Some cattle infected with Mycobacterium bovis (M. bovis), the bacterium that causes bovine TB, may give an inconclusive test result if they were infected shortly before the test or if the immune system was temporarily lowered. This leaflet explains what an inconclusive reactor is and how it should be managed in your herd.
**What is an inconclusive reactor?**
An inconclusive reactor (IR) is an animal which has given readings to the tuberculin skin test between the clear (pass) and reactor (fail) ranges.

These IRs are important because:
- there is some uncertainty as to the disease status of IRs and therefore they must be re-tested
- occasionally, the presence of other diseases, or exposure to bacteria similar to *M. bovis*, can cause a positive test reaction, even if there is no TB infection.

**What happens to an inconclusive reactor?**
If one of your animals has been classed as an IR, you must immediately isolate it from the rest of the herd to reduce the risk of spreading TB to other cattle.

Animal Health will serve a notice confirming you have an IR and giving instructions on what you need to do. What happens next mainly depends on whether or not reactors have been found in the same herd.

The whole herd will be put under movement restrictions if the herd has:
- had a confirmed TB breakdown in the last three years, or
- IRs and reactor animals confirmed.

If the herd has not had a confirmed breakdown in the last three years and no reactors have been identified, then only the IRs will be put under restriction.

Inconclusive reactors are tested again after 60 days, either on their own or, where reactors have also been found, with the rest of the herd. In certain cases, Gamma Interferon testing may also be carried out.

In all cases, even when they are to be tested with the rest of the herd, you should isolate IRs.

Milk from any animal in a herd under TB2 restrictions must not be used for human consumption, unless it is heat treated.

Milk from reactors must not be used for human consumption under any circumstances.

**What happens after the 60 day re-test?**
Following the re-test, the arrangements for IRs differ in Great Britain, as follows:

**England and Scotland**
If an animal is identified as an IR on two consecutive skin tests, it will be reclassified, removed and slaughtered as a reactor.

The removal of two times IRs as reactors will happen both within a TB breakdown (i.e. when a herd is under TB2 restrictions) and outside of a TB breakdown (i.e. when the herd is free of restrictions). Therefore, two times IRs will be removed as reactors regardless of whether the test is carried out at standard interpretation or at severe interpretation of the results.

**Wales**
If an IR fails to resolve after the first 60-day skin re-test under standard interpretation, it is treated as a reactor, removed and slaughtered.

Where severe interpretation is used, if an IR fails to resolve after the first 60-day skin re-test (i.e. is a two times IR), it will be blood tested with
the Gamma Interferon test, unless it is also an IR at standard interpretation, in which case it will be removed. If the animal tests negative to this blood test, a final skin re-test will take place 60 days after the previous skin test.

There are three possible outcomes when an IR is re-tested, the third of which depends on whether or not the results of the skin test are assessed using standard or severe interpretation:

(i) if it tests clear, it can rejoin the herd
(ii) if it fails, it is a reactor and Animal Health will remove it
(iii) if it remains an IR following two consecutive tests under standard interpretation, Animal Health will class it as a reactor and remove it.

Or:

If it remains an IR (i.e. two times IR) following two consecutive tests under severe interpretation and is negative following a Gamma Interferon test, the test will be repeated after a further 60 days. If the result is inconclusive for a third time, the animal will be classed as a reactor and slaughtered.

**Are inconclusive reactors ever slaughtered?**

If your herd is suffering a confirmed TB breakdown, IRs may be slaughtered as direct contacts. Inconclusive reactors may be reclassified and slaughtered as reactors under severe re-interpretation of the test results, following confirmation of a breakdown.

In all cases, other than if you opt for private slaughter, Animal Health will provide compensation for animals required to be slaughtered.

If an IR is not eligible for compulsory slaughter but you don’t want to wait for the animal to be tested again, you can have it privately slaughtered at your own expense. You must tell the local Animal Health office, giving at least three working days’ notice, as they will have to issue a licence allowing the IR to travel to a slaughterhouse of your choice. They will arrange for the IR to be examined in the slaughterhouse for any evidence of bovine TB and may take tissue samples for culture.

**Compensation will not be paid for any privately-slaughtered IRs.**

If you opt to have an IR slaughtered, rather than wait for the outcome of its next TB test, this could lead to additional testing and/or prolonging the restrictions on your herd. You are advised that you should discuss the consequences with your case veterinary officer or your local Animal Health office.

If an IR dies on the farm or has to be put down for welfare reasons, you will also need to tell your local Animal Health office. You will not receive compensation for IRs that die on your farm before slaughter.

If an IR dies on the farm (or is privately slaughtered) and post-mortem examination indicates that the animal was infected with bovine TB, Animal Health will apply TB movement restrictions and test the rest of the herd. If signs of bovine TB are not found at post-mortem examination of the IR, movement restrictions will not be automatically applied, although the whole herd may need to be tested 60 days after the IR is removed. If this test is clear and *M. bovis* cannot be isolated from tissues of the slaughtered IR, the herd will go back to its normal testing pattern.
Further information
Contact your local Animal Health office for further practical advice and guidance or visit the Animal Health website: www.defra.gov.uk/animalhealth

Since devolution, the responsibility and powers in regard to animal health legislation has meant that there are significant differences in the policies regarding bovine TB in England, Wales and Scotland. The Defra, Scottish Government and Welsh Assembly Government websites providing up-to-date detail on these policies can be accessed from the Animal Health website.

If you farm on the border of England and Wales or England and Scotland, you should be aware that the location of your animals at the time of the test would influence which protocols are relevant to you.

This leaflet is one of a series about dealing with TB in your herd. The leaflets are structured so that you should clearly be able to find the information you need, depending on the location of your farm.

DEALING WITH TB IN YOUR HERD leaflets are:

1. Bovine tuberculosis (TB): What is it? Why do we test for it? How do we detect it?
2. What happens if bovine tuberculosis (TB) has been detected in your herd?
3. Reactor animals
4. Inconclusive reactors
5. Valuation, slaughter and compensation
6. Movements on and off restricted premises
7. What further testing will be required?
8. Cleansing and disinfection
9. How to reduce the risk of bovine tuberculosis (TB) on your premises
10. Understanding the risk of bovine tuberculosis (TB) to cattle from wildlife
11. How to manage your milk quota
12. Legislation and enforcement of tuberculosis (TB) restrictions
13. Tuberculosis in deer
14. Tuberculosis in mammals
15. Tuberculosis in camelids

The Health Protection Agency, in association with Animal Health and others, has produced a leaflet providing information on the human health risks associated with bovine TB: Reducing the risk of human M. bovis infection: information for farmers.