

TB Myth Buster: the facts



Contents

TB TESTING	2
CATTLE MOVEMENTS.....	6
COMPROMISING FACTORS FOR TB TESTING –HERD HEALTH	7
TB IN CATTLE	9
TRANSMISSION.....	11
BADGERS AND BOVINE TB	12
BADGER CULLING.....	14
BADGER & CATTLE VACCINES	15
GLOSSARY OF COMMON ABBREVIATIONS.....	16
GLOSSARY OF COMMON TERMS	19
USEFUL CONTACTS	19

TB Myth Buster: the facts



TB TESTING

Q1.

Is it true that skin test positive animals that show no signs (lesions) of TB in their organs at post-mortem examination (known as 'NVL' or 'no visible lesion' animals) have never had TB?

A1.

No. When TB reactors are found on the tuberculin skin test, it is very likely that those cattle are infected with bovine TB, even if no visible TB lesions are found at post-mortem meat inspection.

More information...

The false positive rate for the skin test is very low (only 1 false positive for every 5,000-6,000 TB-free cattle tested with the standard test). The skin test can also find TB long before infected cattle have developed clinical signs that would be noticed by an experienced stockman or a vet. Reactors to the skin test may therefore not have any visible lesions because they are either in the early stages of the disease, or the lesions are too small to be detected by the naked eye. TB lesions can be large and clear to the naked eye, or they can be extremely small (microscopic) and difficult for a meat inspector to detect during a relatively quick visual inspection of the carcass in a busy slaughter line. Often, even if no visible lesions are found at the slaughterhouse, had the carcass been more carefully examined in a laboratory, microscopic lesions could have been detected. But even if no lesions can be detected a reactor animal is still very likely to be infected with TB.

Read more at TB Hub [here](#)

Q2.

If animals test positive to bovine TB using the gamma interferon blood test, but they show no visible lesions, are they disease free?

A2.

No. A positive gamma interferon results indicates the presence of replicating *M.bovis* organisms. There is evidence that these are most likely in the early stages of infection. Therefore, failure to find post-mortem evidence of disease does not mean that the animal in questions was free of the infection.

More information...

Failure to detect lesions of tuberculosis by post-mortem examination at the slaughterhouse, or to culture *M.bovis* in the laboratory, does not imply that a test reactor was not infected with bovine TB. Indeed, in the early stages of this disease it is not always possible to observe lesions during abattoir post mortem examination, and, due to the fastidious nature of this organism, it is very difficult to isolate it from tissue samples without visible lesions.

Read more at TB Hub [here](#)

TB Myth Buster: the facts



Q3.
Negative culture results from the lab must mean no infection is present?

A3.
No. Detection of *M.bovis* by culture is affected by many factors including the sampling process, with visibly lesioned animals giving a great chance of detecting infection. Animals at early stages of disease and latently infected animals do not present with visible lesions at post-mortem and will result in some animals escaping detection.

More information...

The culture-positivity rate of samples collected from so-called NVL animals (no visible lesions) is very low (circa 5-6%) whereas it is relatively high in VL (visible lesions) animals where it is typically around 95-96%. In the first instance, culture success depends on the quality of the abattoir inspection to detect lesioned animals.

However, whilst non-lesioned reactors can be infectious, animals that are found to have visible lesions are more likely to be frequently excreting TB bacteria and present a higher infection risk to other cattle than the non-lesioned animals. Therefore it is preferable to catch the disease in its earlier stages before visible lesions have had an opportunity to develop, and remove those reactors from the herd before they have had the opportunity to infect other animals and cause a more serious TB herd breakdown.

Read more at TB Hub [here](#)

Q4.
Does the gamma interferon blood test give a large percentage of false positives?

A4.
No. The risk of the gamma interferon test identifying a false positive animal is 3 in 100. This risk is reduced when the test is applied in a herd known to be infected with TB. It is common misconceptions that as 82% of gamma interferon test positive animals do not show post mortem evidence of TB in the slaughterhouse or laboratory, that they are false positives. As mentioned because, failure to find post-mortem evidence of disease does not mean that's the animal in question was free of TB.

More information...

The gamma test is used as a supplementary test alongside the tuberculin skin test in specific TB breakdown herds. The aim of combining the skin and blood tests is two-fold: to shorten the duration of the TB breakdown and reduce the risk of leaving infected animals undetected in the herd by the time movement restrictions are lifted.

