

## Comparative efficacy of conventional diagnostic methods and evaluation of polymerase chain reaction for the diagnosis of bovine brucellosis

Raheela Akhtar\*, Prof. Zafar Iqbal Chaudhry, Prof. A. R Shakoori<sup>1</sup>,  
Mansoor ud Din Ahmad and Asim Aslam

Department of Pathology,  
University of Veterinary and Animal Sciences, Lahore, Pakistan  
1. School of Biological Sciences, University of the Punjab, Lahore, Pakistan.  
Corresponding author e-mail: teetu\_meetu41@yahoo.com, Tel: 092-042-9211449

### Abstract

The comparative efficacy of Rose Bengal Plate Test (RBPT) and Milk Ring test (MRT) was calculated in terms of sensitivity and specificity for the diagnosis of bovine brucellosis in cows (Group A) and buffaloes (Group B) from Lahore and Okara districts of Punjab, Pakistan. Using bacterial growth as a gold standard RBPT showed high sensitivity values of 100% in both groups. While its specificity was 96.29% (Group A) and 90.62% (Group B). On the other hands MRT showed low sensitivity (80.0% in Group A; 86.6% in Group B) while its specificity was 100% in all the animals of both groups. The calculated positive predictive and negative predictive values of both groups were in correspondence with their specificity and sensitivity values respectively. High sensitivity and low specificity of RBPT as compare to high specificity and low sensitivity of MRT in all groups suggested the poor efficacy of both tests used individually as compare to bacterial growth. In the continuation of this study polymerase chain reaction (PCR) was evaluated for its diagnostic efficacy of quick *Brucella abortus* isolation from same samples. PCR conducted on serum samples gave more positive results than on milk samples. Therefore, the combination of both conventional tests alongwith serum PCR can be recommended.

**Key words:** Diagnostic tests, PCR, Bovine brucellosis, Laboratory Tests,