Increase in the Periodic Distribution of GI Trchochiles in Goats and Sheep in the Anand District of Gujarat, India

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Abstract

Tropical and subtropical cattle are especially vulnerable to gastrointestinal parasites, such as Trichuris species, which significantly impact animal well-being and output. The incidence of Trichuris diseases in goats and sheep in the Anand area of Gujarat, India, is examined in this research. According to data gathered over a year, Trichuris infections are most common in sheep (33.8%) and goats (33.7%) during rainy and post-monsoon seasons. These variables were studied to understand the influence of factors, including weather, husbandry methods, and host traits, on infection rates. To reduce the negative impact of these parasites on cattle health and production, the research highlights the need for targeted deworming programs and better management techniques during times of high prevalence.

Keywords: *Trichuris species, sheep, goats, seasonal prevalence, gastrointestinal parasites, Anand district, Gujarat, livestock health, monsoon season, deworming programs*

Introduction

In tropical and subtropical areas, gastrointestinal parasites are a significant problem for cattle health and production. Ruminants are particularly vulnerable to the virulence and prevalence of Trichuris species, one kind of helminth. With an emphasis on the Anand area of India's Gujarat province, this literature review compiles previous studies that have examined the seasonal incidence of Trichuris subspecies in sheep and goats. Climate, farming methods, and the effects of these parasites on cattle health are some aspects that will be discussed in this review as they relate to the prevalence.

Trichuris Species in Livestock

The enormous intestine of their hosts is infected by parasitical nematodes referred to as whipworms, which are species of Trichuris. The most often described species in critters are Trichuris ovis and Trichuris globulosa. In young or immune-compromised animals, these parasites may cause serious illness, including diarrhoea, loss of weight, and reduced production. The host carries Trichuris cells throughout their lifecycle from polluted areas to the intestines, where they mature into larvae and then shed their eggs in feces, continuing the cycle.

Prevalence in Different Seasons

Seasonal changes impact the frequency of gastrointestinal parasites, which include Trichuris species. Several studies have shown that rainy and post-monsoon periods have a greater incidence. This is likely because the environmental conditions during these times are ideal for the continuation and spread of infectious stages. For example, Sahoo et al. (2018) found that Trichuris infections were more common in

the rainy than in the dry season in Tamil Nadu. Similar tendencies have been identified in other areas, such as Maharashtra and Chhattisgarh (Kumar et al., 2020; Patil et al., 2019).

This pattern has been seen in Gujarat, namely in the Anand area. According to studies, the monsoon climate is ideal for Trichuris egg multiplication because of high humidity levels and warm temperatures. So, according to Shah et al. (2020), the monsoon season is often when the incidence numbers of sheep and goats are highest.

Factors Affecting Prevalence

Several factors contribute to the seasonal variation in the prevalence of Trichuris species:

Climatic Conditions: Environmental factors like temperature and humidity are critical for the growth and maintenance of Trichuris larvae. During August, characterized by mild temperatures and high moisture, the likelihood of infection is higher, and the chance of survival of eggs is enhanced.

Husbandry Practices: The frequency of Trichuris infections is greatly affected by management techniques such as grazing structures, hygiene standards, and deworming programs. These intestinal parasites may spread rapidly in congested housing and households where people do not practice good hygiene.

Host Factors: An individual's vulnerability to Trichuris illnesses might be influenced by age, nutritional state, and immune system. Insect infestations may be particularly devastating for young and undernourished animals.

