



# Monthly publication of National Statistics on the Incidence of Tuberculosis (TB) in Cattle to end March 2015 for Great Britain

These statistics were released today, Wednesday 10 June 2015 at 09:30, with the next notice to be updated on Wednesday 15 July 2015 at 09:30.

These statistics are obtained from the Animal and Plant Health Agency (APHA) work management IT support system (Sam), used for the administration of TB testing in GB. They are a snapshot of the position on the date on which the data were extracted. These statistics may be subject to regular revision until all test results are available. In particular figures from 2013 onwards will be subject to further revision as test and incident records are completed.

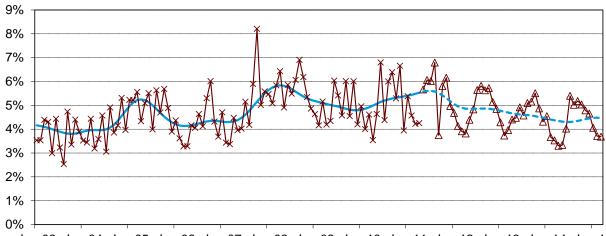
#### The key points relating to March 2015 are:-

- Short term changes in these statistics should be considered in the context of long term trends. The charts and tables in this statistical notice give the latest indication of how the trend in bovine TB incidence has changed since 1996.
- The provisional incidence rate for January to March 2015 is 3.8% compared to 3.9% for January to March 2014. However, care needs to be taken not to read too much into short term figures, especially as this figure includes a number of unclassified incidents. As such, the incidence rates are subject to further revisions as more tests and their results for the period are input.
- The number of new herd incidents during January to March 2015 was 1,394 compared to 1,404 during January to March 2014. The number of tests on officially TB free herds was 25,016 during January to March 2015, compared to 24,476 during January to March 2014.
- The number of cattle compulsorily slaughtered as reactors or direct contacts was 8,936 during January to March 2015, compared to 8,820 during January to March 2014.

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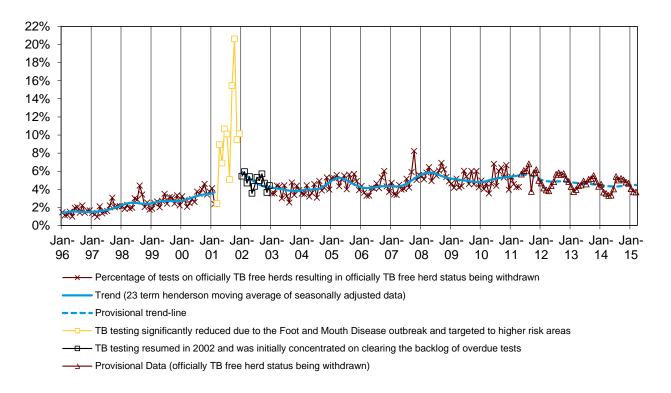
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Figure 1: Herd incidence of bovine TB (bTB) in GB: number of new incidents of bTB leading to the withdrawal of officially TB free (OTF) herd status, as a percentage of tests carried out in OTF herds each month since 2003:



Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15

Figure 2: Herd incidence of bovine TB (bTB) in GB: number of new incidents of bTB leading to the withdrawal of officially TB free (OTF) herd status, as a percentage of tests carried out in OTF herds each month since 1996:



The charts published in this statistical notice, together with the equivalent figures from January 1996 onwards, are also available in spreadsheet format on the Defra web site at :- <u>https://www.gov.uk/government/publications/incidence-of-tuberculosis-tb-in-cattle-in-great-britain</u>. Visit the fifth link (MS Excel spreadsheet) entitled "Incidence of TB in cattle in Great Britain - GB dataset".

#### National trends

There has been an overall long-term upward trend in the incidence of TB in cattle herds in GB since the beginning of the time series presented in this statistical release although the incidence rate is lower now than it was at its peak in 2008.

An unusual spike in the incidence rate was observed during most of 2001. This was an anomaly caused by the suspension of TB testing during the foot and mouth disease (FMD) outbreak of February to October 2001. In the meantime, new bTB breakdowns continued to be detected on farms through routine post-mortem meat inspection of cattle carcases in abattoirs. Following the gradual resumption of herd testing after the 2001 FMD outbreak, a three-year cycle in the bTB herd incidence rate was observed (as shown in two figures above and in Table 1), with peaks in early 2005, early 2008 and in 2011 and troughs in 2006 and 2009.

