Dairy reactors are less likely to have bovine tuberculosis confirmed at *post mortem*

Downs, S.H.[1], Broughan, J.M.[1], Goodchild, A.T.[1], Parry, J.[1], Ely, E.R.[1], Durr, P.A.[2] and Clifton-Hadley, R.S.[1], [1]Animal Health and Veterinary Laboratories Agency, United Kingdom, [2]CSIRO, Animal Health Laboratories, Australia; sara.downs@ahvla.gsi.gov.uk

The primary field screening test for bovine tuberculosis (bTB) in Great Britain (GB) is the single intradermal cervical comparative tuberculin (SICCT) test supplemented by the gamma-interferon (IFN-γ) blood test in specified circumstances. Confirmation of infection with *Mycobacterium bovis* in reactors to field tests requires detection of typical macroscopic lesions during *post-mortem* examination or isolation of the bacteria. SICCT performance varies with infection stage in the bovine, immunosuppressive factors, environmental mycobacteria, test conduct, etc. The aim was to compare proportions of reactor cattle with confirmed infection from different production classes. A population sample of 200 reactors to the SICTT (standard interpretation), was randomly selected from 198 farms in England and Wales. All of the reactors underwent an IFN-γ test, a detailed *post-mortem* and culture of tissue samples. Farmers ascribed production class. The proportion of reactors with detectable *post-mortem* evidence of infection varied by production class: Dairy cows 34% (28/82), Finishers 72% (21/29), Heifers 65% (13/20), Suckler Cows 62% (31/50), Yearlings and Calves 90% (17/19) P<0.001. The odds for non-dairy reactors to have infection confirmed was three times higher than dairy after controlling for SICCT results, bovine age, interval between routine test, herd size and number of reactors in the herd (Odds Ratio 3.3, 95%CI 1.6-6.8, P=0.001). Similar results were observed with IFN-γ test results. Dairy cattle have been reported as having a higher risk of contracting bTB than beef cattle. These data, and data from routinely collected surveillance statistics in GB, suggest that it may be worthwhile investigating whether the immune response to *M. bovis* in cattle may be modified by management or breed. Funding was provided by Defra through project SE3013.