

## ORIGINAL ARTICLE

# Outbreak of PPR in an Organised Goat Farm in Theni District of Tamilnadu

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### ABSTRACT

*A Peste des petits ruminant (PPR) is an acute, febrile, highly contagious and infectious disease of goats along with high morbidity and mortality. The present study was conducted to determine the prevalence, clinical symptoms and response to treatment in terms of breed, age, sex and vaccination status in PPR affected goats in an organized goat farm which comprised of Kanniadu, Boer-Tellicherry cross and non descript (ND) breeds of goats in Theni District of Tamil Nadu. Totally 180 goats were examined during the investigation period, of which 99 were affected with PPR. Based on detailed history, clinical examination and symptoms the disease was diagnosed as PPR. The results revealed that ND goat was more susceptible (63%) to PPR than Boer-Tellicherry crossbred (61%) and Kanniadu (43%). Young animals (4 to 12 months of age) were more prone (69%) to PPR than adult animals (40%) and kids (35%). Female goats were proportionately more susceptible (56%) to PPR than male goats (53%). Non-vaccinated goats were more susceptible (63%) to PPR than vaccinated goats (22%). Parenteral (I/M) use of Ceftiofur Sodium was clinically effective (92%).*

**Key words:** Peste des petits ruminants (PPR), Goats, Breed, Age, Sex, Prevalence, Treatment

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### INTRODUCTION

Peste des petits ruminants (PPR) is an acute, highly contagious and economically important transboundary viral disease of sheep and goats with variable rates of morbidity and mortality that can reach up to 100% and 90%, respectively [1,2]. It is a highly contagious, infectious and fatal viral disease of small ruminants [3,4]. Other names commonly used includes, pseudo rinderpest of small ruminants; pest of small ruminants; goat plague; pest of sheep and goat; stomatitis pneumoenteritis syndrome; contagious pustular stomatitis and pneumoenteritis complex [5]. The clinical disease is characterised by pyrexia, oculo-nasal discharge, necrotising and erosive stomatitis, pneumonia and enteritis [6]. PPR outbreaks can affect an entire flock with 70% to 90% mortality [7]. However, these levels may differ in enzootic areas where some older animals may have survived an earlier infection. Outbreaks are relatively more common in goats than in sheep in northern India [8]. In India, PPR was first recorded in the Tamil Nadu state during 1987 and was later an epidemic in northern India. At present, PPR is enzootic in India and outbreaks occur regularly among small ruminants throughout the country incurring significant economic losses in terms of morbidity, mortality, and loss of productivity [9, 10]. The present paper discusses about an outbreak of PPR in an organised goat farm in Theni district of Tamil Nadu.

### MATERIALS AND METHODS

#### Study area

The study was carried out to study the incidence of PPR in different breeds of goats and their response to antibiotic treatment in an organized goat farm in Theni district of Tamil Nadu.

#### Study Population

About 180 goats were taken for the study. Among them, 65 Kanniaadu, 85 Boer tellicherry crossbreds and 30 ND breeds of goat were affected with PPR. Among 180 goats 48-goats were adults (more than 1 year), 98 goats were young (4-12 months of age) and 34 were kids (up to 3 months of age). Among 180 goats, 116 were females and 64 were males. Diagnosis was made by means of history, examination and clinical

signs. The total affected cases were divided into different categories such as breed, age, sex and vaccination status.

### TREATMENTS

The affected goats were treated with injection Ceftiofur sodium 1mg/kg BW, Pheneramine melete @ 1mg/kgBW and Meloxicam 1ml/animal for three days continuously.

### RESULTS

A total 180 goats of three different breeds were taken for the study, of which morbidity in Kanniaadu was 43%, Boer tellicherry crossbreds was 61% and ND was 63 %. The incidence of PPR in different age groups viz. adults, young and kids was 40%, 69% and 35%, respectively. The incidence in female goats was 56% and 53% in male goats. The incidence in vaccinated goats was 22% and 63% in non vaccinated goats. The percentage of response to treatment by parenteral (I/M) Ceftiofur sodium along with symptomatic treatment was 91.9%.

**Fig 1: Clinical symptoms of PPR in Goats**



**Table 1: Prevalence of PPR in Goats**

	Category	No. of Animals	PPR Positive	PPR Negative	Prevalence (%)
<b>Breed</b>	Kanniaadu	65	28	37	43
	Boer tellicherry crossbreds	85	52	33	61
	ND breeds of goat	30	19	11	63
<b>Age group</b>	Adults (more than 12 months of age)	48	19	29	34
	Young ones (4 to 12 months of age)	98	68	30	69
	Kids (up to 3 months of age)	34	12	22	35
<b>Sex</b>	Male	64	34	30	53
	Females	116	65	50	75
<b>Immunological status / Vaccination status</b>	Vaccinated	55	20	35	37
	Non-Vaccinated	125	79	46	63
<b>Response to treatment</b>		-	91/99	-	91.9

### DISCUSSION

#### Breed -wise Prevalence of PPR in Goats

The morbidity rate of PPR in the farm was 55%. Similar incidence of PPR (51%) was previously reported [11] in Mymensingh district of Bangladesh. Conversely, the finding of this study was lower than the incidence of 90% reported in Al-Ahsa oasis in eastern Saudi Arabia in 1988. In this study the breed wise morbidity rate was 43% in Kanniaadu, 61% in Boer tellicherry crossbreds and 60% in ND breeds of goats. Earlier study reported lesser morbidity rate in Tellicherry goats [12]. It is difficult to draw clear inference for changes of prevalence because the rate of incidence involves so many ecological and immunological factors.

**Age-wise prevalence**

This study shows that among the age groups, the young goats which were 4 to 12 months of age were the most susceptible to PPR (69%). Similar prevalence of PPR (60.87%) reported in young age groups [13,14]. Earlier reporter [10] also assessed that the disease is more prevalent in the goats less than one year of age. The increased susceptibility of young goats to PPRV might be due to malnutrition, poor immunity and poor management systems [15].

**Sex-wise prevalence**

The study shows that prevalence of PPR in female was little bit higher than male goats which is supported by previous workers [13, 16] who reported that the prevalence of PPR in female goats was more (40%) than the male goats (38%). Moreover the sex-wise prevalence was not significantly different and this finding also agrees with earlier findings that the sex of the animals had no effect on the development of PPRV antibodies [17].

**Prevalence based on immunological status/Vaccination status**

Prevalence of PPR was varied significantly based on the immunological status/ vaccination status of the animals. The result of the present study is supported by early reporter [18,13] who noted the prevalence of 66.40% in non-vaccinated goats compared to 19.56% in vaccinated goats. However, vaccination against the disease leads to decrease in the incidence, but may not guarantee for recurrence.

**Response to treatment**

Mortality rate may be decreased by the use of antibiotics; Especially Ceftiofur sodium is recommended to prevent secondary pulmonary infections. The antibiotic used in the present study has given better result than other antibiotics used earlier for the same purpose namely Oxytetracycline (57- 64%), Sulfonamide (28%) and Sulphadimidine (42%) (13,12,18).

**CONCLUSION**

PPR is a highly contagious disease with higher mortality and morbidity in goats. In this study it is revealed that goats are susceptible irrespective of breed and sex, but differs significantly in relation to age and vaccination status of the animal. Although, there is no specific treatment against virus, early diagnosis, control of respiratory infection and supportive therapy might be helpful in controlling the incidence of PPR in goats.

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