use of Tb blood testing to remove additional infected cattle in risk herds	Jul-04
O.	Overdue test initiative for Breakdown Herd Tests	Address the problem of overdue tests in breakdown herds	Jul-04

P.	TVO recruitment (now called VOTs.) TVOs and VOTs are veterinary officers employed directly by the Department to TB test.	Provide DARD testing capacity for high risk tests (TB Review recommendation)	Sep-04
Q.	Enhanced Valuation officer management	Increase support to Valuation Officers	Oct-04
R.	Staff Officer and VO recruited to TB Branch	Increase resource to support HQ TB initiatives. e.g. PVP practice audits	Oct-04
S.	Tighter restrictions on overdue tests, incl ban on moves to slaughter for overdue tests	Address longstanding issue with overdue tests	Nov-04
T.	Strategic anti-fraud approach.	Co-ordinated approach to identify and discourage potential TB fraud	Dec-04
U.	Pre-movement testing for Brucellosis introduced with 30% reduction in movements.	Brucellosis measure, however it appears to have reduced cattle movements, which undoubtedly has reduced TB infected cattle moving	Dec-04

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 (See 3. Ministerial Direction, below). 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

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 03/2008)
- progress plans for a Badger bTB Prevalence Survey (see below)
- progress plans for a TB Biosecurity Case-Control 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 additional funding that will be required.

Badger Population

To date, two country-wide surveys have been completed to allow a fuller understanding of the 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%.

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

- 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 bTB 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 (eg 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;

- 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 bTB Prevalence Survey was approved by the Department of Finance and Personnel (DFP) in December 2009. Preparatory work for the Survey is nearing completion and, should the significant additional funding sought for the 2-year period of the project be available, this Survey could commence.

Other evidence gathering projects

A TB Biosecurity (case control) Study was, on 31 August 2010, announced to start soon 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 will be key elements of this research. As well as establishing relevant farm business information, a survey of on-farm buildings and a farm boundary survey will be carried out. There will also be radial badger sett survey work on and around participating farms. This Study will be

conducted during the period October 2010 to March 2011 and funding is available to complete the Study. The conclusions will inform evidence-based biosecurity advice to be provided to livestock farmers and will inform policy decisions. The outcomes of the Study will be submitted for peer reviewed publication.

DARD seeks to develop communication 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 Pilot 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 vaccine development and deployment.

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. Several Research and Development projects, which could be undertaken during the 2010/2011 financial year and beyond, are about to be commissioned.

Wildlife Advice

Herdkeepers, both during a disease episode and as part of a broader biosecurity education programme, are given advice, 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 13 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 of resources and resources being diverted 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 Stageic Plan 2006-2011, is to

"Eradicate or considerably reduce the level of animal diseases that have public health or economic importance"

Control Procedures

Current Procedures

(a) DARD has a surveillance, compulsory removal and compensation programme. Surveillance is organised in two fully integrated sections, 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 includes both animals at routine slaughter and reactor animals removed under the programme. AFBI is a DARD sponsored non-departmental public body and was formerly known as DARD's Science Service.

(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 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 single comparative intradermal tuberculin test (SCITT) as described in CD 64/432 EEC. Results are recorded on APHIS. More severe interpretations of the SCITT results are 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 the herd status and status reason relevant 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. Failure to do so 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 to OTW.

(g) Herds may also be required to 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 27.9% of herds in NI had more than one TB test in 2009.

(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.

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**

- ☐ **Testing**
- ☐ **Slaughter of positive animals**
- ☐ **Killing of positive animals**
- ☐ Vaccination
- ☐ Treatment
- ☐ **Disposal of products**

Eradication

- ☐ **Testing**
- ☐ **Slaughter of positive animals**
- **Killing of positive animals**
- ☐ **Extended slaughter or killing**
- ☐ **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 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 consists of 10 areas, called divisions, which are divided into patches. 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 their selected PVP who must be DARD approved.

Approval of testing veterinarians requires the completion of field training, field examination and attendance at a training seminar. PVPs are subject to routine audit of performance.

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

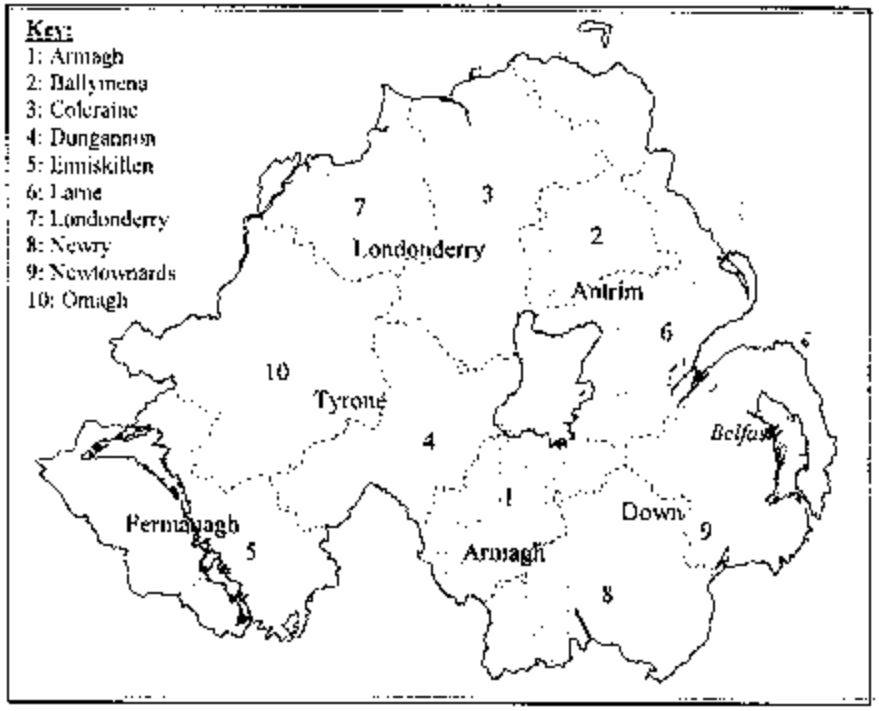
Herdkeepers are legally obliged to notify suspicion of the disease and present all animals for testing as required. Any interference with testing or control measures is an offence.

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) and 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 testing. The former 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. The latter 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 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 1.6 million cattle in Northern Ireland, distributed among 26,300 active herds. Dairy cows/heifers comprise 22% 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 2009, an increase of 16%. However, the data are strongly skewed to the right and the median was 33 for all TB herd tests in 2009. Over one-half of herds (58%) in Northern Ireland have fewer than 50 cattle.

There are no exceptions 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 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 based on their knowledge of the breakdown, the area and any other relevant epidemiological evidence that is available to them.
- In any case, where there are more than five reactors disclosed at a skin test OTW status is immediately applied and not removed until the test and cleansing and disinfection criteria for removal (below) are met.

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 where necessary.

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

- 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.

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 computer database so that no duplication should be possible. The birth of a calf must be notified to the Department within 27 days 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/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 holding, the address of premises to which the animal moved, or if 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 on the same day that an animal either leaves or arrives on his/her farm. 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 the computer database. Stock on farms are checked against official records at cattle identification inspections/and 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 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.

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. 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 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 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.

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).

All reactors are removed by DARD contracted 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. Completion of cleansing and inspection is inspected by DARD staff.

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.

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 need to store slurry for 12 months.
- 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 (RHT) test. If the RHT is clear the restriction is removed and then a post restriction (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 employed valuers 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.

Changes to the valuation system introduced in November 2004 mean that the independent valuation is no longer final and binding, and so the herdkeeper or DARD may appeal a valuation to an independent 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 EC 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 £915.5m here in 2007 (£349m if exports to GB are removed), is dependent on the effective implementation of the programme.

This figure is made up as follows:

live cattle exports	- £20.5m (including to GB)
animal by-products	- £15.0m (including to GB) cannot separate cattle data from other animals
beef and sheep meat	- £405.0m (including to GB) cannot separate data
milk and milk products	- £475.0m (including to GB)

In 2008, the live cattle export market was valued at approximately £22m.

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 or inconclusive 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: 2009 **Situation on date: 1 April 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 [iv] 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 [iv] 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.

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

Year:2005 **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 [ii]	11 (6/4)x100 [ii]
N. Ireland	28,263 [i]	28,263 [i]	27,202 [ii]	2,435 [iv]	1,792 [iv]	7	0.28	96.2	9.8 [iii]	7.22 [iii]
Total	28,263 [i]	28,263 [i]	27,202 [ii]	2,435 [iv]	1,792 [iv]	7	0.28	96.2	9.8 [iii]	7.22 [iii]

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 (24,820 herds had a herd test where cattle were presented). Also, see also [iv] 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:2009 **Situation on date: 1 April 2010**

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

Region[b]	Total number of animals[c]	Number of animals[c] 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
[ii] Based on the average number of cattle presented at TB herd tests over the last 4 years.
[iii] TB reactors only

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[e] 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[1]	1,647,300[2]	1,592,213	1,592,213	8,390[3]	8,390	9,001	96.7	0.53
Total	1,622,541[1]	1,647,300[2]	1,592,213	1,592,213	8,390[3]	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.

[1] From June Agricultural Census 2008
[2] Based on the average number of cattle presented at TB herd tests over the last 4 years.
[3] 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[e] 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[1]	1,464,025[1]	1,640,552	1,640,552	7,299[#]	7,299	7,888	112.1[#]	0.45
Total	1,643,458[1]	1,464,025[1]	1,640,552	1,640,552	7,299[#]	7,299	7,888	112.1[#]	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.

[1] From June Agricultural Census 2007
[*] Based on the average number of cattle presented at TB herd tests over the last 4 years.
[#] Figures currently only indicate TB skin reactors
[#] >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[#]	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[#]	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
[#] >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:2005 **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	1,665,608[i]	1,666,859[ii]	1,776,064	1,776,064	10,479[iii]	10,479	11,687	106.6[iv]	0.59
Total	1,665,608[i]	1,666,859[ii]	1,776,064	1,776,064	10,479[iii]	10,479	11,687	106.6[iv]	0.59

(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 2005
[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
[iv] >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

6.2. 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: 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	1606	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.

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

Year: 2005 **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	16824	1339	4463	1074	Histology – 2908	2623
					VNTR - 2003	1983
Total	16824	1339	4463	1074	4911	4606

(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: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

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

Year:2005 **Disease[a]: TUBERCULOSIS** **Animal species: BOVINE**

Region[b]	Number of herds infected[c]	Number of animals infected
N. Ireland	2368^	4645^
Total	2368^	4645^

(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: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[f][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

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[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).

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[#]	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[#]	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

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

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[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

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[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

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[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).

6.4. Data on the status of herds at the end of each year[9]

Year:2005 **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	28,263[i]	1,666,859[ii]	0	0	572	85,069	667	86,716	3,595	135,952	n/a	n/a	23,429	1,359,122
Total	28,263[i]	1,666,859[ii]	0	0	572	85,069	667	86,716	3,595	135,952	n/a	n/a	23,429	1,359,122

[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

[9] 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[10] (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

[10] 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[11]

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

[11] 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: 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

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: 2005 **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	324	35	0	0	Histology - 0	0
					Spoligo - 32	32
					Post mortem - 62	14
Total	324	35	0	0	94	32

(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: 2005 **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: 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

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

Year: 2005 **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 2011

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[12]

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	26,500	26,500	24,645	1900	1600	10	0.7	93	7.7	6.5
Total	26,500	26,500	24,645	1900	1600	10	0.7	93	7.7	6.5

(a)

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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.

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[e] 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	1,650,000	1,650,000	1,650,000	1,650,000	8,600	8,600	9,100	100	0.52
Total	1,650,000	1,650,000	1,650,000	1,650,000	8,600	8,600	9,100	100	0.52

(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[13]

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	26,500	1,650,000	0	0	230	40,000	820	70,000	1450	112,000	24,000	1,428,000	24,000	1,428,000
Total	26,500	1,650,000	0	0	230	40,000	820	70,000	1450	112,000	24,000	1,428,000	24,000	1,428,000

(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)

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[13] 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[14]

Vaccine(s) and vaccination scheme or treatment and treatment scheme[15]*:*

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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[14] 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.

[15] 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[16] 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

16 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[17]

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	3.64	7,416,500	YES
	Test: Tuberculin – by Temporary Veterinary Officer	512,500	2.76	1,414,500	YES
	Test: TB Culture (Staff Costs)	7,900	61.82	488,378	Not applicable
	Test: TB Culture (Non-Staff Costs)	7,900	12.90	101,910	Not applicable
	Test: Gamma Interferon (Staff Costs)	20,000	11.12	222,400	YES
	Test: Gamma Interferon (Non-Staff Costs)	20,000	10.00	200,000	YES
	Test: Histology	3,354	17.07	57,253	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				

[17] 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		*9,100*	*1,115.59*	*10,151,869*	*YES*
3.2. Transport costs		*9,100*	*6.50*	*59,150*	*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 carcasos. 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*			4,065,531	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				347,481	Not applicable
Salvage		9,100	104.05	-946,855	Not applicable
TOTAL				24,245,868	

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 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: 2011

Reference of this document: *UK(GB)Bovine TB Eradication Plan 2011*

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Date sent to the Commission: 15 September 2010.

