

Technical Report

Detection of *Theileria annulata* asymptomatic carriers in different bovine breeds in Sistan region by PCR

Nabavi, R.; Ganjali, M.; Majidyani, H.R

Faculty of Veterinary, University of Zabol, 98615, Zabol, Iran

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Introduction

The blood and tissue protozoa, *Theileria annulata*, which proliferates in blood and reticuloendothelial system of the body of vertebrate animals, impose many damages and fatalities. The necessity of applying control procedures and prevention of whole infections is accurate and rapid discrimination of the pathogenic agent in samples. Each of the microscopic, serologic and molecular methods has their own advantages in diagnosing this infection, hence microscopic method is a common diagnostic test and molecular method is a sensitive and accurate method for the aim of diagnosing this infection.

Methods

A number of 160 samples from the cattles of the area, including 80 Holstein and 80 Sistani were randomly selected and their blood samples were acquired in methanol-including tubes and on the slides. The presence of *Theileria* parasites in every sample was determined by microscopy and PCR methods and the correlation between these two methods was determined with Kappa statistical test. Also, the sensitivity and specificity of microscopy method was assessed comparing to PCR. For the aim of analyzing data the SPSS statistical software (18th edition) was used.

Results

By means of PCR method the prevalence of infection to *Theileria annulata* in Sistani breed was 27.5% (22 cases) and in Holstein breed was 47.5% (38 cases) and this difference is statistically meaningful (P value<0.05%). In microscopic examination of thin blood smears, only 6.25% (10 cases) were shown to be positive. By results, we evaluated that Sistani breed has a major role as asymptomatic carriers of *Theileria annulata*.