There is no clear explanation for this pattern, because bTB is a chronic disease with a complex epidemiology and reservoirs of infection in cattle and wildlife. As a result of surveillance and testing changes, there has been no stable time series until recently. For example there have been different herd testing frequencies in each parish over time, ranging from annual to four-yearly and changing every year until those frequencies were unified in Wales in 2010 (annual) and in England in 2013 (annual and four-yearly).

There are at least three possible explanations:

- 1. The smoothed trend represents true seasonal changes in the transmission risk and prevalence of infection in wildlife and cattle populations. However there is no strong evidence to support this.
- After FMD higher risk herds were tested every 3 to 4 years and could have contributed to a cyclically higher incidence rate. However breakdowns in the 4-yearly (and formerly 3-yearly) testing areas represent a small and decreasing proportion of the breakdowns in any given year.
- 3. When testing resumed in 2002 following the 2001 FMD outbreak, high-risk herds may have been identified then put under restrictions and control tested for a period (when they cannot generate a new incident). Once the bTB incident has been resolved and OTF herd status is restored, the herd becomes susceptible to a new incident as it undergoes post-breakdown surveillance tests at 6 and 18 months after regaining OTF status.

## **Regional differences**

The regional and county-level statistics published as part of this statistical notice show that there are considerable differences in the distribution and frequency of bovine TB across GB.

Scotland, which has officially TB-free (OTF) status, has very few breakdowns of the disease. The incidence of new TB breakdowns is very low and stable and is largely driven by sporadic introductions of disease into Scotland.

In Wales, TB prevalence varies across regions. The Central, South West and some areas in the South East regions have high levels of bovine TB whereas the regions in the North West and North East of Wales have relatively low levels. To attempt to contain the disease and prevent its spread into these lower-incidence regions, all herds in Wales are tested for the disease annually. The strategically-located Intensive Action Area (north Pembrokeshire and small parts of Ceredigion and Carmarthenshire, which fall within Dyfed in the statistical dataset) has one of the highest incidence rates of bovine TB in Wales. Here there are extra measures in place to control the disease, such as stricter cattle controls and improved biosecurity.

In England, there are wide geographical variations in the incidence of bTB. This is reflected in the division of the country into three different epidemiological areas, with different disease control strategies and herd testing regimes applied in each of them:

- In the *Low Risk Area* of the North, East and South East of England, the incidence of bTB is very low and stable and most cattle herds are routinely tested every four years. Similar to Scotland, the majority of breakdowns in the Low Risk Area can be linked to movements of undetected infected cattle from other areas of GB.
- In the *Edge* Area, which spans most of Cheshire, parts of the counties of Derbyshire, Warwickshire, Oxfordshire and East Sussex and the whole of Nottinghamshire, Leicestershire, Northamptonshire, Buckinghamshire and Hampshire, the herd incidence is higher than in the Low Risk Area, although this varies from county to county.
- In the *High Risk Area* of the West Midlands and South West of England, the incidence and prevalence of infected cattle have remained high for many years, thought to be partly a result of a reservoir of infection in the local wildlife.