Any skin test-negative but gamma test-positive animals must be slaughtered to increase the probability of correctly identifying all TB-infected cattle in the affected herd. The gamma test is compulsory for every new TB breakdown herd with lesion and/or culture positive animals in;

TB Myth Buster: the facts



- Low incidence areas of England and Wales
- Scotland
- Edge Area of England

More information on Gamma testing can be found [here](#)
View Defra's Gamma policy presentation [here](#)

Q5.
What is radial testing and how is it used?

A5.
Radial testing is a TB surveillance test around all new breakdowns with lesion and/or culture positive animals in the areas where radials are applied. Herds that fall within a 3km radius of a new breakdown will be subject to an immediate radial test. All cattle on the holdings above 42 days of age must be tested.

More information...

Radial testing is applied in the LRA and from January 2018, parts of the Edge Area too. A full list of areas applicable for radial testing can be found [here](#).

Test notification letters will be sent to farmers from APHA to inform them that immediate testing must be carried out and will specify when the test is due. While farmers are waiting for the radial test, (RAD) no restrictions are held on the herd and movements can take place, however herds in the LRA will still need to comply with pre movement testing regulations.

The testing window for the test is 60 days, unless the herd has been tested within two months prior, then the testing will be deferred until six months after the prior clear test.

Provided the RAD test is clear, farmers will then be expected to carry out a second radial test 6 months after, (RAD6). Farmers in the LRA of England will be required to carry out a RAD12; which is 12 months after the RAD6 test. Other areas will revert back to the annual testing regimes.

A radial test can be counted as a pre-movement test.

Read more at TB Hub [here](#)

TB Myth Buster: the facts



Q6.
What are trace tests and when are they used?

A6.
There are two types of tracing tests; sourcing and spread tracing. Herds or individual cattle with visible lesion and/or culture positive animals must be traced and TB tested to control possible disease spread.

More information...

Spread (forward) tracing is the identification and testing of animals that have moved off a breakdown holding within a defined period of time (the tracing window).

All animals moved from breakdown herds with visible lesion and/or culture positive animals must be traced and TB tested to control possible disease spread.

In England, severe interpretation of the skin test is used for all spread traced animals. This also applies to animals traced to holdings in England from TB breakdown herds in Wales and Scotland. The tracing window should cover movements off the breakdown farm from 60 days (or two calendar months) before the last clear herd test. APHA case vets have discretion to adjust the tracing window or include additional animals that require tracing depending on the circumstances.

If a routine herd test is due, the tracing tests and the herd test should be combined.

Cattle from TB breakdowns traced to active Approved Finishing Units (AFU) and Licensed Finishing Units (LFU) will not be required to undertake tracing testing.

Source tracing is the tracing of animals backwards from the herd identified as being infected, in an attempt to establish the source of infection.

Specific animals moved to a TB breakdown with visible lesion and/or culture positive animals must be traced to their herd of origin, and the origin herd TB tested to control possible disease spread.

Potentially infected cattle must also be source traced from Approved Finishing Units (AFUs), Licensed Finishing Units (LFU) and (Pre-movement testing) Exempt Finishing Units

Keepers of cattle that require trace testing will receive a test notification letter advising them of the need to test the animal(s) and the deadline by which the trace test needs to be completed.

If any TB test has been completed less than 90 days since the animal moved from the breakdown holding, it should be re-tested when 120 days have elapsed (and at least 60 days from any previous test).

In England, any inconclusive reactor (IR) pending re-testing will need to be re-interpreted at severe interpretation if it is identified as a spread traced animal. Any severe reactors will need to be removed and normal breakdown procedures will apply. No further action will be taken with any IR already re-tested with negative results by the time it is identified as a spread trace.

No separate tracing tests will be triggered if a short interval test (or another test of the whole herd) is due to take place shortly in the holding of destination, provided that the traced animals are expected to be included in such herd test. If a herd test is due shortly on the holding, the

TB Myth Buster: the facts



animal will be synchronised with the herd test. Herd owners will still be notified in writing that they have received cattle from a herd that subsequently had a breakdown and that they are expected to be included in the herd test scheduled shortly, for their awareness.

Q7.
What happens when an inconclusive reactor (IR) is disclosed on farm?