2. Historical data on the epidemiological evolution of the disease

2.1 The efforts to eradicate bovine tuberculosis (TB) from Great Britain (GB) pre-date the first legal initiatives in this area at European Community (EC) level. Following the accession of the UK to the European Community (EC; later the European Union, EU) in 1973, British cattle producers have been required to comply with the rules laid down in **Directive 64/432/EEC**, 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 testing with immediate slaughter of any reactors) and there was a steady decline in the level of disease seen.

2.3 The wild Eurasian badger (*Meles meles*) was first identified as a possible reservoir of infection in the early 1970s (in England and Wales although there is no evidence of such a reservoir in Scotland) and a series of strategies were developed to tackle this source of the disease. Further cattle-based measures were also introduced. In 1979 there was the lowest recorded level of bTB incidence, 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 TB incidence stalled in the mid-1980s. 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 testing regime in those areas. An interim culling strategy, involving the removal and culling of badgers only from farms where a TB incident had been confirmed and where, following investigation, it was thought that badgers were the most likely cause of the disease, was in place between 1986 and 1997.

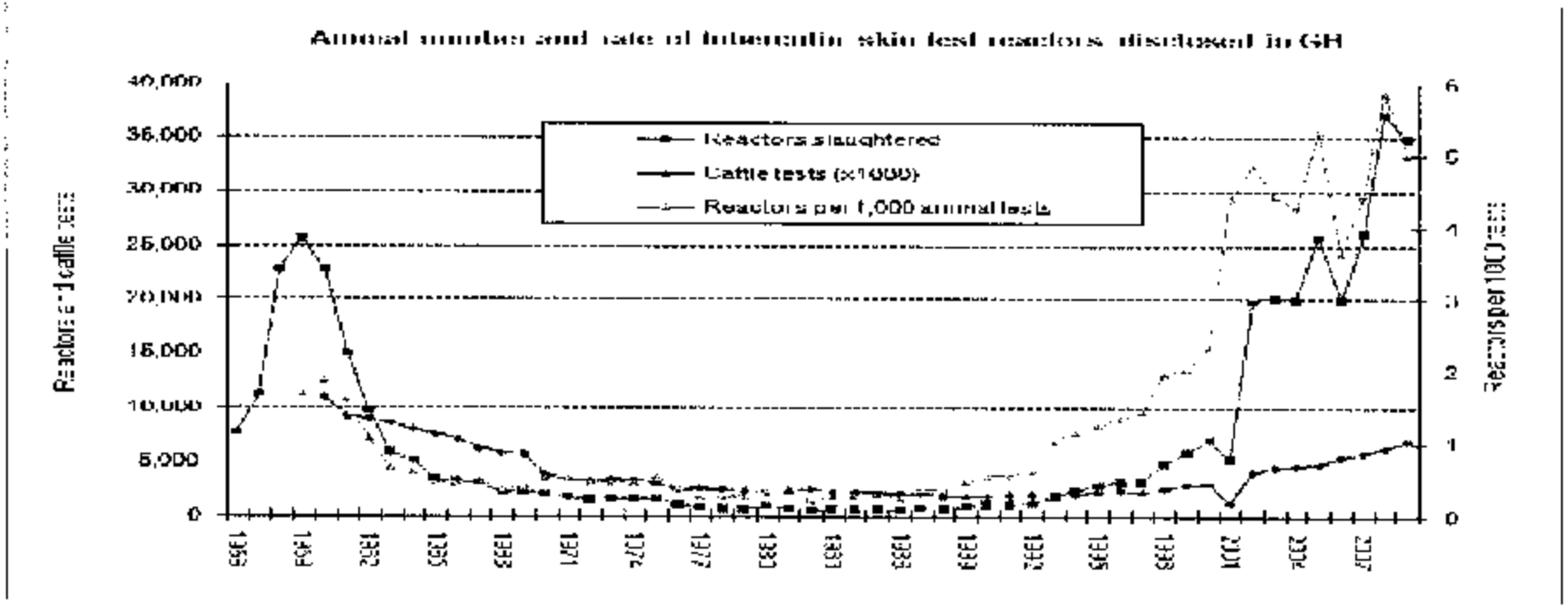

Figure 1: Number and rate of tuberculin test reactors disclosed annually in GB (1956-2009)

2.5 In 2001, the national TB testing programme, as well as much field-based TB research, was disrupted due to a major outbreak of **Foot and Mouth Disease**, which led to anomalous TB 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 testing recovered.

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. This indicated that, whilst badgers did significantly contribute to the incidence of TB in cattle (up to 40% of cattle breakdowns in the endemic TB areas), cattle-to-cattle transmission was also important in those areas and a major cause of TB spread to new areas.

2.8 A more detailed history of the evolution of TB epidemiology and policy can be seen in the 2010 UK(GB) Eradication Plan.

Current position

2.9 Bovine TB in cattle continues to be a problem in GB (see Figures 1, 2 and 3) particularly in the South West and Midlands of England and South and Mid-Wales (see Figure 4). Elsewhere in GB, TB breakdowns are generally associated with the movements of infected cattle from high incidence regions. TB is also sporadically diagnosed in captive deer and non-bovine domestic species such as South American camelids, pigs, sheep, goats, cats and dogs (and a case in wild boar). *M. bovis* infections in those species invariably arise in parts of GB where there is high incidence of TB in cattle and wildlife.

	Herd statistics					Animal statistics			
Year[1]	Cattle herds registered at year end	Tests on unrestricted herds (including pre-movement tests)	New TB herd incidents	New confirmed TB herd incidents	Herd incidence of confirmed 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

Table 2.1 - TB statistics for Great Britain (England and Wales) (1998-2009)

[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 confirmed TB herd incidents as a proportion of tests on unrestricted herds.

[3] This includes the figure for Scotland.

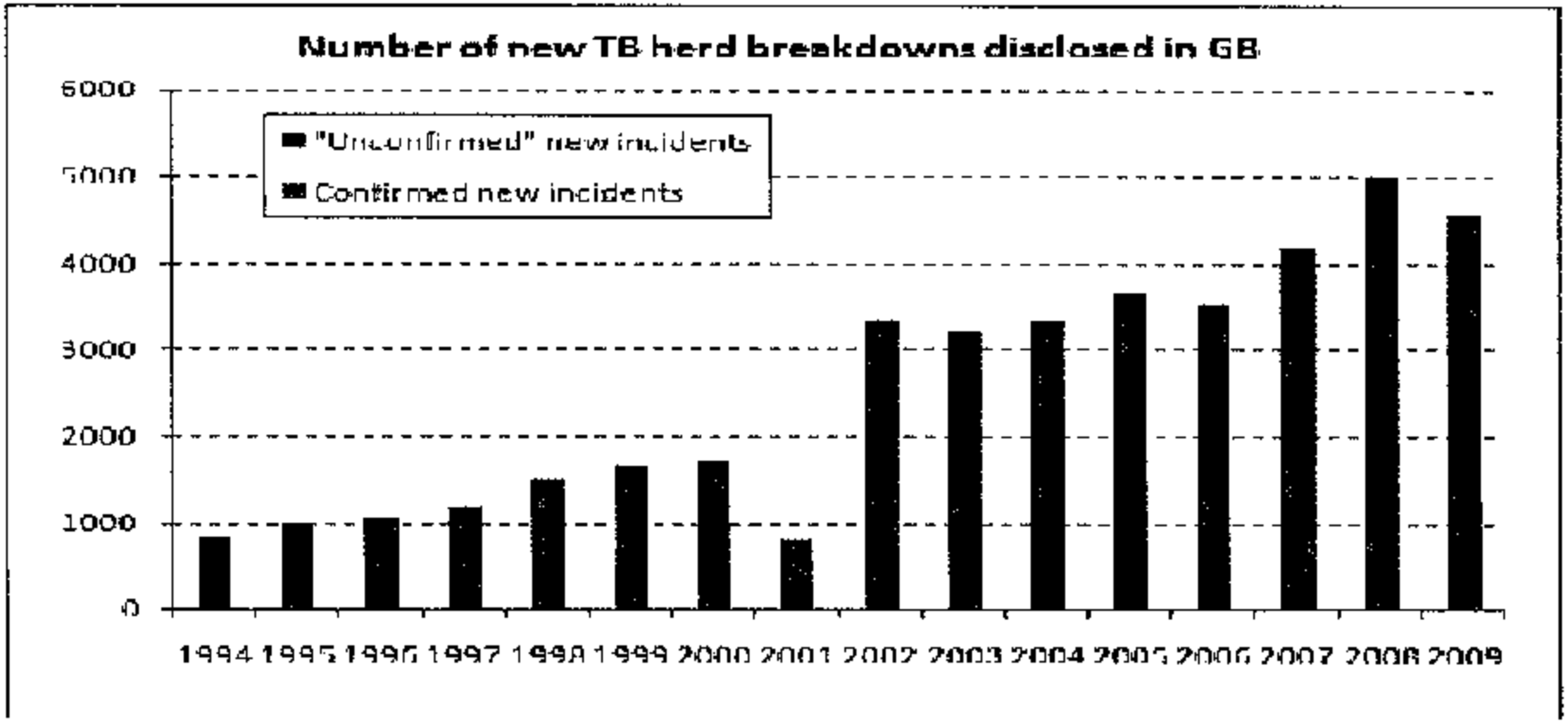

Figure 2 - Number of TB incidents (breakdowns) disclosed annually in GB (1994-2009)

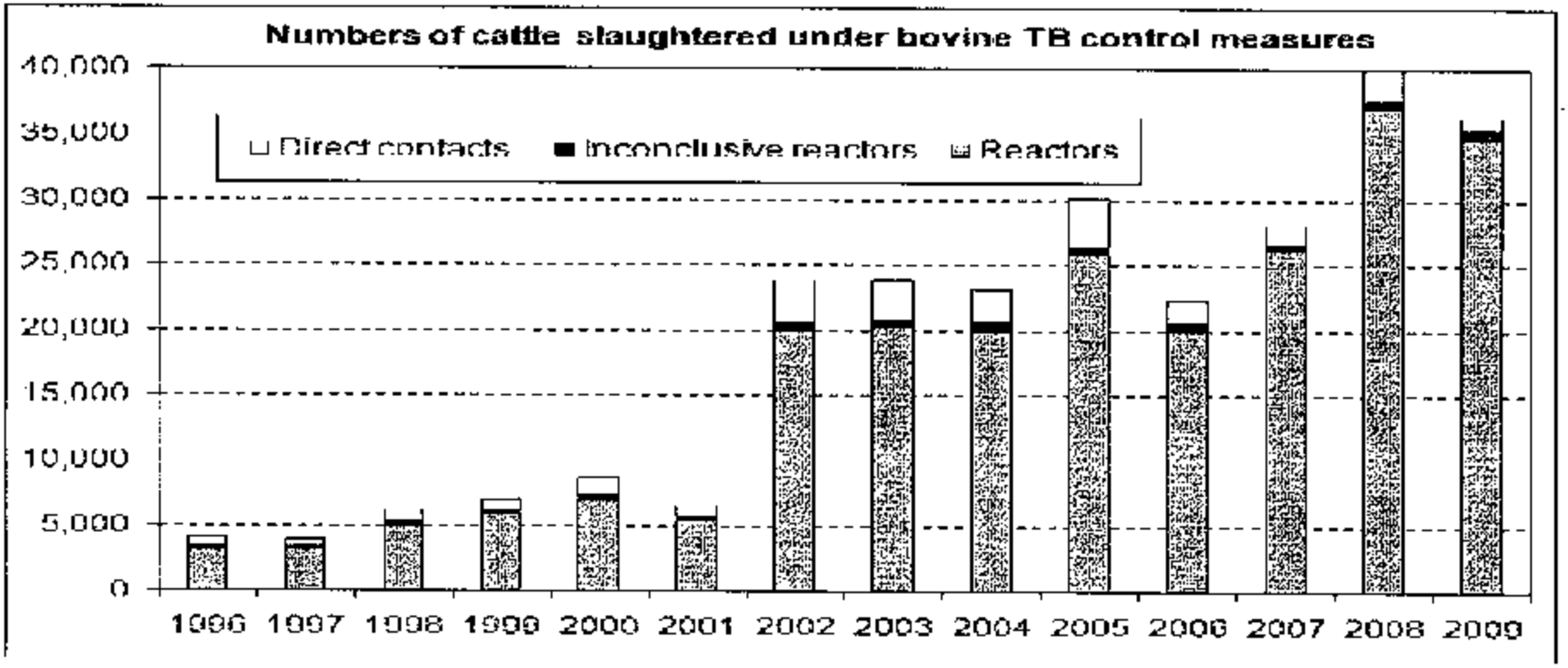

Figure 3 - Cattle slaughtered under the TB control programme in GB (1996 – 2009)

