

**Differences between bovine TB indicators in herds in the IAA and herds in the Comparison Area (Project OG0142):
First two years, 1st May 2010 to 30th April 2012**

A report commissioned by the Welsh Government under Project OG0142

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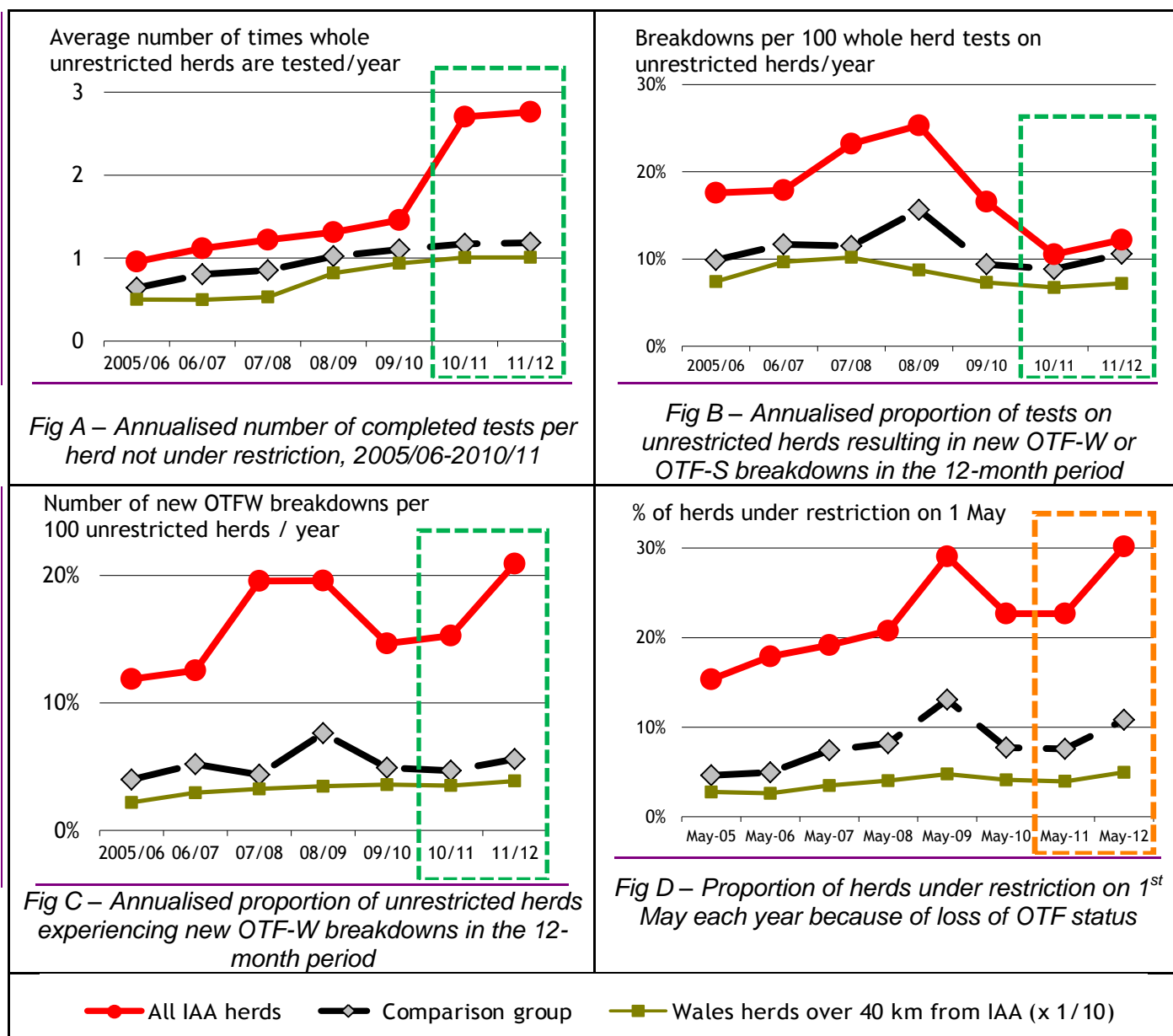
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Differences between bovine TB indicators in herds in the IAA and herds in the Comparison Area (Project OG0142): First two years, 1st May 2010 to 30th April 2012

Summary & Key messages:

On 1st May 2010, when cattle controls began in the Intensive Action Area (IAA), the numbers of herds in the IAA and Comparison Area were 317 and 1313 respectively¹. A descriptive analysis has been undertaken to show bovine tuberculosis (bTB) testing effort and trends in measures of bTB incidence in cattle from 1st May 2005 to the end of April 2012, including the 24 months since the introduction of cattle controls in the IAA. We describe the trends observed in relation to the changes in testing effort, procedures in bTB breakdowns and biosecurity in the IAA, and note that the observed differences in trends (except for testing intervals) are small in comparison with the historic variation between years.

The graphs and points below illustrate the key messages, which are described in more detail in the body of the report:



- The frequency of testing of unrestricted IAA herds doubled, from once to twice per year from 1st May 2010, and is clearly illustrated in Fig A (from Fig 2.1 in the full report).

¹ The Comparison Area (CA) contains more herds than the IAA to compensate for the lower apparent force of infection in the CA, evidenced by different proportions of herds with bTB breakdowns at the initiation of the IAA.

- Between 2009/10 and 2010/11 there had been a decrease in the proportion of herd tests in unrestricted IAA herds that disclosed breakdowns (Fig B, from Fig 3.1 in the full report), both absolutely and relative to herds in the Comparison Area. This decrease had been expected, because the decreased interval between herd tests in IAA herds reduced the time during which infection could enter each herd. In 2011/12, this effect persisted.
- Increases in the proportion of unrestricted herds that experienced new OTF-W breakdowns between pre-IAA (2009/10) and the most recent 12 months (2011/12) (Fig C, from Fig 6.2 in the full report) were larger in the IAA than in the Comparison Area. The proportions increased 1.42 and 1.14-fold for the IAA and Comparison Area, respectively. The change in testing interval to 6-monthly in May 2010 resulted in herds with clear tests in the *first* half of 2009/10 having further tests in the first and second halves of 2010/11. Therefore, if any of these herds had bTB reactors in the first or second routine test in 2010/11, they might have been test-positive in the previous 18 months (rather than the usual 12 months).
- The proportion of IAA herds under restriction in both 2010/11 and 2011/12 remained very high compared to the proportion in the Comparison Area (Fig D, from Fig 4.1 in the full report) and is likely to be reflecting the high burden of bTB infection within the IAA. The proportion in IAA herds under restriction may be further affected by the introduction of an extra clear test before releasing OTF-S breakdowns from restriction. The relative increase between 2010/11 and 2011/12 was not greater in herds in the IAA (1.33-fold) than in herds in the Comparison Area (1.43-fold).
- Some 10-15% of the map references of IAA herds recorded on SAM (release 6) fell outside the IAA area (Fig E). A similar proportion of herd map references in the Comparison Area also fell outside the parish implied by their CPHH. Since the locations of IAA herds had been validated before May 2010, we concluded that those with map references outside the IAA area were frequently using land within the IAA. Outside the IAA, most of the discrepancies were a few km.

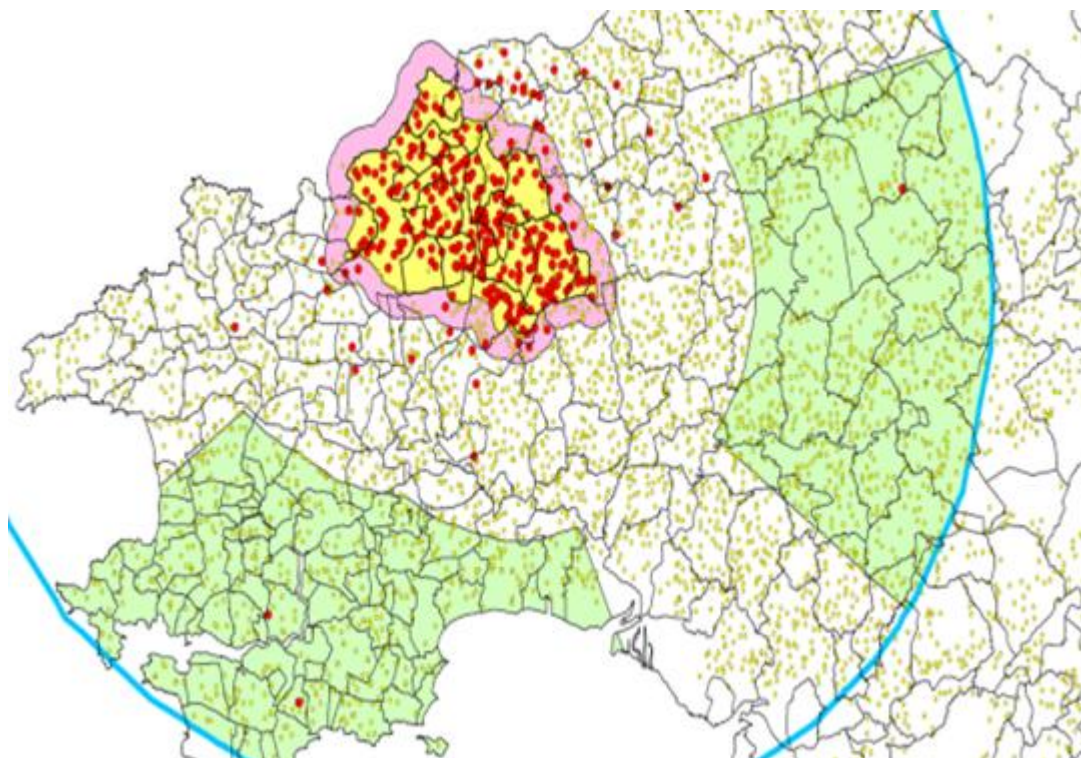


Fig E – Areas contributing to Figures A to D: the IAA Area (yellow), Comparison Area (green, in two parts) and Wales more than 40 km from the edge of the IAA (north and east of the blue circle). The 313 herds registered in the IAA for at least 12 of the 24 months May 2010 to April 2012 are shown in red; other herds (yellow dots) are shown according to their map reference in SAM release 6. The 2-km-wide buffer around the IAA is shown in purple.

Summary conclusion

A more intensive testing effort was used in the IAA compared to the Comparison Area. However, observed differences in trends in bTB incidence since the initiation of the IAA are small in comparison with the historic variation between years. There have been major changes in testing regimes in the IAA, differences in demography between the Comparison Areas and IAA. Because of this, and a lack of true randomisation or replication, we predict that any difference in bTB trends due to control efforts between herds in the IAA and herds in the Comparison Areas will not be detectable until several years have elapsed. Specifically, the purposive selection of the IAA and the difficulty in finding a Comparison Area with equivalent bTB exposure reduces the soundness of evidence that any observed differences in bTB incidence are due to bTB control strategies rather than other differences between the areas in the epidemiology of bTB.

Introduction

The 288-km² Intensive Action Area (IAA) in north-eastern Pembrokeshire experienced one of the highest incidence rates of bovine TB (bTB) in Wales in five 12-month periods (2005/06 to 2009/10) that ended on 30th April. Intensified cattle controls were introduced into the IAA on 1st May 2010 and a badger vaccination programme in May 2012.

The cattle controls comprised enhanced biosecurity and changes to bTB testing regimes. They include:

- (1) restricting cattle movements within the IAA and between the inside and outside of the IAA, involving revocation of SOAs with stricter control on reallocation, withdrawal of BCMS linkages between herds, etc;
- (2) use of source & spread tracing in OTF-suspended herds (as well as mandatory tracing in OTF-withdrawn herds), and
- (3) A programme of badger vaccination commenced in May 2012, for which preliminary results will be given in future reports.

Enhanced testing has increased the number of tests applied to animals in herds and has a potential impact on surveillance statistics:

- (1) the frequency of periodic surveillance testing of herds has been increased from 12-monthly to six-monthly;
- (2) two successive clear tests are required before movement restrictions are withdrawn from OTF-S breakdowns (similar to the mandatory practice for OTF-W breakdowns); and
- (3) use of the interferon-gamma (IFNg) blood test has been encouraged in IAA project herds. In the first two years of the IAA, the IFNg test has been used to improve the sensitivity of testing animals in the IAA, but has not been used to disclose new bTB breakdowns.

