



ISSN: 2456-2912

NAAS Rating (2025): 4.61

VET 2025; 10(12): 360-362

© 2025 VET

www.veterinarypaper.com

Received: 02-09-2025

Accepted: 05-10-2025

K Usha Sree

PhD Scholar, Department of
Veterinary Medicine, College of
Veterinary Science,
Rajendranagar, Hyderabad,
Telangana, India

K Padmaja

Professor and University Head,
Department of Veterinary
Medicine, College of Veterinary
Science, Rajendranagar,
Hyderabad, Telangana, India

K Lakshmi

Professor, Department of
Veterinary Clinical complex,
College of Veterinary Science,
Rajendranagar, Hyderabad,
Telangana, India

Corresponding Author:

K Usha Sree

Department of Veterinary
Medicine, College of Veterinary
Science, Rajendranagar,
Hyderabad, Telangana, India

Prevalence of bacterial and mycoplasma pneumonia in goats affected with pneumonia in and around Hyderabad and Orvakal of Andhra Pradesh

K Usha Sree, K Padmaja and K Lakshmi

DOI: <https://www.doi.org/10.22271/veterinary.2025.v10.i12f.2841>

Abstract

The present investigation titled was carried out from January 2024 to January 2025 on goats presented to the Veterinary Clinical Complex, Rajendranagar, Veterinary Ambulatory Clinic, Mylardevpally, certain goat flocks located in and around Hyderabad and Orvakal Mandal, Andhra Pradesh. A total of 3025 goats were screened during the study period, of which 492 (16.25%) were confirmed to have bacterial pneumonia based on cultural examination of nasal swabs. Mycoplasma pneumonia was detected in 75 goats (2.48%) using the Slide agglutination test, and 20 goats were further confirmed by PCR targeting the 16S rRNA gene.

Keywords: PCR, Slide agglutination test, cultural examination

Introduction

Goats play a crucial role in the socioeconomic life of rural communities, particularly in less favoured regions globally. In India, goat farming focuses on meat and milk production, especially among marginal farmers. Diseases pose a significant challenge to profitable goat farming, often leading to farmer disinterest due to economic losses, particularly fatal respiratory ailments affecting goats of all ages (Hota *et al.* 2024) ^[7].

Small ruminant respiratory diseases are complex, with bacterial infections being particularly harmful due to diverse symptoms, evolving strains, disease severity, lack of vaccines, and antibiotic resistance. Common bacterial agents include *Mannheimia haemolytica*, *Streptococcus pneumonia*, *Klebsiella pneumonia*, *Escherichia coli*, *Staphylococcus aureus*, *Bacillus species*, *Pseudomonas spp.*, *Proteus spp.*, etc. (Kumar *et al.* 2020; Hashem *et al.* 2022) ^[12]. These respiratory diseases constitute 5.6% (Kumar *et al.* 2014) ^[11] and 3.64% Hota *et al.*, (2024) ^[7] of all goat diseases, and the severity is often influenced by environmental stress, immunosuppression, poor management practices, and other predisposing factors

Different species and subspecies of *Mycoplasma* are involved in causation of respiratory infections in small ruminants. *Mycoplasma capricolum subsp. capripneumoniae (Mccp)* affects lungs and causes contagious caprine pleuropneumonia (CCPP) principally in goats and occasionally in sheep and wild ruminants. *Mycoplasma mycoides subsp. capri* causes pleuropneumonia, arthritis and conjunctivitis mainly in goats. *Mycoplasma capricolum subsp. capricolum* is associated with pleuropneumonia, mastitis, arthritis and conjunctivitis in goats and sheep. *Mycoplasma agalactiae* is reported to be associated with mastitis, arthritis, keratoconjunctivitis, pleuropneumonia, infectious agalactia and sometimes abortion.

Results

Goats presented with history and clinical signs of dullness, anorexia, sneezing, bilateral nasal discharges, pyrexia, dyspnoea suggestive of pneumonia excluding viral etiology basing on classical clinical signs (PPR, Pox) were selected, examined and further subjected to detailed study.

During the present study, a total of 3025 goats were screened that were presented to the Veterinary Clinical Complex, College of Veterinary Science, Rajendranagar (2085), Veterinary Ambulatory clinic at Mylardevpally (760), flocks around Hyderabad (150) and a flock at Orvakal mandal of Andhra Pradesh state (30). Out of these, 492 cases were diagnosed with bacterial pneumonia, based on cultural examination of nasal swabs with an overall occurrence of 16.25%. While, 75 (2.48%) were positive for mycoplasma pneumonia in serum agglutination test using coloured antigen. Among which 20 cases were confirmed for mycoplasma pneumonia through PCR. The occurrence of pneumonia both bacterial and mycoplasma in goats presented to Veterinary Clinical Complex, Veterinary Ambulatory clinic, Mylardevpally, flocks around Hyderabad and flocks at Orvakal mandal of Andhra Pradesh were 81.70, 10.16, 4.07 and 4.07 and 73.33, 6.66, 20.00 and 0 percent, respectively.