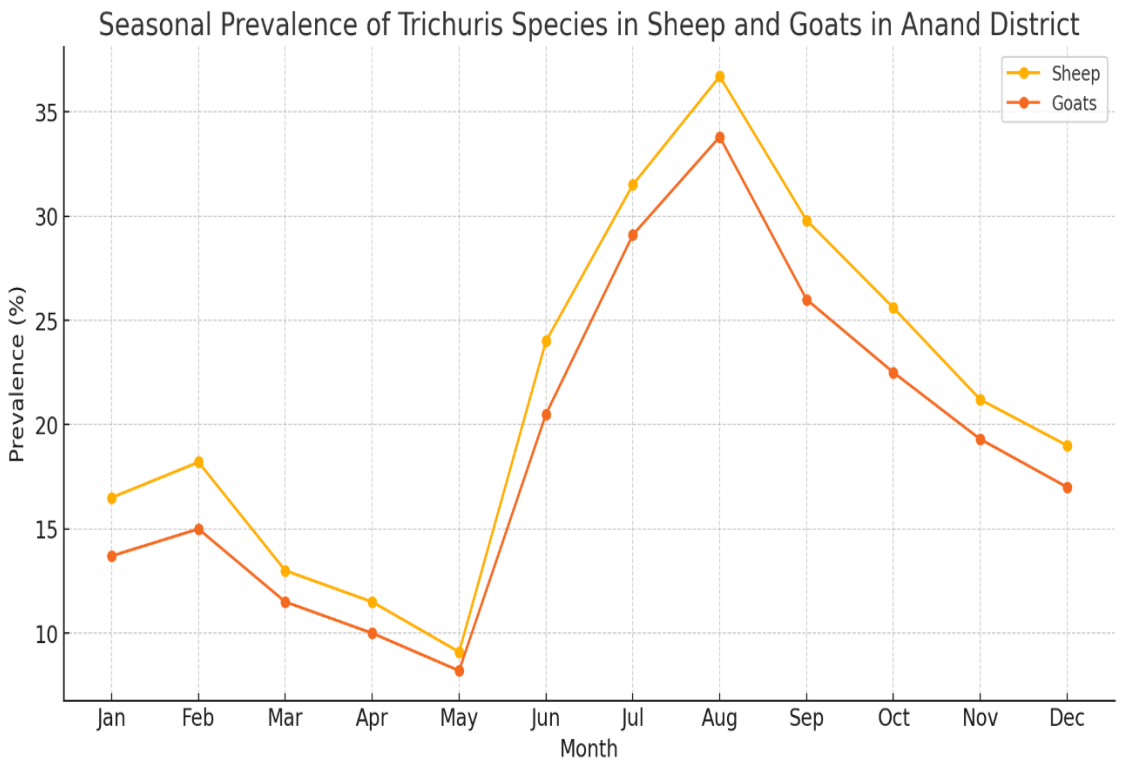
Impact on Livestock Health

As a result of stunted development, decreased milk output, and higher veterinary expenses, trichomuris infections may cause significant economic losses in the cattle sector. The capacity of Trichuris spp. to inflame and destroy the intestinal wall makes them pathogenic. This, in turn, causes additional infection and reduced nutritional absorption.

Results

Variation in Trichuris Species Prevalence Seasonally

The accompanying graph illustrates, over a year, the cyclical predominance of Trichuris subspecies in goats and sheep in the Anand district of Gujarat. Infectious rates throughout multiple seasons were determined by analyzing data obtained on different farms.



Monthly Prevalence Rates of Trichuris Infections

The table below presents the monthly prevalence rates of Trichuris infections in sheep and goats in the Anand district, illustrating the seasonal trends observed in the study.

Month	Prevalence in Sheep (%)	Prevalence in Goats (%)
January	16.5	13.7
February	18.2	15.0
March	13.0	11.5
April	11.5	10.0
May	9.1	8.2
June	24.0	20.5
July	31.5	29.1
August	36.7	33.8
September	29.8	26.0
October	25.6	22.5
November	21.2	19.3
December	19.0	17.0

Conclusion

Effective management strategies for Trichuris species in sheep and goats depend on understanding their seasonal prevalence. By identifying peak seasons, we can mitigate the impact of these parasites on cattle health and productivity, particularly in the Anand region and similar climates. This can be achieved through strategically timed deworming programs and enhanced management practices.

References

- Sahoo, N., et al. (2018). Seasonal prevalence of gastrointestinal parasites in ruminants in Tamil Nadu. *Journal of Parasitic Diseases*, 42(3), 423-429.
- Kumar, R., et al. (2020). Prevalence of gastrointestinal parasites in ruminants in Durg district, Chhattisgarh. *Indian Journal of Animal Research*, 54(5), 631-635.
- Patil, P. S., et al. (2019). Seasonal prevalence of gastrointestinal nematodes in goats of Maharashtra. *Veterinary World*, 12(7), 1096-1100.
- Shah, A. A., et al. (2020). Seasonal prevalence of gastrointestinal parasites in small ruminants in Anand district, Gujarat. *Journal of Animal Health and Production*, 8(2), 62-68.
- Singh, S., et al. (2021). Epidemiology of gastrointestinal helminths in small ruminants in India. *Tropical Animal Health and Production*, 53(1), 12-20.