This report shows the trends in indicators of bovine TB (bTB) in herds registered as using land in the IAA, in a 2-km buffer around the IAA, in a Comparison Area between 16 and 40 km from the edge of the IAA, and in Wales further than 40 km from the IAA.

Methods

Reporting periods

Reporting periods begin on 1st May and end on 30th April the following year. The first two 12-month periods of interventions in the IAA are described here (1st May 2010 to 30th April 2012), and the five earlier periods that began on 1st May 2005 are also described. These seven periods are labelled 2005/06 through 11/12 in the annual statistical charts in this report. In the line graphs below, points for the periods 2010/11 and 2011/12 are highlighted in green and; points for fixed dates (e.g. 1st May) are shown with orange highlighting.

Definition, selection and location of IAA and Comparison Areas

The number of registered IAA herds changed each month, but the identity of all IAA herds was reported to us monthly. Sometimes the map reference attributed to an IAA herd in SAM 6 was outside the IAA geographical area, but this was not considered an error because many herds in

the IAA do not use land in the IAA continuously. The areas in which non-IAA herds fall are defined by their map references in SAM6. Bovine TB in herds located in the 2-km wide buffer around the IAA is reported because of the proximity of the herds to the IAA. Bovine TB in non-IAA herds having a map reference between 2 and 16 km from the edge of the IAA is ignored because the degree to which they have contact with IAA herds is uncertain.

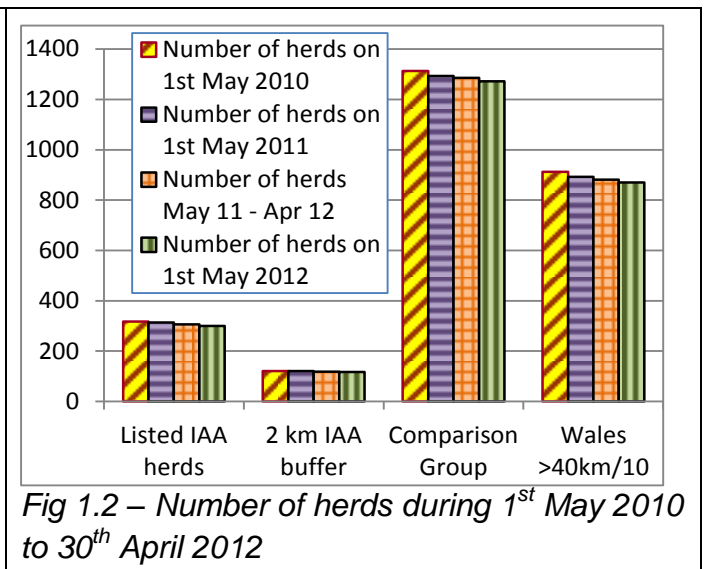
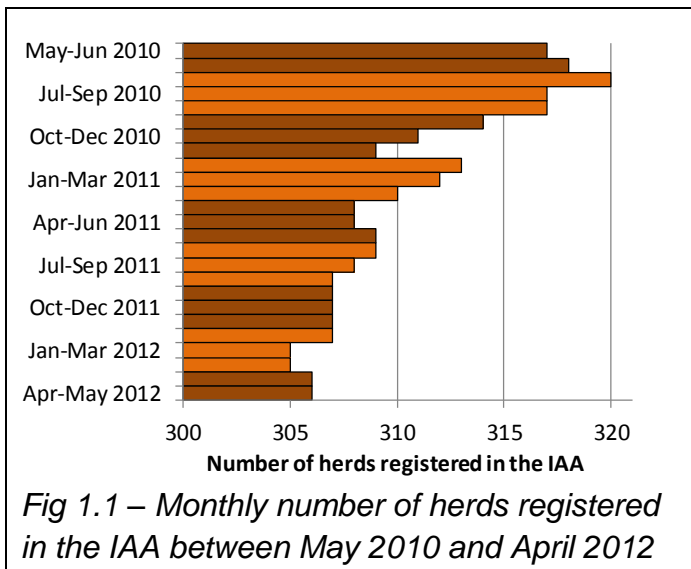
Selecting the Comparison Area (CA) involved compromise, because the nearest set of herds with a bTB incidence rate equivalent to that in the IAA herds was over 100 km away. Instead, we selected a CA with a larger number of herds and cattle than was in the IAA that was as near to the IAA as was epidemiologically sound. In the CA there was a slightly larger absolute number of bTB breakdowns, which should serve to improve the statistical precision of results in future. According to their map references, herds in the CA are further than 16 km from the edge of the IAA, making it unlikely that they will use land in the IAA. The CA extends to 40 km from the edge of the IAA, to include most of Dyfed. Although the CA occupies a band 16-40 km from the IAA, the parts of the band where bTB herd incidence is low have been excluded.

This report differs from the report for May 2011 by including all non-IAA herds according to their map references instead of the Parish implied by the first five characters of the CPHH. For some herds the map reference falls outside of the Parish but in most cases this is only by a few kilometres. As a result, numbers of herds and of animals in all areas except the IAA are 10-15% higher in this report than in last year's.

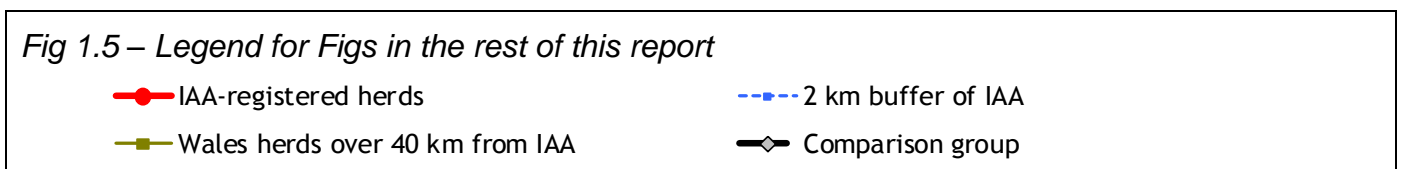
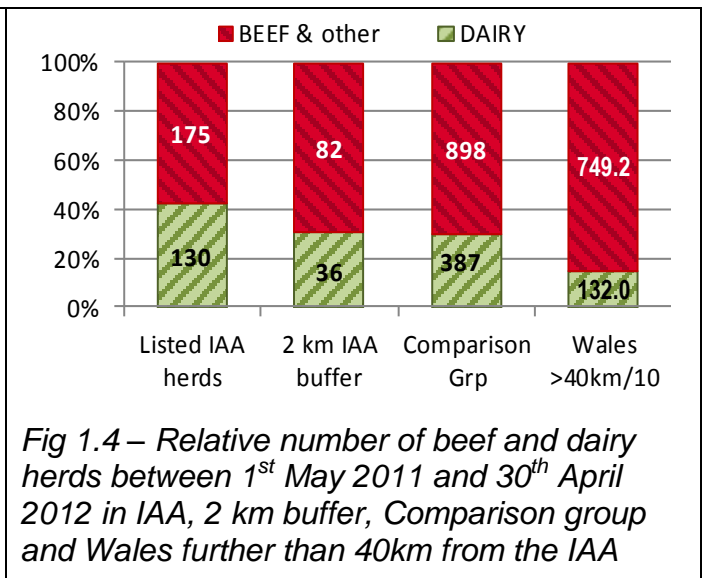
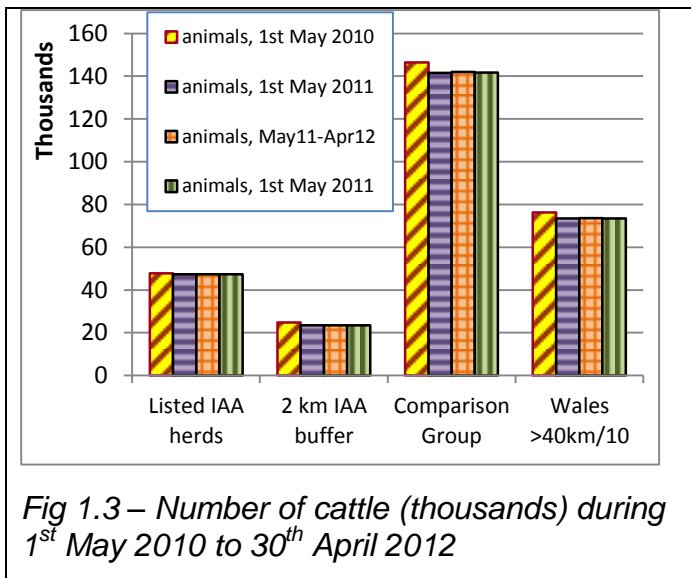
Appendices give (A1) a Glossary of definitions and descriptions, and (A2) the numbers upon which the graphs are based.

1. Cattle demographics in the IAA and Comparison Area

The number of herds in the IAA on 1st May 2010 was 317 (Fig 1.1); at that time the number in the Comparison Area was 1313, the number in the 2 km buffer was 120 and the number in Wales further than 40 km from the IAA was 9115 (Fig 1.2). Two years later the number of herds in these groups has decreased, to 306, 1272, 116 and 8699. The average herd sizes increased between May 2010 and May 2012 to 158, 112, 202 and 84, broadly maintaining the number of cattle despite the loss of herds (Fig 1.3). Herd size was heavily influenced by the proportion of dairy herds (Fig 1.4 – please note the 12-month period). The rate of decrease of number of herds in the IAA between May 2010 and May 2012 (Fig 1.1) was not significantly different from the rate in the Comparison Area (an average of 1.6% a year).



At the end of April 2012, the number of herds and of cattle in the Comparison Area (CA) was 4.13 and 2.99 times greater than the number in the IAA (Figs 1.2 and 1.3). In the IAA, the proportion of dairy herds (which tend to be larger than beef herds) was greater than in the CA, which in turn was greater than the proportion in Wales more than 40 km from the IAA (Fig 1.4).



It will be seen that the lines for the 2-km buffer of the IAA are often irregular in direction and sometimes exceptionally low or high. This is a result of the small number of denominator herds (no more than 120).

2. Testing effort

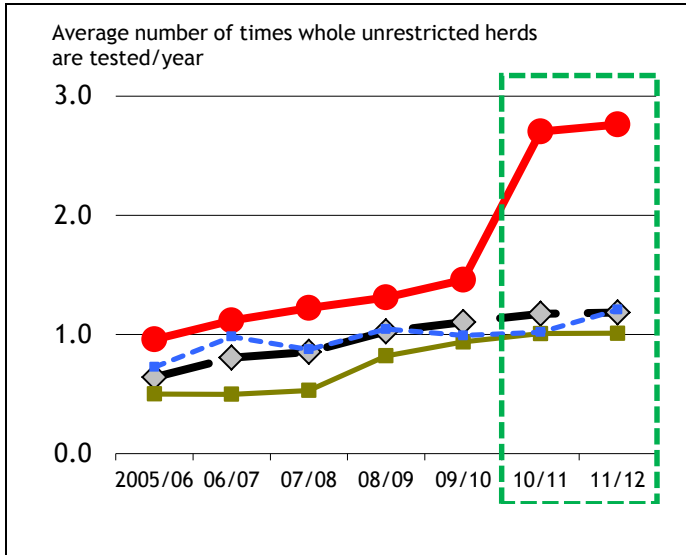


Fig 2.1 – Annualised number of completed whole herd type tests per herd not under restriction, 2005/06-2011/12

Up until 2009/10, the large number of tests per unrestricted IAA herd reflected the large proportion of such herds that was tested annually (Fig 2.3). In the last 24 months, herds in the IAA were routinely tested twice yearly, and many were tested more often, for example in contiguous herd tests.

The tests shown here include those that disclose a bTB incident, but do not include tests conducted *during* incidents *after* restrictions are imposed. If it took more than one day to complete a test, the test date was considered to be the day of completion.

