

# COMPARATIVE EVALUATION OF DIAGNOSTIC TECHNIQUES IN DETECTION OF ROTAVIRUS INFECTION IN CALVES

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*Thesis submitted in part fulfilment of the requirements for the degree of*  
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## CERTIFICATE

This is to certify that thesis entitled "COMPARATIVE EVALUATION OF DIAGNOSTIC TECHNIQUES IN DETECTION OF ROTAVIRUS INFECTION IN CALVES" submitted in partial fulfilment of the requirements for the degree of Master of Veterinary Science, in Veterinary Preventive Medicine to the Tamil Nadu Veterinary and Animal Sciences University, Madras, is a record of bonafide research work carried out by DHANARAJ. V, under my supervision and guidance and that no part of this thesis has been submitted for the award of any other degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part or full in any scientific or popular journal or magazine.

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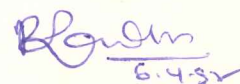


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## ABSTRACT

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CALVES

Agar gel precipitation test (AGPT), Counter immunoelectrophoresis (CIEP), Fluorescent antibody test (FAT) and polyacrylamide gel electrophoresis with silver staining (PAGE - SS) for rotaviral RNA were assessed for diagnosis of rotavirus infection in calves. A total of 186 enteric stool samples were tested by AGPT and 35 cases were found to be positive (18.82%). Most of the samples showed single precipitation line and five samples showed double precipitation line. The disease was found to occur both in crossbred and non-descript calves. The calves between the age of 0 - 7 days showed high incidence (33.3%), followed by animals between 7 to 15 days (20.3%). When the seasonal prevalence of infection was studied, most of the infection occurred during winter months (37 - 40%).



All the samples were subjected to CIEP and 30 samples showed positive reaction and this test did not detect 5 positive cases detected by AGPT.

Sixty two stool samples including the 35 AGPT positive samples were tested by indirect fluorescence antibody test for the presence of rotaviral antigen in faecal smears. All the AGPT positive samples showed positive fluorescence and the remainder proved negative.

All the stool samples from calves were analysed by PAGE -SS for rotavirus RNA. Only cases positive by AGPT were positive by this test indicating that AGPT is as sensitive as PAGE-SS.

From the results of this study, it was concluded that tests AGPT, FAT and PAGE - SS showed similar sensitivity than CIEP which was less sensitive. AGPT being a simpler test among the 3 tests, it was suggested as routine test for survey and diagnosis.