#### TABLE 1: TB INCIDENTS IN GREAT BRITAIN - HERDS

|            |     | Number of<br>cattle herds<br>registered on<br>Sam | Total<br>tests on<br>herds | Herds not Officially<br>TB free due to a<br>bovine TB incident<br>(non-OTF Herds) | Tests on officially<br>TB free herds<br>(OTF) | New herd<br>incidents<br>(NHI) | NHI of which:<br>officially TB free<br>herd status<br>withdrawn (OTFW) | Number of OTFW<br>incidents as a<br>percentage of tests on<br>officially TB free herds |
|------------|-----|---|----------------------------|---|---|--------------------------------|--|--|
|            |     | (1)   | (2)                        | (3)   | (4)   | (5)                            | (6)  | (7)  |
| 1996       |     | na  | 36,314                     | 1,589   | 34,812  | 1,075                          | 490  | 1.4%   |
| 1997       |     | na  | 34,065                     | 1,632   | 32,295  | 1,195                          | 540  | 1.7%   |
| 1998       |     | na  | 37,046                     | 2,077   | 34,502  | 1,514                          | 787  | 2.3%   |
| 1999       |     | na  | 41,365                     | 2,374   | 38,338  | 1,661                          | 967  | 2.5%   |
| 2000       |     | na  | 40,669                     | 2,482   | 37,184  | 1,738                          | 1,135  | 3.1%   |
| 2001       | *   | na  | 13,187                     | 1,697   | 11,118  | 802                            | 571  | 5.2%   |
| 2002       | **  | na  | 49,709                     | 4,167   | 43,641  | 3,323                          | 2,042  | 4.7%   |
| 2003       |     | na  | 56,208                     | 5,460   | 47,568  | 3,214                          | 1,789  | 3.8%   |
| 2004       |     | na  | 56,836                     | 5,220   | 49,027  | 3,341                          | 1,934  | 4.0%   |
| 2005       |     | na  | 55,887                     | 5,669   | 46,725  | 3,665                          | 2,308  | 4.9%   |
| 2006       |     | na  | 64,457                     | 5,859   | 56,051  | 3,530                          | 2,303  | 4.1%   |
| 2007       |     | na  | 64,145                     | 6,582   | 54,856  | 4,188                          | 2,546  | 4.7%   |
| 2008       |     | na  | 66,432                     | 7,935   | 54,854  | 5,011                          | 3,093  | 5.6%   |
| 2009       |     | na  | 72,205                     | 8,386   | 58,894  | 4,599                          | 2,847  | 4.9%   |
| 2010       |     | 83,636  | 74,474                     | 7,964   | 61,587  | 4,723                          | 3,013  | 4.9%   |
| 2011       |     | 80,426  | 76,659                     | 8,243   | 62,489  | 4,912                          | 3,112  | 5.2%   |
| 2012       |     | 79,251  | 88,573                     | 8,930   | 73,649  | 5,130                          | 3,460  | 4.7%   |
| 2013       | (p) | 79,287  | 86,849                     | 9,048   | 72,185  | 4,811                          | 3,262  | 4.5%   |
| 2014       | (p) | 76,777  | 91,162                     | 8,538   | 77,537  | 4,720                          | 3,315  | 4.3%   |
| 2015       | (p) | 75,902  | 28,702                     | 5,034   | 25,016  | 1,394                          | 943  | 3.8%   |
| 2013 Jan   | (p) | 79,187  | 8,753                      | 4,731   | 7,342   | 494                            | 311 - 319  | 4.2% - 4.3%  |
| Feb        | (p) | 79,188  | 9,005                      | 4,742   | 7,562   | 400                            | 281 - 283  | 3.7% - 3.7%  |
| Mar        | (p) | 79,241  | 9,255                      | 4,761   | 8,010   | 486                            | 315 - 320  | 3.9% - 4.0%  |
| Apr        | (p) | 79,354  | 8,084                      | 4,748   | 6,610   | 426                            | 288 - 294  | 4.4% - 4.4%  |
| May        | (p) | 79,469  | 7,356                      | 4,580   | 5,972   | 401                            | 265 - 269  | 4.4% - 4.5%  |
| Jun        | (p) | 79,553  | 5,088                      | 4,361   | 3,947   | 325                            | 192 - 196  | 4.9% - 5.0%  |
| Jul        | (p) | 79,558  | 5,080                      | 4,213   | 3,860   | 275                            | 176 - 177  | 4.6% - 4.6%  |
| Aug        | (p) | 79,538  | 5,552                      | 4,076   | 4,415   | 326                            | 224 - 226  | 5.1% - 5.1%  |
| Sep        | (p) | 79,501  | 5,981                      | 4,036   | 4,912   | 349                            | 253  | 5.2%   |
| Oct        | (p) | 79,511  | 7,273                      | 4,098   | 6,207   | 472                            | 341 - 343  | 5.5% - 5.5%  |
| Nov        | (p) | 79,426  | 8,583                      | 4,173   | 7,444   | 504                            | 362 - 363  | 4.9% - 4.9%  |
| Dec        | (p) | 79,287  | 6,839                      | 4,167   | 5,904   | 353                            | 254 - 255  | 4.3% - 4.3%  |
| 2014 Jan   | (p) | 79,111  | 9,693                      | 4,352   | 8,134   | 534                            | 369 - 370  | 4.5% - 4.5%  |
| Feb        | (p) | 79,052  | 9,050                      | 4,347   | 7,897   | 429                            | 289 - 290  | 3.7% - 3.7%  |
| Mar        | (p) | 78,756  | 9,578                      | 4,365   | 8,445   | 441                            | 297 - 299  | 3.5% - 3.5%  |
| Apr        | (p) | 78,798  | 8,083                      | 4,297   | 6,828   | 362                            | 224 - 227  | 3.3% - 3.3%  |
| May        | (p) | 78,837  | 8,302                      | 4,157   | 6,944   | 374                            | 230 - 233  | 3.3% - 3.4%  |
| Jun        | (p) | 78,834  | 5,716                      | 3,937   | 4,588   | 265                            | 184 - 185  | 4.0% - 4.0%  |
| Jul        | (p) | 78,638  | 5,731                      | 3,864   | 4,532   | 323                            | 244 - 245  | 5.4% - 5.4%  |
| Aug        | (p) | 78,614  | 5,380                      | 3,738   | 4,411   | 297                            | 221 - 222  | 5.0% - 5.0%  |
| Sep        | (p) | 77,575  | 6,096                      | 3,670   | 5,142   | 359                            | 266 - 267  | 5.2% - 5.2%  |
| Oct        | (p) | 76,927  | 8,146                      | 3,752   | 7,049   | 471                            | 353 - 356  | 5.0% - 5.1%  |
| Nov        | (p) | 76,909  | 8,513                      | 3,907   | 7,583   | 503                            | 361 - 365  | 4.8% - 4.8%  |
| Dec        | (p) | 76,777  | 6,874                      | 3,945   | 5,984   | 362                            | 277 - 280  | 4.6% - 4.7%  |
| 2015 Jan   | (p) | 76,165  | 9,918                      | 4,135   | 8,513   | 495                            | 340 - 350  | 4.0% - 4.1%  |
| Feb<br>Mar | (p) | 75,961  | 9,328                      | 4,242   | 8,142   | 444                            | 299 - 305  | 3.7% - 3.7%  |
| war        | (p) | 75,902  | 9,456                      | 4,324   | 8,361   | 455                            | 304 - 312  | 3.6% - 3.7%  |