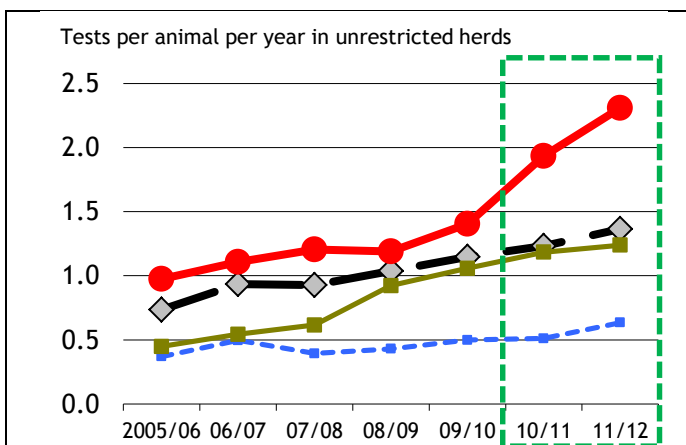


Fig 2.2 – Annualised number of tests per animal in unrestricted herds, 2005/06-2011/12, including all test types

The denominator excludes periods during which animals were in restricted herds. As in Fig 2.1, the relative number of tests increased between 2009/10 and 2011/12, especially in the IAA. The number of tests per animal exceeded the number of tests per unrestricted herd by up to 20% because testing in unrestricted herds includes individual animal type tests such as pre-movement tests

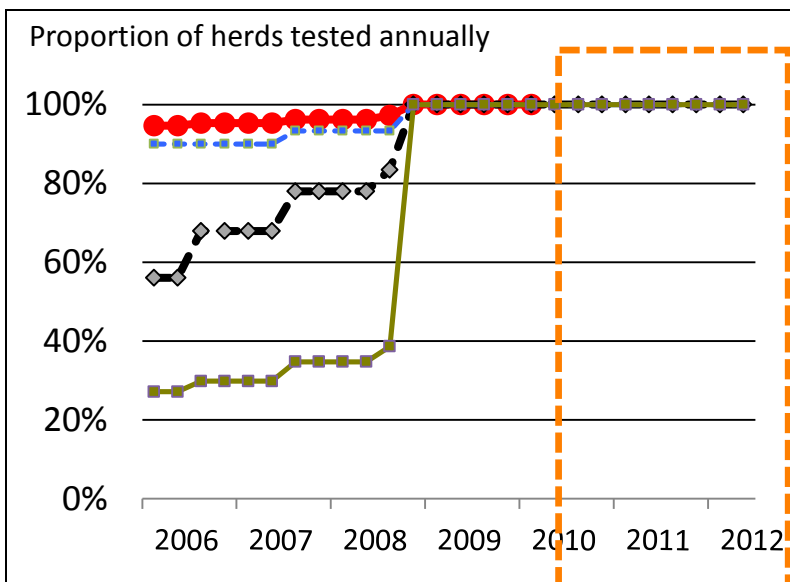


Fig 2.3 – Proportion of herds in yearly-tested parishes, 2005/06-2011/12

Between October 2008 and the start of the IAA, all herds in Wales had been tested annually. Before then, Comparison Herds were tested less frequently than those in the IAA; after the start of IAA cattle controls on 1st May 2010, IAA herds have been tested twice yearly

- IAA-registered herds
- 2 km buffer of IAA
- Wales herds over 40 km from IAA
- ◆ Comparison group

3. Breakdowns and reactors per test

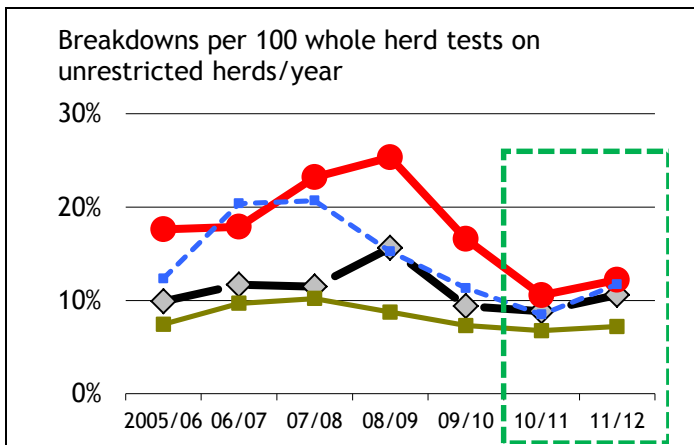


Fig 3.1 – Number of herds losing their OTF status (becoming OTF-W or OTF-S), per complete whole-herd type test of unrestricted herds

Between 2009/10 and 2010/11 there had been a decrease in the total number of breakdowns per test in the IAA herds, which was attributed to an increase in the denominator (Fig 2.1). In 2011/12 there has been a small increase in the IAA, but herds in the 2 km buffer and Comparison Area were affected to a similar extent.

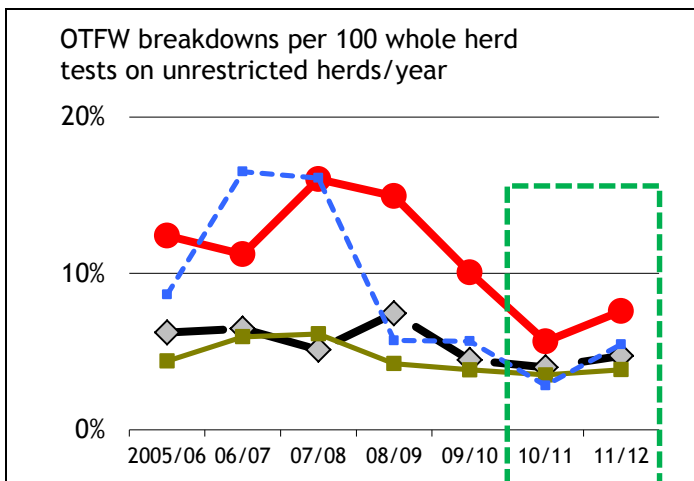


Fig 3.2 – Number of OTF Withdrawn Breakdowns, per complete whole-herd type test on unrestricted herds

Besides the similarities with Fig 3.1, the tendency for there to be more OTFW breakdowns per whole-herd test in the IAA than in the Comparison Area continues in 2011/12. A greater proportion of OTFW herds in the IAA would have been classified OTFW on epidemiological grounds, having been OTFW in the last three years of being contiguous to an ongoing OTFW, without any finding of lesion or culture.

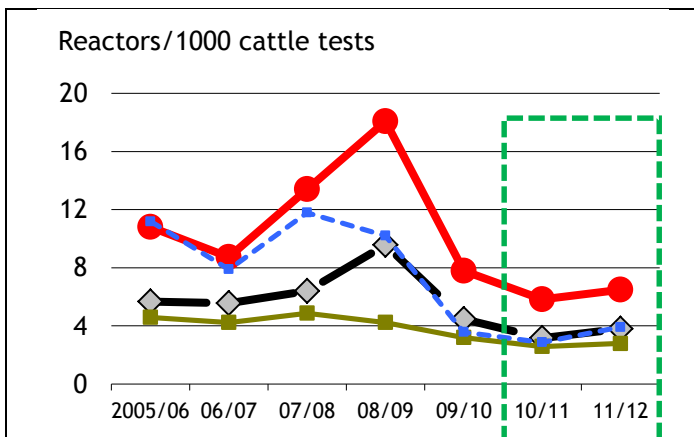


Fig 3.3 – Number of reactors per 1000 animal tests (all tests)

The increase in number of reactors per 1000 animal tests of any kind between 2010/11 and 2011/12 paralleled the increase in number of breakdowns per 100 herd tests (Fig 3.1). The statistic continued to be greater in the IAA than in the Comparison Area.



VL reactors or *M bovis* animals/
1000 cattle tests

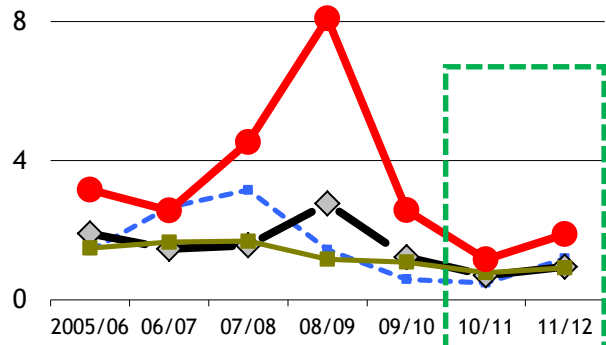


Fig 3.4 – Number of reactors with visible lesions or animals with positive *M. bovis* cultures per 1000 animal tests (all tests)

The relative decrease in the IAA (vs. Comparison Area) between 2009/10 and 2010/11 was reversed in 2011/12.

Number of new OTFW breakdowns as a
proportion of all breakdowns

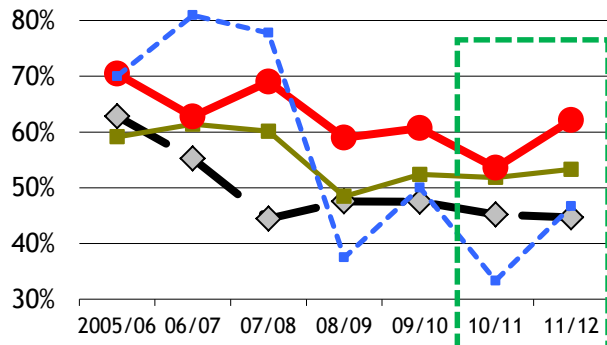


Fig 3.5 – Proportion of all breakdowns (OTF-W and OTF-S) that are OTF-W

The proportion can be calculated by dividing the data in Fig 3.2 by the data in Fig 3.1.

The lower ratio from about 2008/09 onwards has in the past coincided with changes in tuberculin potency. The proportion in the IAA has tended to be consistently higher than the proportion in the comparison areas, which commonly occurs when incidence is higher.

4. Proportion of herds under restriction on 1st May

% of herds under restriction on 1 May

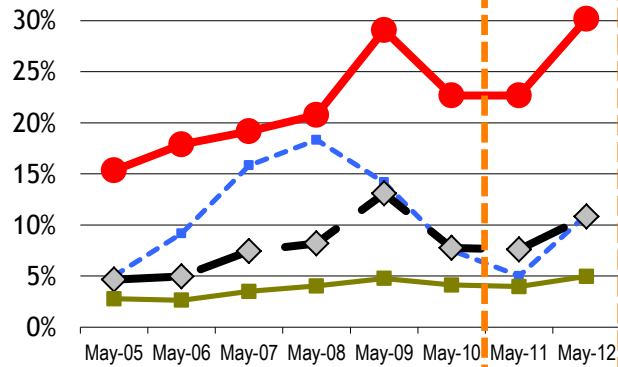


Fig 4.1 – Average proportion of herds under restriction on 1st May each year because of loss of OTF status (all breakdowns, OTF Withdrawn and OTF Suspended)

The proportion of herds under restriction has been around three times as high in the IAA as in the Comparison Group since 2005/06 or before. It has not decreased since the start of IAA controls, despite the extra testing performed at the end of breakdowns in the IAA.

● IAA-registered herds

--- 2 km buffer of IAA

■ Wales herds over 40 km from IAA

◆ Comparison group

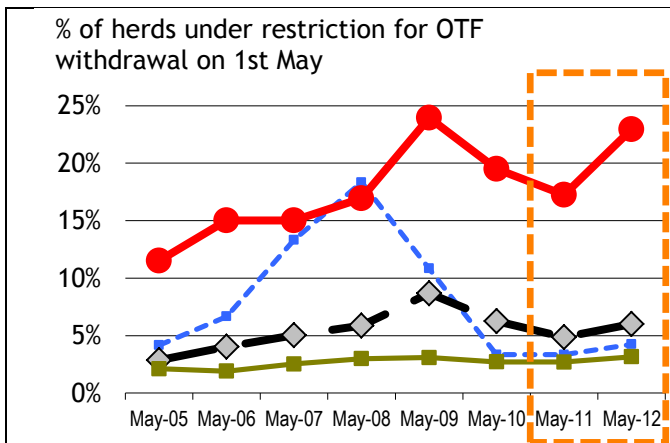


Fig 4.2 – Average proportion of herds under restriction on 1st May each year because of withdrawal of Official TB Free (OTF) status

As in Fig 4.1, the proportion of herds under OTFW restriction showed similar trends to the proportion in the Comparison Group. The proportion has been 3 or 4 times as large as the proportion in the Comparison Group

Rolfes' Drafting Note:

- Is there an important issue associated with the ratio of OTFW to OTFS? To what extent does changes in this ratio explain trends within and differences between the different cohorts?

