

## Detection of *Mycoplasma capri* antibodies in goats of Gujarat state

Ashish Roy, Pankaj Kumar and B. B. Bhanderi\*

Department of Veterinary Microbiology, College of Veterinary Science and Animal Husbandry, Anand-388001, Anand Agricultural University, Gujarat, India

\* Corresponding author email : bbbhanderi@yahoo.co.in, Cell: +91 92283 09371

### Abstract

200 serum samples were collected from apparently healthy goats of different age and sex from Anand, Navsari and Valsad districts of Gujarat (India), were screened for mycoplasmal antibodies by slide agglutination test using colored antigen of *Mycoplasma mycoides subsp. capri*. Out of 200 serum samples screened 85 were found to be positive indicating overall seroprevalence of 42.50 percent. The higher prevalence was observed in Navsari district (66.66 %) followed by Valsad (60.66%) and Anand district (32.85 %). The higher incidence in these district could be suggest the endemicity of the disease. Slide agglutination test for mycoplasmal antibodies detection using colored antigen of *Mycoplasma mycoides subsp. capri*. antigen was found to be quick, simple, low cost with ease of application in the field without the need of any specialized training and equipments.

**Keywords:** Seroprevalence, Goat, Gujarat, *Mycoplasma mycoides subsp. capri*

### Introduction

The serological study over different regions help in understanding the distribution and epidemiology of the disease status. Many workers had pointed out foci of Mycoplasmal infection may already be present in our country and as such investigations should be taken up to study the problem of Mycoplasmosis as it affects the livestock of the country.

The seroprevalence of goats in India has been reported by Ghosh et al. (1989) and workers have shown its existence in various parts of country (Srivastava and Singh, 2000; Ingle et al., 2008; Ramdeva et al.; 2008 and Rana et al., 2009).

As far as studies on Mycoplasmosis in Gujarat state is concerned, there exists scanty information regarding circumstances of infection in animals of the state. Hence, the present study was contemplated to assess the prevalence of *Mycoplasma* infection amongst goats in Gujarat state.

### Material and Methods

#### •Collection of samples

The samples were collected during November 2008 to April 2009. Details of samples collected are enlisted in table 1.

#### •Blood

Blood samples were collected to prepare serum for detection of *Mycoplasma* antibodies. About 9 ml of blood was collected aseptically from the jugular vein of

individual animal in a vacuette with serum clot activator (Greiner bio-one, Austria) and transported to the laboratory on ice. The separated serum was collected in a screw capped plastic vial and were stored at -20°C till further use.

Slide agglutination test (sat) for detection of mycoplasmal antibodies.

#### • Colored antigen of *M. mycoides subsp. capri*

The antigen obtained from the Bacteriology and Mycology division of Indian Veterinary Research Institute (I.V.R.I.), Izatnagar, Uttar Pradesh and was used for Slide Agglutination Test (SAT).

#### • Test procedure:

One drop (0.03 ml) of test serum was taken on a glass slide by micropipette. The antigen bottle was shaken well to ensure homogenous suspension and then one drop (0.03 ml) of whole cell coloured antigen was added. The antigen and serum were mixed thoroughly with a tooth pick and then the slide was rotated for 1 to 2 minute. The result was read after 2 to 3 minute.

#### • Interpretation:

Positive result was indicated by definite clumping while in case of negative reaction, mixture remained homogeneous without formation of any clumps.

### Results and Discussion

Seroprevalence of *Mycoplasma* antibodies was studied for 200 serum samples of goats by SAT using colored antigen of *M. mycoides subsp. capri* (Table 2).

Table-1. Details of serum samples collected for serological test

Area/Regions		Goats	Total
Central Gujarat	Anand	140	140
South Gujarat	Navasari	45	45
	Valsad (Vapi)	15	15
Total		200	200

Table-2. Result of serodetection of Mycoplasmal Antibodies in Goats by SAT

Area/Regions		No. of serum samples tested	No. of serum samples positive	Percentage
Central Gujarat	Anand	140	46	32.85
South Gujarat	Navasari	45	30	66.66
	Valsad (Vapi)	15	9	60.66
Total		200	85	42.50

A serum sample showing clumps was considered as a positive while serum sample showing homogenous suspension without clumps was considered as negative.

In the present study 200 serum samples from goats having respiratory distress were studied. Overall prevalence of *Mycoplasma* antibodies in the serum of goats as detected in the present study employing SAT (Colored antigen of *M. mycoides* subsp. *capri*) was 42.50 %.

Similar finding were also recorded by Ingle et al. (2008) 33.14 % by SAT in goats of Nagpur district (India) and Eshetu et al. (2007), Hadush et al. (2009) reported 31 % and 32.68 % seroprevalence in goats of Ethiopia, positive for Mycoplasmal antibodies by complement fixation test (CFT).

Ghosh et al. (1989) reported 9-63 % seroprevalence for Mycoplasmal antibodies in goats of different districts of Tripura state.

Higher prevalence of *Mycoplasma* antibodies was also detected by Agarwal et al. (2007) 68.20 % by SAT in goats of Kumaon and Garhwal region while Rana et al. (2009) reported 97 % and 78 % seroprevalence by latex coated *Mycoplasma mycoides* subsp. *capri* colored antigen and by indirect ELISA respectively in goats of Mathura (India).

Low prevalence of *Mycoplasma* antibodies was recorded by Srivastava and Singh (2000) 4.97 % in goats of U.P. while Ramdeva et al. (2008) recorded 5.08 % seroprevalence in goats of Himachal Pradesh by SAT and Sajjad-ur- Rahman et al. (2006) recorded 7.3 % and 1.6% seroprevalence by CIE and IHA respectively in goats of Pakistan.

The present finding indicates endemicity of the infection in various areas of Gujarat state and hence appropriate steps is required for regular screening, therapeutics and prophylactic measures for containment of the disease.

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