**Notes:-** The data are a snapshot extracted from Sam. Data for 2012 onwards will remain provisional and subject to revision each month until all culture results are available and final data validation has been carried out. The herd incidence rates for the latest months are given as a range because a number of incidents are still unclassified, so data for these months should be treated as provisional results. TB incidents remain unclassified if at the end of the period covered by this notice they had not been designated OTFW, but were still ongoing and the herd could have its OTF status withdrawn if further testing revealed one or more animals with post-mortem evidence of TB.

(1) The number of herds registered on the APHA's Sam (computer) system – monthly figures are not available (na) before December 2010. Occasionally there are changes to the number of herds registered on Sam. This is the result of routine or ad hoc data cleansing.

(2) Herds for which tuberculin skin testing is carried out on at least one animal during the period shown. Does not include gamma tests. (same as column 1 in Table 2).

(3) Herds which were not officially TB-free (i.e. herds under movement restrictions with OTF status suspended or withdrawn) due to a TB incident, during the period shown. A herd with more than one incident in the period will be counted more than once. As herds may be under restrictions for several consecutive calendar months, the monthly figures cannot be added together to describe the total number of individual herds restricted annually.

(4) Any test carried out in an OTF herd during the period shown. Does not include gamma tests.

(5) Herds which were previously OTF but either had cattle that reacted to a tuberculin test or had a tuberculous animal disclosed by routine meat inspection at slaughter, during the period shown.

(6) New herd incidents (column 5) where OTF status was withdrawn from the herd.

(7) Column 6 as a percentage of column 4.