Discussion

Out of 492 diagnosed with bacterial pneumonia, based on isolation and identification of bacteria from nasal swabs with an overall occurrence of 16.25%, that is in close agreement with Trupti *et al.* (2020) [22] recorded an overall prevalence of bacterial pneumonia in goats as 20.0%. In contrary, Ibrahim *et al.* (2016) [8] documented the overall prevalence of bacterial pneumonia in goats as 48.75%. The difference in prevalence of pneumonia in different places may be due to the various factors affecting the cause of pneumonia in goats like environmental stress, immunosuppression, and poor managemental practices. These factors vary differently in different places and can be attributed the occurrence of bacterial pneumonia at 16.25% in the present study.

In the present study the overall occurrence of mycoplasma pneumonia by slide agglutination test was at 2.48% that is closer to the findings of Ramdev *et al.*, 2008 [16], who documented as 5.02% in goats. Similarly, Getachew *et al.*, 2025 [5] and Ashagire *et al.*, 2024 [1] recorded CCPP in goats as 4.7% and 6.7% through ELISA. In contrast the seroprevalence of CCPP by SAT at 33.67% and 42.5% was observed by Ingle *et al.*, 2008 and Roy *et al.*, 2008 in different places in India.

The overall seroprevalence of mycoplasma pneumonia detected by PCR was at 0.66% while, Rehman *et al.*, 2022 [17] recorded at 6%. In contrast the prevalence of mycoplasma pneumonia was found to be at 22% by Khodakaram-Tafti *et al.*, 2023 [9], 20.24% by Suryawanshi *et al.*, (2015) [19]. In contrary, Deepika *et al.* (2023) [2] documented prevalence of mycoplasma pneumonia by PCR as 55.91% and Sumith *et al.* (2021) [18] as 71.4%. The variation in prevalence of mycoplasma pneumonia in goats in various regions could be due to geographical variations as environmental stress; hot and humid climate that favors the precipitation of this disease.

In the present study, a proportion of goats exhibiting respiratory signs were positive for *Mycoplasma* antibodies by Slide Agglutination Test (SAT) but negative by PCR. This discrepancy can be attributed to the fundamental differences between the two diagnostic techniques. SAT detects circulating antibodies, which may persist for weeks to months following natural infection or exposure, even after the organism has been cleared (OIE, 2021). Conversely, PCR detects *Mycoplasma* DNA and is dependent on the presence of sufficient organism load in the sample. In chronic cases or during the convalescent stage, bacterial shedding may be intermittent or at very low levels, leading to PCR false negatives (Ghanem *et al.*, 2015; Nicholas *et al.*, 2008) [6, 14].

Additionally, SAT may yield false positives due to cross-reactivity with antibodies against other *Mycoplasma* species (Thiaucourt *et al.*, 2000) [21]. Similar observations have been reported by earlier workers, emphasizing that SAT-positive and PCR-negative animals may either represent past exposure, chronic carriers with low organism load, or cases where respiratory signs are attributable to other bacterial pathogens (Saleh and Allam, 2014; Das *et al.*, 2015) [20, 2].