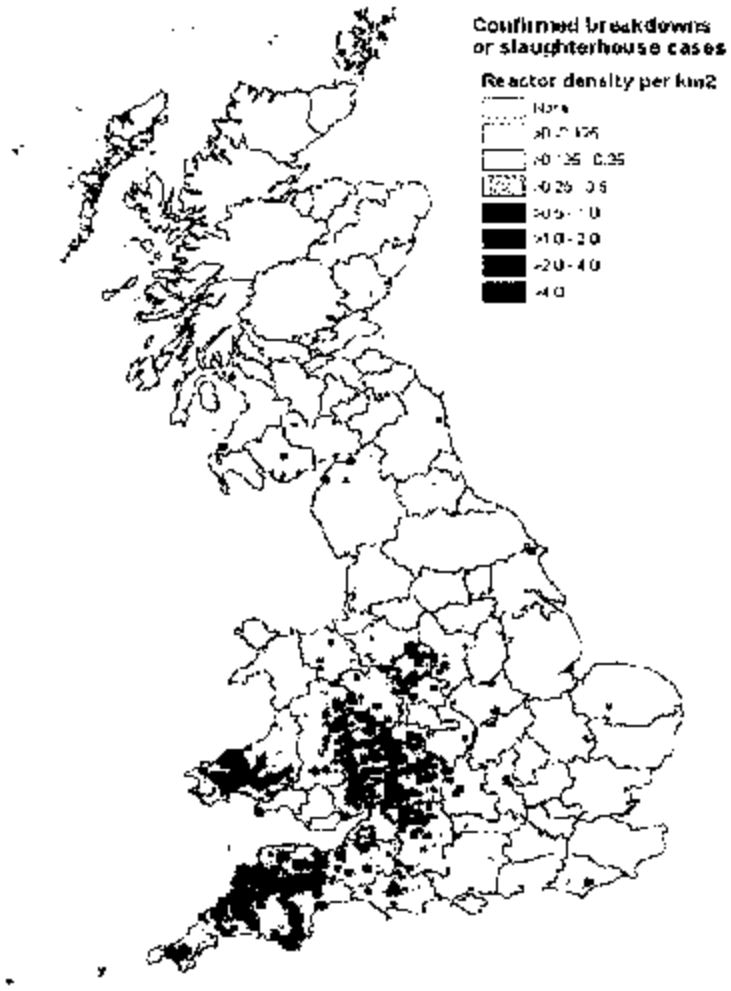

Figure 4 - Density of skin test, IFN-gamma reactors and slaughterhouse cases in confirmed TB incidents per km² taken between January and December 2009

2.10 Since 2006, a further range of measures have been rolled out in England and Wales:

- compulsory **pre-movement tuberculin testing** of all cattle over 42 days old to have a clear TB test within 60 days of moving from 1 and 2 yearly TB tested herds.
- **use of gamma interferon (g-IFN)** new ancillary blood testing policy in certain circumstances.
- a **one retest policy on inconclusive reactors (IRs)** was introduced on 1 March 2009 in Wales, and on 1 January 2010 in England.
- updated advice for farmers on **biosecurity and husbandry measures** in relation to TB in their herd was made available in 2007. 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.
- extensive Government **liaison with stakeholders** about TB controls and developing eradication programmes in England and Wales.
- the introduction of **table valuation based cattle compensation** arrangements in England (February 2006) and revised arrangements in Wales, including the use of monitor valuers, to provide a greater degree of financial control.

2.11 In 2009, Scotland applied for, and was granted, OTF status following the agreement of other Member States. Additional testing requirements have been in place since 28 February 2010 for animals entering Scotland from low incidence areas of England.

Recent and ongoing developments

2.12 The bovine TB control and eradication programmes in each country of the UK continue to evolve. 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 is 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 GB (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 UK(GB) Bovine TB Eradication Plan. Close engagement with stakeholders is also fundamental in developing an effective eradication programme.

2.13 Defra and the Welsh Assembly Government have been successful in engaging stakeholder groups within the policy making process. The TB Eradication Group in England and the Animal Health and Welfare 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 2010

2.14 Defra and the Welsh Assembly Government are continuing to develop their eradication programmes, with measures tailored to different levels of disease 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. In 2010 Defra and the Welsh Assembly Government have prioritised and made progress on the following areas:

- A revised, risk-based approach to the treatment of **unconfirmed breakdowns**. It is recognised that an unknown but significant proportion of the total number of herds with reactors (rather than just those with confirmed reactors) are likely to represent true disease, particularly in the endemic areas, given the current levels of disease, Therefore some breakdowns currently categorised as unconfirmed should be treated as if

disease is present in a herd and the risk managed accordingly. Defra and the Welsh Assembly Government have been working with the Veterinary Laboratories Agency and Animal Health 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 an 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 disease 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 parallel, **TB terminology** around breakdowns will be changed to better reflect the status of the herd, moving from 'confirmed/unconfirmed' to 'officially TB free status withdrawn/suspended' as outlined in Annex A of Council Directive 64/432/EEC. These changes will be put in place for the 2011 plan.

- Defra and the Welsh Assembly Government have agreed in principle that parishes are not the appropriate size upon which to base the calculation of **routine TB testing intervals**. However, establishing a longer term risk-based approach to setting testing intervals is complex and so the further analysis that is being carried out along with VLA and Animal Health is likely to take some time to come up with sound, evidence based, and epidemiologically robust alternatives. In England, a more proactive risk-based approach was introduced from 1 January 2010, with a significant expansion of the area under more frequent testing, with a core of high risk areas placed on annual testing surrounded by a two-yearly testing buffer area. Defra is analysing initial data from this new approach and will expand the area under more frequent testing where required, on the basis of both national and local assessment of TB incidence and epidemiological risk, ensuring this continues to be in line with Directive 64/432/EEC. Testing intervals for 2011 will be finalised following the completion of this review. Defra will review the data for the whole of 2010 from this new approach, once it becomes available, and use it to inform any future changes to the routine testing regime.

- Cattle herds in Wales will continue to be subject to an annual testing regime in 2011.

- **Tackling disease in wildlife in high risk areas** – Defra and the Welsh Assembly Government continue to develop approaches to tackle TB in the main wildlife reservoir i.e. badgers:
  - **Badger control (vaccination/culling) in England**
    - 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 bovine TB in cattle. Defra launched a public consultation in September 2010 on a badger control policy. The consultation sought views on badger control; it discussed the benefits and limitations of both culling and vaccination and described how they could be used in combination. 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 criteria. The farming industry would cover the cost of culling and/or vaccination. The Government's role would be limited to operating the licensing regime and monitoring the effectiveness, humaneness and impact of badger control measures. A formal decision following consideration of the responses to the consultation is expected early in 2011.

    - In light of this 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 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.

- **Badger culling in Wales –**
  - As part of the Intensive Action Pilot Area (IAPA) a cull of badgers alongside stringent cattle control measures was planned in an area of high TB incidence in cattle in West Wales. The decision to undertake badger culling in Wales was subject to a Judicial Review in March 2010 initiated by the Badger Trust. The High Court ruled that the Tuberculosis Eradication (Wales) Order 2009 was lawful. The Badger Trust subsequently appealed to the Court of Appeal where the judges recognised the serious impact that bovine TB is having in Wales and the need to tackle the disease, however, raised concerns that the TB Eradication (Wales) Order 2009 related to the whole of Wales, while the evidence was primarily in relation to an Intensive Action Pilot Area in West Wales. The Welsh Assembly Government agreed to address this ground of appeal in order to satisfy the Court, accepting that as a result the TB Eradication (Wales) Order 2009 would be quashed. The Welsh Assembly Government is now considering the detail of the judgment before deciding on next steps, however, the Minister for Rural affairs is clear that both cattle and badger sources of infection need to be addressed (through culling, vaccination or any other alternative means) in order to eradicate bovine TB in Wales.
  - Despite the TB Eradication (Wales) Order 2009 being quashed, the following cattle control measures have still been deployed in the Intensive Action Pilot Area from 1 May 2010 and will continue:
    - Withdrawal of all linkages between holdings interior and exterior to the pilot area. Withdrawal of all Sole Occupancy Authorities – 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.

- In England and Wales an enhanced veterinary assurance programme to provide more robust quality assurance of veterinary training and skills on TB is being developed by Animal Health to supplement existing training of OVs to carry out testing. A formal process for auditing of TB testers at 24-month intervals has been drawn up and is being rolled out through Animal Health's Operations Manual. The process provides for comprehensive and auditable quality assurance of our TB testing procedures 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). The British Cattle Veterinary Association has recently held a number of roadshows with vets in England and Wales to provide CPD on aspects of TB epidemiology and immunology. Since January 2010, Animal Health 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.

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

- The first stage of a review of pre-movement testing in England and Wales has been completed. An assessment of the impacts of the policy since its introduction in 2006 has been completed and a report published on Defra's website. The review's key finding is that pre-movement testing has been successful in reducing TB spread – 1,445 reactors and 2,360 inconclusive reactors were identified earlier than would have been the case over three years to March 2009 through pre-movement testing. Additionally a further 6,514 reactors were disclosed as a result of follow-up testing in herds with pre-movement test positive animals. On this basis pre-movement testing will remain a central control

policy – Defra is now using the analyses of data to inform thinking on if/how policy could be enhanced in England e.g. by making changes to the limited number of exemptions from pre-movement testing. This work will be completed in late 2010/early 2011. A consultation on any recommendations for changes to the policy will be carried out later in 2010/early 2011. In Wales the pre-movement testing exemptions have been reconsidered in the light of the TB Eradication Programme. In 2009-10 there was a consultation on the Tuberculosis and Brucellosis (Wales) Order 2010 which proposed changes to the exemptions (and also to compensation arrangements – see section 4.4.10). The Tuberculosis (Wales) Order 2010, which came into force in May 2010, removes a number of the pre-movement testing exemptions and revokes and replaces the TB (Wales) Order 2006.

- **In Wales** since January 2010 in order to prevent disease entering low disease incidence areas (formerly 3 and 4 yearly testing areas), and to minimise the threat from cattle with bovine TB in such areas, where epidemiological evidence suggests it is warranted, **gamma interferon testing** has been deployed. Since this time the gamma interferon test has also been used in confirmed breakdowns outside this area, where disease attributed to a wildlife origin is not considered already to be endemic. This additional gamma interferon usage will continue in 2011. The current use of gamma interferon testing as an ancillary diagnostic tool has also been reviewed **in England** and additional applications are being considered for 2011 (for example, gamma testing all confirmed breakdown herds in the two-yearly testing buffer areas).

- A number of initiatives and collaboration to **raise awareness** about TB in general and **biosecurity** in particular are being taken forward in England and Wales. These include improved cooperation between Animal Health, farmers and private vets through sharing of TB case reports to promote a shared understanding of each breakdown and help identify and agree strategies to tackle it. A number of regional initiatives have been introduced to provide business and veterinary advice to farmers whose herds are both under TB restrictions and currently free of the disease.

- There is a substantial on-going national **research programme**, and epidemiological and data analysis with veterinary and scientific experts to 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 This Eradication Plan sets out a programme of actions and measures for tackling bovine TB (the 'GB TB programme'). The overall aim of the GB TB programme, which has been in place for almost 60 years, is the eradication of bovine TB in cattle in Great Britain. The programme remains successful in achieving that aim over parts of England and Wales, but the complexity of the disease problem, in particular with a wildlife reservoir in regions where there is a high level of TB incidence, makes complete eradication at the national level a long-term goal. It requires a phased, risk based approach with measures targeted at meeting the intermediate goals for the GB TB programme: to control the spread and reduce the incidence of TB over time, leading to the eradication of bovine TB in Great Britain. The objectives of the TB programme are:

- Preventing the spread of TB to new areas;
- Bearing down on disease in existing high incidence areas;
- Eradication in the longer term;
- Government working with industry stakeholders who share the determination to eradicate TB.

3.2 The **GB Strategic Framework (2005)** for the sustainable control of TB was developed with the aim of slowing down and reversing the geographic spread of the disease into clean areas and achieving a sustained reduction in incidence in high risk areas as part of a 10-year programme. The twelve goals of the Framework can be seen at http://www.defra.gov.uk/foodfarm/farmanimal/diseases/atoz/tb/strategy/goals.htm .

