International Journal of Zoology Studies
www.zoologyjournals.com
ISSN: 2455-7269
Received: 13-04-2026, Accepted: 14-05-2026, Published: 29-05-2026
Volume 11, Issue 2, 2026, Page No. 102-104

# Studies on seasonal incidence of gastrointestinal cestodes in goats *Capra hircus* from Nanded District of Maharashtra

**Pooja Mahajan Kadam[1], Dhanraj Balbhim Bhure[2*]**
[1] Research Scholar, Department of Zoology, Yeshwant Mahavidyalaya, Nanded, Maharashtra, India
[2*] Research Supervisor, Department of Zoology, Yeshwant Mahavidyalaya, Nanded, Maharashtra, India

**Abstract**
The present investigation was conducted from February 2025 to January 2026 to evaluate the seasonal incidence of cestode infections caused by *Moniezia* sp. and *Stilesia* sp. in *Capra hircus* (domestic goat) from different regions of Nanded district, Maharashtra, India. A total of 120 goat intestines were examined for cestode infections, of which 42 were found infected, resulting in an overall prevalence rate of 35.0%. Seasonal analysis revealed the highest prevalence during the monsoon season (55.0%), followed by winter (40.0%), whereas the lowest prevalence was recorded during summer (10.0%). A total of 94 cestode parasites belonging to *Moniezia* sp. and *Stilesia* sp. were recovered during the study period. Collected specimens were processed using standard parasitological techniques involving fixation in hot 4% formalin, Borax carmine staining, dehydration, clearing, and permanent mounting in DPX medium for taxonomic identification. The higher prevalence observed during the monsoon season may be attributed to favorable environmental conditions such as increased humidity, moderate temperature, and enhanced survival of infective stages and intermediate hosts. The findings indicate that climatic conditions significantly influence the transmission dynamics of cestode parasites in goats. The study emphasizes the importance of implementing season-specific parasite control strategies to reduce economic losses and improve goat health management in the region.

**Keywords:** Seasonal Incidence, Cestode parasites, *Capra hircus*, *Moniezia* sp., *Stilesia* sp., Monsoon season, Nanded District.

## Introduction

Goat rearing is one of the most important livestock-based occupations in India and contributes significantly to the rural economy by providing meat, milk, skin, manure, and regular income to farmers. *Capra hircus* (domestic goat) is one of the most adaptable livestock species. Cestodes such as *Moniezia* sp. And *Stilesia* sp. are commonly found in goats and are responsible for reduced growth, weight loss, poor feed utilization, anemia, and decreased disease resistance. The prevalence and transmission of cestode infections are greatly influenced by environmental and climatic factors including temperature, humidity, rainfall, and grazing conditions. Seasonal changes affect the survival and development of infective stages and intermediate hosts, particularly oribatid mites, which play an important role in the life cycle of cestodes. Monsoon conditions with high humidity and moderate temperature provide favorable conditions for the survival of infective stages, leading to increased infection rates among grazing goats. In contrast, high temperature and dry environmental conditions during summer reduce parasite survival and transmission.

Several studies have reported seasonal variation in gastrointestinal helminth infections in goats from different parts of India. Kennedy (1976) emphasized the influence of ecological factors on parasite prevalence, while Pawade et al. (2011) and Bhure et al. (2017) reported higher prevalence of cestode infections during the rainy season in Maharashtra. Similar observations were also made by Katoch et al. (2000), Yadav et al. (2006), and Varadharajan and Vijayalakshmi (2015).

The present study was therefore undertaken to investigate the seasonal incidence of cestode parasites, particularly *Moniezia* sp. And *Stilesia* sp., in *Capra hircus* from different regions of Nanded district, Maharashtra, during February 2025 to January 2026.

## Material and Method

**Study Area:** The present study was carried out in different localities of Nanded district, Maharashtra, India, from February 2025 to January 2026. The region experiences three major climatic seasons: summer, monsoon, and winter.

**Collection and Examination of Samples:** A total of 120 intestines of *Capra hircus* were collected and examined for cestode infections during the study period. Seasonal distribution of examined hosts was maintained equally, with 40 goat samples examined in each season. The intestines were carefully dissected in the laboratory, and cestode parasites were recovered manually. The collected parasites were washed thoroughly in normal saline solution to remove debris and mucus.

**Preservation and Identification:** Recovered cestodes were fixed in hot 4% formalin and subsequently stained with Borax carmine stain. The stained specimens were dehydrated through ascending grades of alcohol, cleared in xylene, and permanently mounted in DPX mounting medium. Taxonomic identification of cestodes was carried out using standard morphological and taxonomic keys based on diagnostic characters.

**Data Analysis:** The prevalence of infection was calculated using the following formula:

$$\text{Prevalence (\%)} = \frac{\text{Number of infected hosts}}{\text{Total number of hosts examined}} \times 100$$

Seasonal prevalence rates were compared to determine variations in infection patterns among summer, monsoon, and winter seasons.

## Result & Discussion

The seasonal prevalence of cestode infections in *Capra hircus* is presented in Table 1.