A7.
Inconclusive reactors are animals that have a skin test result that is neither definitively clear nor positive. Once found, they must be isolated from the rest of the herd until they are re-tested. This is to reduce the risk of spreading TB to other cattle. If possible, they should also be kept separate from any TB reactors found at the same test

More information...

When one or more IRs are found, the herd is initially put under automatic whole herd movement restrictions until the test result is reviewed by APHA. A restriction notice (TB34) is issued and you need to isolate the IR on farm until it is re-tested. The IR cannot move off the holding except under a licence issued by APHA.

For officially TB free (OTF) herds, when the test results are reviewed by APHA, the need for whole herd movement restrictions is also assessed against the ‘three year rule’ explained below.

If the three year rule applies then whole herd movement restrictions stay in place until the IR is re-tested. If the three year rule does not apply then the whole herd movement restrictions are lifted and restrictions only apply to the IR(s). If whole herd movement restrictions are lifted then you are free to trade and it is only the IR(s) that need to remain isolated and cannot move off the holding.

Read more on TB Hub [here...](#)

CATTLE MOVEMENTS

Q8.
Can I move my cattle between my permanent CPH (pCPH) and my temporary CPH (tCPH)?

A8.
In short, yes, however movements will only be permitted via an APHA license.

More information...

Farmers need to consider the implications of suffering a TB breakdown when their cattle are located at a tCPH. In this situation, APHA will not assume by default that cattle kept on tCPHs are separate epidemiological groups from the animals on the applicant’s pCPH and the default position is that TB restrictions are placed on the tCPH. When a pCPH and any additional CPHs (whether permanent or temporary) are TB restricted, movements between them will only be permitted under licence following a

TB Myth Buster: the facts



VRA. If the tCPH is found to be truly epidemiologically separate in terms of cattle movements and management following VRA, then restrictions may be lifted.

Read more [here](#)

Q9.

Can I move my cattle on and off a holding while under restriction?

A9.

Yes, this can be permitted by APHA while a holding or cattle are under restriction, but is granted on an individual basis via a veterinary risk assessment. Farmers must request a license to move cattle while under restriction.

More information...

To control the risk of spreading bovine TB through the movement of cattle with undisclosed infection, only limited and controlled movements onto and off TB restricted holdings are permitted.

When a holding has lost its Officially Tuberculosis Free (OTF) Status, any movements of live cattle onto or off the holding can only be permitted under licence issued by APHA.

Farmers must complete a license request [application form](#) and send back to APHA.

There are some general rules for licensing movements of TB restricted cattle. Read the rules [here](#).

COMPROMISING FACTORS FOR TB TESTING -HERD HEALTH

Q10.

Do liver fluke (infestation with *Fasciola hepatica*) and the use of flukicides affect the performance of the tuberculin skin test in the field?

A10.

There is no conclusive evidence to support this hypothesis at present and there is no advice with regard to modifying the interpretation of the SICCT test in the context of evidence of liver fluke infection in a specific herd. Nevertheless, farmers are advised that, where possible, medicines and routine veterinary treatments (including wormers) should not be given to cattle on the first day of the tuberculin skin test, or shortly before a test. If possible wait until the test results are read on the second day and animals have passed the test.

More Information...

There is no known biological or pharmacological reason in principle why flukicides per se should interfere with the skin test. Farmers are advised not to give their animals any drugs (including other wormers) in the course of a tuberculin skin test.

Read more at TB Hub [here](#)

TB Myth Buster: the facts



Q11.
Is TB testing compromised by the presence of Johne's disease?

A11.
Potentially. Exposure to Johne's disease can cause gross reactivity when using the skin and gamma interferon tests for bovine TB.

More information...

Johne's disease, caused by infection with the bacterium *Mycobacterium avium* subspecies *paratuberculosis* (abbreviated MAP) is a chronic and insidious disease of cattle and other ruminants which is believed to be endemic in the UK and many other countries worldwide. It is well known that exposure of cattle and other animals (including man) to MAP and environmental mycobacteria can cause cross reactivity to components of the bovine PPD tuberculin used in the skin and gamma interferon tests for bovine TB. In particular, this reduces the specificity of the single tuberculin skin test (in the neck or the caudal fold) in TB-free herds infected with (or vaccinated against) MAP

Read more at TB Hub [here](#)

Q12.
What is the TB implication of BVD (Bovine Viral Diarrhoea) infection in herds?