3.3 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. TB testing and controls are generally funded through Defra. TB compensation and costs for haulage and valuation are devolved. In addition the Welsh Assembly Government has funded additional TB controls (for instance the additional testing and practical costs of implementing the annual testing regime, the Intensive Action Pilot Area and the regional initiatives underway).

3.4 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.

3.5 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); whilst 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 Government 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.

3.6 The TB programme includes a range of control measures for 2011, which are summarised below and described in more detail in section 4.

Monitoring

- Active surveillance by compulsory skin testing of herds at regular intervals (1-4 years, although for 2011 it is anticipated that all herds in Wales will again be subject to annual testing) depending on local disease incidence and veterinary risk assessment of the epidemiology in the area.
- Abattoir surveillance and back-tracing and restriction of the herds of origin of any carcases with suspect tuberculous lesions.
- Additional targeted skin testing of non-restricted herds (and animals) at risk: e.g. herds contiguous to confirmed breakdowns, new and re-formed herds, animals traced from confirmed breakdowns, imported cattle etc.
- Annual national review of routine testing intervals.

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 on herds with overdue TB tests (zero tolerance) and active management of all overdue tests by Animal Health.
- Slaughter and disposal of all test reactor animals including persistent 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) or allow their TB tests to become overdue.
- Where skin test reactors are detected, the following additional measures are adopted to eliminate the infection from the herd and contain its spread to other herds:
    - Cattle movement restrictions.

- Isolation, removal and slaughter, with compensation, of test reactors and contacts, 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 OTF suspended herds considered to be higher risk will be required to clear two consecutive short interval tests and will therefore have an extended period under restriction.
- Epidemiological enquiry (forward- and back-tracings and contiguous testing, use of disease report forms and enhanced contact between vets and farmers into the causes of the breakdown and advice on prevention measures).
- Ancillary g-IFN testing of all herds with newly confirmed breakdowns in low incidence areas, and certain herds in the other risk areas such as those with chronic severe breakdowns. In Wales, in order to prevent disease in low incidence areas, the g-IFN test alongside the skin test is deployed where epidemiological advice suggests that it is warranted. Ancillary g-IFN testing is also used in other areas where there is a confirmed TB breakdown where disease is not attributed to a wildlife origin and is not already considered to be endemic.
- Occasional *stamping out* of severely infected groups or herds (partial or total depopulation).
- Follow-up testing 6 and 18 months post restoration of OTF *status*.
- Appropriate *cleansing and disinfection* of reactor premises, transport and equipment

- Compulsory pre-movement tuberculin testing of 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 2011 given that all herds will be subject to an annual testing regime. From May 2010, the pre-movement testing requirements in Wales have been enhanced with the removal of a number of higher risk exemptions following consultation. In addition there is the requirement to pre-movement test animals from low incidence areas in England before movement to Scotland (unless they have lived all their lives in a low incidence area or are moving direct to slaughter in Scotland).

- Tailored policies to reflect area disease incidence and risks (for example the establishment of the Intensive Action Pilot 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 are also underway.
- Animal husbandry best practice guidance.
- Additional measures for certain breakdowns in a previously clean area.
- Annual regional descriptive epidemiology exercise.
- Registration, identification and movement reporting of all cattle (and other livestock species).
- Wildlife measures including work on deploying badger vaccination (BVDP) in England and proposals to cull badgers in Wales as part of the Intensive Action Pilot Area.
- Monthly update of TB statistics including number of herds registered, TB tests carried out, new herd incidents, reactors slaughtered, tests overdue and herds under movement restrictions.
- Development of further measures for dealing with the disease in species other than cattle (e.g. camelids and goats). In Wales, a consultation was launched in August 2010 on legislative arrangements for managing and preventing incidents of bovine TB in non-bovine animals, specifically camelids, goats and deer. The responses will inform policy decisions on managing and preventing bovine TB in non-bovines in 2011.
- Change of approach to unconfirmed breakdowns.
- Use of OTF terminology as described in Annex A of Council Directive 64/432/EEC.
- 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 provides recommendations to the Secretary of State on bovine TB and its eradication and includes representatives from Defra, Animal Health, 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 is taking

forward 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 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. Similar projects are also taking place in England (for example the South East Keep TB Out campaign).

- Ongoing research including
    - Development of a cattle vaccine and a differentiate infected from vaccinated animals (DIVA) test.
    - Establish the scientific and economic evidence base for current and potential future TB control measures.

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 2011. This Plan includes the latest measures which will be in place for 1st January 2011 and outlines the current thinking on how controls might be amended in the future. This plan builds on the 2010 Plan 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 2011 programme will focus on surveillance, testing and slaughter of cattle including pre-movement testing and supplementary use of g-IFN testing. Measures to reduce the risk of transmission of TB between wildlife, particularly badgers, and cattle in endemic areas will be introduced. 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 Assembly 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 As figure 5 demonstrates, 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.

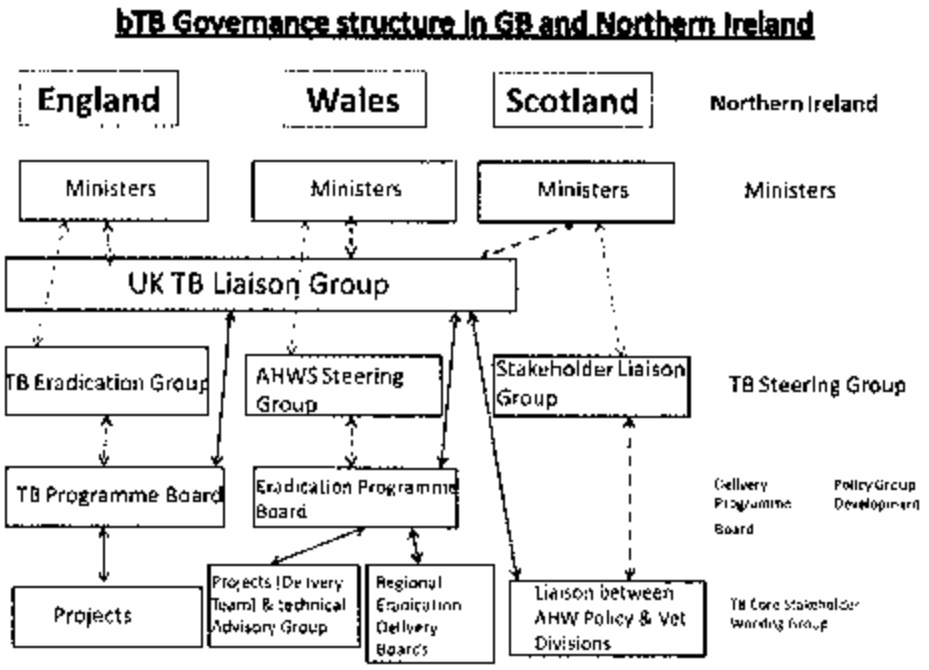

Figure 5: TB Policy and Programme Governance in the United Kingdom

4.6 The 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), Animal Health, 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.

4.7 The TB Eradication Programme for Wales is overseen by a Programme Board with membership including the farming industry, veterinary profession, Animal Health and Welsh Assembly 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 Animal Health, the farming industry, veterinary profession, auctioneers, Local Authority Trading Standards and the Welsh Assembly 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.

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 Assembly Government are set out in the table below. These governance arrangements will remain in place, taking account of Scotland's regional OTF status.

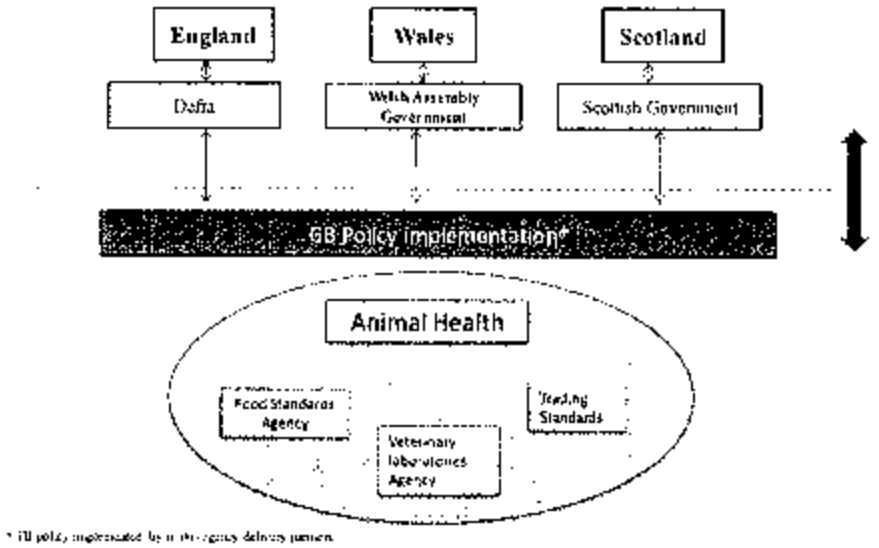

Figure 6 – Delivery of animal health controls in Great Britain

Organisation name	Address	Responsibilities	IT systems used
Animal Health	Block C, Government Buildings, Whittington Road, Worcester. WR5 2LQ	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	"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,

		• 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.
		
		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.
			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

Veterinary Laboratories Agency	Veterinary Laboratories Agency, New Haw, Addlestone, Surrey. KT15 3NB	• An executive agency of Defra • 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 Wales	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)

		Links to Animal Health for culture analysis.	
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 (for example the county parish holding number) 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). 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 instigate (where necessary) TB screening of human in-contacts upon receipt of a notification from Animal Health, which will also update policy Divisions 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 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)	

4.9 Animal Health is the lead agency in delivering the overarching strategy laid down by central Government. Animal Health has the authority to deal with local issues in line with this strategy and leads on individual case management. In 2008-9 over 40% of the total Animal Health budget (£53.9m) was spent on TB related issues. All field based operations are overseen by the Director of Animal Health England and the Director of Animal Health Wales. If there is any doubt about what type of action is permitted, Animal Health will ask the relevant devolved administration department for a view. In England, Animal Health consists of eight 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 eight Regional Offices are supported by a further seven Animal Health Offices.

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.

4.11 A formal process for auditing of TB testers at 24-month intervals has been drawn up and is being rolled out through Animal Health's Operations Manual. The process provides for comprehensive and auditable quality assurance of our TB testing procedures 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). Since January 2010, Animal Health 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.

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 be 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 Animal Health office immediately. Suspect TB lesions detected at post-

mortem examination of any farm or companion animal is also notifiable under these Orders. Animal Health will carry out an official investigation (testing of animals) and confirm whether an outbreak has occurred in bovines. The isolation of *M. bovis* from tissues of any mammal other than man will also be notifiable to the VLA. Under the Tuberculosis (Deer) Order 1989, TB is a notifiable disease in deer. TB will be defined as infection with *M. bovis*.

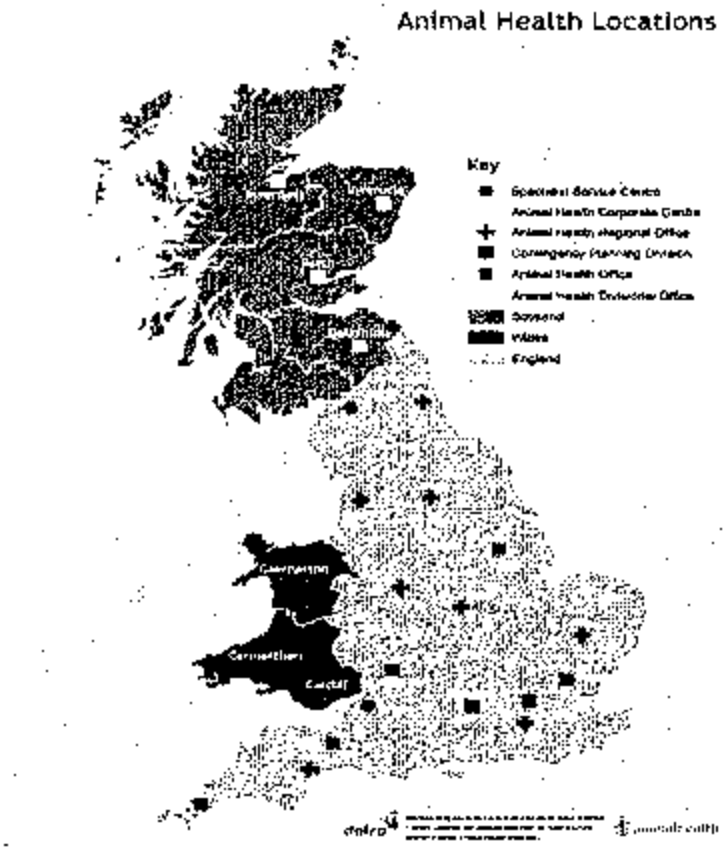

Figure 7: Current Animal Health Regions

4.14 Slaughterhouse inspection of cattle from unrestricted herds that are 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 are 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 2009, a total of 1,012 tuberculous carcases were notified to AH by meat inspectors in GB, out of approximately 2.6m cattle slaughtered in the country. These slaughterhouse cases accounted for approximately 17% of all confirmed new TB breakdowns disclosed in GB during the year. Additionally, Food Standards Agency inspectors will carry out post mortem examination on carcases of non-reactor cattle from TB-restricted herds slaughtered for food consumption, as well as all skin and gamma-interferon test reactors and direct contacts slaughtered by Animal Health and slaughtered in licensed red meat abattoirs. Reactors displaying lesions typical of TB will be considered as confirmed. Where TB is suspected from typical lesions, identified at routine commercial slaughter of cattle from non-restricted herds, Animal Health 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 suspended pending the receipt of results from the VLA.

