

Seroprevalence of Bluetongue among domestic ruminants in Northern Kerala, India

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Abstract. The objective of the present study is to assess the seroprevalence of bluetongue (BT) among domestic ruminants of Northern Kerala. Sera samples from cattle (82), goat (40) and sheep (50) collected from districts of Wayanad, Kozhikode and Palakkad respectively were tested using competitive enzyme linked immune-sorbent assay (cELISA). Out of the 172 samples tested, the overall BT seroprevalence was 9.3%. There is an increase in prevalence from previous reports which may indicate possible outbreaks in future.

INTRODUCTION

Bluetongue is caused by Bluetongue Virus (BTV) of the genus *Orbivirus*, placed under the subfamily *Sedoreovirinae* and family *Reoviridae*. The virus is transmitted between the vertebrate hosts by *Culicoides* spp. (Maclachlan & Dubovi, 2011). Bluetongue is listed as a multispecies disease by Office International des Epizootics (OIE). BT most commonly affects sheep and wild ruminants. Although goat and cattle are susceptible, the disease is usually subclinical or inapparent in these species. Cattle serve as the most important reservoir host of BT (Reddington *et al.*, 1991; Reddy *et al.*, 2008). The disease affects domestic and wild ruminants reared in regions between latitudes 40-50° North and 35° South.

The disease was first reported in India in 1964 (Sapre, 1964). There are reports of 26 serotypes of BTV worldwide, of which 21 serotypes have been reported in India either on the basis of virus isolation or serology

(Prasad *et al.*, 1992; Sreenivasulu *et al.*, 2004; Hofmann *et al.*, 2008; Maan *et al.*, 2011).

Prevalence of antibodies against BT among sheep, goat and cattle were reported from many states of India (Prasad *et al.*, 1992; Bhanuprakash *et al.* 2008; Sikrodia *et al.*, 2012). Seroprevalence of BT in ruminants has been reported in Kerala (Ravishankar *et al.*, 2005; Sunilkumar *et al.*, 2005). However these two studies were carried out with the aim of establishing the prevalence of the disease in ruminants in Kerala for the first time. Thereafter no studies have been carried out in this direction. Hence this study was undertaken to assess the seroprevalence of the disease in these species after a five year period.

MATERIALS AND METHODS

The area of study encompassed three districts of Northern Kerala namely, Wayanad, Kozhikode and Palakkad. The state