



## Ticks Infestation in Radhanagari Taluka of Kolhapur District, Maharashtra, India

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### Abstract

Ticks belong to the Phylum Arthropoda and represent the most extensive group of organisms in the order Acarina. Ticks are the major ecto-parasites impacting livestock in tropical and subtropical areas, resulting in considerable economic losses for the livestock industry. The present study was conducted to investigate the infestation of ticks on cattle in Radhanagari taluka of Kolhapur district, Maharashtra, India during the winter season of 2022. A total 301 cattle were observed during the study. Out of 301 cattle examined, 179 cattle were found infested by ticks. The percent infestation of ticks was calculated and the highest recorded in Turambe village with 64.58%. However, the lowest percent infestation was recorded in Sonyachi shiroli (50%).

**Keywords:** Ticks, infestation, cattle, season

### Introduction

India is primarily an agricultural nation, with approximately 70% of its population relying on agricultural income for their livelihoods. Farmers maintain livestock for the purposes of producing milk, meat, wool, and hides, as well as for various agricultural tasks. India holds a substantial portion of the global livestock population, comprising approximately 57% of the world's buffaloes, 16.5% of cattle, 16.3% of goats, and 5.7% of sheep (FAO 2004) [3]. Ticks are classified within the Phylum Arthropoda and represent the most extensive group of organisms in the order Acarina. They are categorized into two primary groups: soft-bodied ticks (family Argasidae) and hard-bodied ticks (family Ixodidae). Hard ticks engage in prolonged feeding on their hosts, with durations ranging from several days to weeks, influenced by factors such as their life stage, the type of host, and the specific species of tick (Sonenshine, 1991) [10]. Furthermore, numerous soft ticks exhibit a remarkable ability to endure prolonged periods without nourishment, allowing them to survive for several years without a blood meal (Furman and Loomis, 1984) [5]. Ticks result in significant economic losses to livestock globally and negatively impact their hosts in various ways (Snelson, 1975) [9]. Ticks represent the primary ecto-parasites affecting livestock in tropical and subtropical regions, leading to significant economic losses within the livestock sector. The primary economic losses attributed to ticks stem from their capacity to transmit various protozoan, rickettsial, and viral diseases affecting livestock, which hold significant economic implications globally (Frans, 2000) [4]. In India, the economic impact of tick and tick-borne diseases amounts to a loss of approximately US \$498.7 million (over 2000 crores) each year (Ghosh *et al.*, 2007) [6]. The majority of tick research in India has concentrated on the northern and western regions. In terms of cattle population, Maharashtra is ranked fifth, behind West Bengal, Uttar Pradesh, Madhya Pradesh, and Bihar (Anonymous, 2019) [1]. So far in Kolhapur district of Maharashtra, no tick surveillance was undertaken and no data is available about the prevalence of the ticks. Therefore, the current investigation was conducted to determine the prevalence of ticks in the selected region of Kolhapur district.

### Material and Methods

The Survey was carried out in Radhanagari taluka of Kolhapur district of Maharashtra during the winter season of 2022. Randomly 10 villages were selected viz., Banachiwadi, Pungav, Chandre, Dhamode, Sarvade, Turambe, Sonyachi shiroli, Kalamawadi, K Tarale and Ghotawade. From each village, 5 farmers cattle sheds were selected. The cattle were examined irrespective of age, sex and breed for the presence of ticks. The data was collected village wise so as to understand the infestation percentage of ticks.

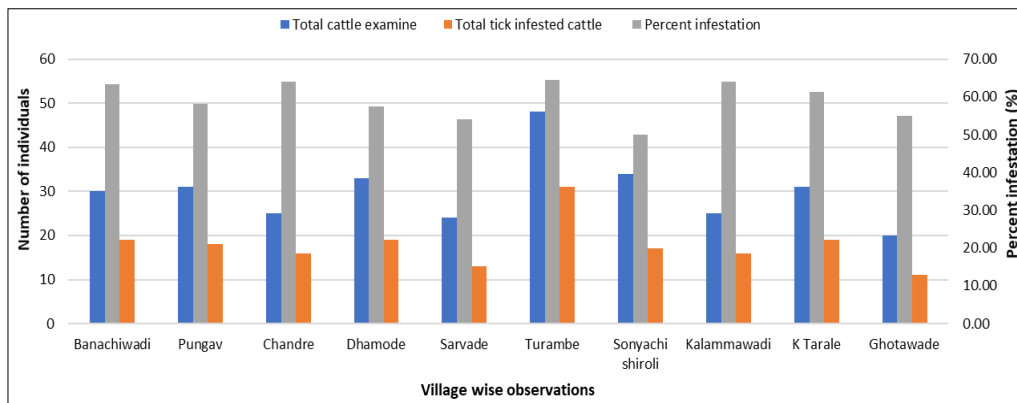
### Results and Discussion

A total 301 cattle were observed, 30 from Banachiwadi village, 31 from Pungav village, 25 from Chandre village, 33 from Dhamode village, 24 from Sarvade village, 48 from Turambe village, 34 from Sonyachi shiroli village, 25 from Kalamawadi village, 32 from K Tarale village and 20 from Ghotawade village, respectively. Out of 301 cattle examined, 179 cattle were found infested by ticks. The percent infestation of ticks was calculated and the highest recorded in Turambe village with 64.58%, followed by 64% recorded in both Chandre and Kalamawadi village. In Banachiwadi and K Tarale village the percent infestation was 63.30% and 61.29%, respectively. While, the percent infestation of ticks in Pungav, Dhamode, Sarvade village and Ghotawade village were 58.06%, 57.57%, 54.16%, 55.00%, respectively (Table 1).

However, the lowest percent infestation was recorded in Sonyachi shiroli (50%). Similarly, Kumar *et al.* (2022) [8] studied the prevalence of tick infestation in cattle in Vallabhnagar tehsil of Udaipur district in Southern Rajasthan and recorded the overall prevalence of tick infestation in cattle was 80.07%. Similarly, Debbarma *et al.* (2018) [2] reported a prevalence of 41.93% for hard tick infestations in cattle located in West Bengal, India. Kaur *et al.* (2017) [7] conducted an epidemiological study on ixodid ticks infesting cattle raised by smallholder farmers and reported an overall prevalence of 59.11% in Lucknow, Uttar Pradesh.

**Table 1:** Overall percent infestation of ticks in cattle

Sr. no.	Name of village	Total cattle examine	Total tick infested cattle's	Percent infestation (%)
1	Banachiwadi	30	19	63.30
2	Pungav	31	18	58.06
3	Chandre	25	16	64.00
4	Dhamode	33	19	57.57
5	Sarvade	24	13	54.16
6	Turambe	48	31	64.58
7	Sonyachi shiroli	34	17	50.00
8	Kalammawadi	25	16	64.00
9	K Tarale	31	19	61.29
10	Ghotawade	20	11	55.00



**Fig 1:** Graphical representation of percent infestation of ticks on cattle in selected villages of Radhanagari taluka during winter season 2022

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