5. Duration and lifting of restrictions

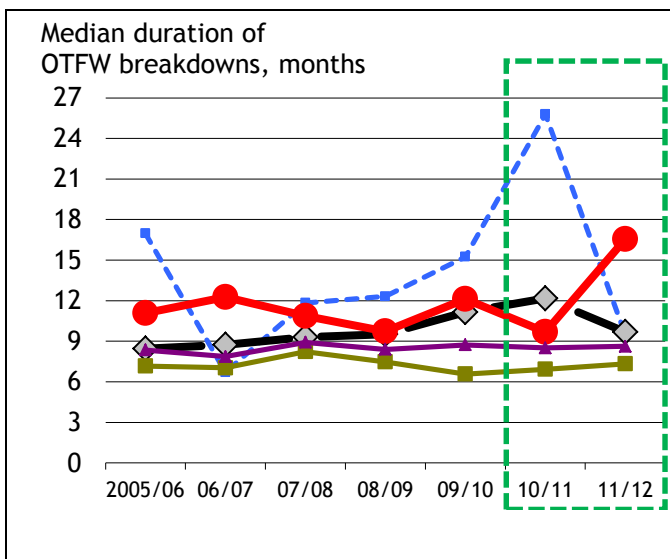


Fig 5.1 – Median duration of OTF withdrawn breakdowns ending in each 12-month period (months)

In order to include all data for each period, durations are calculated at the end of periods rather than at the beginning. Medians are shown to minimise the effects of skewed distributions.

The duration of breakdowns in the IAA has increased since the start of controls in the IAA, but was not recorded until 2011/12 because of the retrospective nature of recording. The increased duration in the IAA could be due to the extra severity of test interpretation at the end of OTFW breakdowns

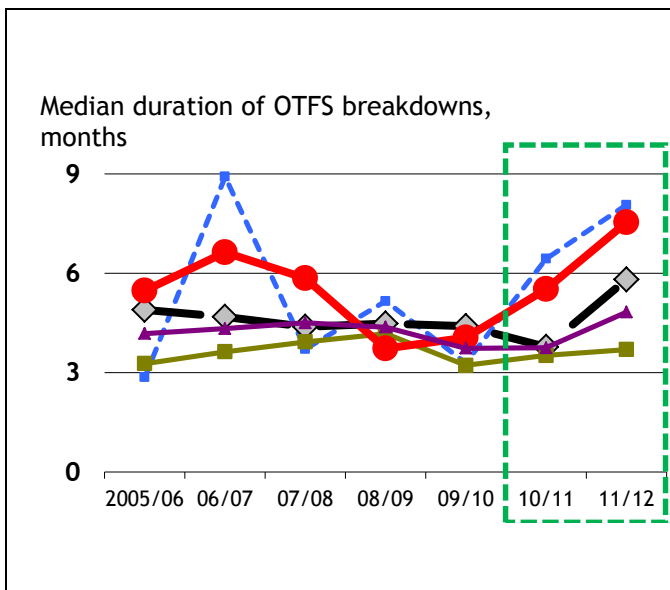


Fig 5.2 – Median duration of OTF suspended breakdowns ending in each 12-month period (months)

The larger median duration in IAA herds (relative to Comparison Herds) in 2010/11 was continued in 2011/12. The difference was approximately 2 months in both periods. This difference is consistent with last year's conclusion that it was due to the extra clear test required for an OTF-S breakdown to end in the IAA.

In contrast with OTFW breakdowns, the increase in duration of OTFS breakdowns was observed in the first year rather than the second year of controls in the IAA. This may have been caused by the tendency for OTFS breakdowns to be about 6

- IAA-registered herds
- - -■ - - - 2 km buffer of IAA
- Wales herds over 40 km from IAA
- ◇— Comparison group

Herds with restrictions lifted in year per 100 herds under restriction on May 1st

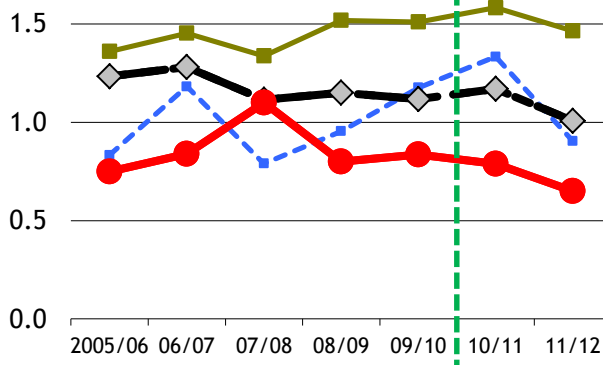


Fig 5.3 – Herds that had restrictions lifted during a 12 month period as a proportion of herds under restriction at the beginning: OTFW and OTFS

Because this is the ratio between the number of breakdowns ending during the 12 months divided by the number of herds under restriction at the beginning of the period, values greater than 1.0 are possible and tend to represent relatively short breakdowns. There has been little difference in changes since May 2010 between herds in the IAA and those in the Comparison Area

Herds with OTFW restrictions lifted in year per 100 herds under OTFW restriction on May 1st

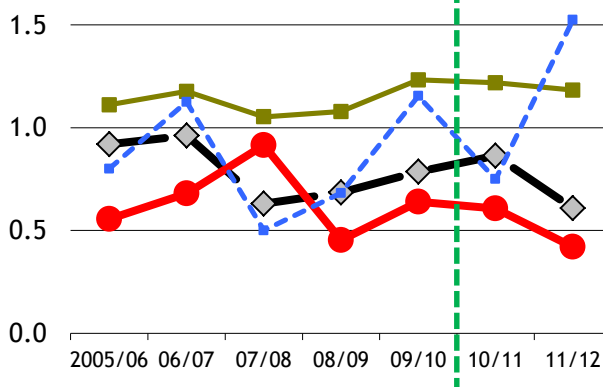


Fig 5.4 – Herds that had restrictions lifted during a 12 month period as a proportion of herds under restriction at the beginning: OTFW only

The pattern was similar to that in Fig 5.3, but with herds in the IAA being slightly more similar to herds in the Comparison Area

6. Breakdowns per 100 herds and reactors per 1000 animals

Number of new breakdowns per 100 unrestricted herds

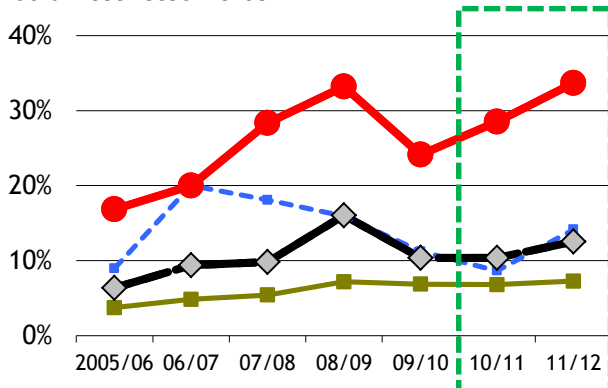


Fig 6.1 – Annualised proportion of unrestricted herds experiencing new OTFW or OTFS breakdowns in each 12-month period (herd incidence rate)

The relative increase in incidence in the IAA between 2009/10 and 2011/12 was 1.40-fold, larger than the increase in the Comparison Area (1.21-fold). The change in testing interval to 6-monthly in the IAA in May 2010 resulted in herds with clear tests in the first half of 2009/10 having further tests in the first and second halves of 2010/11. Therefore, if any of these herds were detected with bTB in either of the routine tests in 2010/11 they would contribute to the statistic for 2010/11, having become reactive to a bTB test in the 18 previous months (rather than the usual 12 months).

- IAA-registered herds
- - - 2 km buffer of IAA
- Wales herds over 40 km from IAA
- ◆ Comparison group

Number of new OTFW breakdowns per 100 unrestricted herds

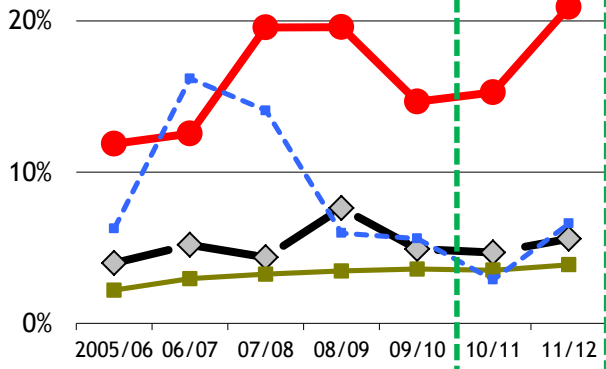


Fig 6.2 – Annualised proportion of unrestricted herds experiencing new OTFW breakdowns in the 12-month period

The confirmed (OTFW) herd incidence increased between 2009/10 and 2011/12 by 43% in IAA herds 14% in the Comparison Area; the difference between areas was greater, but the change in the IAA was also seen in the 2-km buffer. As in Fig 6.1, the change to a greater testing frequency in the IAA would have played a part.

Cattle slaughtered in the bTB control programme per 1000 cattle per year

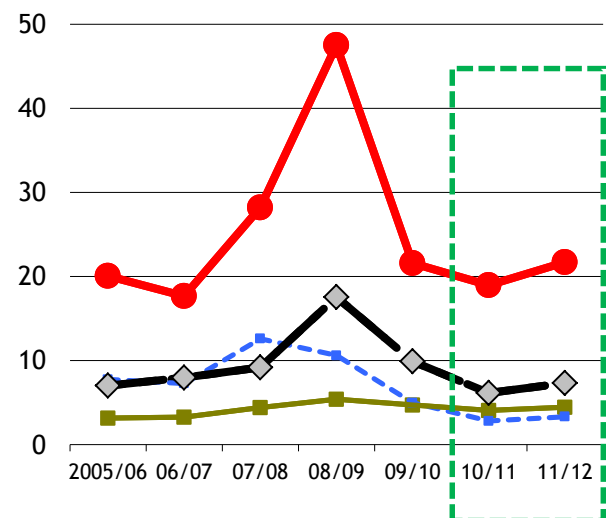


Fig 6.3 – Annualised number of cattle slaughtered for bTB control (excluding slaughterhouse cases), per 1000 total herd size

Between 2009/10 and 2011/12 the proportion of cattle slaughtered for bTB control in the IAA increased by 0.6% whereas the proportion in the Comparison Herds decreased by 26%.

These changes were small in comparison with the large numbers of cattle slaughtered for bTB control in 2008/09, but in 2010/11 would have been affected by the change in testing frequency, as explained in Fig 6.1