\* Data for 2001 are not comparable with other years. During the outbreak of Foot and Mouth Disease, TB testing was significantly reduced and necessarily targeted to areas of higher risk.

\*\* Data for 2002 are not comparable with other years. Testing resources were concentrated on herds overdue their tests (because of the backlog caused by the Foot and Mouth Disease outbreak).

(p) provisional

|          |     | Total tests on herds | Total cattle tests | Cattle compulsorily slaughtered as reactors or contacts: |          |                 |  |
|----------|-----|----------------------|--------------------|--|----------|-----------------|--|
|          |     |                      |                    | Total  | Reactors | Direct contacts |  |
|          |     | (1)                  | (2)                | (3)  | (4)      | (5)             |  |
| 1996     |     | 36,314               | 2,249,891          | 3,776  | 3,151    | 625             |  |
| 1997     |     | 34,065               | 2,170,630          | 3,384  | 3,017    | 367             |  |
| 1998     |     | 37,046               | 2,447,848          | 5,685  | 4,782    | 903             |  |
| 1999     |     | 41,365               | 2,825,177          | 6,754  | 5,794    | 960             |  |
| 2000     |     | 40,669               | 2,931,658          | 8,123  | 6,877    | 1,246           |  |
| 2001     | *   | 13,187               | 1,181,861          | 6,156  | 5,200    | 956             |  |
| 2002     | **  | 49,709               | 3,961,145          | 22,072   | 19,191   | 2,881           |  |
| 2003     |     | 56,208               | 4,474,526          | 23,972   | 20,798   | 3,174           |  |
| 2004     |     | 56,836               | 4,604,721          | 22,214   | 19,636   | 2,578           |  |
| 2005     |     | 55,887               | 4,811,699          | 29,231   | 25,627   | 3,604           |  |
| 2006     |     | 64,457               | 5,417,573          | 22,062   | 20,090   | 1,972           |  |
| 2007     |     | 64,145               | 5,753,244          | 26,882   | 25,330   | 1,552           |  |
| 2008     |     | 66,432               | 6,178,789          | 39,007   | 36,968   | 2,039           |  |
| 2009     |     | 72,205               | 6,840,568          | 37,979   | 36,739   | 1,240           |  |
| 2010     |     | 74,474               | 7,447,653          | 31,949   | 31,277   | 672             |  |
| 2011     |     | 76,659               | 7,587,837          | 34,238   | 33,453   | 785             |  |
| 2012     |     | 88,573               | 8,031,218          | 37,735   | 37,050   | 685             |  |
| 2013     | (p) | 86,849               | 8,391,218          | 32,612   | 31,715   | 897             |  |
| 2014     | (p) | 91,162               | 9,042,596          | 32,859   | 31,733   | 1,126           |  |
| 2015     | (p) | 28,702               | 2,865,569          | 8,936  | 8,727    | 209             |  |
| 2013 Jan | (p) | 8,753                | 771,202            | 3,200  | 3,141    | 59              |  |
| Feb      | (p) | 9,005                | 814,369            | 3,105  | 2,997    | 108             |  |
| Mar      | (p) | 9,255                | 854,217            | 2,973  | 2,860    | 113             |  |
| Apr      | (p) | 8,084                | 825,434            | 2,726  | 2,690    | 36              |  |
| May      | (p) | 7,356                | 664,880            | 3,243  | 2,962    | 281             |  |
| Jun      | (p) | 5,088                | 482,595            | 2,035  | 2,004    | 31              |  |
| Jul      | (p) | 5,080                | 511,222            | 2,704  | 2,649    | 55              |  |
| Aug      | (p) | 5,552                | 537,366            | 2,523  | 2,470    | 53              |  |
| Sep      | (p) | 5,981                | 575,850            | 2,103  | 2,065    | 38              |  |
| Oct      | (p) | 7,273                | 722,180            | 2,851  | 2,807    | 44              |  |
| Nov      | (p) | 8,583                | 926,462            | 2,750  | 2,715    | 35              |  |
| Dec      | (p) | 6,839                | 705,441            | 2,399  | 2,355    | 44              |  |
| 2014 Jan | (p) | 9,693                | 999,586            | 2,923  | 2,883    | 40              |  |
| Feb      | (p) | 9,050                | 864,246            | 3,001  | 2,868    | 133             |  |
| Mar      | (p) | 9,578                | 880,232            | 2,896  | 2,847    | 49              |  |
| Apr      | (p) | 8,083                | 798,534            | 2,867  | 2,748    | 119             |  |
| May      | (p) | 8,302                | 717,203            | 2,725  | 2,690    | 35              |  |
| Jun      | (p) | 5,716                | 546,304            | 2,652  | 2,446    | 206             |  |
| Jul      | (p) | 5,731                | 578,711            | 2,320  | 2,205    | 115             |  |
| Aug      | (p) | 5,380                | 518,039            | 1,942  | 1,919    | 23              |  |
| Sep      | (p) | 6,096                | 639,153            | 2,552  | 2,483    | 69              |  |
| Oct      | (p) | 8,146                | 852,357            | 2,900  | 2,800    | 100             |  |
| Nov      | (p) | 8,513                | 883,163            | 2,729  | 2,568    | 161             |  |
| Dec      | (p) | 6,874                | 765,068            | 3,352  | 3,276    | 76              |  |
| 2015 Jan | (p) | 9,918                | 1,015,228          | 2,977  | 2,923    | 54              |  |
| Feb      | (p) | 9,328                | 899,695            | 2,954  | 2,898    | 56              |  |
| Mar      | (p) | 9,456                | 950,646            | 3,005  | 2,906    | 99              |  |