A12.
It is possible that any infective agent that suppresses an animal's immune response mechanism such as occurs in cattle when infected with BVD virus, will increase the susceptibility to and ability to fight other infectious diseases such as TB. For instance, concurrent TB and other infections are frequently seen in people infected with HIV, but there has been limited work to demonstrate a similar risk for cattle infected with BVD virus.

More information...

Bovine viral diarrhoea (BVD) is most common in young cattle (6-24 months old). Serologic surveys indicate that BVD virus is distributed worldwide and the virus is regarded as endemic in most parts of the world. A small experiment with five neonatal calves artificially infected with BVD virus and *M. bovis* BCG was carried out by Charleston *et al.* (2001). The results showed that infection of cattle with this virus could transiently reduce interferon-gamma responses to *M. bovis* in the two weeks after BVD virus inoculation and resulted in a failure to identify tuberculous cattle. There is therefore some experimental proof of the principle that BVD virus infection could suppress the immune response of cattle against *M. bovis* in some cattle, but it is far from clear that this is a significant issue or a widespread cause of false-negative skin test results under normal field conditions

Read more at TB Hub [here](#)

TB Myth Buster: the facts



TB IN CATTLE

Q13.

Are some cattle breeds more resistant to bovine TB than others? Is it possible to breed cattle that are resistant to *M. bovis* infection?

A13.

There is anecdotal evidence pointing to differences in resistance to infection with *M. bovis* between European cattle breeds and zebu (*Bos indicus*) regions.

In the UK, there is no clear evidence of differences between breeds in terms of susceptibility to bovine TB. While there is evidence that dairy farms are more likely to experience a breakdown than beef farms, this is not necessarily due to breed differences.

However, pedigree analyses funded by the Government have shown evidence of genetic variation to bTB susceptibility within Holstein-Friesian dairy cattle in the UK and similar evidence exists from Ireland and NI. However, the actual impact (if any) of genetic selection for bTB resistance on the incidence of bTB in cattle has yet to be determined.

More information...

The industry body AHDB Dairy is funding the development of a system for routine national genetic evaluations of dairy bulls for resistance to bovine TB, which is due to be completed in 2015. AHDB Dairy has advised that it expects to be able to select Holstein bulls with resistant genes in 2016 at the earliest, and it will take another three years before their daughters would join the milking herd. While AHDB Dairy expects this to improve the resistance of the Holstein herd to bTB over the next decade, it notes that it is unlikely that any animal has full genetic resistance to infection. Although breeding strategies that may help control bTB are welcome, it will ultimately be for (dairy) farmers to decide how they want to breed their cattle, as breeding programmes have to consider a wide variety of traits, not just resistance to disease.

Read more at TB Hub [here](#)

Q14.

Is there are large amount of undetected infection in cattle herds?

A14.

No test is 100% accurate; therefore there is undoubtedly some undetected infection. Test and slaughter regimes based on the skin test have been successfully used in other countries to control bovine TB where there is no wildlife reservoir.

More information...

Due to the regularity of TB testing in England, it is very rare to find clinical cases of TB in cattle. England uses immunological tests based on tuberculin detecting infected animals at an early stage.

Clinical signs may not be seen for months or years post infection until there is enough tissue damage to cause organ dysfunction

TB Myth Buster: the facts



Read more at TB Hub [here](#)

Q15.

Do cattle become infectious only in the late stages of TB - once they have developed "open" lesions?

A15.

The evidence shows that animals may become infectious - can pass on infection - very soon after they themselves have been infected. This may be followed by periods when animals are less infectious with intermittent excretion of tubercle bacillia. Infected animals should be regarded as a risk to others.

More information...

All cattle identified as TB reactors can pose an infection risk to other animals, regardless of whether lesions are observed at post-mortem examination (PME). There is not any way to know at PME of cattle whether the lesions observed were resulting in continuous or occasional shedding of bacteria in excretions or secretions while the animal was alive.

The majority of TB lesions in cattle are located in the lymph nodes of the chest and head. Any reactor with demonstrable signs of *M.bovis* infection is potentially infectious to other animals and any reactor without or without TB lesions, is potentially infected and may become infectious in due course. It is not correct to imply that cattle without lesions pose no such risk to others. Nasal transmission of infection occurs during the early stages of infection and cannot be excluded.