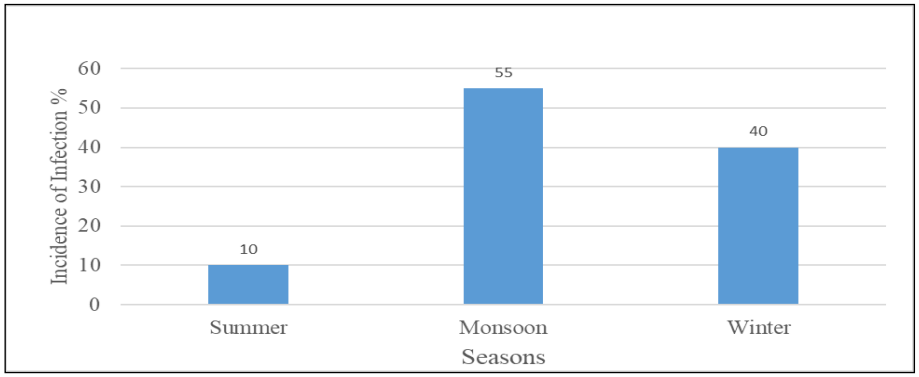
Out of 120 goats examined during the study period, 42 were infected with cestode parasites, resulting in an overall prevalence rate of 35.0%. A total of 94 cestode parasites were recovered from infected hosts.

The highest prevalence of infection was observed during the monsoon season, where 22 out of 40 goats were infected, yielding a prevalence rate of 55.0% and a total recovery of 56 parasites. Winter season showed moderate infection levels, with 16 out of 40 goats infected (40.0%) and 28 parasites collected. The lowest prevalence was recorded during summer, where only 4 out of 40 goats were infected (10.0%) with 10 parasites recovered.

These findings indicate a marked Seasonal incidence in cestode infection among goats in the study area.

**Table 1:** Seasonal incidence of Cestode parasite in *Capra hircus* during February 2025 to January 2026 from different parts of Nanded district (MH), India

| Season | Months | No. of Hosts Examined | No. of Hosts Infected | Total Parasites Collected | Prevalence (%) |
|---|---|---|---|---|---|
| Summer | February–May 2025 | 40 | 04 | 10 | 10.0 |
| Monsoon | June–September 2025 | 40 | 22 | 56 | 55.0 |
| Winter | October 2025–January 2026 | 40 | 16 | 28 | 40.0 |
| Total | — | 120 | 42 | 94 | 35.0 |




**Graph 1:** Seasonal incidence of Cestode parasite in *Capra hircus* during February 2025 to January 2026 from different parts of Nanded district (MH), India

## Discussion

The present investigation demonstrated significant Seasonal incidence in cestode infections among *Capra hircus* in the Nanded district. The prevalence was highest during the monsoon season, followed by winter, while the lowest prevalence was recorded during summer.

The increased prevalence of *Moniezia* sp. and *Stilesia* sp. during the monsoon season may be associated with high humidity, moderate temperature, and favorable environmental conditions supporting the survival of oribatid mites, which serve as intermediate hosts for these cestodes. During rainy periods, grazing fields remain moist and contaminated, increasing the possibility of infection among grazing goats.

The lower prevalence observed during summer may be attributed to elevated temperatures and dry environmental conditions, which adversely affect the survival of infective stages of parasites.

The findings of the present study are in agreement with the observations of Kennedy C. R. (1976) [3], who reported that climatic factors such as temperature, rainfall, humidity, host feeding behavior, and availability of susceptible hosts play a crucial role in determining parasite prevalence.

Similarly, Pawade V. R. *et al*. (2011) [4] reported Seasonal incidence in *Moniezia* infections in goats from Ahmednagar district, Maharashtra. The present results are also consistent with the findings of Dhanraj Balbhim Bhure *et al*. (2017) [1], who observed maximum prevalence of *Avitellina* species during the rainy season.

Comparable seasonal patterns have also been reported by Yadav A. J. K. *et al*. (2006) [6], Varadharajan A. and Vijayalakshmi R. (2015) [5], and Katoch R. *et al*. (2000) [2], who documented higher prevalence of gastrointestinal helminths during monsoon and winter seasons compared to summer.

Overall, the study highlights the influence of climatic and ecological factors on the epidemiology of cestode infections in goats.

## Conclusion

The present study concludes that infections caused by *Moniezia* sp. and *Stilesia* sp. in *Capra hircus* from Nanded district exhibit clear seasonal variation. The prevalence was highest during the monsoon season, moderate during winter, and lowest during summer. Environmental factors such as humidity, rainfall, temperature, and grazing conditions appear to significantly influence the transmission and survival of cestode parasites. The findings suggest that strategic deworming and parasite control programs should be intensified before and during the monsoon season to minimize infection rates and economic losses in goat farming. This study provides valuable epidemiological information for developing effective seasonal parasite management strategies in goats in the Nanded region.

**Acknowledgement**
The authors sincerely thank the Principal, Yeshwant Mahavidyalaya, for providing laboratory facilities throughout the course of the study. PMK is also grateful to SARTHI for financial assistance.

**References**
1. Bhure DB, Nanware SS, Pawar RG. Studies on prevalence of cestode parasite *Avitellina* Gough, 1911 from *Capra hircus* L. Asian Journal of Agriculture and Life Sciences,2017:2(3):40–42.
2. Katoch R, Chauhan PPS, Johri DK. Seasonal incidence of gastrointestinal nematodes in goats of Mathura region. Indian Veterinary Journal,2000:77:259–260.
3. Kennedy CR. Ecological Aspects of Parasitology. Amsterdam: North-Holland Publishing Company, 1976.
4. Pawade VR, Pulate VM, Bhagwan HK. Seasonal Incidence of *Moniezia* (Blanchard) in *Capra hircus* at Sangamner region, Ahmednagar district (M.S.), India. International Multidisciplinary Research Journal,2011:1(8):21–23.
5. Varadharajan A, Vijayalakshmi R. Prevalence and seasonal occurrence of gastrointestinal parasites in small ruminants of coastal areas of Tamil Nadu. International Journal of Advanced Research in Biological Sciences,2015:2(2):21–25.
6. Yadav AJK, Khajuria JK, Raina AK. Seasonal prevalence of gastrointestinal parasites in sheep and goats of Jammu. Journal of Veterinary Parasitology,2006:20(1):65–68.