
SEROPREVALENCE OF BLUE TONGUE AND PESTES DES PETITS RUMINANTS AMONG GOATS IN NAGPUR DISTRICT OF VIDARBHA REGION

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ABSTRACT

A total of 727 serum samples collected from goats from Nagpur district in Vidarbha region were screened for PPR by Competitive Enzyme Linked Immunosorbent Assay (c-ELISA). For Bluetongue antibodies screening, the samples were referred to Institute of Animal Health and Veterinary Biologicals, Hebbal, Bangalore and Department of Microbiology, College of Veterinary and Animal Science, Parbhani, a collaborating centre of ICAR, All India Network Project on Bluetongue. In the present study, the seropositivity of goats for Blue tongue was found to be 27.95 %. The seropositivity of goats for PPR turned out to be 26.13 %. It is clear that Bluetongue and PPR are prevalent in goats in Nagpur district of Vidarbha region. Results of this study warrant a thorough investigation of prevalence of these diseases in goats in other districts and to assess the economical importance of these diseases in this region.

Key Words: Seroprevalence, Bluetongue, Pestis des petits ruminants

INTRODUCTION

Goat rearing is gaining importance due to increased demand for meat and milk thus contributing for the poor man's economy. Migration of goats from one region to another due to seasonal variations, availability of grazing land, fairs etc. may lead to dissemination of various disease from affected animals to other healthy animals in disease free region. Goat population is threatened by number of viral disease of which Bluetongue (BT) and Peste des Petits de Ruminants (PPR) are the most important and emerging and have been considered as major constraint in the small ruminant development and production in recent years.

Bluetongue has a worldwide distribution. It is listed under category 'A' of disease by OIE. It

is an infectious, non-contagious, arthropod borne viral disease manifested by high fever, odema of mucous membranes, ulceration of gums and lameness (Scientific Committee on Animal Health and Animal Welfare, 2000).

PPR is highly contagious viral disease of goats caused by virus belonging to Morbillivirus genus of family 'Paramyxoviridae'. The disease is characterized by mucopurulent nasal and ocular discharge, necrotizing and erosive stomatitis, enteritis and pneumonia. It is endemic in our country and associated with heavy economic losses every year due to high mortality and morbidity in infected goats (Singh *et. al.*, 2004). Though the disease was reported for the first time in India in 1989 (Shaila *et. al.*, 1989), its outbreak are now become a regular feature in different parts of country since 1994

(Anjaneyahu and James, 1999; Jana and Ghosh, 2002; Purushothaman *et. al.*, 2006).

Serological investigation is considered as a faster means of assessing the prevalence of infections. So far no systematic survey has been undertaken for Blue tongue and PPR in Vidarbha region. In a view of paucity of information on the prevalence of these infections in goats, the present serological survey of Blue tongue and PPR was undertaken to ascertain the status of these diseases in Nagpur district of Vidarbha region.

MATERIALS AND METHODS

A total of 727 serum samples were collected from apparently healthy goats of different age and sex from different flocks from 14 tehsils of Nagpur district in Vidarbha region. The serum samples were stored at -20°C until screened. All the samples were screened for PPR by Competitive Enzyme Linked Immunosorbent Assay (c-ELISA) (Singh *et. al.*, 2004). For Blue tongue antibodies screening the samples were referred to Institute of Animal Health and Veterinary Biologicals, Hebbal, Bangalore and Department of Microbiology, College of Veterinary and Animal Science, Parbhani, a collaborating centre of ICAR, All India Network Project on Blue tongue. Bluetongue antibodies were detected by employing c-ELISA test.

Competitive-ELISA for PPR antibodies detection was employed using kit generously provided by Division of Virology, IVRI, Mukteshwar. The test was employed as per protocol of Singh *et. al.* (2004) who developed a monoclonal antibody based c-ELISA for serosurveillance of PPR. The test utilizes monoclonal antibodies directed against a neutralizing epitope of haemagglutinin (HA) protein of PPR virus. The test is based on inhibition of binding of monoclonal antibody to PPR virus antigen in the presence of virus specific antibody in the field sera. The reduction in the binding of monoclonal antibody is indicated by reduced color development which in turn indicates positivity of

the serum samples. The test serum samples showing 50% or more inhibition were considered as positive for PPR antibodies (Singh *et. al.*, 2004).

RESULTS AND DISCUSSION

The results of seroprevalence Bluetongue and PPR among goats in Nagpur district of Vidarbha region are summarized in Table 1.

In the present study, the seropositivity of goat for Bluetongue was found to be 27.95% (185 out of 651) which is in close agreement with the reported seroprevalence of 27.97 per cent in Bidar district of Karnataka (Bhoyar *et. al.*, 2004). Higher prevalence of Bluetongue in goats (58.01%) has also been reported from Goa (Barbuddhe *et. al.*, 2005).

The seropositivity of goats for PPR turned out to be 26.13% (190 out of 727), which is comparable to reported prevalence of PPR (27.80%) and (42.76%) among goats in Delhi and Haryana state respectively (Singh *et. al.*, 2006). A prevalence of 35.46% has been reported in goats from Madhya Pradesh (Sharma *et. al.*, 2007).

Migratory flocks of nomads have been thought to be a source of infection of Blue tongue (Bhalodiya and Jhala, 2002) and PPR (Dhand *et. al.*, 2002) in new areas. The occurrence of antibodies in goat sera against Bluetongue and PPR is of significance. Environmental stress, particularly hot and humid climate contributes for the precipitation of these diseases (Wous, 1995). After the control of Rinderpest in the country continued outbreak of PPR since 1994 in the goats and sheep population is alarming and is a serious threat to the growing goat industry in India. Absence of specific vaccine and ban on use of Rinderpest vaccine has put the entire small ruminant population at risk (Nayak *et. al.*, 1997).

From the present study, it is clear that Bluetongue and PPR are prevalent in goats in Nagpur district of Vidarbha region. Results of this study warrant a thorough investigation of prevalence of

these diseases in goats in other districts and to assess the economical importance of these diseases in this region.

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Table 1

Seroprevalence of Bluetongue (BT) and Peste des petits de ruminants (PPR) among goats in Nagpur district of Vidarbha region

Diseases	No. of samples		Per cent Positively
	Screened	Positive	
Blue tongue	651	182	27.95%
PPR	727	190	26.13%

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