#### TABLE 2: TB INCIDENTS IN GREAT BRITAIN - ANIMALS

Notes: The data are a snapshot extracted from Sam. Data for 2012 onwards will remain provisional and subject to revision each month until all culture results are available and final data validation has been carried out.

(1) Herds for which tuberculin skin testing is carried out on at least one animal during the period shown. Does not include gamma tests. (same as column 2 in Table 1).

(2) Count of the number of tests on cattle. An individual animal could be tested more than once in each time period. Includes a minority of interferon-gamma blood tests.

(3) Animals compulsorily slaughtered because they reacted to the tuberculin skin test or because they were considered to be direct contacts (see below). Not all of these animals showed evidence of *Mycobacterium bovis* infection at post-mortem examination.

(4) An animal which was compulsorily slaughtered because it responded to the tuberculin skin test or interferon-gamma test in a way that was consistent with it being infected with *Mycobacterium bovis*.

(5) An animal in an OTFW incident that, although not a test reactor, was considered to have been exposed to *Mycobacterium bovis* and compulsorily slaughtered.

\* Data for 2001 are not comparable with other years. During the outbreak of Foot and Mouth Disease, TB testing was significantly reduced and necessarily targeted to areas of higher risk.

\*\* Data for 2002 are not comparable with other years. Testing resources were concentrated on herds overdue their tests (because of the backlog caused by the Foot and Mouth Disease outbreak).

(p) provisional

#### What is bovine tuberculosis?

Bovine tuberculosis (bTB) is a chronic infectious disease of cattle<sup>1</sup>. The risk bTB poses to human health is low, largely due to milk pasteurisation. The disease is detected either on farms (through mandatory skin tests<sup>2</sup> of cattle herds for bTB at regular intervals) and at abattoirs (through post-mortem meat inspection of cattle carcases).

#### What are the impacts of bTB?

Bovine TB presents serious challenges to the food and farming industries and has economic and social impacts. The economic costs of a bTB breakdown<sup>3</sup> are shared by farmers and government; in 2012 the estimated average cost of a confirmed herd breakdown in high risk areas of England was £14,000 to farmers and £20,000 to government<sup>4</sup>. Costs are incurred for a number of reasons:

- Cattle which are found (or are highly likely) to have bTB are slaughtered. This loses the farmer the value of the animal and its output. Government pays farmers compensation for slaughtered animals which is based on the market value of cattle.
- There are costs associated with testing animals for bTB. Farmers incur costs from gathering animals together, such as paying workers for their time, and government pays the vets' fees for carrying out tests on the herd (and in the event of a breakdown on herds in neighbouring farms).
- When an animal in a herd tests positive for the disease, the whole herd is put under movement restrictions until all the remaining animals are tested repeatedly with negative results. This presents costs to farmers, for example because they are unable to move their cattle to market or buy in replacements for animals that are slaughtered.