Number of reactors/1000 cattle

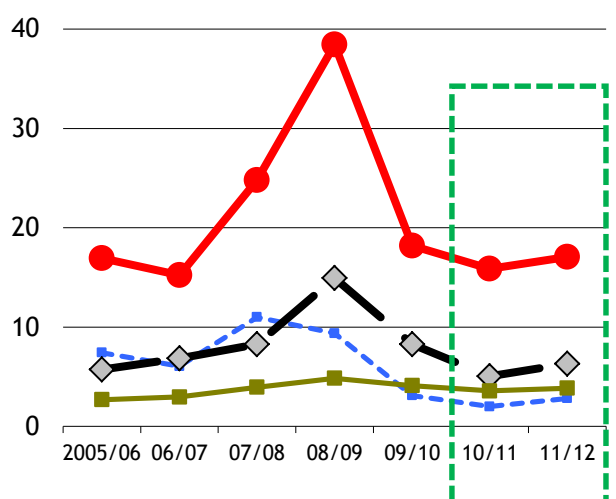
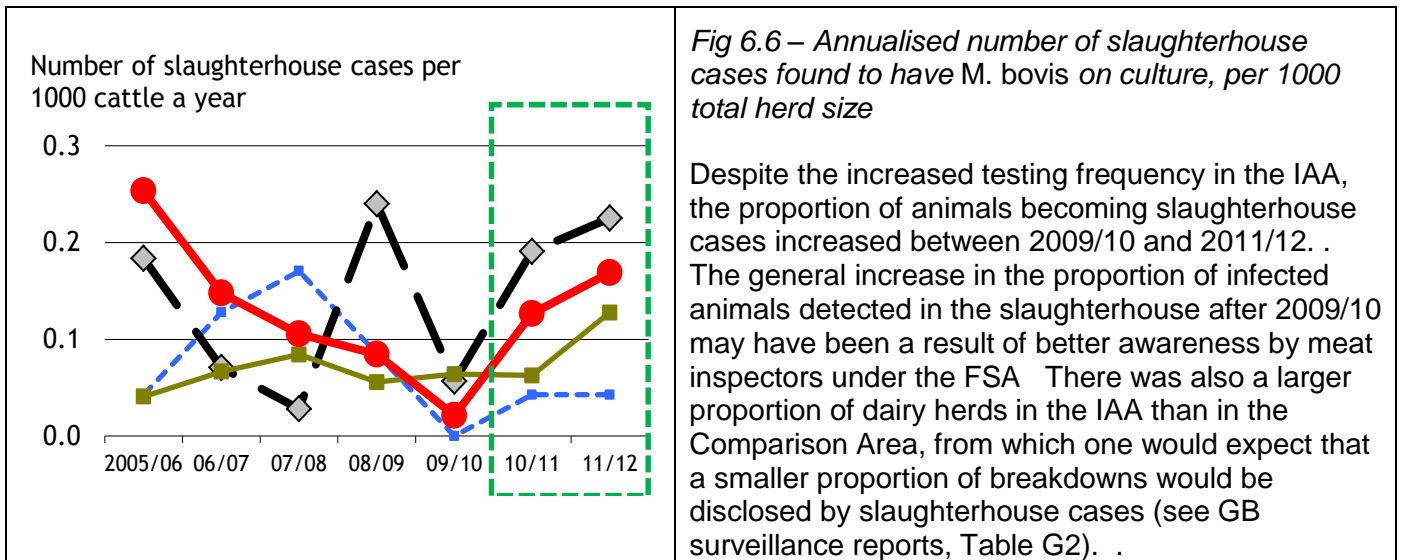
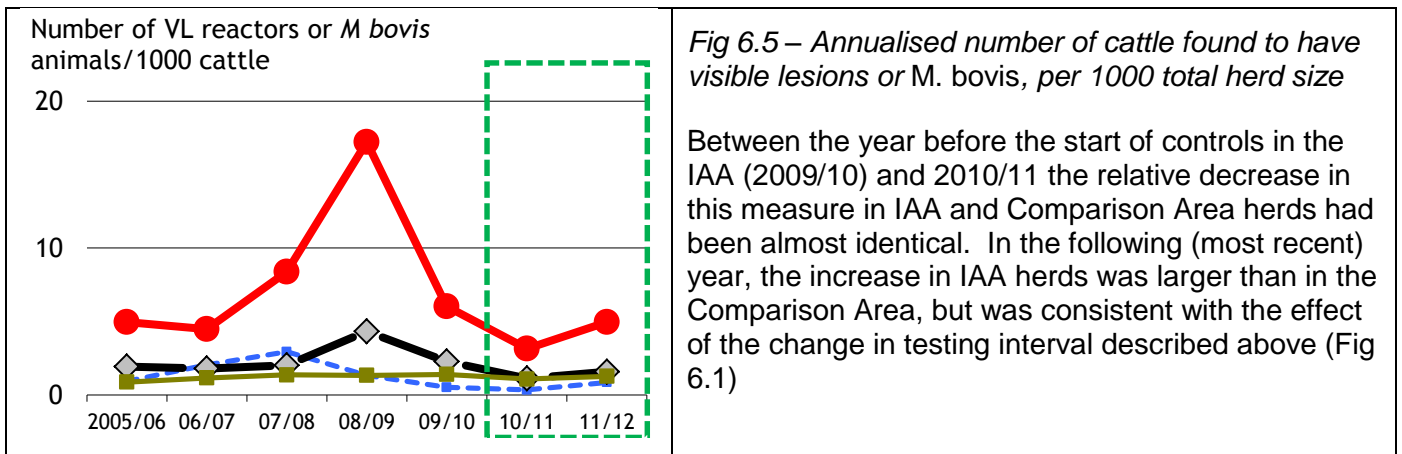


Fig 6.4 – Annualised number of cattle becoming reactors, per 1000 total herd size

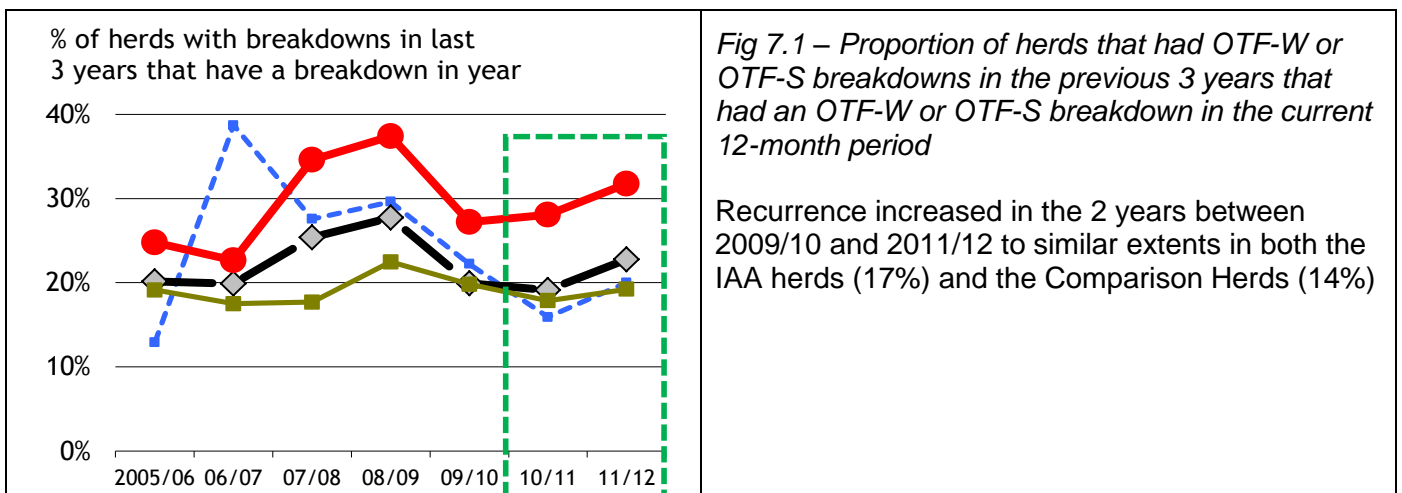
The relative increase in number of reactors per 1000 cattle between 2010/11 and 2011/12 was smaller in IAA herds (8%) than in Comparison Herds (25%). This compensated to some extent for the smaller relative decrease in the IAA between 2009/10 and 2010/11.

The increased number of reactors in the IAA in 2010/11 had probably been a transient effect of the 6-monthly testing frequency in the IAA, as described above (Fig 6.1). The small increase between 2010/11 and 2011/12 in IAA herds occurred was not associated with interferon-gamma testing, because such tests (per head) decreased from 0.82% to 0.56% of all tests in the IAA, which were smaller proportions than were used in Wales as a whole.

- IAA-registered herds
- - - 2 km buffer of IAA
- Wales herds over 40 km from IAA
- ◆ Comparison group



7. Recurrence of bovine TB



- IAA-registered herds
- - - 2 km buffer of IAA
- Wales herds over 40 km from IAA
- ◆ Comparison group

8. Number of reactors per breakdown

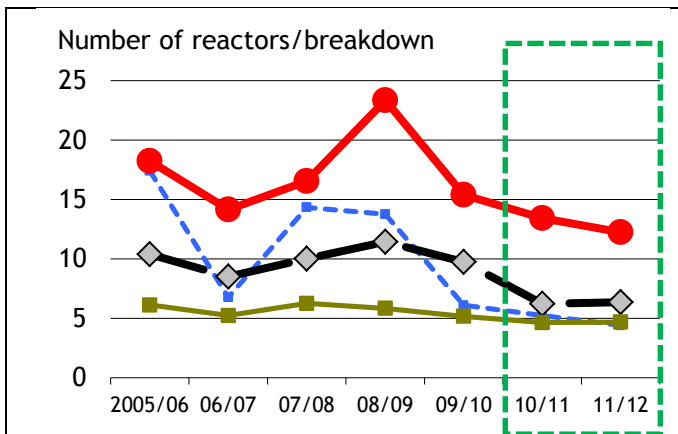


Fig 8.1 – Number of reactors (by skin test or IFN-gamma test) per OTF-W or OTF-S breakdown starting in the 12-month period

The relative decrease in number of reactors per breakdown since 2009/10 is still greater in the Comparison Herds (35%) than in the IAA herds (20%). The pattern parallels that of number of reactors (Fig 6.4)

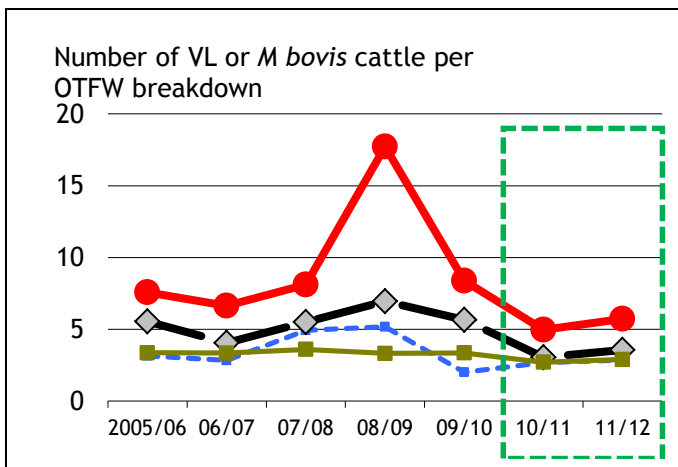


Fig 8.2 – Number of reactors (by skin test or IFN-gamma test) that had visible lesions or M. bovis, per OTF-W breakdown starting in the 12-month period

Relative decreases in the number of animals with lesion or culture evidence of bTB are similar both in IAA herds (32%) and Comparison Herds (37%), resembling the pattern in Fig 6.5



Appendix Table A1. Glossary of definitions and descriptions

Short name	Full name	Definition or description
Legend	Legend for lines in line graphs (Figs 2.1 to 8.2)	<ul style="list-style-type: none"> • Herds in the IAA: Solid red lines with filled round markers • Comparison Area herds: dashed black lines with open diamond markers • 2-km buffers of the IAA: dotted blue lines with small square markers • Wales more than 40 km from the IAA: solid khaki lines and markers
[Per year]	Annualised	Calculation of ratios and proportions from annual totals or averages. For example, the annualised OTF-W incidence is the <i>total</i> number of new OTF-W breakdowns in a year divided by the <i>average</i> number of OTF herds that are active in that year
bTB	Bovine tuberculosis	Infection with <i>Mycobacterium bovis</i> , including suspected but undetected infection
DC	Dangerous contact	An animal in a herd from which OTF status has been withdrawn and is not a reactor or clinical case, but is slaughtered for bTB control because veterinary judgment considers that its risk of having and spreading infection is high.
Herd size	Herd size	For a bTB breakdown (OTF-S or OTF-W), herd size is the largest number entered in VetNet at any time during the breakdown. For officially bTB free herds, herd size is the size recorded at the most recent whole herd test.
Herd types	Herd types	<p>'Beef' includes Beef, Beef Fattener, Beef Suckler and Stores herds</p> <p>'Dairy' includes Dairy, Dairy Dealer, Dairy (Other), Dairy Producer-Retailer and House Cow herds;</p> <p>'Other' (where shown) includes Calf Rearers, Heifer Rearers, Heifer, Mixed, City Farm, Dealer Herds, and herds described on VetNet as 'Other herds'.</p>
Incidence	[Herd] incidence, incidence rate	Herd incidence rate is the ratio between the number of detected bTB breakdowns of a given type and a denominator for the population, which is the number of unrestricted live herds, regardless of whether they have been tuberculin tested.
Breakdown	<i>Incident</i> is not used	The term <i>breakdown</i> is used instead of <i>incident</i> throughout the report. The term "incident" has been avoided because of the similarity in sound of its plural (<i>incidents</i>) to the term <i>incidence</i> , which has a different meaning.
IAA	Intensive Action Area	An area with high bTB prevalence in North Pembrokeshire, adjacent to Ceredigion, in which enhanced cattle control measures (including twice-yearly routine testing and enhanced testing for OTF-S breakdowns) have been applied since May 2010.
2 km buffer	IAA buffer (2 km)	All land between the boundary of the IAA and 2 km outside the boundary
Comparison Area or Herds	IAA Comparison Area	A selected area between 16 and 40 km from the boundary of the IAA in which the incidence of bTB has been relatively high between 1 st May 2005 and 30 th April 2010. Herds in the Comparison Area taken collectively are also termed Comparison Herds
Active IAA herd or live IAA CPHH	Live herd or Active herd registered in the IAA	A bovine herd, identified using the County/Parish/Holding/Herd notation. The definition of an active (live) herd is slightly different between IAA and non-IAA herds. <i>Live herds in the IAA are listed monthly as being active by AHVLA (field operations), and are considered to be IAA herds regardless of the map reference given in SAM.</i>
Active non-IAA herd or live non-IAA CPHH	Live herd or Active herd (not registered in the IAA)	A bovine herd, identified using the County/Parish/Holding/Herd notation. Live non-IAA herds are defined by SAM data as being <i>active</i> for at least 6 months in each 12-month period. A herd is <i>active</i> for the period between its first registration ("Live" date) and its reported closing date ("Archive" date). The number of non-IAA herds depends on the accuracy of creation and archiving dates given in SAM, and differs from the number given in Agricultural Censuses (which involves sampling and extrapolation) or CTS (unsuitable because of aggregation at the CPH level). <i>The geographical area (Comparison Area, Buffer etc) in which a non-IAA herd is located depends solely on the Easting and Northing coordinates recorded in SAM.</i>

