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# How does the bovine TB Gamma Interferon test work?

Information update and facts  
relating to Bovine Tuberculosis (bTB)



[www.agriculture.gov.ie](http://www.agriculture.gov.ie)



## The Gamma Interferon Test

This is a blood test to detect bovine TB (bTB) infection and is carried out in a laboratory. It is also known as the GIF test or IFN- $\gamma$  test.

### How does it work?

A blood sample is taken from the animal and brought to the laboratory. The blood sample is then stimulated with bovine tuberculin and avian tuberculin, which stimulate immune cells in the blood to produce a molecule called gamma interferon. The level of gamma interferon produced by the immune cells from each sample in response to the bovine or avian tuberculin is measured and a comparison is made between the two

### What do the results mean?

If more gamma interferon is produced by the immune cells in response to the bovine tuberculin than the avian tuberculin, it indicates that the animal is infected with bovine TB (bTB).





## How effective is the test at detecting bTB?

The GIF test can detect more than 90% of cattle infected with bTB, so it can detect more bTB infected animals than the skin test. There are several factors which can affect it:

- The GIF test can detect an infected animal earlier than the skin test, so it is more effective at detecting new infections.
- There is a period of time immediately after an animal is first infected with bTB but before it has developed an immune response when the GIF test will be negative.
- As with the skin test, sometimes animals may have damaged immune systems that do not respond during the GIF test. This may cause them to test negative even though they have bTB.

The level of bTB infection in the herd determines whether the GIF test will be used to look for further infected animals.

In a herd where bTB has been confirmed a GIF positive animal is very likely to be truly infected. In a herd where there is thought to be no bTB, a GIF positive animal is still likely to be infected but it is not as certain as in an infected herd. For this reason, the GIF test is not suitable to be used as a mass screening test in all herds, in the way the skin test is used. Instead, it is used in herds where bTB is present and has spread within the group of cattle tested.



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Further information is available at

<https://www.agriculture.gov.ie/animalhealthwelfare/diseasecontrol/bovinetb/>