Read more at TB Hub [here](#)

Q16.

Why do we test calves as this is a disease for adult cattle and if the cow is infected will the calf be taken too?

A16.

Cattle of all ages are susceptible to infection. TB has been successfully diagnosed by skin testing in animals less than 4 weeks of age. Young calves are also at risk through milk borne infection.

The calves from infected cows are not routinely taken. APHA will assess the risk to calf and if the risk is deemed to be high then the calf will be taken as a direct contact.

More information...

Calves from reactor animals are not routinely taken. However APHA will assess the risks to the calf following post-mortem examination of the reactor cow. If the risk to the calf is deemed to be high, for example if the cow had TB lesions in the udder, then it will be taken as a direct contact. Compensation would be paid for the calf. In reality this is a rare event.

TB Myth Buster: the facts



There are two main reasons why calves under 42 days are excluded from the majority of TB tests:

1. It is unlikely for such young animals to be infected with *M.bovis*. In GB the rate of skin test reactors increase steadily with age of the animal until it stabilises at about 24-30 months of age. Age in itself does not affect the susceptibility to infection but opportunities for exposure to the bacterium accumulate with time and once infected, cattle are believed to remain sensitised to bovine tuberculin for the rest of their lives.
2. Even if a calf is infected, not every calf undergoing skin testing in the first 42 days of life will be detected because it takes some time (usually a 3-6 week period) to mount a detectable immune response to the skin test.

Read more at TB Hub [here](#)

TRANSMISSION

Q17.

How much does cattle to cattle contact account for all TB cases?

A17.

The extent of cattle to cattle transmission varies depending on the area and level of infection. It is impossible to put figures on the effects of this source of transmission.

More information...

It is difficult to determine the precise cause of a TB breakdown in a cattle herd. In low bovine TB incidence areas there is evidence to suggest that cattle to cattle transmission could be responsible for the majority or more of cases. The situation is quite different in the areas of high incidence where studies have shown that cattle are infected from purchased cattle and from wildlife sources. It is impossible to put precise figures on these possible sources.

Read more at TB Hub [here](#)

Read the APHA Epidemiology Report 2015 [here](#)

Q18.

Can cattle only become infected by badgers whilst out at pasture?

A18.

No. There is an increasing body of evidence which suggests that badger visits to farmyards and buildings pose a comparable disease transmission risk to that posed by contamination of grazing land.

More information...

There is increasing body of evidence which suggests that badgers regularly visit farmyards and buildings such as feed stores and cattle sheds, where they can contaminate feed, water drinkers and also come into direct contact with cattle. Defra have funded a research study ([SE3029](#)) which aims to quantify direct and non-direct between badgers and cattle. GPS collars and video surveillance will be monitored and badger to cattle contact will be assessed to see if this contact is influenced by management. This project has been carried out in 4 areas in a TB "hotspot" from 2012 to 2016.

TB Myth Buster: the facts



Read further Defra study reports [here...](#)

Q19.

Do cattle regularly give TB to badgers?

A19.

The transmission of TB from cattle to badgers is low as cattle are routinely tested and reactors are removed; therefore cattle are unlikely to be shedding large amounts of TB organisms into the environment.

More information...

TB is endemic in the badger population and there is much evidence that is self-sustaining in the absence of cattle. From 2015-2016, the Stockport road kill badger survey was carried out. 30 road kill badgers were delivered to Liverpool University and results show that 28.6% of these badgers tested positive for *M.Bovis*.

Read more on the road kill survey [here...](#)

Q20.

Is the requirement of cattle reactor isolation necessary?

A20.

Yes. Reactor cattle infected with *M.Bovis* pose a high risk to other cattle. Once infection has been confirmed the immediate and strict isolation of those cattle is extremely important.

More information...

Not only is it important that reactor cattle are isolated immediately, but where appropriate, any purchased cattle should also be isolated, especially if cattle are from the high risk areas. The period should be for at least 60 days in order to carry out the post movement test before introducing them to the herd. The development of bovine TB can take many months or even days to transmit therefore isolation is important.

Read more at the TB Hub [here](#)

BADGERS AND BOVINE TB

Q21.

Are badgers easily identified as infected based on their appearance?