Short name	Full name	Definition or description
<i>M. bovis</i>	<i>Mycobacterium bovis</i>	The causative organism of bovine tuberculosis
Restrictions	Movement restrictions	Prohibitions on the free movement of animals into and out of a herd because of the presence or suspicion of <i>M. bovis</i> infection or because statutory tests are overdue. The number of herds under restriction is calculated at given time points. Herds under restriction during a 12-month period is here calculated as the average number at the beginning and end of the period. <i>Herd restrictions due to overdue tests are excluded from analyses in this report because precise data is unavailable and to avoid overestimating disease.</i>
New BD or new breakdown	New bTB breakdown	A herd previously OTF in which at least one test reactor, inconclusive reactor taken as a reactor, or a culture-positive slaughterhouse case has been found. The <i>restrictions</i> , and thus the breakdown, begin on the date of the <i>disclosing test</i> and ends on the date that <i>Form TB10</i> is issued. To qualify as being “new”, the breakdown must have been <i>disclosed</i> in the period specified.
OTF	Officially Bovine Tuberculosis Free	A full definition of <i>Officially TB Free status</i> appears in Appendix 3 of European Union (1998), Council Directive 98/46/EC. <i>The terms OTF, OTF suspended and OTF withdrawn were introduced on 1st January 2011, and have been used retrospectively to describe the status of all herds.</i>
OTF-S	Officially Bovine Tuberculosis Free status Suspended	For the purposes of this report, OTF-S is the status of a herd with a bTB breakdown where there is suspicion of infection being present but the criteria for OTF withdrawal have not been reached. <i>OTF suspension due to overdue testing is not reported here</i>
OTF-W	Officially Bovine Tuberculosis Free status Withdrawn	For the purpose of this report, OTF-W refers to a herd with a bTB breakdown in which appropriate evidence of <i>M. bovis</i> infection has been obtained in at least one slaughtered animal, i.e. <i>M. bovis has been identified in a cultured tissue sample and/or lesions are detected in the carcass of a SICCT or IFN-γ test reactor. Slaughterhouse cases with visible lesions typical of bTB result in suspension of OTF status, which becomes changed to withdrawal of OTF-S status if M. bovis is been identified in the lesion(s)</i>
PME	<i>Post mortem examination</i>	Examination (to various extents) of the carcass and organs of slaughtered cattle for suspected lesions of bovine TB. Such post mortem examinations include those at an AHVLA Regional Laboratory, those at the slaughterhouse following suspicion of infection (e.g. reactors, IRs and DCs), and those constituting routine meat inspection
R	Reactor	An animal showing a particular pattern of reactions to a SICCT test or to a gamma interferon (IFN-γ) assay that uses bovine and avian tuberculin reagents, not including an animal first suspected to have bTB at the slaughterhouse. <i>If an animal has an inconclusive reactor (IR) test result and is slaughtered as a result, it can be reclassified as a reactor.</i>
SICCT	Single Intradermal Comparative Cervical Test	Also commonly referred to as the ‘skin test’ or ‘tuberculin skin test’, the testing procedure involves the injection of small amounts of <i>M. bovis</i> and <i>M. avium</i> tuberculins (PPD) into two sites of the skin of the animal’s neck, followed by a comparative measurement of any swelling (delayed-type hypersensitivity reaction) which develops at the two injection sites after 72 hours. Each tuberculin is a mixture of antigens in the form of purified protein derivative (PPD) of the cell wall of a standard strain of <i>M. bovis</i> or <i>M. avium</i>
Total cattle	Total cattle	The total of the herd sizes given for herds in SAM. These sizes have been recorded by the veterinarian who performed a most recent skin test, generally the most recent test on or before 20 th October 2012
VE-SIHo	(Confirmed) slaughterhouse case	The finding of visible lesions from which <i>M. bovis</i> can be cultured in a bovine animal that had not been under suspicion for bTB at the time of slaughter. The finding of a slaughterhouse case in an herd not under OTF-W movement restrictions leads to the withdrawal of OTF status; the finding of a slaughterhouse case in a herd already under OTF-W restrictions is recorded in SAM but does not disclose a new breakdown

Short name	Full name	Definition or description
TB10	Form TB10	The name of the form issued at the end of a bTB breakdown to lift the restrictions imposed on cattle movements onto and off the holding.
Unrestricted herds	Unrestricted herds	<i>Unrestricted herds</i> include all herds that are not in an ongoing breakdown, which includes herds undergoing a disclosing test, which is allowed up to 41 days for completion. <i>Herds that are restricted because tests are overdue are not counted as unrestricted herds in this report because precise data is unavailable.</i>
SAM6	SAM Release 6 database, TB in Cattle database	SAM6 is the version of AHVLA's bTB control and surveillance system used for this report, which records (amongst other things) details of herds, bTB tests, bTB breakdowns, slaughtered cattle (reactors, slaughterhouse cases and direct contacts), and inconclusive reactor cattle. The version used at AHVLA (Weybridge) incorporates data from the VetNet database up to September 2011
WHTT	Whole Herd Type Test	A test in which <i>at least</i> as many animals are tested as in a periodic surveillance test. The test types include RHT; WHT; WHT2; 12M; 6M; 90D; CON; CON6 ; CON12; CT; CT-HS1 & 2; CT-NH1, 2 & 3; CT-RH1, 2 & 3; CT-RTA; CTW 1 & 2; IA6 & 12, (and SI in herds under restriction). When several part tests are need to complete the herd test, the test date for a multi-day whole herd type test in this report is that for the final test, identified by the letter "C" (indicating a completed test) at the beginning of the PartCode.

Appendix Table A2 - Data for Figs 1.1 to 8.2 shown in the body of the report

Note that the *ALL OF WALES* column includes approximately 2300 herds within 40 km of the boundary of the IAA that do not appear in the preceding four columns

Figure description	Date(s)	All IAA herds	Comparison Herds	2 km buffer of IAA	Wales herds >40 km from IAA	ALL OF WALES
Data Table for Fig 1.1 - Changes in numbers of herds since the start of the IAA - <i>all</i> herds in the respective areas	1st May 2010	317	1313	120	9115	13,213
	1st May 2011 ¹	313	1293	120	8914	12,949
	Average during May11-Apr12 ¹	305	1285	118	8812	12,798
	1st May 2012	299	1272	116	8699	12,651
Data Table for Fig 1.2 - Changes in numbers of animals since the start of the IAA (thousands)	1st May 2010	47.92	146.48	24.79	763.60	1,252.81
	1st May 2011 ²	47.37	141.59	23.47	735.54	1,217.98
	Average during May11-Apr12 ²	47.37	142.12	23.47	736.41	1,220.44
	1st May 2012	47.34	141.78	23.47	734.59	1,218.06
Data Table for Fig 1.4 PLUS EXTRA DETAIL - Average number of beef and dairy herds between 1 st May 2011 and 30 th April 2012. RAW DATA - <i>all</i> herds in the respective areas	Beef (finisher)	7	81	6	361	539
	Beef (other)	20	139	7	1532	1885
	Beef (suckler)	142	651	65	5492	7470
	Dairy	130	387	36	1320	2711
	Other	6	27	4	107	193
	TOTAL	305	1285	118	8812	12798
EXTRA DATA (not shown as a chart) - Number of cattle by herd type, average between 1 st May 2011 and 30 th April 2012 (thousands)	Beef (finisher)	0.64	7.82	1.43	19.87	35.50
	Beef (other)	1.23	6.73	0.34	79.27	96.98
	Beef (suckler)	11.96	39.01	15.60	386.73	517.78
	Dairy	33.52	87.42	6.08	246.85	564.47
	Other	0.03	1.14	0.02	3.70	5.70
	TOTAL	47.37	142.12	23.47	736.41	1220.44
Data Table for Fig 2.1 - Annualised number of completed whole herd type tests per herd not under restriction, 2005/06-2010/11	May05-Apr06	0.958	0.641	0.726	0.501	0.548
	May06-Apr07	1.118	0.805	0.981	0.498	0.596
	May07-Apr08	1.222	0.854	0.874	0.531	0.632
	May08-Apr09	1.311	1.024	1.045	0.820	0.889
	May09-Apr10	1.457	1.103	0.991	0.938	0.994
	May10-Apr11	2.702	1.173	1.019	1.007	1.085
	May11-Apr12	2.760	1.185	1.208	1.009	1.109

¹ These were also denominators for Figures 4.1, 4.2, 5.3 and 5.4.

² These were also denominators for Figures 2.2, 2.3, 6.3, 6.4, 6.5 and 6.6.

Figure description	Date(s)	All IAA herds	Comparison Herds	2 km buffer of IAA	Wales herds >40 km from IAA	ALL OF WALES
Data Table for Fig 2.2 - Annualised number of tests per animal in unrestricted herds, 2005/06-2010/11, including all test types	May05-Apr06	0.976	0.736	0.369	0.448	0.551
	May06-Apr07	1.108	0.934	0.496	0.543	0.675
	May07-Apr08	1.205	0.927	0.394	0.615	0.730
	May08-Apr09	1.189	1.038	0.430	0.923	0.958
	May09-Apr10	1.406	1.146	0.498	1.058	1.100
	May10-Apr11	1.935	1.233	0.511	1.184	1.211
	May11-Apr12	2.310	1.365	0.635	1.239	1.344
Data Table for Fig 2.3 - Proportion of herds in yearly-tested parishes from October 2005 to May 2011. <i>(From October 2008, all herds in Wales were tested yearly; from May 2010, herds in the IAA were tested every 6 months)</i>	Oct05-Jun06	94.6%	56.0%	90.0%	27.1%	38.3%
	Jul06-Jun07	95.3%	67.9%	90.0%	29.8%	41.1%
	Jul07-Jun06	96.2%	78.0%	93.3%	34.7%	45.9%
	Jul08-Sep08	97.2%	83.4%	93.3%	38.6%	51.9%
	Oct08-Apr10	100.0%	100.0%	100.0%	100.0%	100.0%
	May10-Apr12	(6-monthly testing)	100.0%	100.0%	100.0%	(All under 6- or 12-monthly testing)
Table 2.4 (Supplementary Data) - Number of interferon-gamma tests performed on individual animals	May05-Apr06	148	87	323	1198	1770
	May06-Apr07	281	93	8	267	1645
	May07-Apr08	1060	123	10	2218	4267
	May08-Apr09	1166	641	15	2538	5177
	May09-Apr10	522	418	7	3837	5482
	May10-Apr11	324	498	8	6813	8172
	May11-Apr12	226	62	2	1372	2788
Data Table for Fig 3.1 - Number of herds losing their OTF status (OTF-W or OTF-S), per complete whole-herd type test of unrestricted herds	May05-Apr06	17.6%	9.9%	12.3%	7.4%	8.8%
	May06-Apr07	17.9%	11.7%	20.4%	9.7%	10.7%
	May07-Apr08	23.2%	11.5%	20.7%	10.2%	12.1%
	May08-Apr09	25.3%	15.6%	15.2%	8.7%	11.7%
	May09-Apr10	16.6%	9.4%	11.3%	7.3%	8.5%
	May10-Apr11	10.5%	8.8%	8.5%	6.8%	7.8%
	May11-Apr12	12.2%	10.6%	11.7%	7.2%	8.7%
Data Table for Fig 3.2 - Number of OTF Withdrawn Breakdowns, per complete whole-herd type test on unrestricted herds	May05-Apr06	12.4%	6.2%	8.6%	4.4%	5.2%
	May06-Apr07	11.2%	6.5%	16.5%	5.9%	6.0%
	May07-Apr08	16.0%	5.1%	16.1%	6.1%	6.6%
	May08-Apr09	14.9%	7.4%	5.7%	4.2%	5.4%
	May09-Apr10	10.1%	4.5%	5.7%	3.8%	4.2%
	May10-Apr11	5.6%	4.0%	2.8%	3.5%	3.7%
May11-Apr12	7.6%	4.7%	5.5%	3.8%	4.2%	