4.15 All cases with suspect tuberculous lesions detected during commercial slaughter will undergo tissue sampling for histological and bacteriological examination at VLA. Between 60-70% of cases yield *M.bovis* on culture. Following a veterinary risk assessment, the local Animal Health 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 is given by the VLA within two weeks. The skin check test will initially be interpreted at standard interpretation pending the culture results, when reinterpretation may be necessary. If this test is clear and the tissue cultures are negative for TB, 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 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 in GB over 42 days old for surveillance purposes and all bovines for control purposes. In addition the legislation and programme will contain certain measures to control other reservoirs and sources of TB.

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 are in line with 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 RPA 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 2011 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.

4.4.4 Qualifications of animals and herds

4.21 The TB 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. All herds will be OTF unless placed under TB movement restrictions due to skin test reactors, slaughterhouse cases, inconclusive reactors detected within 3 years of a confirmed TB breakdown, delayed (overdue) TB testing or if presenting (very unusually) as suspect clinical cases. Maintenance of, or suspension, withdrawal and re-qualification of herds as OTF will be in accordance with paragraphs 2 and 3 of Annex A of Directive 64/432/EEC.

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 movement restrictions will be put in place prohibiting any animal being moved into or out of the herd, unless the animal is being moved to slaughter under licence from Animal Health. A licence will only be issued if the cattle are being taken to slaughter, either directly to an approved abattoir, or via an approved finishing unit or through an approved slaughter market; or when a risk assessment concludes there will be a low risk. Suspected animals within the herd will also be isolated. Appropriate follow-up re-testing will take place until the final clearance test shows the herd to be clear and OTF status will be restored in accordance with paragraph 3 of Annex A of Directive 64/432/EEC. Local Authorities monitor and enforce TB2 restricted herd movements.

4.23 England and Wales have reviewed existing disease control policies. A range of options have been developed to better support cattle farmers with herds under TB restrictions without materially compromising disease controls. England has implemented Approved Quarantine Units (AQUs), dispersal sales and dedicated sales, while in Wales farmers will benefit from the introduction of AQUs. Both England and Wales have widened of the scope of existing Approved Finishing Units (AFUs), and encouraged the setting up of more specialist TB isolation units.

Pre-movement testing

4.24 Under the Tuberculosis (England) Order 2007 and the Tuberculosis (Wales) Order 2010 it is a statutory requirement for all cattle 42 days old and over moving out of high risk herds (1 or 2 yearly tested herds) to have tested negative to a tuberculin test within 60 days prior to the movement (**pre-movement test**) unless there is a relevant exemption. In addition there is the requirement to pre-movement test animals from low incidence areas in England before movement to Scotland (unless they have lived all their lives in a low incidence area or are moving direct to slaughter in Scotland).

4.25 Between 1 March 2006 and 30 June 2010, 1970 reactors were identified in 1133 herds from dedicated pre-movement tests in England and Wales; and a further 3086 inconclusive reactors (IRs) were also identified.

4.26 All pre- (and any post-) movement tests use the SICCT test and must be arranged and paid for by the herd owner, although the tuberculin used in the test will be paid for by Government. Routine surveillance tests paid for by the Government can also qualify as pre-movement tests, for animals moving within 60 days of a negative test.

4.27 Herd owners must retain copies of their TB test charts as proof of testing and are advised to retain evidence of the relevant exemption for non-tested stock. Those marketing cattle will likely be asked for copies of this evidence as assurance of the test status of the animal. It is an offence to move cattle that have not been TB tested 60 days before their movement out of a 1 or 2 yearly tested herd unless the movement is exempt. Animal Health check cattle movements and cattle testing records and report suspected breaches to the local authorities to investigate non-compliance, which may lead to prosecution.

4.28 If cattle received on a holding were not pre-movement tested, and the animal or movement was not exempt, the receiving herd owner must isolate the received cattle and arrange and pay for a post-movement test to be carried out. Where Animal Health detect that a herd has received cattle that have not had a TB test (within 60 days prior to their movement) and where the movements were not exempt from pre-movement testing requirements, they will place the received cattle under movement restrictions stating a date by which the received cattle must be tested (within 60 days). If this test is not completed, the whole herd will be placed under movement restrictions (and OTF status suspended) until the received cattle have been post-movement tested. Under such circumstances, animals will not be permitted to move unless under a licence issued by Animal Health.

4.29 The Pre-Movement Testing Monitoring Unit (PMTU) within Animal Health will monitor compliance with the pre-movement testing policy and refer non-compliant herd owners to Local Authorities. The monitoring procedures will involve Animal Health cross-checking all eligible cattle movement data from the Cattle Tracing System (CTS) with cattle test data from the VETNET database and actively following-up investigations into a percentage of these based on risk factors or random searches.

4.30 In addition, compliance with TB testing requirements, including pre-movement testing, will be included within Common Agricultural Policy (CAP) cross compliance checks. Movement of animals from a holding may be considered to be a breach of the statutory management requirements applying under the cross compliance scheme if herd owners cannot provide evidence of a clear TB test within 60 days prior to movement, or of an exemption. It may result in a reduction being applied to their Single Payment.

4.31 The first stage of a review of pre-movement testing in England and Wales has been completed. An assessment of the impacts of the policy since its introduction in 2006 has been completed and a report published on Defra's website. The review's key finding is that pre-movement testing has been successful in reducing TB spread - 1,445 reactors and 2,360 inconclusive reactors were identified earlier than would have been the case over three years to March 2009 through pre-movement testing. Additionally a further 6,514 reactors were disclosed as a result of follow-up testing in herds with pre-movement test positive animals. On this basis pre-movement testing will remain a central control policy - Defra is now using the analyses of data to inform thinking on if/how policy could be enhanced in England e.g. by making changes to the limited number of exemptions from pre-movement testing. This work will be completed in late 2010/early 2011. In Wales the pre-movement testing exemptions have been reconsidered in the light of the TB Eradication Programme. In 2009-10 there was a consultation on the Tuberculosis and Brucellosis (Wales) Order 2010 which proposed changes to the exemptions (and also to compensation arrangements – see section 4.4.10). The Tuberculosis (Wales) Order 2010, which came into force in May 2010, removes a number of the pre-movement testing exemptions and revokes and replaces the TB (Wales) Order 2006.

4.4.6 Tests used and sampling schemes

4.32 As contemplated in Directive 64/432/EEC as amended, the primary screening test within the routine surveillance testing programme for bovine TB in GB will be the Single Intradermal Comparative Cervical Tuberculin (SICCT) test. Additionally, and in line with the recommendations of the EC Task Force TB sub-group (SANCO/10200/2006 Final) the g-IFN test will be used in specific situations as an ancillary parallel test to enhance

sensitivity. Further analysis will be undertaken during 2010 to assess whether it would be more appropriate to use tests that increase sensitivity in certain circumstance.

Routine Surveillance Testing Programme - Active

4.33 The herd owner will be responsible for arranging scheduled tests under the routine surveillance programme, which will be paid for by Government. Animal Health will give herd owners advance notice of the 2 – 3 month period in which the test must be completed by their nominated Official Veterinary practice. Test notification letters will be sent centrally from Animal Health to ensure consistency of notification. Official Veterinarians (OVs) will also be notified by Animal Health of the test due dates for their client's herds. The tuberculin testing policy was strengthened in early 2005, by the introduction of a **zero tolerance regime for overdue tests**. Under this policy herd restrictions will be imposed and OTF will be suspended by Animal Health immediately a test becomes overdue, which will provide motivation for herd owners to get tests completed on time. Animal Health actively manage these overdue tests and this policy reduces the risk of disease spread from herds with an unknown TB status. Herd owners will also be allowed to bring forward (but not delay) routine surveillance tests by up to two months in annual testing areas and by up to three months in 2, 3 and 4 yearly testing areas. There is a two-month testing window in annual testing areas and a three-month testing window in 2, 3 and 4 yearly testing areas. Testing will be marked forward for the same window in 1-4 years time.

4.34 In line with Annex A of 64/432/EEC, all herds in England have a testing frequency of either 1, 2, 3 or 4 years based on herd TB incidence in their area. In 2010, a more proactive approach was devised for England in order to better reflect the current local risk of infection for cattle herds and ensure a more coherent picture for TB surveillance, (rather than setting intervals using the mechanistic, administration-unit based method) and this approach continues for 2011. The provisional routine testing frequency map for 2011 is shown in Figure 8 which shows the areas of expansion of the core annual testing and two-year testing buffer areas. This 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 in 2010. This will follow the principles that:

a. A core area across the whole of South-West England and the West Midlands is placed on annual TB testing, since this represents the TB endemic area of high TB incidence and risk in England broadly associated with a local wildlife reservoir. No pockets of less frequent routine testing remain within this core annual testing area;
b. The northern and eastern edges of this endemic core area are separated from the low TB incidence and risk regions of England by a 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. In addition, 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, is 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 than areas further to the North and East.

The routine testing programme for 2011 will be finalised following further, detailed local review with the opportunity to strengthen the testing regime through the application of local veterinary discretion.

4.35 Animal Health will retain the discretion to increase testing frequency in response to changes in the local disease situation throughout the year. Once it becomes available, Defra will review the data for the whole of the routine testing programme in 2010. This will be used to inform future changes to the routine testing regime.

4.36 To optimise the effectiveness of TB surveillance in lower risk areas, the testing of herds in 2, 3 and 4 yearly testing areas, will be organised so as to ensure that a balanced number of routine herd tests will be carried out each year, in such areas. This approach, known as temporal smoothing, ensures that herd tests are distributed equally across the area over time. Equalisation of testing within relatively small areas, will provide a good chance of detecting TB incidents early and will reduce the risk that new hotspots would become established. The testing frequencies for 2011 are highlighted in figure 8 below.

4.37 Cattle herds in Wales will continue to be subject to an annual testing regime in 2011. All herds in Wales will, therefore, be required to comply with pre-movement testing requirements.

4.38 In addition to the routine testing frequencies outlined in England and Wales above, there is enhanced testing for increased risk herds and areas. For all new and reformed herds there will be a requirement to be tested within 12 months of the first animal arriving and for higher risk herds will receive an annual check test for 3 years for example reformed herds following depopulation for TB purposes.

Routine Surveillance Testing Programme - Passive

4.39 Animal Health will also carry out an investigation of clinical suspects notified to them. However this is likely to only occur in a small number of cases. Details of passive surveillance carried out in slaughterhouses can be seen at paragraphs 4.14-4.15.

