SEROPREVALENCE OF PPR IN GOATS IN KERALA BY cELISA*

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Abstract

Seroprevalence of PPR in goats of Kerala was studied using competitive ELISA. Four hundred and twelve samples were collected from all districts of Kerala and were subjected to cELISA for detecting antibodies against PPR infection. Sixty four samples (15.05 per cent) were found positive for PPR antibodies, which could be due to the increased movement of animals from neighbouring states.

Key words : *PPR, cELISA, goat*

Peste des petits ruminants (PPR) is one of the economically important diseases of sheep and goats. It is a severe, fast spreading viral disease mainly of domestic small ruminants. The disease is characterised by the sudden onset of depression, fever, discharges from the eyes and nose, sores in the mouth, dyspnoea, cough, foul smelling diarrhoea and death. Laboratory diagnosis of PPR can be done by virus isolation or by the detection of antigen or antibody. Sensitivity and specificity of ELISA in detecting antibodies is more than that of other serological tests. The present paper describes the use of competitive ELISA (cELISA) for the detection of antibodies of PPR.

Materials and Methods

Competitive ELISA for detection of PPR antibodies was performed as per the method of Singh *et al*. (2004) using Competitive ELISA kit purchased from IVRI, Mukteswar. The cELISA test is based on the inhibition of binding of monoclonal antibody to antigen in the presence of PPR antibody present in field sera.

Procedure: Fifty microlitres each of diluted PPR antigen (1: 100) was added to all the wells of a 96 well microtitre ELISA plate for coating and incubated at 37°C for one hour in an orbital shaker. After one hour of incubation the plates were washed three times with wash buffer. Then 40 µl each of blocking buffer was added to all the wells, 20 µl to monoclonal antibody control wells and 60 µl to the conjugate control wells and added 20 µl of each test serum sample in a set of two wells. Added 20 µl of each of strong positive serum, weak positive serum and negative serum to the respective control wells. Added 40 µl of diluted monoclonal antibody to each well of the plate except the conjugate control wells. Incubated the plates at 37°C for one hour in an orbital shaker.

After one hour of incubation and repeated washing, added 50 µl each of diluted antimouse conjugate (1: 1000) to all the wells. Repeated the washing step after one hour of incubation and added 50 µl of orthophenylene diamine and hydrogen peroxide mixture in each well of the plate.

Incubated the plates for 10 to 20 min at 37°C without shaking. After the colour development in the control wells, added 50 µl

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of stopping solution to each well of the plate.

Test sera demonstrating mean Percentage Inhibition (PI) values of 40 per cent or greater were considered as positive

Results and Discussion

The results revealed a seroprevalence of 15. 05 per cent for PPR in goats of Kerala. Out of 412 sera samples tested 64 samples were positive by cELISA. Sreeramulu (2000) reported a high specificity (99 per cent) and sensitivity (90 per cent) of cELISA for differential diagnosis of Rinderpest and PPR. The preliminary serological study of PPR in Kerala by Sunilkumar *et al.* (2005), using cELISA, revealed a prevalence rate of 0.93 per cent among 536 goat sera samples tested. The high prevalence rate reported in the present study could be attributed to the increased animal movement from neighbouring states. Krishna *et al*. (2001) and Dorairajan *et al*. (2006) reported significant seroprevalence of PPR in small ruminants of Andhra Pradesh and Tamil Nadu respectively. As reported by Kumar *et al*. (1999) natural focus of PPR infection continues to be in the southern states of India. The high prevalence rate reported in the present study indicates the need for a regular monitoring and vaccination programme for this disease in Kerala.

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