Figure description	Date(s)	All IAA herds	Comparison Herds	2 km buffer of IAA	Wales herds >40 km from IAA	ALL OF WALES
Data Table for Fig 3.3 - Number of reactors per 1000 animal tests (all tests)	May05-Apr06	10.80	5.66	11.18	4.58	5.60
	May06-Apr07	8.72	5.55	7.88	4.22	5.05
	May07-Apr08	13.41	6.40	11.79	4.87	6.45
	May08-Apr09	18.07	9.56	10.20	4.23	6.82
	May09-Apr10	7.79	4.45	3.57	3.19	4.05
	May10-Apr11	5.83	3.16	2.86	2.57	3.33
	May11-Apr12	6.47	3.79	3.91	2.78	3.81
Data Table for Fig 3.4 - Number of reactors found to have visible lesions or M. bovis per 1000 animal tests (all tests)	May05-Apr06	3.16	1.90	1.41	1.49	1.55
	May06-Apr07	2.56	1.46	2.67	1.66	1.49
	May07-Apr08	4.54	1.56	3.15	1.69	1.93
	May08-Apr09	8.09	2.77	1.44	1.17	1.95
	May09-Apr10	2.57	1.22	0.59	1.08	1.15
	May10-Apr11	1.16	0.70	0.49	0.78	0.86
	May11-Apr12	1.88	0.95	1.18	0.92	1.03
<u>Data Table for Fig 3.5 - Proportion of all breakdowns (OTF-W and OTF-S) that are OTF-W</u>	May05-Apr06	0.705	0.628	0.700	0.591	0.592
	May06-Apr07	0.627	0.553	0.810	0.614	0.566
	May07-Apr08	0.690	0.444	0.778	0.601	0.550
	May08-Apr09	0.590	0.476	0.375	0.484	0.460
	May09-Apr10	0.607	0.475	0.500	0.524	0.497
	May10-Apr11	0.536	0.452	0.333	0.519	0.475
	May11-Apr12	0.621	0.447	0.467	0.533	0.487
Data Table for Fig 4.1 - Proportion of herds under restriction on 1st May each year because of loss of Official TB Free (OTF) status (OTF Withdrawn + OTF Suspended, i.e. all breakdowns)	1st May 2005	15.3%	4.6%	5.0%	2.8%	4.0%
	1st May 2006	17.9%	4.9%	9.2%	2.6%	3.7%
	1st May 2007	19.2%	7.4%	15.8%	3.5%	5.1%
	1st May 2008	20.8%	8.2%	18.3%	4.0%	5.9%
	1st May 2009	29.1%	13.1%	14.2%	4.8%	8.0%
	1st May 2010	22.7%	7.7%	7.5%	4.1%	6.0%
	1st May 2011	22.7%	7.6%	5.0%	4.0%	5.6%
Data Table for Fig 4.2 - Average proportion of herds under restriction on 1st May each year because of withdrawal of Official TB Free (OTF) status (OTF Withdrawn only)	1st May 2005	11.5%	2.9%	4.2%	2.1%	2.8%
	1st May 2006	15.0%	4.0%	6.7%	1.9%	2.8%
	1st May 2007	15.0%	5.0%	13.3%	2.5%	3.5%
	1st May 2008	16.9%	5.9%	18.3%	3.0%	4.3%
	1st May 2009	24.0%	8.7%	10.8%	3.1%	5.1%
	1st May 2010	19.5%	6.3%	3.3%	2.7%	4.2%
	1st May 2011	17.3%	4.9%	3.3%	2.7%	3.7%
Data Table for Fig 5.1 - Median duration of OTF	May05-Apr06	11.09	8.44	16.97	7.16	8.36
	May06-Apr07	12.25	8.74	6.70	7.03	7.87

withdrawn breakdowns	May07-Apr08	10.87	9.30	11.83	8.23	8.92
ending in each 12-month	May08-Apr09	9.72	9.53	12.32	7.47	8.40
period (months). <i>RAW</i>	May09-Apr10	12.12	11.15	15.24	6.57	8.73
<i>DATA</i>	May10-Apr11	9.69	12.17	25.79	6.93	8.51
	May11-Apr12	16.56	9.69	9.51	7.33	8.62

Figure description	Date(s)	All IAA herds	Comparison Herds	2 km buffer of IAA	Wales herds >40 km from IAA	ALL OF WALES
Data Table for Fig 5.2 - Median duration of OTF suspended breakdowns ending in each 12-month period (months). RAW DATA	May05-Apr06	5.47	4.90	2.86	3.27	4.18
	May06-Apr07	6.64	4.68	8.92	3.63	4.33
	May07-Apr08	5.85	4.39	3.71	3.93	4.50
	May08-Apr09	3.73	4.48	5.16	4.17	4.37
	May09-Apr10	4.06	4.40	3.29	3.22	3.74
	May10-Apr11	5.52	3.78	6.44	3.52	3.75
	May11-Apr12	7.54	5.82	8.07	3.70	4.82
Data Table for Fig 5.3 - Ratio between [number of herds that had OTF-W or OTF-S restriction lifted in the next 12 months] and [number of herds under restriction on 1st May]	May05-Apr06	0.750	1.233	0.833	1.360	1.231
	May06-Apr07	0.839	1.281	1.182	1.453	1.272
	May07-Apr08	1.100	1.115	0.789	1.338	1.256
	May08-Apr09	0.800	1.151	0.955	1.518	1.289
	May09-Apr10	0.835	1.118	1.176	1.511	1.237
	May10-Apr11	0.789	1.170	1.333	1.583	1.340
	May11-Apr12	0.650	1.006	0.904	1.465	1.165
Data Table for Fig 5.4 - Proportion of herds under OTF-W restriction on 1st May that had the restrictions lifted during the following 12 months	May05-Apr06	0.556	0.919	0.800	1.111	0.972
	May06-Apr07	0.681	0.962	1.125	1.176	0.981
	May07-Apr08	0.915	0.631	0.500	1.053	0.900
	May08-Apr09	0.453	0.684	0.682	1.079	0.846
	May09-Apr10	0.640	0.786	1.154	1.233	0.944
	May10-Apr11	0.607	0.864	0.750	1.219	0.974
	May11-Apr12	0.421	0.609	1.525	1.183	0.839
Data Table for Fig 6.1 - Annualised proportion of unrestricted herds experiencing new OTF-W or OTF-S breakdowns in the 12-month period	May05-Apr06	16.86%	6.34%	8.97%	3.72%	4.83%
	May06-Apr07	20.00%	9.40%	20.00%	4.83%	6.35%
	May07-Apr08	28.34%	9.82%	18.09%	5.41%	7.63%
	May08-Apr09	33.19%	16.01%	15.92%	7.17%	10.38%
	May09-Apr10	24.14%	10.36%	11.21%	6.86%	8.45%
	May10-Apr11	28.50%	10.37%	8.65%	6.80%	8.45%
	May11-Apr12	33.67%	12.54%	14.15%	7.27%	9.66%
	Minimum 95% confidence interval 2009/10	15.8% to 32.5%	8.1% to 12.6%	3.4% to 19%	6.2% to 7.5%	7.8% to 9.1%
	Minimum 95% confidence interval 2011/12	22.2% to 45.2%	10% to 15.1%	5.2% to 23.1%	6.6% to 8%	9% to 10.3%
	Relative change, 2009/10 to 2011/12	+39.5%	+21.1%	+26.2%	+6.1%	

Figure description	Date(s)	All IAA herds	Comparison Herds	2 km buffer of IAA	Wales herds >40 km from IAA	ALL OF WALES
Data Table for Fig 6.2 - Annualised proportion of unrestricted herds experiencing new OTF-W breakdowns in the 12-month period	May05-Apr06	11.88%	3.98%	6.28%	2.20%	2.86%
	May06-Apr07	12.55%	5.19%	16.19%	2.96%	3.59%
	May07-Apr08	19.56%	4.36%	14.07%	3.25%	4.20%
	May08-Apr09	19.57%	7.62%	5.97%	3.47%	4.78%
	May09-Apr10	14.66%	4.92%	5.61%	3.59%	4.20%
	May10-Apr11	15.27%	4.69%	2.88%	3.52%	4.01%
	May11-Apr12	20.92%	5.60%	6.60%	3.88%	4.70%
	Minimum 95% confidence interval 2009/10	8.5% to 20.8%	3.4% to 6.4%	0.3% to 11%	3.1% to 4.1%	3.8% to 4.6%
	Minimum 95% confidence interval 2011/12	12.6% to 29.2%	4% to 7.2%	0.7% to 12.5%	3.4% to 4.4%	4.2% to 5.2%
<i>Relative change, 2009/10 to 2011/12</i>	+42.7%	+13.9%	+17.8%	+7.9%		
Data Table for Fig 6.3 - Annualised number of cattle slaughtered for bTB control (excluding slaughterhouse cases), per 1000 total herd size	May05-Apr06	20.05	7.02	7.76	3.16	5.04
	May06-Apr07	17.67	7.97	7.29	3.28	5.16
	May07-Apr08	28.22	9.18	12.61	4.41	7.40
	May08-Apr09	47.52	17.58	10.61	5.40	10.46
	May09-Apr10	21.60	9.94	4.99	4.72	7.14
	May10-Apr11	18.98	6.14	2.81	4.08	5.96
	May11-Apr12	21.72	7.30	3.32	4.45	6.97
Data Table for Fig 6.4 - Annualised number of cattle becoming reactors, per 1000 total herd size	May05-Apr06	16.93	5.71	7.41	2.69	4.32
	May06-Apr07	15.22	6.85	6.05	2.96	4.58
	May07-Apr08	24.78	8.27	10.99	3.94	6.59
	May08-Apr09	38.44	14.94	9.38	4.85	9.01
	May09-Apr10	18.20	8.26	3.11	4.10	6.06
	May10-Apr11	15.85	5.04	2.00	3.57	5.03
	May11-Apr12	17.06	6.31	2.81	3.85	5.95
Data Table for Fig 6.5 - Annualised number of cattle found to have visible lesions or <i>M. bovis</i> , per 1000 total herd size.	May05-Apr06	4.96	1.92	0.94	0.87	1.20
	May06-Apr07	4.48	1.80	2.05	1.16	1.35
	May07-Apr08	8.38	2.02	2.94	1.36	1.98
	May08-Apr09	17.20	4.32	1.32	1.34	2.57
	May09-Apr10	6.02	2.27	0.51	1.39	1.73
	May10-Apr11	3.15	1.12	0.34	1.08	1.30
	May11-Apr12	4.96	1.58	0.85	1.27	1.61