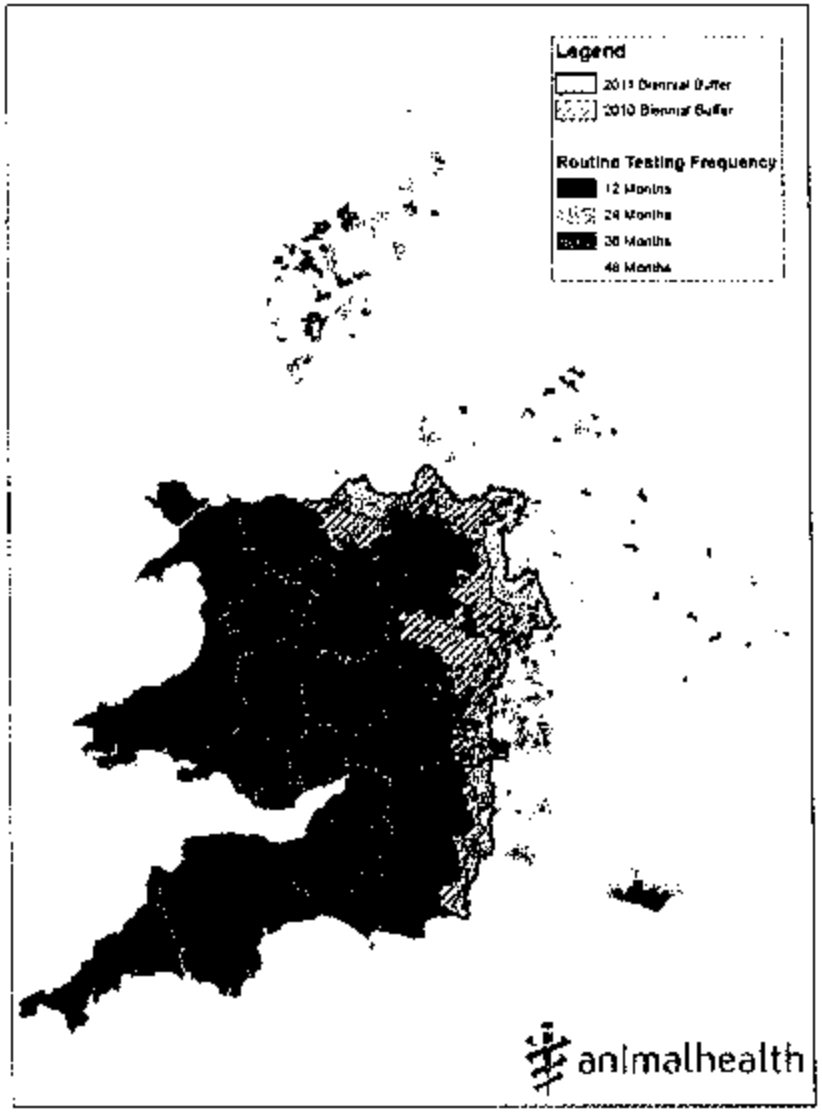

Figure 8: Proposed TB routine testing intervals for 2011

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 is 'suspended') and movements into and out of the herd can only take place under a licence issued by Animal Health.
- Rapid removal of reactors and contacts within 10 days of disclosure to a licensed abattoir 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.
- If the breakdowns involves dairy herds, Animal Health will notify the local food authority (CEHO) to ensure compliance with food hygiene regulations, including witholding any milk produced by any reactor cows from the human food chain.
- 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 two consecutive tests.
- Severe (re-)interpretation of the skin test where demonstrable evidence of *M. bovis* infection is found at PM examination/culture.
- Risk based approach to the testing of herds contiguous to cattle holdings with TB breakdowns.
- Ancillary in vitro TB testing (Bovigam) in specified circumstances.

- Epidemiological enquiry including molecular typing of *M. bovis* isolates.
- 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 disinfection.
- Very occasional partial or complete depopulation, depending on prevalence of skin and gIFN test reactors and subject to veterinary risk assessment.
- Follow-up testing of OTF withdrawn herds 6 and 18 months after restoration of its OTF status (and a follow up test of OTF suspended herds) including pre-movement testing of any cattle moved to other herds.
- Provision of biosecurity advice to herd owners.

4.40 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*. At present, *withdrawal* of OTF status is 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 Assembly Government have been working with the Veterinary Laboratories Agency and Animal Health 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 an 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 disease 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.

4.41 In 3 and 4 year testing areas an enhanced surveillance strategy will be instigated for new, confirmed TB breakdowns where the cause cannot be attributed to recently purchased cattle. This will comprise increased testing of cattle in the area together with a survey of the wildlife in the area (to check whether TB has become established in wildlife).

Tuberculin test

4.42 Tuberculin testing of cattle will continue to be the main TB surveillance and control tool in England and Wales in 2011. 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 The Netherlands under a 3-year supply contract awarded in Dec 2009. 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 Animal Health with new OVs supervised by Animal Health (including one supervised test for OVs after 6 months). Animal Health carry out audits of testing procedures for quality assurance purposes.

4.43 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) on herds with recent confirmation of TB. It will also be used to re-assess the results of the disclosing herd test if reactors with confirmed TB are revealed. This will be done where necessary to maximise the probability of detecting infected animals.

Gamma interferon diagnostic blood (g-IFN) test

4.44 In line with Directive 64/432/EEC, in GB, the **gamma interferon** (g-IFN) 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.

4.45 Under this policy the primary focus of the g-IFN test will be in confirmed breakdown herds in lower risk (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 g-IFN test will be mandatory in GB under the following circumstances:

- On tuberculin test-negative animals in all confirmed new TB incidents in 3 or 4 year testing parishes 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 around 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 in low incidence areas (predominantly in North Wales), the g-IFN test alongside the skin test is deployed where epidemiological advice suggests that it is warranted. Ancillary g-IFN testing is also used in other areas where there is a confirmed TB breakdown where disease is not attributed to a wildlife origin and is not already considered to be endemic.
- In England an additional application being considered is the gamma testing of all confirmed breakdowns in the two-yearly routine testing buffer area.

4.46 Between 23 October 2006 and end July 2010, 106,870 g-IFN blood tests were performed on cattle from 5,417 herds, identifying 11,311 positive animals.

4.47 Occasionally, in exceptional circumstances, Animal Health may use the g-IFN test as a serial test (where animals need to test positive to both tests) to reduce the risk of a false positive result in chronic, unconfirmed TB incidents in 2, 3 or 4-yearly testing areas, where non-specific cross reactions to tuberculin are suspected or to re-test tuberculin test reactors with abnormal skin responses.

4.48 The use of gamma interferon will continue to be reviewed in England and Wales.

Inconclusive reactors (IRs)

4.49 There is a one retest policy on IRs, in line with the requirements in Directive 64/432/EEC.

Imported cattle

4.50 All cattle imported into GB from non-OTF EU Member States and other parts of the UK (Northern Ireland, Isle of Man and Channel Islands) 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 movement 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 destined for direct slaughter. Based on a risk assessment, it may also be necessary to carry out checks and testing of certain consignments from third countries.

Exports

4.51 The normal comparative intradermal test must continue to be applied. However, **only the bovine reaction should be considered** when interpreting the test results in bovine animals intended for intra-Community trade. Those animals showing an increase in the skin fold thickness greater than 2mm or the presence of oedema 72 hours after tuberculin injection (i.e. a positive bovine reaction) will not be eligible for intra-Community trade,

and should not be so certified. This interpretation is in line with Community legislation (Council Directive 64/432/EEC – point 2.2.5.3.4 in Annex B refers).

Control in non-bovine animals

4.52 Suspicion of disease in non-bovine species is notifiable. Passive surveillance will be carried out on domestic livestock other than cattle (farmed deer, sheep, pigs, camelids, cats and goats) mainly by meat inspection in animals going through licensed abattoirs, necropsy of suspect clinical cases by VLA, or via the surveillance network provided by OVs and private veterinary surgeons. If bacteriological tests confirm infection with *M. bovis* in non-bovine animals, where appropriate, movement restrictions will be imposed by Animal Health and usually only lifted following two clear tuberculin tests, and also the local Health Protection Unit's CCDC is informed. *M. bovis* infection in some of these species is monitored by VLA. The extent and impact, of *M. bovis* infection in some of these species (specifically camelids and goats) is currently being reviewed to consider whether any additional TB controls are needed.

4.53 In Wales, a consultation was launched in August 2010 on legislative arrangements for managing and preventing incidents of bovine TB in non-bovine animals, specifically camelids, goats and deer. The arrangements proposed in the consultation would impose duties, obligations and responsibilities on the keepers of these animals. This would be done by largely replicating the arrangements already in place for bovine animals through secondary legislation.

4.4.7 Vaccines used and vaccination schemes

Badger vaccination

4.54 Recognising that action to address the wildlife reservoir of bovine TB is needed, a **Badger Vaccine Deployment Project** has been launched to start using an injectable vaccine in Summer 2010 following the issuing of a licence for the injectable badger vaccine (BadgerBCG) in March 2010. The

deployment project is a step towards addressing the wildlife source of TB and will develop practical know-how for vaccinating badgers, identify and address practical issues.

4.55 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. 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.

4.56 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 Assembly 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 working group is being set up to consider this further.

4.57 Research is underway to develop an oral BCG vaccine bait formulation in collaboration as this is seen as the most practicable application of a vaccine to a wildlife population in the longer term, if technical barriers can be overcome.

Cattle vaccination developments

4.58 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 will also be carried out in GB to develop tests to differentiate infected from vaccinated animals (so-called '**DIVA' tests**) to address the legal concerns.

Research projects

4.59 Priorities for future research have been developed in discussion with independent advisory groups. These include: development of a cattle vaccine and an oral badger vaccine; further epidemiological work towards understanding the spread of TB in cattle; improved methods for diagnosing TB in badgers; improving understanding of cattle responses to diagnostic tests; and ecological studies of badger behaviour and social group dynamics.

4.60 Since 1995, the GB Government has spent over £87m (not including the Randomised Badger Culling Trial which took almost 10 years and cost nearly £50m) on a wide-ranging **bovine TB research programme** (£8.9m was spent in 2009/10 the budget for 2010/11 is £7.9m). Recently completed and on-going projects cover:

- Vaccines – to develop and license an oral TB vaccine for badgers, and a TB vaccine for cattle together with a DIVA test (to Differentiate Infected and Vaccinated Animals).
- Diagnostics – to develop tests for cattle and badgers, improving on existing sensitivity (ability to detect positive animals) and specificity (ability to detect negative animals). Projects include: developing methods for rapid confirmation of diagnosis from cattle slaughterhouse samples; a meta-analysis to calculate best estimates of the performance of existing tests; work to develop and validate tests based on the Polymerase Chain Reaction for the detection of *M. bovis*; and validation of new serological tests for use in cattle.
- Wildlife risks and epidemiology - to further understand the dynamics of TB within cattle and wildlife populations and assess the effect of control policies. Projects include: a long term ecological/epidemiological study of a wild badger population; developing tools to identify TB 'problem herds' and control strategies for such herds; investigating the genetic basis for TB resistance in cattle; developing methods to create 'homerange' maps for *M. bovis* genotypes; descriptive epidemiology of the TB outbreak in England since 1980; and further analysis of data from the Randomised Badger Culling Trial using a variety of different methodologies.

- Social science and economics – to look at the social and economic effects on farmers of TB and TB control measures. Recently completed projects looked at changes in farmer behaviour relating to cattle movement and management, and the cost effectiveness of farm husbandry manipulations. A study is currently underway to assess the level of farmer confidence in the use of badger vaccination, and identify motivators and barriers that could influence the use of TB vaccines.

Wildlife issues

4.61 There is clear evidence that transmission between cattle and wildlife 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 a wildlife source, namely 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

4.62 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 Assembly Government has established an Intensive Action Pilot Area in order to implement stringent cattle and wildlife measures together. Further details of measures to address bovine TB in both sources of infection underway in the Intensive Action Pilot Area are outlined in this plan (see paragraph 2.14)

4.63 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 launched a public consultation in September 2010 on a badger control policy. The consultation sought views on badger control; it discussed the benefits and limitations of both culling and vaccination and described how they could be used in combination. 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 criteria. The farming industry would cover the cost

of culling and/or vaccination. The Government's role would be limited to operating the licensing regime and monitoring the effectiveness, humaneness and impact of badger control measures. A formal decision following consideration of the responses to the consultation is expected early in 2011.

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

4.64 The Governments in England and Wales are collaborating to promote husbandry and animal health bio-security advice, through Animal Health vets and an information compact disc to support their on-farm advisory work; in England this also features at livestock market roadshows. 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 was recently updated to take account of the latest research findings.

4.65 A more effective and better focussed advice service for farmers under TB restrictions (in England) is being developed. It will cover veterinary, biosecurity and business issues. As a first step, pilot on-farm events demonstrating practical biosecurity measures - aimed at reducing the risk of bovine TB transmission – were held. Outputs are being used to develop a framework for wider roll-out. Since 1 January 2010 government vets have provided an enhanced veterinary advice service to owners of new TB breakdown herds and a range of other delivery options (for veterinary advice) are being explored. The business advice element will be fully implemented by Autumn 2010.

4.66 In Wales a consultation on compensation arrangements (in addition to pre-movement testing exemptions) took place in late 2009. The Tuberculosis (Wales) Order 2010 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 could see their compensation payment reduced under the Tuberculosis

(Wales) Order 2010. As mentioned previously, private vets are providing biosecurity advice to farmers as part of the North Wales Biosecurity Intensive Treatment Area and the Gower peninsula projects being taken forward by the Regional Eradication Delivery Boards.

4.4.9 Measures in case of a positive result

Officially TB Free Status and Slaughter of Animals

4.67 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 where there has the presence of confirmed reactor animals 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 a TB test.

4.68 All reactors and IRs are required to be isolated from contact with any other cattle; reactors for immediate slaughter and inconclusive reactors for further testing. Movement restrictions will be imposed and no movement will take place unless a licence is authorised by an Animal Health vet. TB testing will be carried out again at 60 day intervals (up to max 90 days). If the presence of TB is not confirmed in any slaughtered reactor, OTF status can be regained if there is a clear test of all animals within the herd at 60 days after the isolation/removal of the reactor animal(s) (and a further clear test in higher risk herds).