Conflict of Interest

Not available

Financial Support

Not available

Reference

1. Ashagrie M, Tadesse B, Abebe E, Yasine A. Seroprevalence and associated risk factors of contagious caprine pleuropneumonia in selected districts of South Wollo Zone, Northeast Ethiopia. BMC Vet Res. 2024;20(1):317-317.
2. Das S, Nath R, Balamurugan V, Choudhury R, Devi M. Haemato-biochemical analysis of goats naturally infected with peste des petits ruminants. Int J Res Emerg Sci Technol. 2015;2(9):19-24.
3. Deepika R, Vijayalakshmi S, Nagendra Reddy T, Siva Swetha C. Molecular detection of non-*Mycoplasma mycoides* cluster organisms in respiratory infections of sheep and goats. Pharma Innov J. 2023;12(8):300-304.
4. Dhayagude V, Bhupesh K, Abhijit B, Jayanth S, Divya S, Uma T, et al. Pathological and molecular diagnosis of contagious caprine pleuropneumonia in naturally infected goats from Maharashtra, India. Emerg Anim Species. 2023;7:100024-100024.
5. Getachew M, Tora E, Mohammed N, Benti T. Contagious caprine pleuropneumonia: Seroprevalence and risk factors in goats in Derashe Zone, Southern Ethiopia. Immun Inflamm Dis. 2025;13(9):e70257-e70257.
6. Ghanem MM, Yousif HM, El-Ghany AAH, El-Raof AYM, El-Attar HM. Evaluation of pulmonary function tests with hemato-biochemical alterations in Boer goats affected with *Klebsiella pneumoniae*. Benha Vet Med J. 2015;29(1):53-62.
7. Hota P, Acharya AP, Mishra C, Kerry RG, Sahoo B, Panda SK. Investigating respiratory health challenges in Ganjam goats: An in-depth study in Odisha, India. Proc Indian Natl Sci Acad. 2024;90(4):956-971.
8. Ibrahim NA, Al-Gedawy A, Fawzy M, Elnaker YF. Studies on bacterial causes of respiratory manifestations in small ruminants. Glob Vet. 2016;17(4):295-302.
9. Khodakaram-Tafti A, Derakhshandeh A, Daee AA, Seyedin M. Identification of *Mycoplasma capricolum* subsp. *capripneumoniae* and *Mycoplasma arginini* by culture, PCR and histopathology in pneumonic lungs of slaughtered goats in Mashhad, Iran. Iran J Vet Res. 2023;24(2):96-102.
10. Kumar G, Gupta DK, Singh RS. A retrospective study of goat cases presented at the University Multispeciality Teaching Veterinary Clinical Complex-cum-Hospital, Ludhiana. Indian J Vet Med. 2004;43(1):45-55.
11. Kumar A, Tikoo SK, Malik P, Kumar AT. Respiratory diseases of small ruminants. Vet Med Int. 2014;2014:373642-373642.
12. Kumar R, Ali SA, Singh SK, Bhushan V, Mathur M,

- Jamwal S, et al. Antimicrobial peptides in farm animals: An updated review on diversity, function, modes of action and therapeutic prospects. *Vet Sci*. 2020;7(4):206-206.
13. Kumar J, Singh S, Sheikh TJ, Singh S, Singh AK, Kumar D, et al. Prevalence and haemato-biochemical changes in different pulmonary affections in goats of Baghelkhand region of Madhya Pradesh. *Haryana Vet J*. 2024;62(1):8-12.
 14. Nicholas RAJ, Ayling RD, McAuliffe L. *Mycoplasma diseases of ruminants*. Wallingford: CABI Publishing; 2008.
 15. World Organisation for Animal Health (WOAH). *OIE terrestrial animal health manual*. Paris: WOAH; 2021. Available from: <https://www.woah.org>
 16. Ramdeva J, Sharma M, Katoch VC, Dhar P, Chahota R. Seroprevalence of mycoplasmosis in sheep and goats of Himachal Pradesh. *Indian J Small Rumin*. 2008;14(2):276-278.
 17. Rehman FU, Khan FA, Saeed M, Ali M, Khan H, Ahmad F, et al. Clinicopathological and sero-molecular detection of *Mycoplasma capricolum* subsp. *capripneumoniae* in goats in Southern Pakistan. *Vet Med Int*. 2022;2022:1-11.
 18. Sumith KS, Umesh CG, Ravishankar C, Manju KM, Ajith Kumar S. Evaluation of therapeutic efficacy of oxytetracycline against caprine respiratory mycoplasmosis using clinical score card method. *J Vet Anim Sci*. 2021;52(4):331-334.
 19. Suryawanshi SN, Tembhurne PA, Gohain S, Kesharkar JA, Tumlam UM, Ingle VC. Seroprevalence of contagious caprine pleuropneumonia in small ruminants in Maharashtra. *Indian J Vet Sci Biotechnol*. 2015;10(4):73-74.
 20. Saleh NS, Allam TS. Pneumonia in sheep: Bacteriological and clinicopathological studies. *Am J Res Commun*. 2014;2(11):73-88.
 21. Thiaucourt F, Bölske G, Leneguersh B, Smith D, Wesonga H. Diagnosis and control of contagious caprine pleuropneumonia. *Rev Sci Tech*. 2000;19(3):493-508.
 22. Trupti SK, Ravindra BG, Vivek RK, Halmandge SC, Patil NA. Prevalence of pneumonia in goats in and around Bidar. *Pharma Innov J*. 2020;9(1):250-252.

How to Cite This Article

Sree KU, Padmaja K, K Lakshmi K. Prevalence of bacterial and mycoplasma pneumonia in goats affected with pneumonia in and around Hyderabad and Orvakal of Andhra Pradesh. *International Journal of Veterinary Sciences and Animal Husbandry*. 2025; 10(12): 360-362.

Creative Commons (CC) License

This is an open-access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 International (CC BY-NC-SA 4.0) License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.