

SERO-PREVALENCE OF LEPTOSPIROSIS IN SMALL RUMINANTS IN PUDUKKOTTAI DISTRICT OF TAMIL NADU

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ABSTRACT

A study was conducted to document sero prevalence level of leptospiral serovars in small ruminants in Pudukkottai district of Tamil Nadu by subjecting the serum samples to MAT. The results indicated that sero positivity rate in sheep and goat was 18.35 per cent and 12.87 per cent respectively. The predominant leptospiral serovar *pomona* and *grippotyphosa* was found in sheep and *canicola* in goats.

KEY WORDS: Sero prevalence, Serum samples, Leptospiral serovar, Small ruminants.

INTRODUCTION

Leptospirosis is the general term applied to diseases of animals and humans caused by numerous distinct serovars of a spiral-shaped bacterium known as *Leptospira interrogans*. Many such serovars are harboured by a wide range of animals, and all of them are capable of causing illness in humans. *Leptospira* serovars *pomona* and *hardjo* are particularly important in livestock, however the number of other serovars of concern, detected in domestic animals and in humans, is growing. Leptospirosis causes heavy economic losses on account of abortions, still birth, infertility and sterility. In India, the prevalence of leptospirosis in farm animals in many states has been reported earlier (Ajay Verma *et al.*, 2001; Sivaseelan *et al.*, 2003 and Balakrishnan *et al.*, 2008). Generally, this disease manifests itself as an in apparent or sub-clinical state and most often goes undiagnosed. The present study was undertaken to assess the sero-prevalence of leptospirosis in sheep and goats in Pudukkottai district of Tamil Nadu.

MATERIALS AND METHODS

A total three hundred and sixty (158 sheep and 202 goats) blood samples were collected randomly from apparently healthy sheep and goats prior to slaughter from slaughter houses in Pudukkottai district of Tamil Nadu for a period of 12 months. The serum samples were sent to Central University Laboratory, Tamil Nadu Veterinary and Animal Sciences University, Chennai, for analysis. All the samples were subjected to Microscopic Agglutination Test (MAT) to identify the presence of leptospiral antibodies as per the method suggested by Faine (1982).

RESULTS AND DISCUSSION

The overall sero prevalence of leptospirosis among sheep and goats was 18.35 per cent (n=29) and 12.87 per cent (n=26) respectively. In sheep, the prevalence of leptospiral serovar *Pomona* was 5.69 per cent (n=9) followed by *grippotyphosa* 5.69 per cent (n=9), *australis* 2.53 per cent (n=4), *canicola* 1.27 per cent (n=2), *hebdomadis* 1.27 per cent (n=2), *autumnalis* 1.27 per cent (n=2), and *hardjo* 0.63 per cent (n=1) which is in agreement with earlier report of Natarajaseenivasan and Ratnam (1998) who stated that the sero survey conducted among sheep and goats from Pumpozhil village of Southern Tamil Nadu revealed that *pomona* is the predominant serovar followed by *autumnalis*. In goats, the incidence of leptospiral serovar *canicola* was 3.46 per cent (n=7)

followed by *pomona* 1.98 per cent (n=4), *grippotyphosa* 1.98 per cent (n=4), *hebdomadis* 1.98 per cent (n=4), *icterohaemorrhagiae* 1.48 per cent (n=3), *autumnalis* 0.50 per cent (n=1), *hardjo* 0.50 per cent (n=1) *javanica* 0.50 per cent (n=1) and *australis* 0.50 per cent (n=1). Similar findings recorded by Manickavel *et al.* (1991) stated that *pomona* was the most frequent the leptospiral serovar found in field outbreaks of sheep and goats in South Tamil Nadu, India. The serovar *icterohaemorrhagiae* and *javanica* identified in goats had no prevalence in sheep. Similar prevalence of leptospiral serovars in sheep and goat was recorded by Sivaseelan *et al.* (2005).

The variation in the presence of serovars might be due to their habitation and no species specificity could be observed in their distribution. Presence of leptospiral antibodies in the sera samples of sheep and goats in this study indicated the prevalence of leptospiral infections as explained by the earlier study report conducted by Sivaseelan *et al.* (2003) in Madurai district.

From the study, it was concluded that in Pudukkottai district, the predominant leptospiral serovar found in sheep was *canicola* whereas in goats it was *pomona* and *grippotyphosa*.

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