

Case Study

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## Incidence of Benign Theileriosis in Cattle of Puducherry Region, India

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### ABSTRACT

#### Keywords

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The study revealed, benign theileriosis, which is caused by *Theileria orientalis* conformed by using the PCR/ Blood smear/ Lymph node aspiration smear examination. The incidence of theileriosis was 24.21% to the total cases recorded in the veterinary hospital. Based on the clinical suspicion the incidence rate is 90.91%. The incidence rates of theileriosis in female animals (85%) were higher than male (15%) animals. Age 3-4 years (34%) and 5-6 years (20%) higher the *Theileria* incidence rate than the younger animals (9%). Cross breed jersey (59%) and Holstein Friesian (23%) the incidence rate of theileriosis was higher than non-descript animals (5%). Theileriosis incidence in grazing and stall fed animals were almost same.

### Introduction

The aim of the study was to assess the incidence of theileriosis in cattle of Puducherry region. Bovine Benign Theileriosis is caused by *Theileria orientalis* and *T. segenti/ buffeli* found throughout the world and cause mild or asymptomatic disease (Uilenberg 1981). *Theileria orientalis* is classified into eight genotypes on the basis of diversity in the SSUrRNA and major piroplasm surface protein (MPSP) Kubota *et al.* (1996). BBT cause severe form of clinical signs and production losses unless the cattle were affected by stress such as pregnancy,

parturition, lactation, inter-current disease and environment factors (Kakuda *et al.* (2001).

### Materials and Methods

From January to August 2014, a total numbers of 413 cattle were brought to Large Animal Medicine Unit, Teaching Veterinary Clinical Complex, Rajiv Gandhi Institute of Veterinary Education and Research, Puducherry for treatment various medical conditions. One hundred and ten cases with clinical signs suggestive of theileriosis were subjects to clinic-pathological and molecular study.

Based on the SSUrRNA gene 1098bp for *Theileria* and MPSP gene-849bp for *T. Orientalis* for PCR/ Blood smear/ Lymph node aspiration smear examination, the result was made and the incidence of Bovine benign theileriosis (*Theileria orientalis*) was calculated.

## Results and Discussion

The incidence of theileriosis among the cattle presented to Large Animal Medicine Unit, Teaching Veterinary Clinical Complex, Rajiv Gandhi Institute of Veterinary Education and Research, Puducherry was 24.21 per cent (n=413). One hundred and ten cases with clinical signs suggestive of theileriosis, in that a total of 100 (90.91%) cattle were found positive either by peripheral blood smear or lymph node aspiration or PCR, which is in agreements with Keles *et al.* (2001), Kamau *et al.* (2011) and Yu *et al.* (2011) who reported that theileriosis in cattle was endemic in tropical regions. Whereas Chaisi *et al.* (2013) and Aktas *et al.* (2006) reported an incidence of *Theileria orientalis* was 5.8% and 7% in South Africa and Eastern Turkey respectively.

The incidence of the theileriosis was more in female cattle (85%) when compared with males (15%), the increased incidence in female was due to over representation of female cases to TVCC. Gill (1994), Benical *et al.* (1997) and Kakuda *et al.*, (1998) reported that latent infection of *Theileria* in females was mainly due to the stress, pregnancy, parturition, lactation undercurrent disease and environment factors.

Cattle in the age group of 3-4 years had highest incidence (34%) of theileriosis followed by 5-6 years age group (20%), 7-8 years group (15%). 9-10 years group (13%), less than 1 year (9%) and 1-2 years (9%) these finding were similar to the reports of

Radostitis *et al.* (2010) who revealed that young animals were less susceptible than adult cattle.

In the present study, the highest incidence of theileriosis was observed in cross bred jersey (59%) followed by Holstein Friesian (23%), Hallikar (13%) and non-descript (5%) which in concurrence with the report of Kachani *et al.* (1992). Radostitis *et al.* (2010) opined that the indigenous cattle breeds were less affected than the exotic breeds of cattle.

The incidence of theileriosis was almost equal in stall fed and (50%) animals and cattle on gazing (46%). The present findings were in agreement with that reported by Chae *et al.* (1996), Choi *et al.* (1997) and Song and Sang (2003) who reported that higher incidence was noticed in non-gazing cattle, but they were nevertheless lower than in grazing cattle.

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