A21.

No. TB infection in badgers is currently confirmed by the culture of *M.bovis* from clinical samples or tissues in the laboratory and is impossible to identify based on their appearance. Only in the late stages of infection do animals show any clinical signs and these could reflect diseases other than TB.

More information...

TB infection is currently confirmed in badgers by culture of *M. bovis* from clinical samples or tissues in the laboratory. However, *M. bovis* grows very slowly so culture results can take a minimum of 6 weeks.

TB Myth Buster: the facts



Additionally, laboratory culture of the bacterium from clinical or pathological samples is only reasonably sensitive if a detailed post-mortem examination can be carried out and visible lesions of TB are found from which culture can be attempted.

Read more at the TB Hub [here...](#)

Q22.

Can you identify TB infected setts?

A22.

No. It is impossible to identify infected setts without the capture of animals from that sett and detailed diagnostic tests.

More information...

Whilst it is possible to identify areas where the *M.bovis* organism is present (soil and faeces testing) it is impossible to identify which individual animals that were infected. Furthermore, a negative environmental sample is not reliable as the tests are insensitive and infected badgers shed *M. bovis* intermittently. So, the presence of bacteria in latrines or soil will depend on the intensity of sampling and whether infected badgers have been shedding bacteria in the sample type collected.

Read more on the TB Hub [here...](#)

Read the Defra study [here...](#)

Q23.

Are there more badgers in England now than in the 1990's?

A23.

There are no exact badger population figures in England, however through regular sett surveys; there are estimated numbers of badger social (family) groups in England

More information...

According to the most recent National Badger survey conducted by Food and Environment Research Agency (Fera) between November 2011 and March 2013, in the last 25 years badger social group numbers have likely increased by 27,000 to 40,000. Since 1985 – 88 the estimated number of social groups has increased by 103% in England.

While badger sett surveys are well suited to estimating the abundance of social groups, on their own they are limited in the suitability for estimating populations of individual animals. This is principally because sett characteristics are a poor predictor of badger number and group size.

Read the recent National Badger Survey results [here...](#)

TB Myth Buster: the facts



BADGER CULLING

Q24.

If a farmer or area does not sign up for culling, do they lose out on compensation?

A24.

Cull sign up is an optional/voluntary scheme which farmers can choose whether to be a part of or not. The Defra compensation values are based on real market data and are in place regardless of culling activities. The only reason why compensation would not be paid is if the farmer chooses to slaughter the animal privately or voluntarily.

More information...

Compensation for bovine animals slaughtered for Bovine TB, EBL and Brucellosis is calculated in England under the Cattle Compensation (England) Order 2012 (based upon average livestock market prices for the relevant categories) and the Individual Ascertainment of Value (England) Order 2012. Compensation for bovine animals slaughtered for BSE is calculated in England under the TSE (England) (Amendment) Regulations 2013, in Wales under the TSE (Wales) Regulations 2008, and in Scotland under the TSE (Scotland) Regulations 2010, which use data from the same system as England.

Table valuations are entirely objective and based on real market data. Rates for the 51 cattle categories are determined using large amounts of contemporaneous sales data for same category, but disease free, cattle. Sales data for around 1.4m cattle is collected each year to support table valuations. For non-pedigree table values one month's sales data is used, whereas six months' data is used to determine table values for pedigree animals to ensure that data from either of the key sales periods in spring or autumn is included in the calculation.

More information on the current compensation values can be found [here](#)...

Q25.

Are badgers a protected species?

A25.

Yes. Badgers and their setts are protected under the Protection of Badgers Act 1992 in England and Wales.

More information...

It is an offence under the Badger Protection Act 1992 to:

- Wilfully kill, injure or take a badger (or attempt to do so).
- Cruelly ill-treat a badger.
- Dig for a badger.
- Intentionally or recklessly damage or destroy a badger sett, or obstruct access to it.
- Cause a dog to enter a badger sett.
- Disturb a badger when it is occupying a sett.

There are exceptions to this and Natural England can grant licenses to undertake some actions if justified.

TB Myth Buster: the facts



BADGER & CATTLE VACCINES

Q26.

Is there a vaccine available for cattle?

A26.

Vaccination can be a useful tool to help control bovine TB in the future. A realistic programme could be years away and it will not control the disease on its own. The vaccination will not work on an animal that already has bovine TB.