Other impacts of high bTB levels can include:

- Restrictions on trade in cattle within Europe<sup>5</sup>
- Significant stress amongst famers, their families and local communities<sup>6</sup>
- The infection spilling over to domestic and wild animals<sup>7</sup>.

#### Why monitor statistics about bTB?

**Legal requirements:** EU Member States are legally required to have accelerated bTB eradication plans in place in order to achieve officially TB free (OTF) status<sup>8</sup>. Defra and Welsh Government policy is to achieve OTF status for the whole country by 2038, while Scotland achieved OTF status in September 2009. bTB statistics are used in England and Wales to measure progress towards this

<sup>&</sup>lt;sup>1</sup> bTB is caused by the bacterium *Mycobacterium bovis* (*M. bovis*). Cattle are the natural host of the bacterium, but many other species, including wildlife such as badgers and (less commonly) deer, are also susceptible to *M. bovis*, can develop TB and transmit the infection to other species.

other species. <sup>2</sup> the tuberculin skin test: if tuberculin (a purified sterile cocktail of proteins derived from *M. bovis* cultures) is injected into the skin of an animal infected with *M. bovis*, this will cause a localised allergic reaction characterised by temporary swelling of the skin, which is measured 72hrs after the injection. The principle is very similar to the skin tests for TB in humans.

<sup>&</sup>lt;sup>3</sup> A *breakdown* is the term used to describe the occurrence in a herd of at least one animal with a positive reaction to the skin test, or the identification of *M. bovis* in an animal with TB lesions detected at routine slaughter. The affected herd is then placed under restrictions and loses its Officially TB Free (OTF) status.

<sup>&</sup>lt;sup>4</sup> Economic analysis based on research report SE3112 for Defra, 2004

<sup>&</sup>lt;sup>5</sup> Because the disease undermines the effective operation of the single market – see the EU Animal Health Strategy

<sup>&</sup>lt;sup>6</sup> See for example research report SE3120 for Defra, 2008

<sup>&</sup>lt;sup>7</sup> For example Broughan, J. M., Downs, S. H., Crawshaw, T. R., Upton, P. A., Brewer, J. & Clifto-Hadley, R. S. (2013) *Mycobacterium bovis* infections in domesticated non-bovine mammalian species. Part 1: review of epidemiology and laboratory submissions in Great Britain 2004-2010. *Veterinary Journal* **198**, 346-35. See also <u>http://webarchive.nationalarchives.gov.uk/20140405112558/http://www.defra.gov.uk/ahvla-en/publication/pub-survreport-tb/</u>

en/publication/pub-survreport-tb/ <sup>8</sup> "OTF Status" takes its meaning from European law: for a region or Member State of the EU to be considered to be OTF the annual incidence of herds with confirmed *M. bovis* infection must not have exceeded 0.1% and at least 99.9% of the herds within it must have been free from bTB at the end of the year for at least six consecutive years.

target, and to support the annual case for Scotland to retain its OTF status, as the qualification is based on herd incidence.

**Monitoring policy effectiveness:** Statistics on the incidence of bTB in cattle herds and the number of cattle slaughtered as a result of bTB are used by policymakers to monitor the spread and concentration of the disease and to inform decisions around the potential approaches to controlling it. Existing controls include routine testing in cattle based on the disease incidence (or risk) in a given area, restricting movements of cattle from herds where an animal has tested positive for the disease and addressing the problem of disease spread through wildlife (principally badgers).

### Factors affecting statistics on incidence of bTB in cattle herds

Variation in the monthly statistics can occur for a number of reasons, including:

- **Disease**: an increase in the trend can be the result of a higher proportion of herds experiencing a breakdown because of an increase in the underlying incidence of bTB.
- **Surveillance policy** (including the frequency of testing): Cattle herds in high risk areas<sup>9</sup> are tested annually and cattle herds in low risk areas are usually tested every four years. If cattle herds in a low prevalence region are tested more frequently than every four years, the increase in the number of bTB tests will not necessarily be followed by a similar increase in the detection of infected cattle and so this may result in a decline in the incidence rate.
- **Seasonality**: more animals are tested when they are housed, during winter months, compared with when they are grazing outdoors in summer months. This is simply because it is easier to gather and test the cattle when they are already contained within a building. The blue trend line in Figures 1 and 2 account for this by presenting seasonally adjusted data.
- Number of **testing days** in a given month: tests tend to be carried out at the beginning of the working week and the results collected and entered into the data system towards the end of the week. Months containing five Fridays may therefore have more positive test results than months containing four.