Figure description	Date(s)	All IAA herds	Comparison Herds	2 km buffer of IAA	Wales herds >40 km from IAA	ALL OF WALES
Data Table for Fig 6.6 - Annualised number of slaughterhouse cases found to have <i>M. bovis</i> on culture, per 100,000 total herd size	May05-Apr06	25.3	18.4	4.3	4.1	6.6
	May06-Apr07	14.8	7.1	12.8	6.7	6.8
	May07-Apr08	10.6	2.8	17.0	8.4	7.1
	May08-Apr09	8.4	24.0	8.5	5.6	7.6
	May09-Apr10	2.1	5.7	0.0	6.4	5.8
	May10-Apr11	12.7	19.1	4.3	6.3	8.3
	May11-Apr12	16.9	22.5	4.3	12.8	13.4
Data Table for Fig 7.1 - Proportion of herds that had OTF-W or OTF-S breakdowns in the previous 3 years that had an OTF-W or OTF-S breakdown in the current 12-month period	May05-Apr06	24.8%	20.1%	12.9%	19.1%	19.8%
	May06-Apr07	22.6%	19.9%	38.7%	17.5%	20.1%
	May07-Apr08	34.6%	25.4%	27.6%	17.7%	22.7%
	May08-Apr09	37.4%	27.7%	29.6%	22.5%	26.7%
	May09-Apr10	27.2%	19.9%	22.2%	19.8%	21.2%
	May10-Apr11	28.1%	19.1%	15.9%	17.9%	18.9%
	May11-Apr12	31.8%	22.8%	20.0%	19.2%	22.5%
Data Table for Fig 8.1 - Number of reactors (by skin test or IFN-gamma test) per OTF-W or OTF-S breakdown starting in the 12-month period	May05-Apr06	18.23	10.37	17.40	6.12	8.76
	May06-Apr07	14.14	8.51	6.76	5.22	7.10
	May07-Apr08	16.54	10.01	14.33	6.24	8.59
	May08-Apr09	23.35	11.43	13.75	5.83	8.78
	May09-Apr10	15.39	9.75	6.08	5.17	7.25
	May10-Apr11	13.41	6.21	5.22	4.63	6.21
	May11-Apr12	12.24	6.36	4.40	4.68	6.41
Data Table for Fig 8.2 - Number of reactors (by skin test or IFN-gamma test) that had visible lesions or <i>M. bovis</i> , per OTF-W breakdown starting in the 12-month period	May05-Apr06	7.58	5.55	3.14	3.36	4.10
	May06-Apr07	6.63	4.05	2.82	3.34	3.69
	May07-Apr08	8.10	5.50	4.93	3.60	4.68
	May08-Apr09	17.72	6.95	5.17	3.32	5.44
	May09-Apr10	8.38	5.65	2.00	3.35	4.15
	May10-Apr11	4.97	3.04	2.67	2.71	3.37
	May11-Apr12	5.73	3.56	2.86	2.89	3.56

Appendix Table A3 - Numerators and denominators for the figures shown above and the tables in Table A2

Statistic	Period	All IAA herds	Comparison herds	2 km buffer of IAA	Wales herds >40 km from IAA	ALL OF WALES	Numerator for Figures:	Denominator for Figures:
Number of new breakdowns (OTF-W or OTF-S) in the 12 months	May05-Apr06	44	78	10	323	601	3.1, 6.1	8.1
	May06-Apr07	51	114	21	417	786	3.1, 6.1	8.1
	May07-Apr08	71	117	18	464	934	3.1, 6.1	8.1
	May08-Apr09	78	185	16	611	1251	3.1, 6.1	8.1
	May09-Apr10	56	120	12	584	1018	3.1, 6.1	8.1
	May10-Apr11	56	115	9	567	987	3.1, 6.1	8.1
	May11-Apr12	66	141	15	606	1132	3.1, 6.1	8.1
Number of new OTF-W breakdowns in the 12 months	May05-Apr06	31	49	7	191	356	3.2, 6.2	8.2
	May06-Apr07	32	63	17	256	445	3.2, 6.2	8.2
	May07-Apr08	49	52	14	279	514	3.2, 6.2	8.2
	May08-Apr09	46	88	6	296	576	3.2, 6.2	8.2
	May09-Apr10	34	57	6	306	506	3.2, 6.2	8.2
	May10-Apr11	30	52	3	294	469	3.2, 6.2	8.2
	May11-Apr12	41	63	7	323	551	3.2, 6.2	8.2
Number of reactors detected in the 12 months	May05-Apr06	802	809	174	1977	5262	6.4, 8.1, 3.3	
	May06-Apr07	721	970	142	2178	5582	6.4, 8.1, 3.3	
	May07-Apr08	1174	1171	258	2897	8021	6.4, 8.1, 3.3	
	May08-Apr09	1821	2115	220	3564	10,979	6.4, 8.1, 3.3	
	May09-Apr10	862	1170	73	3017	7376	6.4, 8.1, 3.3	
	May10-Apr11	751	714	47	2627	6128	6.4, 8.1, 3.3	
	May11-Apr12	808	897	66	2836	7258	6.4, 8.1, 3.3	
Number of cattle with visible lesions or M bovis in culture reported in the 12 months	May05-Apr06	235	272	22	642	1459	6.5, 8.2, 3.4	
	May06-Apr07	212	255	48	855	1644	6.5, 8.2, 3.4	
	May07-Apr08	397	286	69	1004	2407	6.5, 8.2, 3.4	
	May08-Apr09	815	612	31	983	3131	6.5, 8.2, 3.4	
	May09-Apr10	285	322	12	1025	2102	6.5, 8.2, 3.4	
	May10-Apr11	149	158	8	796	1582	6.5, 8.2, 3.4	
	May11-Apr12	235	224	20	934	1959	6.5, 8.2, 3.4	
Number of herds under OTF-W or OTF-S restriction on 1st May	1-May-05	48	60	6	247	516	4.1	5.3
	1-May-06	56	64	11	234	482	4.1	5.3
	1-May-07	60	96	19	311	655	4.1	5.3
	1-May-08	65	106	22	359	766	4.1	5.3
	1-May-09	91	169	17	425	1030	4.1	5.3
	1-May-10	71	100	9	367	774	4.1	5.3
	1-May-11	71	98	6	353	724	4.1	5.3
	1-May-12	92	139	13	442	965	4.1	5.3
Number of herds under OTF-W restriction on 1st May	1-May-05	36	37	5	189	360	4.2	5.4
	1-May-06	47	52	8	170	366	4.2	5.4
	1-May-07	47	65	16	226	452	4.2	5.4
	1-May-08	53	76	22	267	559	4.2	5.4
	1-May-09	75	112	13	275	662	4.2	5.4
	1-May-10	61	81	4	242	543	4.2	5.4
	1-May-11	54	63	4	241	483	4.2	5.4
	1-May-12	70	77	5	281	584	4.2	5.4
Average number of unrestricted herds during the year	May05-Apr06	261	1231	112	8674	12,450		2.1, 6.1, 6.2
	May06-Apr07	255	1213	105	8642	12,380		2.1, 6.1, 6.2
	May07-Apr08	250	1192	100	8579	12,238		2.1, 6.1, 6.2
	May08-Apr09	235	1156	100	8522	12,051		2.1, 6.1, 6.2
	May09-Apr10	232	1158	107	8518	12,047		2.1, 6.1, 6.2
	May10-Apr11	196	1110	104	8342	11,685		2.1, 6.1, 6.2
	May11-Apr12	196	1124	106	8333	11,718		2.1, 6.1, 6.2
Number of herds released from restriction (OTF-W or OTF-S) during the 12 months	May05-Apr06	36	74	5	336	635	5.3	
	May06-Apr07	47	82	13	340	613	5.3	
	May07-Apr08	66	107	15	416	823	5.3	
	May08-Apr09	52	122	21	545	987	5.3	
	May09-Apr10	76	189	20	642	1274	5.3	
	May10-Apr11	56	117	12	581	1037	5.3	
	May11-Apr12	45	100	8	517	891	5.3	
Number of herds released from OTF-W restriction during the 12 months	May05-Apr06	20	34	4	210	350	5.4	
	May06-Apr07	32	50	9	200	359	5.4	
	May07-Apr08	43	41	8	238	407	5.4	
	May08-Apr09	24	52	15	288	473	5.4	
	May09-Apr10	48	88	15	339	625	5.4	
	May10-Apr11	37	70	3	295	529	5.4	
	May11-Apr12	25	49	6	283	450	5.4	

Statistic	Period	All IAA herds	Comparison herds	2 km buffer of IAA	Wales herds >40 km from IAA	ALL OF WALES	Numerator for Figures:	Denominator for Figures:
Number of animals slaughtered, excluding slaughterhouse cases	May05-Apr06	950	994	182	2321	6143	6.3	
	May06-Apr07	837	1128	171	2411	6285	6.3	
	May07-Apr08	1337	1300	296	3245	9007	6.3	
	May08-Apr09	2251	2489	249	3974	12,744	6.3	
	May09-Apr10	1023	1407	117	3470	8694	6.3	
	May10-Apr11	899	869	66	2999	7257	6.3	
	May11-Apr12	1029	1038	78	3271	8493	6.3	
Number of slaughterhouse cases	May05-Apr06	12	26	1	30	80	6.6	
	May06-Apr07	7	10	3	49	83	6.6	
	May07-Apr08	5	4	4	62	86	6.6	
	May08-Apr09	4	34	2	41	93	6.6	
	May09-Apr10	1	8	0	47	71	6.6	
	May10-Apr11	6	27	1	46	101	6.6	
	May11-Apr12	8	32	1	94	164	6.6	
Number of herds in which an OTF-W breakdown ended in any of the 36 months before the current period	May05-Apr06	105	149	31	653	1273		7.1
	May06-Apr07	106	166	31	737	1442		7.1
	May07-Apr08	104	193	29	791	1514		7.1
	May08-Apr09	123	220	27	939	1744		7.1
	May09-Apr10	136	261	36	1100	2024		7.1
	May10-Apr11	146	350	44	1332	2514		7.1
	May11-Apr12	148	360	45	1477	2721		7.1
Number of herds in which an OTF-W breakdown ended in any of the 36 months before the current period AND there was an OTF-W breakdown in the present 12-month period	May05-Apr06	26	30	4	125	252	7.1	
	May06-Apr07	24	33	12	129	290	7.1	
	May07-Apr08	36	49	8	140	344	7.1	
	May08-Apr09	46	61	8	211	465	7.1	
	May09-Apr10	37	52	8	218	429	7.1	
	May10-Apr11	41	67	7	238	475	7.1	
	May11-Apr12	47	82	9	284	613	7.1	
Total number of tests of any kind on animals (thousands)	May05-Apr06	74.3	143.0	15.6	431.4	939.6		3.3, 3.4
	May06-Apr07	82.7	174.9	18.0	515.6	1106.2		3.3, 3.4
	May07-Apr08	87.5	183.1	21.9	595.2	1244.1		3.3, 3.4
	May08-Apr09	100.8	221.3	21.6	843.4	1608.8		3.3, 3.4
	May09-Apr10	110.7	262.9	20.5	946.3	1821.8		3.3, 3.4
	May10-Apr11	128.8	226.2	16.4	1022.0	1838.2		3.3, 3.4
	May11-Apr12	124.8	236.5	16.9	1019.9	1902.7		3.3, 3.4
Total number of tests of any kind on animals in unrestricted herds (thousands)	May05-Apr06	39.1	99.4	8.2	320.3	644.2	2.2	
	May06-Apr07	43.1	125.7	10.6	389.0	791.9	2.2	
	May07-Apr08	46.1	121.5	7.8	436.7	844.2	2.2	
	May08-Apr09	44.6	135.0	8.2	651.6	1097.5	2.2	
	May09-Apr10	47.2	141.1	10.0	740.8	1233.1	2.2	
	May10-Apr11	70.9	161.1	11.1	834.9	1386.4	2.2	
	May11-Apr12	84.6	179.0	13.8	874.7	1541.8	2.2	
Completed whole herd type tests on unrestricted herds	May05-Apr06	250	789	81	4346	6818	2.1	3.1, 3.2
	May06-Apr07	285	976	103	4305	7377	2.1	3.1, 3.2
	May07-Apr08	306	1018	87	4552	7737	2.1	3.1, 3.2
	May08-Apr09	308	1183	105	6990	10,713	2.1	3.1, 3.2
	May09-Apr10	338	1278	106	7988	11,972	2.1	3.1, 3.2
	May10-Apr11	531	1301	106	8399	12,673	2.1	3.1, 3.2
	May11-Apr12	541	1332	128	8410	12,992	2.1	3.1, 3.2
Number of herds in yearly-tested parishes <i>There were no yearly-tested herds in the IAA after 1st May 2010 because all herds were tested twice-yearly</i>	Oct05-Jun06	300	655	108	2206	5751	2.3	
	Jul06-Jun07	302	795	108	2481	6114	2.3	
	Jul07-Jun06	305	913	112	2939	6491	2.3	
	Jul08-Sep08	308	976	112	3312	7287	2.3	
	Oct08-Apr10	317	1313	120	9115	13,149	2.3	
	May10-Apr12	[0]	1285	118	8812	12,832	2.3	
Number of interferon-gamma tests on animals	May05-Apr06	148	87	323	1198	1770		
	May06-Apr07	281	93	8	267	1645		
	May07-Apr08	1060	123	10	2218	4267		
	May08-Apr09	1166	641	15	2538	5177		
	May09-Apr10	522	418	7	3837	5482		
	May10-Apr11	324	498	8	6813	8172		
	May11-Apr12	226	62	2	1372	2788		

For
Information