More information...

There are calls for cattle to be vaccinated, but currently there is no legal vaccination available. The problem lies when distinguishing whether a cow is vaccinated or infected with TB. Work is underway to devise a DIVA test (ref 6, 7, 8) - a test that can differentiate between Infected and Vaccinated Animals. But even when this has been fully developed, it will need to go through EU and international approval.

We know the BCG vaccination reduces the progression, severity and excretion of TB, resulting in reduced transmission between animals, but it is not perfect. And for any vaccine to eradicate a disease it is necessary to ensure that 80% of the target population are immunised. The current BCG vaccine just does not shape up.

Most voices in the debate, including the NFU, support the use of [badger vaccination](#) in areas on the edge of the disease spread to help stop bTB spreading further.

Farmers are getting involved in badger vaccination projects in these areas because they recognise that vaccination could have a role to play in stopping disease spread.

The Government has also set up the [Badger Edge Vaccination Scheme \(BEVS\)](#) to support badger vaccination projects in areas on the edge of the disease spread that are thought to be most at risk of the disease spreading from the endemic areas of the South West and West Midlands. However, in December 2015 the Government announced that all badger vaccination projects in England were being [suspended due to a global shortage of the BCG vaccine](#).

The only vaccine currently available for use on badgers is in an injectable form – and that presents problems.

You need to cage-trap the badgers to vaccinate them. And you have to do it annually for period of at least five years

Read more information at TB Free England [here](#)...

Q27.

Is there a vaccine available for badgers?

A27.

Badger vaccination aims to reduce the transmission and spread of the disease in the badger population with the intention of reducing the risk of cattle contracting TB.

More information...

There is no evidence that vaccination will have either a positive or negative effect on badgers that are already infected with TB. Even if vaccination has no effect on infected badgers this does not mean that it

TB Myth Buster: the facts



cannot reduce TB in badger populations. Badgers typically live for 3-5 years. Over a four year programme, vaccination should reduce new cases of TB in badgers (as in the Gloucestershire field trial) and infected animals will gradually die off. The combination of these processes should lead to a reduction in the number of infected badgers in an area.

Read more information on TB Hub [here](#) ...

GLOSSARY OF COMMON ABBREVIATIONS

AFU	<u>Assured Finishing Unit</u> AFUs provide a route for rearing, fattening or finishing cattle from TB restricted (OTFW/OTFS) and unrestricted (OTF) farms. Read more here
IR	<u>Inconclusive reactors</u> Following a TB test, there may be cattle that are neither clear nor positive. This means that an animal's skin test is inconclusive. Such animals become 'inconclusive reactors' (IRs) Read more here
LFU	<u>Licensed Finishing Unit</u> LFUs provide an outlet for the finishing of negative-testing cattle from multiple officially TB free (OTF) herds, where the animals are permanently under movement restrictions, housed under biosecure conditions and exempt from TB testing. Read more here
NVL	<u>No visible lesions</u> No lesions typical of TB were found in the carcass, usually because the animal was infected shortly before slaughter and the lesions were too small to find. NVL doesn't mean that the animal wasn't infected
OTF	<u>Officially TB Free</u> All herds are classed as Officially TB Free (OTF) unless the TB status of a herd is either regarded as unknown due to overdue testing or there is suspicion that the herd may be infected with TB. Read more here