An extreme example of the impact of testing on the incidence rate can be seen in the statistics for 2001, when bTB testing was significantly reduced for most of the year due to the outbreak of Foot and Mouth Disease but new bTB breakdowns continued to be detected through disease surveillance in abattoirs. This led to an unusually high incidence rate for 2001 and 2002, when effectively two years' worth of breakdowns were identified in one year when the normal testing regime resumed.

#### Surveillance policy in GB

These statistics are presented for GB, but the bTB surveillance and control policy – including how frequently animals are tested for bTB – varies between England, Wales and Scotland and has changed over time.

#### Timeline:

- **1990s**: most herds in GB tested every four years and background testing intervals determined on a parish basis. Herds in parishes with a high incidence of bTB breakdowns (in the South West of England and in parts of Wales) are tested on an annual or biennial basis, with a smaller number of three-yearly testing herds.
- **2004 to 2010**: the proportion of parishes and herds in England and Wales with annual testing increases gradually as the disease spread, with a corresponding decrease in the proportion of parishes with four-yearly testing.

<sup>&</sup>lt;sup>9</sup> South West, West Midlands and East Sussex, where the majority of TB cases are found and where the prevalence (probability) of TB-infected cattle and badgers is relatively high.

- October 2009: the European Commission designates Scotland as an officially bTB free region of the UK.
- January 2010: In England, a core annual testing area is established, spanning entire counties in the South West and West Midlands (the 'high risk area') and surrounded by a 'buffer' of twoyearly testing parishes. Most of the rest of England remains on background four-year testing. The Welsh Government puts all cattle herds in Wales on annual bTB testing (with herds in the small Intensive Action Area of West Wales put on 6-monthly bTB testing).
- **2011 and 2012**: further expansion of the annual testing area in England to the east and north.
- January 2013: herd testing intervals are determined on a county basis and England is split into annual testing and four-yearly testing counties. Annual testing of herds is extended to all the counties at the edge of the high risk area (more detail below). Three- and two-yearly testing is abolished.

#### Current differences in surveillance policy in GB

- England is divided into two cattle bTB testing frequency areas that broadly reflect the geographically clustered nature of the disease. The majority of bTB cases are found in counties of the South West, West Midlands and East Sussex. These herds are tested for bTB annually and represent nearly 60% of all herds in England. In the rest of England most herds are tested every four years. Herds that have a high risk of contracting bTB or present a potential public health risk (e.g. producer-retailers of unpasteurised milk) are tested annually regardless of their location.
- All herds in **Wales** are tested annually.
- **Scotland** has in place a risk-based routine herd testing policy. This targets testing at higher risk herds. Around 35 per cent of herds are considered low risk herds and are exempt from routine testing. Herds that are not exempt tested are every four years.

More information on bovine TB can be found at:

England :https://www.gov.uk/government/policies/reducing-bovine-tuberculosis

Wales :-

http://gov.wales/topics/environmentcountryside/ahw/disease/bovinetuberculosis/?lang=en

Scotland :-

http://www.scotland.gov.uk/Topics/farmingrural/Agriculture/animalwelfare/Diseases/disease/tuberculosis

#### Methodology

For a description of the data sources and methodology used in the calculation of the TB statistics, together with notes on data revisions policy etc. Refer to the Annex document at :- <a href="https://www.gov.uk/government/uploads/system/uploads/attachment\_data/file/305850/bovinetb-annex-24apr14.pdf">https://www.gov.uk/government/uploads/system/uploads/attachment\_data/file/305850/bovinetb-annex-24apr14.pdf</a>

#### Further Information

This statistical notice and a wide range of other statistics are available on the internet at https://www.gov.uk/government/organisations/department-for-environment-food-rural-affairs/about/statistics