Gamma interferon (IFN-γ) on trial in GB - a pilot field trial

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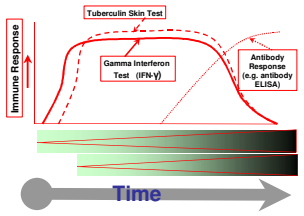
The trial

- Since November 2002, the Veterinary Laboratories Agency (VLA) with the State Veterinary Service (SVS) has been conducting a randomised field trial of the IFN-γ test as an ancillary (parallel) test to the tuberculin skin test in herds with confirmed bovine tuberculosis (bTB) breakdowns.

Background

- The IFN-γ test is an *in vitro* lab-based test that detects IFN-γ in blood. This is a cytokine produced by white blood cells after stimulation with antigens such as bovine tuberculin.
- The IFN-γ test appears to detect infected cattle earlier than the skin test (see schematic chart), which would help to control bTB by decreasing cattle-to-cattle spread.

Response of the animals' immune system to various tests for tuberculosis (*Schematic*)

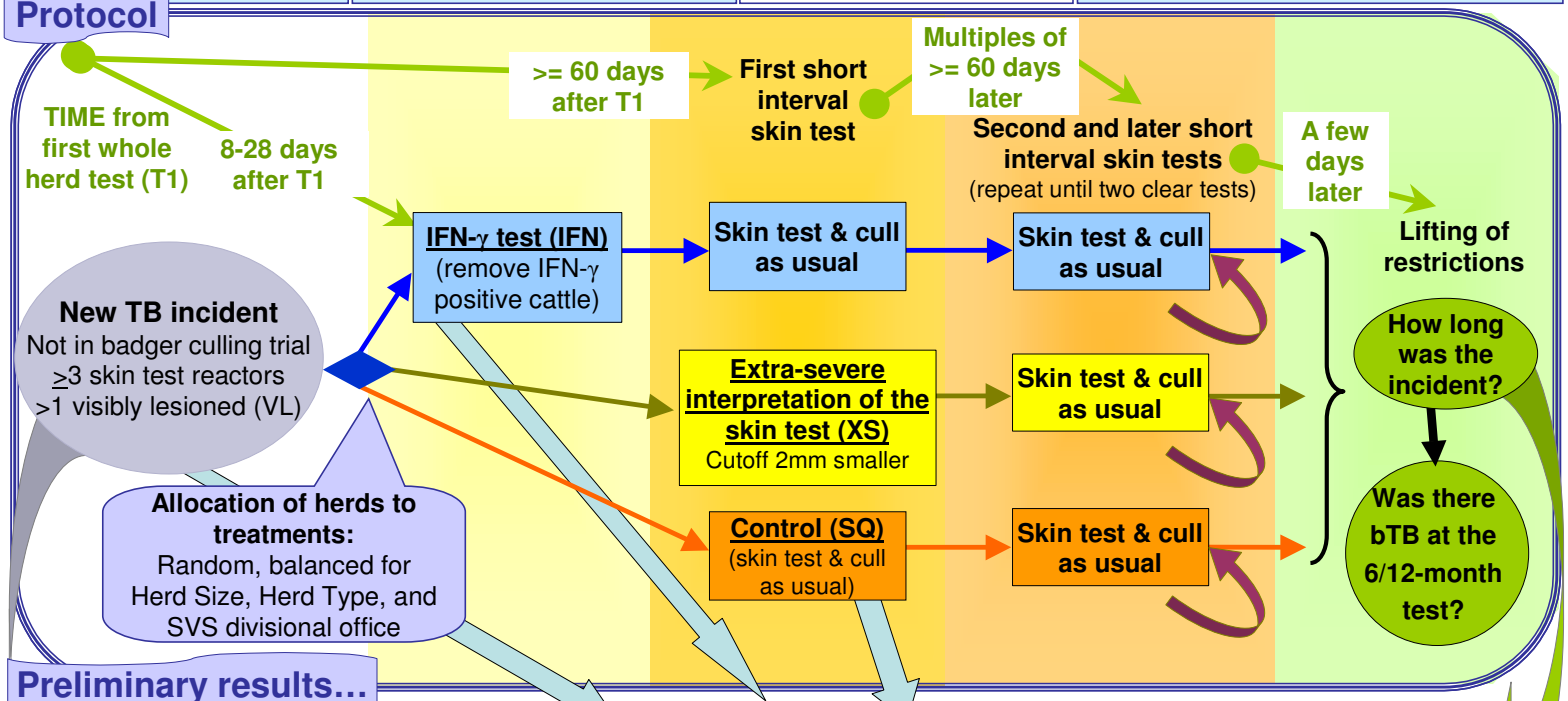


Objectives

To determine

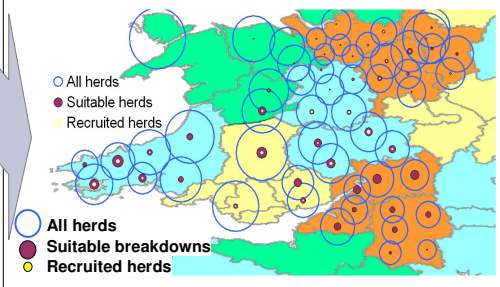
- whether (& by how much) an IFN-γ test 8-28 days after the disclosing test can shorten the length of herd movement restrictions;
- whether the IFN-γ test can reduce recrudescence in tests performed 6 months after the removal of these restrictions;
- whether making the cut-off criteria for the skin test more stringent is as effective as the IFN-γ test.

Protocol



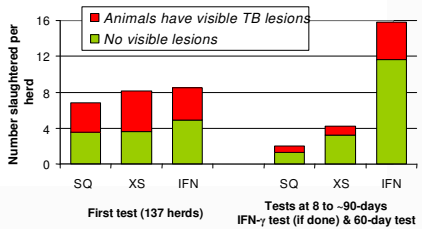
Preliminary results…

Numbers of herds, breakdowns, suitable breakdowns and recruitment (to March 2005)



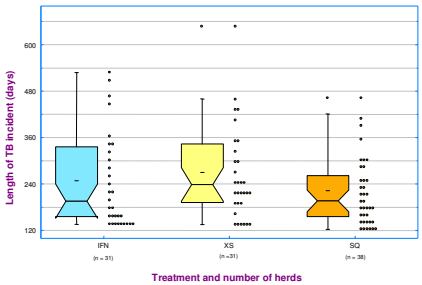
Some herds not recruited (blue rings) because of SVS resources or farmer unwillingness

Number of animals removed at (a) first test and (b) IFN-γ test (if done) & 60-day short interval test



When the IFN test was used, more animals are removed, but *16%* of them have lesions and/or *M. bovis*

Duration of TB incidents (preliminary results)



The median duration for treatment IFN is lower than the median for the other 2 treatments – data for 100 herds only. The median is the "waist" of the coloured shape

Conclusions

- Recruitment into a voluntary trial depends on farmers' willingness (perceptions of value of test) as well as resource availability
- Gamma interferon enhances the detection of lesioned animals
- One of the objectives of the trial – to shorten the duration of incidents – may be achievable

Other applications (how the IFN-γ test is used outside the pilot trial)

- **Parallel testing**
  - Resolving prolonged confirmed incidents with a protracted TB problem
  - Assessing the need for whole / part herd slaughter
- **Serial (confirmatory) testing**
  - Resolving incidents with non-specific skin test reactions, using more specific antigens

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For more information on Defra's IFN-γ trial go to: http://www.defra.gov.uk/animalh/tb/control/gammapilot.htm or contact us:

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