TB Myth Buster: the facts



<p>OTFS</p>	<p><u>Officially TB Free Suspended</u></p> <p>When there is suspicion of infection with TB in a herd the OTF status will be suspended (OTFS) and the herd will be put under movement restrictions. Read more here (Page 2)</p>
<p>OTFW</p>	<p><u>Officially TB Free Withdrawn</u></p> <p>A herds officially TB free status can be removed for various reasons such as when lesions are found at reactor post mortem examination. Read more here (Pages 13)</p>
<p>PM or PME</p>	<p><u>Post mortem or Post mortem Examination</u></p> <p>The reactor carcass will be examined, where appropriate, to look for evidence of infection and where necessary, to collect tissue samples for laboratory diagnosis. The nature and extent of the lesions in the carcass may indicate whether the disease was in an early or advanced stage or may indicate how the animal was infected. If a tuberculin test revealed several reactors, samples may not be collected from every animal slaughtered. The laboratory will attempt to isolate bovine TB from the samples, which will take at least six weeks. The results will help to understand the nature of the outbreak Read more here (Page 9)</p>
<p>PRMT</p>	<p><u>Pre movement test</u></p> <p>Pre-movement TB testing reduces the risk of bovine TB spreading to new herds through movements of cattle. Pre-movement testing is a statutory requirement for certain Officially TB Free (OTF) herds Read more here</p>
<p>PTMT</p>	<p><u>Post movement test</u></p> <p>Infected cattle do not usually show clinical signs of TB and will look healthy. It is therefore prudent to carry out post-movement testing to detect infected cattle prior to introducing them to the herd. It is advised to carry out the PTMT 60-120 days after cattle arrive on holding. Read more here</p>
<p>VL</p>	<p><u>Visible lesions</u></p> <p>Lesions typical of TB found in the carcass at the slaughterhouse. Read more here</p>

TB Myth Buster: the facts



<p>VRA</p>	<p><u>Veterinary Risk Assessment</u></p> <p>Veterinary Risk Assessments are carried out by an Official Vet (OV) who will assess the risk of TB in a herd when a keeper is applying for a particular license when a keeper is applying for a license to move cattle on and off a restricted holding.</p>
<p>pCPH</p>	<p><u>Permanent County Parish Holding</u></p> <p>A permanent CPH number covers land being used for more than a year. Land can be added to the permanent CPH if:</p> <ul style="list-style-type: none"> • The keeper owns the land, or have use of it for more than one year • it's within 10 miles of the main livestock handling area <p>Read more here</p>
<p>tCPH</p>	<p><u>Temporary County Parish Holding</u></p> <p>A tCPH is permitted where a parcel of land which a keeper wishes to link to the pCPH sits in a separate risk area to the pCPH.</p> <p>These last for a maximum of 1 year with an option to renew.</p> <p>TB testing intervals reflect that of the risk area in which they are located. However, if a tCPH lies in the LRA then the testing interval will be the same to the interval of the pCPH.</p> <p>Pre and post movement testing rules still apply between tCPH and pCPH.</p> <p>In the event of a TB breakdown, APHA default position is to apply restrictions on the tCPH and movements between them will be permitted via license after a VRA.</p> <p>Read more here</p>
<p>TLA</p>	<p><u>Temporary Land Association</u></p> <p>Parcels of land which keepers use on a temporary basis, within 10miles of their pCPH, can be associated via a TLA. TLA's can last for a maximum of 1 year with the option to renew.</p> <p>TLA's will be permitted where the parcel of land is of the same TB risk level to the keepers/applicants pCPH.</p> <p>All land covered in the pCPH will be treated as one, including all livestock reporting and recording, therefore no movements between permanent and temporary land associated to it need to be recorded.</p> <p>When a TB breakdown occurs on either the pCPH or the TLA, the epidemiology will considered for both, therefore TB restrictions will be applied to all parcels of land within the pCPH. Read more here</p>

TB Myth Buster: the facts



GLOSSARY OF COMMON TERMS

Genotype	A strain of TB. <i>M.bovis</i> is broken down into different genotypes; which can be geographically localised.
Radial	Carried out on herds within 3km of a breakdown herd with culture/lesion positive animals. These take place within parts of the Edge Area .
Sensitivity	The ability of a test to <i>correctly identify an infected animal as positive</i> , i.e. the higher the sensitivity of the test, the lower the probability of incorrectly classifying an infected animal as uninfected (a false negative result)
Severe interpretation	Increases the <i>sensitivity</i> of the test (the probability of correctly identifying truly infected animals as test positives) over the normal standard interpretation.
Specificity	The ability of a test to <i>correctly identify an animal that is free from infection as negative</i> , i.e. the higher the specificity, the lower the probability of incorrectly classifying an uninfected animal as infected (a false positive result).
Spoligotype	This is the DNA which determines the genotype of the <i>M.bovis</i> . Spoligotyping with a combination of VNTR testing
Standard interpretation	All tests are initially read at standard interpretation. When reactors are found, the test is then re-interpreted at severe.

USEFUL CONTACTS

[APHA](#) – 03000 200 301

[TB Hub](#)

[Defra](#)

[TB Free England](#)

[TB Advisory Service \(TBAS\)](#)