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ESTABLISHMENT AND VALIDATION OF AN IMMUNOFLUORESCENCE  
ANTIBODY TEST (IFAT) TO DIAGNOSE SARCOYSTIS INFECTION IN  
CATTLE

A PROJECT REPORT PRESENTED BY

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# ESTABLISHMENT AND VALIDATION OF AN IMMUNOFLUORESCENCE ANTIBODY TEST (IFAT) TO DIAGNOSE SARCOYSTIS INFECTION IN CATTLE

## Abstract

*Sarcocystis* is an important parasite in the livestock industry, causing acute and chronic disease in cattle, which often results in abortions in females. This work was designed to establish a time-efficient immuno-fluorescent assay for diagnostic as well as sero-prevalence studies in cattle.

Teflon coated slides were prepared with bradyzoites extracted from macroscopic sarcocysts as the antigen. Positive samples were established by clinical observation, while negative samples were determined during the development of the test.

A serological survey conducted on 130 test samples reported prevalence of infection as 13%, where 5% was of heavy and 8% mild infection, with an antibody titer value of 1:160 for heavy infection. No cross reaction with *Neospora* and *Toxoplasma* was observed in the subsequent tests carried out. Serological survey for *Neospora* infection reported a sero-prevalence of 10% heavy infection and 17% mild infection among the same 130 samples. Immuno fluorescent studies in cross sections of muscle cysts determined the specificity of antibody binding sites around the cysts and surface of the bradyzoites and it did not appear with *Toxoplasma* and *Neospora* positive sera. Thus it was revealed that IFAT is a more reliable serological assay for the determination of antibodies against *Sarcocystis* infection in animals. Polymerase Chain Reaction studies further determined the identity of the muscle cysts to belong to *Sarcocystis* species and not any other closely related species.