4.69 In accordance with the Directive, the OTF status of a herd will be *withdrawn* if classical lesions of TB are seen at post-mortem examination of skin test positive reactors or following the isolation of *M. bovis* following laboratory culture. Where *M. bovis* infection has been confirmed and OTF status withdrawn; two consecutive herd tests with negative results must be attained before movement restrictions can be withdrawn and OTF status

regained. 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 confirmed TB breakdowns.

4.70 After regaining OTF status all OTF withdrawn herds must undergo two further check tests before going back to the normal area herd testing frequency. The first test is 6 months after restoration of OTF status. If this test is negative, a second check test takes place 12 months later. (OTF suspended herds will require one clear follow up test). During this period, any cattle moved out of the herd will be eligible for pre-movement testing.

4.71 When OTF status is suspended a **TB2 Notice** 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 Animal Health, 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 a TB breakdown is confirmed in any cattle by visible lesions or positive culture results, Animal Health will inform the relevant local medical authorities, i.e. the CCDC in England and Wales.

4.72 In accordance with the Tuberculosis (England) Order 2007 and the Tuberculosis (Wales) Order 2010; a **Cleansing and Disinfection Notice** will be served on the owner immediately following the removal of any reactors or 'affected' animals for completion of cleansing and disinfection. This will include thorough disinfection 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 after such use if new stock are to come on. There are also rules for the disposal of manure on TB infected farms.

4.73 As part of the general TB control requirements, the keeper will be required to comply with the legislation with regard to the transport of animals 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.

4.74 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.

4.75 In accordance with domestic legislation, Animal Health will arrange removal of all tuberculin test and g-IFN reactors and dangerous contacts to slaughter or disposal with compensation paid. All reactors and dangerous contacts will be valued before being removed. Animal Health will aim to remove such animals within 10 working days from the date on which the test results are disclosed. All animals compulsorily slaughtered for TB control purposes will undergo post-mortem examination by the FSA or Animal Health, and the pathological findings will inform subsequent action in the affected herd. Bovine TB infection will be officially confirmed (i.e. breakdown confirmed and OTF status withdrawn) by disclosure of typical visible lesions of TB during post-mortem examination and culture of *M. bovis* in primary isolation medium.

4.76 In every TB breakdown disclosed, 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 Animal Health office may sample additional reactors at their discretion if this is considered essential to support the epidemiological investigations.

Stamping out of heavily infected herds (depopulation)

4.77 If TB is widespread within the herd, in order to reduce disease incidence, total or partial depopulation will occasionally be carried out. This may be carried out in heavily infected herds in low incidence areas (those with three to four years testing intervals) and will be designed to prevent the development of a potential new hotspot. In endemic areas, depopulation will only be contemplated in very severe bovine TB incidents. The decision to depopulate herds will be taken by an Animal Health vet on a case by case basis, taking into account:

- Prevalence of infection in the herd;
- Prevalence and severity of pathological findings in the slaughtered cattle;
- Risks of herd re-infection:
- Risks posed to the local cattle and wildlife population and the herd incidence in the locality; and/or
- Evidence that repeat skin testing and ancillary g-IFN (and sometimes TB antibody) testing has failed to resolve the problem.

4.78 This measure 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 procedures will have to 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

4.79 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 Animal Health. Responsibility for meeting the costs of cattle compensation schemes and the removal and slaughter costs will rest with individual Administrations.

4.80 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 (see paragraph 4.82 for further information).

4.81 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. In a small minority of cases (no more than 1%), compensation will be determined through individual valuation.

4.82 In Wales, compensation for TB affected cattle will be calculated in accordance with the provisions of the Tuberculosis and Brucellosis (England and Wales) Order 1978 as amended. The TB (Wales) Order 2010 which came into force in May 2010 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 on a monthly basis.

4.83 Compensation will not be provided for infected cattle identified at slaughterhouses in GB or for any TB test positive cattle that die on farm before being collected.

4.4.11 Control on the implementation of the programme and reporting

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

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

4.86 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 Animal Health 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 a viable and sustainable beef and dairy sector 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.
- The adoption of such measures will also have benefits in terms of the wider responsibility and cost sharing agenda.
- An improved disease situation would link into the achievement of Defra's strategic objectives and the EU Animal Health Strategy.

6. Data on the epidemiological evolution during the last five years[1]

6.1. Evolution of the disease

6.1.1. Data on evolution of the disease[2]

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

Year: 2005 **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	61,633	61,633	31,879	4,432	2,904	5	0.113	51.72	13.90	9.11
Wales	14,944	14,944	8,641	1,182	733	4	0.338	57.82	13.68	8.48
Total	76,577	76,577	40,520	5,614	3,637	9	0.160	52.91	13.85	8.98

[1] It is not possible through current reporting methods to identify the number of individual herds checked (tested) in any given period. This figure, therefore, includes all test types, so some herds may have been checked more than once in the same year (e.g. to regain OTF status). Future reporting will be able to identify the numbers of individual herds checked in a given year.

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

2 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.

[2] The number of positive and new positive herds includes both "confirmed" and "unconfirmed" breakdowns, i.e. all herds with at least one test reactor identified, regardless of post-mortem and laboratory findings.

[3] Standard herd TB incidence calculations in GB (including the UK's recent application to the Commission for OTF regional status for Scotland) are based on "confirmed" incidents only, but for the purpose of this table total new TB incidents ("confirmed" and "unconfirmed") have been used.

[4] Includes total depopulations of entire cattle holdings *and* any partial slaughters of certain 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: 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

[1] It is not possible through current reporting methods to identify the number of individual herds checked (tested) in any given period. This figure, therefore, includes all test types, so some herds may have been checked more than once in the same year (e.g. to regain OTF status). 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 "confirmed" and "unconfirmed" breakdowns, i.e. all herds with at least one test reactor identified, regardless of post-mortem and laboratory findings.

[3] Standard herd TB incidence calculations in GB (including the UK's recent application to the Commission for OTF regional status for Scotland) are based on "confirmed" incidents only, but for the purpose of this table total new TB incidents ("confirmed" and "unconfirmed") have been used.

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

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] It is not possible through current reporting methods to identify the number of individual herds checked (tested) in any given period. This figure, therefore, includes all test types, so some herds may have been checked more than once in the same year (e.g. to regain OTF status). 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 "confirmed" and "unconfirmed" breakdowns, i.e. all herds with at least one test reactor identified, regardless of post-mortem and laboratory findings.

[3] Standard herd TB incidence calculations in GB (including the UK's recent application to the Commission for OTF regional status for Scotland) are based on "confirmed" incidents only, but for the purpose of this table total new TB incidents ("confirmed" and "unconfirmed") have been used.

[4] Includes total depopulations of entire cattle holdings *and* any partial slaughters of certain 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] It is not possible through current reporting methods to identify the number of individual herds checked (tested) in any given period. This figure, therefore, includes all test types, so some herds may have been checked more than once in the same year (e.g. to regain OTF status). 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 "confirmed" and "unconfirmed" breakdowns, i.e. all herds with at least one test reactor identified, regardless of post-mortem and laboratory findings.

[3] Standard herd TB incidence calculations in GB (including the UK's recent application to the Commission for OTF regional status for Scotland) are based on "confirmed" incidents only, but for the purpose of this table total new TB incidents ("confirmed" and "unconfirmed") have been used.

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

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(c) [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	38,649	6,189	3,350	1	0.016	67.22	16.01	8.67
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	54,741	8,303	4,525	5	0.060	77.38	15.17	8.27

[1] It is not possible through current reporting methods to identify the number of individual herds checked (tested) in any given period. This figure, therefore, includes all test types, so some herds may have been checked more than once in the same year (e.g. to regain OTF status). 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 "confirmed" and "unconfirmed" breakdowns, i.e. all herds with at least one test reactor identified, regardless of post-mortem and laboratory findings.

[3] Standard herd TB incidence calculations in GB (including the UK's recent application to the Commission for OTF regional status for Scotland) are based on "confirmed" incidents only, but for the purpose of this table total new TB incidents ("confirmed" and "unconfirmed") have been used.

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

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

Year: 2005 **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	5,527,000	5,527,000	3,689,066	3,689,066	20,145	20,145	23,135	66.75	0.55
Wales	1,241,000	1,241,000	928,751	928,751	5,520	5,520	6,777	74.84	0.59
Total	6,768,000	6,768,000	4,617,817	4,617,817	25,665	25,665	29,912	68.23	0.56

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

[2] Data in columns 6, 7, and 8 include the numbers of skin test reactors, unresolved inconclusive reactors and (from 2006) gamma interferon 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: 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 animals individually tested, so this figure includes animals which may have been tested and counted more than once. Future reporting will be able to distinguish total number of animal tests from the numbers of animals individually tested, by linking tests to Official Animal Identifiers.

[2] Data in columns 6, 7, and 8 include the numbers of skin test reactors, unresolved inconclusive reactors and (from 2006) gamma interferon test reactors, regardless of their post-mortem and culture findings

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(c) [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 animals individually tested, so this figure includes animals which may have been tested and counted more than once. Future reporting will be able to distinguish total number of animal tests from the numbers of animals individually tested, by linking tests to Official Animal Identifiers.

[2] Data in columns 6, 7, and 8 include the numbers of skin test reactors, unresolved inconclusive reactors and (from 2006) gamma interferon 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 animals individually tested, so this figure includes animals which may have been tested and counted more than once. Future reporting will be able to distinguish total number of animal tests from the numbers of animals individually tested, by linking tests to Official Animal Identifiers.

[2] Data in columns 6, 7, and 8 include the numbers of skin test reactors, unresolved inconclusive reactors and (from 2006) gamma interferon 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 animals individually tested, so this figure includes animals which may have been tested and counted more than once. Future reporting will be able to distinguish total number of animal tests from the numbers of animals individually tested, by linking tests to Official Animal Identifiers.

[2] Data in columns 6, 7, and 8 include the numbers of skin test reactors, unresolved inconclusive reactors and (from 2006) gamma interferon test reactors, regardless of their post-mortem and culture findings

6.1.2. Data on evolution of the disease[3] [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)	(a5)	(a4)	(a3)	(a4)	(a5)
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.

[3] 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: 2006 **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:

- Confirmed new TB breakdowns in herds located in 3 or 4 yearly testing parishes, after each skin test at which confirmed or standard reactors are identified;
- For rapid retesting of inconclusive reactors that remain inconclusive after their first re-test, in annual and 2-yearly parishes;
- On skin-test negative cattle in severe confirmed 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 serological test based on the detection of antibodies to a set of recombinant *M. bovis* antigens) is occasionally deployed in herds with chronic TB breakdowns where anergy to the skin and gamma-interferon blood test is suspected. A very small number of animals are subjected to serological testing each year (figures not shown below).

Description of the used microbiological tests:

Mycobacterial culture and, in some cases, histology of lymph nodes both with and without visible tuberculous lesions (VL and NVL) is routinely undertaken by the Veterinary Laboratories Agency to identify the causative strain of the bacterium. All cattle compulsorily slaughtered for TB control purposes (i.e. skin test reactors, direct contacts and γ-IFN test positives) undergo post-mortem examination. Tissue specimens (VLs or, in the case of NVL reactors, a pool of lymph nodes) from at least one animal per breakdown are then submitted for culture. All suspect tuberculous lesions detected in the course of routine meat inspection of cattle carcases ("slaughterhouse cases") are also submitted for culture. Bovine TB is confirmed in test reactors by the disclosure of typical visible lesions during post-mortem examination and/or culture of *Mycobacterium bovis* in primary isolation medium. In other words, a TB breakdown is confirmed when at least one of the reactor animals in that breakdown is VL and/or yields *M. bovis* on culture. In slaughterhouse cases, TB is only confirmed upon isolation of *M. bovis* by bacteriological culture from the pathological material.

For cultural examination approximately $1cm^3$ of tissue is homogenised in a stomacher with a solution of 5% oxalic acid (to decontaminate the sample) and then centrifuged. The resulting deposit is washed and re-suspended in sterile saline buffer. The suspension is sown (in most cases in duplicate or triplicate) onto a different range of solid media slopes, depending on the type of submission. The slopes are incubated at 37°C for up to six weeks. Although colony growth can be observed in many cases after 3 weeks, results from samples with low bacterial counts ('paucibacillary' specimens) usually take up to six weeks. Additionally, all VL submissions (i.e. slaughterhouse cases and 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 the Ziehl-Neelsen method for the presence of acid-fast bacilli. Laboratory diagnosis of bovine TB is primarily made on morphological grounds by the characteristic appearance of the mycobacterial colonies on various growth media. Histopathology results and Ziehl-Neelsen staining are ancillary methods used to support a diagnosis based on culture observations.

Acid-fast organisms 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' PCR. This PCR technique is used to distinguish bacteria of the *Mycobacterium tuberculosis* complex (MTBC) and those of the *M. avium-intracellulare* complex from other organisms belonging to the genus *Mycobacterium*. This is now used as a primary tool and has replaced biotyping at VLA. It is a particularly important tool for assisting with the diagnosis of suspect TB lesions in slaughterhouse cases and species other than cattle (e.g. deer).

