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Evaluation of the sensitivity and specificity of gamma interferon assay, single intradermal tuberculin and comparative intradermal tuberculin tests in naturally infected cattle herds

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B ovine tuberculosis (bTB) is a chronic disease of a wide range of animal species primarily caused by Mycobacterium bovis, a member of the Mycobacterium tuberculosis complex. M. bovis is also known to affect humans causing a serious public health problem where the disease is endemic. Imperfect sensitivity and specificity of available diagnostic techniques often hampers the control of bTB. Due to lack of an adequate gold standard to define positive and negative individuals, it is imperative to evaluate the existing diagnostic tools for confirmation of bovine tuberculosis. In the present study, a total of cattle (n=164) from 8 different herds were simultaneously screened by gamma interferon (γ -IFN) assay, single intradermal tuberculin (SIT) and comparative intradermal tuberculin (CIT) tests. The results revealed that 106 (64.6%) cattle were tested positive by SIT in comparison to 56 (31.4%) and 34 (20.7%) by CIT test and γ -IFN, respectively. The sensitivity (97%) and specificity (98%) of γ -IFN assay was higher as compared to sensitivity (100%) and specificity (44%) of SIT. On the other hand, the sensitivity (91%) and specificity (80%) of CIT was found to be better than SIT. These finding indicate that γ -IFN assay could be used for routine screening of cattle for bTB.

Biography

Premanshu Dandapat has completed his PhD from Indian Veterinary Research Institute and MVM from Massey University, New Zealand. Presently he is engaged in applied research on zoonotic tuberculosis and paratuberculosis.

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