DNA extracted from every mycobacterial isolate is subjected to genetic fingerprinting to support epidemiological investigations into the origin of TB breakdowns. Spoligotyping is the principal *M. bovis* genotyping technique used in GB. However, because two spoligotypes have been found to comprise approximately 70% of all *M. bovis* isolates from cattle in Britain, an additional typing method (VNTR - 'variable number of tandem repeats') was adopted by VLA more recently, to enable a finer strain discrimination of the most widespread spoligotypes. Each *M. bovis* isolate is thus classified according to its spoligotyping and VNTR pattern into a certain 'genotype'.

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]
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		
2005	13,877	~11%	18,902	5,463		
2004	6,310	~11%	16,246	4,490		
Total	111,778	-	97,333	30,675		

(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)

Year: 2005 **Disease[a]: Tuberculosis** **Animal species: Bovine**

Region(b)	Number of herds infected [1] (c)	Number of animals infected [2]
England	2,904	20,145
Wales	733	5,520
Total	3,637	25,665

[1] This includes the numbers of confirmed and unconfirmed 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

[1] This includes the numbers of confirmed and unconfirmed 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: 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

6.4. Data on the status of herds at the end of each year[4]

Year: 2005 **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) [1]		Not free or not officially free [1]				Free or officially free suspended(g)		Free(h) [1]		Officially free (i)	
					Last check positive(e)		Last check negative(f)							
	Herds	Animals(j)	Herds	Animals(j)	Herds [1]	Animals(j)	Herds [2]	Animals(j)	Herds [2]	Animals(j) [1]	Herds	Animals(j)	Herds	Animals(j) [1]
England	61,633	5,527,000	n/a	n/a	n/a	n/a	n/a	n/a	3,841	n/a	n/a	n/a	57,792	n/a
Wales	14,944	1,241,000	n/a	n/a	n/a	n/a	n/a	n/a	1,630	n/a	n/a	n/a	13,314	n/a
Total	76,577	6,768,000	n/a	n/a	n/a	n/a	n/a	n/a	5,471	n/a	n/a	n/a	71,106	n/a

[1] 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. However future reporting will make these distinctions

[2] Total number of herds under TB2 restrictions at the end of the reported period.

(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).

The same notes appear on the following four years

[4] 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: 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) [1]		Not free or not officially free [1]				Free or officially free suspended(g)		Free(h) [1]		Officially free (i)	
					Last check positive(e)		Last check negative(f)							
	Herds	Animals(j)	Herds	Animals(j)	Herds [1]	Animals(j)	Herds [2]	Animals(j)	Herds [2]	Animals(j) [1]	Herds	Animals(j)	Herds	Animals(j) [1]
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] 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. However future reporting will make these distinctions.

[2] Total number of herds under TB2 restrictions at the end of the reported period.

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) [1]		Not free or not officially free [1]				Free or officially free suspended(g)		Free(h) [1]		Officially free (i)	
					Last check positive(e)		Last check negative(f)							
	Herds	Animals(j)	Herds	Animals(j)	Herds [1]	Animals(j)	Herds[2]	Animals(j)	Herds [2]	Animals(j) [1]	Herds	Animals(j)	Herds	Animals(j) [1]
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] 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. However future reporting will make these distinctions.

[2] Total number of herds under TB2 restrictions at the end of the reported period.

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) [1]		Not free or not officially free [1]				Free or officially free suspended(g)		Free(h) [1]		Officially free (i)	
					Last check positive(e)		Last check negative(f)							
	Herds	Animals(j)	Herds	Animals(j)	Herds [1]	Animals(j)	Herds [2]	Animals(j)	Herds [2]	Animals(j) [1]	Herds	Animals(j)	Herds	Animals(j) [1]
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] 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. However future reporting will make these distinctions.

[2] Total number of herds under TB2 restrictions at the end of the reported period.

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) [1]		Not free or not officially free [1]				Free or officially free suspended(g)		Free(h) [1]		Officially free (i)	
					Last check positive(e)		Last check negative(f)							
	Herds	Animals(j)	Herds	Animals(j)	Herds [1]	Animals(j)	Herds [2]	Animals(j)	Herds [2]	Animals(j) [1]	Herds	Animals(j)	Herds	Animals(j) [1]
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] 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. However future reporting will make these distinctions.

[2] Total number of herds under TB2 restrictions at the end of the reported period.

6.5. Data on vaccination or treatment programmes[5] *[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

5 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[6]

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

[6] 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: 2010 **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 Total, 57 so far	~186 to September 2010	1	186 so far in 2010
Total	57	186	1	186 so far

(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)	61,602 [1]
	Gamma Interferon Assay	Bovines	Heparinised Blood	Programme implementation (Ancillary parallel test - elimination of infection from herds)	32,000
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)[7]: *7.1.2. Targets on testing herds and animals*[8]

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

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

Region[(c)]	Total number of herds[(a)]	Total number of herds under the programme	Number of herds expected to be checked [1] [2]	Number of expected positive herds [2][(c)]	Number of expected new positive herds [2][(c)]	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	57,129	57,129	48,500	6,500	3,800	2	0.031	84.90	13.40	7.84
Wales	13,102	13,102	13,102	2,100	1,200	4	0.190	100 [3]	16.03	9.16
Total	70,231	70,231	61,602	8,600	5,000	6	0.070	87.71	13.96	8.12

[1] For England, 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

[2] This figure includes both confirmed and unconfirmed breakdowns

[3] All eligible herds expected to be tested as part of routine herd surveillance testing.

(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.

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7 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.

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, 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.

(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	5,542,000	5,542,000	5,400,000	5,400,000	25,000	25,000	27,000	97.44	0.46
Wales	1,138,000	1,138,000	1,800,000	1,800,000	10,000	10,000	11,000	158.17	0.56
Total	6,680,000	6,680,000	7,200,000	7,200,000	35,000	35,000	38,000	107.78	0.49

[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.

(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[9] (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.

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[9] 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[10]

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	57,129	5,542,000	n\a	n\a	6,500	n\a	n/a	n\a	1,200	n\a	n\a	n\a	49,429	n\a
Wales	13,102	1,138,000	0	0	2,100	n\a	n/a	n\a	450	n\a	n\a	n\a	10,552	n\a
Total	70,231	6,680,000	n\a	n\a	8,600	n\a	n/a	n\a	1,650	n\a	n\a	n\a	59,981	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)

[10] 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[11] - N/A

Vaccine(s) and vaccination scheme or treatment and treatment scheme[12]:

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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11 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.

12 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[13] of wildlife (Badgers)

Year: 2011 **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	400	1	400 (Estimate)
Total				

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

* Assuming 400 badgers on average per 100km^2 area.

*[2] Assuming a campaign = one year vaccination

[13] 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**[1] *These figures are provisional and subject to change following the Spending Review*

Costs related to	*Specification*	*Number of units*	*Unitary cost in €*	*Total amount in €* [1]	*Community funding requested (yes/no)* [1]
1. Testing					
1.1. Cost of the analysis	*Test: Tuberculin test* [2]	*61,300 (herds)*	*423 (average)*	*25,903,000*	Yes
	Purchase of tuberculin	*1296 litres bovine, 1298 litres avian (2,592 litres in total)*	*995*	*2,579,040*	
	Test: Gamma interferon[3]	*32,000 tests*	*29*	*942,168*	*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	27,000	1,315 (average)	35,500,000	
	Wales	11,000	1,989 (average)	21,882 600	
	Total	**38,000**	**1,632 (average)**	**57,382,600**	Yes
3.2. Transport costs (Haulage)	**Haulage plus destruction costs for England and Wales.**				
	England	27,000	45 (average)	1,215,700	
	Wales	11,000	55 (average)	600,430	

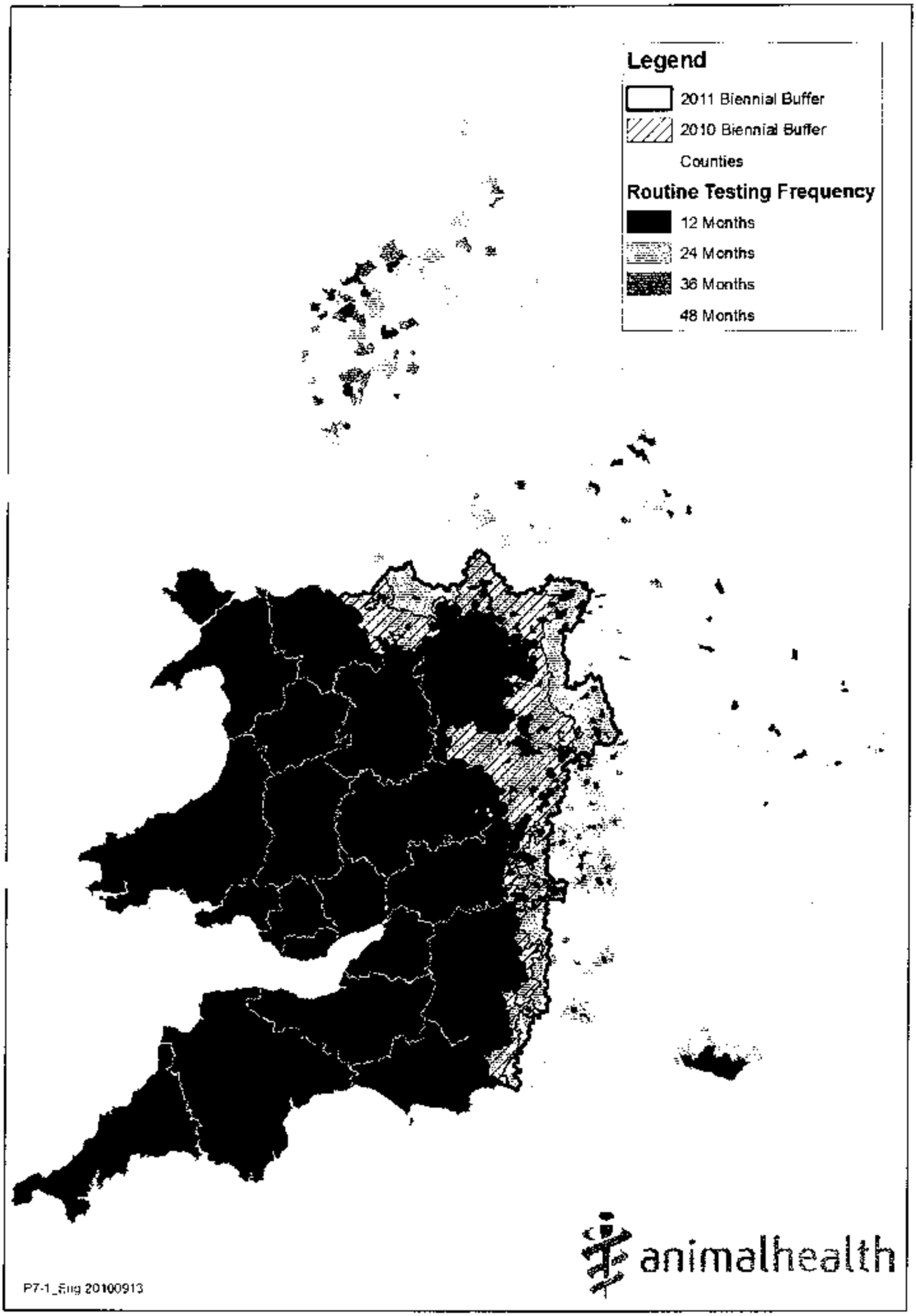
	Total	*38,000*	*50 (average)*	*1,816,130*	
3.3. Destruction costs					
3.4. Loss in case of slaughtering					
3.5 Costs from treatment of products (milk, eggs, hatching eggs, etc)					
Income from sale of carcases	*England*	*27,000*	*180 (average)*	*4,863,000*	
	Wales	*11,000*	*213 (average)*	*2,343,000*	
	Total	*38,000*	*197 (average)*	*7,206,000*	
4. Cleaning and disinfection					

5. Salaries *(staff contracted for the programme only, includes T&S)*	*England*	*35*	*52,101 (average)*	*1,823,550*	
	Wales	*41*	*73,079 (average)*	*2,996,258*	
	Total	*76*	*62,590*	*4,819,808*	
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	*13,000*	*46 (average)*	*592,700*	
	Total	*13,290*	*65 (average)*	*617,000*	
TOTAL to be applied for				*84,227,768*	

Footnote:

[1] Costs are provisional and subject to change

[2] Budget held by Animal Health


Legend
2011 Biennial Buffer
2010 Biennial Buffer
Counties
Routine Testing Frequency
12 Months
24 Months
36 Months
48 Months
animalhealth
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