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Management of Tick Infection in Animal

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Abstract

Sangam Park Taluka Paranda Of The Dharashiv District, Maharashtra, India, Were Used In The Current Study To Examine The Species Diversity, Prevalence, And Distribution Of Hard Ticks. Month-By-Month From January 2023 To December 2023, Hard Ticks From Domestic Animals (Cats, Livestock, And Dogs) Were Gathered. 233 Domestic Animals—103 Dogs, 108 Cattle, And 22 Cats—Of The 450 Total That Were Examined Had Tick Infestations. Two Hard Tick Species Were Identified From The Research Area: Rhipicephalus Sanguineus And Rhipicephalus Microplus. In The Examined Domestic Animals, Recorded Tick Densities Indicated A Significant Infestation. Tick Density Was Highest In And Around The Ear And Neck Regions Of Dogs, Lower Than In The Appendages, Belly, And Neck.

Keywords: Dogs, Cat, Ivermectin, Lice, Ticks, Infection, Prevalence

Introduction

Dogs Will Always Hold A Particular Place In The Hearts Of Their Human Friends. Until The 18th Century, When The Phrase "Man's Best Friend" Entered Common Usage, Their Function Among Humans Was Mostly Utilitarian. Dogs Are Incredibly Important To Society, But Owning A Pet With Any Number Of Infectious Disorders, Including Parasitic Infections, Has Been Linked To Well-Documented Health Risks And Dangers. Tick Infestation Is Primarily The Most Significant Of The Various Parasites And Ectoparasitic Illnesses. Ticks Are Ravenous Bloodsuckers That Can Cause Skin Irritation, Redness, Swelling, And Itching That Can Result In Self-Inflicted Injuries. Anemia, Weight Loss, And Even Death From Ingesting A Significant Amount Of Blood Are Possible Outcomes Of Severe Infestations. When There Are A Lot Of Brown Dog Ticks, (Rhipicephalus Sanguineus) Is The Most Common Dog Tick Prevalent Throughout The World.

Ticks, Like Other Arthropods, Live As Blood Sucking Ectoparasites. These Are The Most Important Group Of Arthropods Which Act As Vectors Of Many Bacterial, Viral, Rickettsial And Protozoan Diseases Of Dogs. Ticks Attach To The Dog's Body, Suck Blood Causing Anemia And Can Transmit Diseases Like Ehrlichiosis, Anaplasmosis, Babesiosis, Hepatozoonosis, Bartenellosis, Lyme Disease And Some Zoonotic Diseases Like Rocky Mountain Spotted Fever And Tularemia. Tick Bite Causes Irritation, Redness, Swelling, Itching And Self Trauma. One Of The Most Harmful Impacts Of Tick Bite Is The Release Of Neurotoxins From Tick Saliva Leading To Tick Paralysis, Systemic Illness And Hypersensitivity Reactions . In General, Different Parasitic Infestations Including Tick Infestations Are More Prevalent In Stray Dogs, But The Pet Dogs Which Directly Or Indirectly Get Exposed To Stray Dogs Also Frequently Suffer From Different Parasitic Infestations.

Different Control Strategies Against Ticks And Tick Borne Diseases Like Integrated Pest Management (Ipm) Have Been Adopted To Reduce The Intensity Of Acaricide Use; Measures That Can Minimize The Chance Of Drug Resistance, Using New Generation Herbal Acaricides, Development Of Tick Vaccines And Biological Control Methods For Control Of Ticks In Dogs.

Because These Ticks Infesting Dogs Can Come In Contact With Human Beings Or Other Animals While In Close Proximity And Cause Serious Zoonotic Diseases, The Present Study Was Conducted To Assess The Prevalence Of Tick Infestation Among Pet And Stray Dogs With An Aim To Develop A Strategic Control Programme Against Tick Infestations In Dogs In And Around Paranda.

Material and Methods

The Present Study Was Conducted From Jan-2023 To Dec 2023, In Paranda , Dharashiv District Maharashtra, India. The Random Sampling Was Performed For This Study In Sangam Park , Paranda, Dharashiv District From Which 233 Domestic Animals Were Thoroughly Investigated

By Close Inspection, Parting The Hairs Against Their Natural Direction For The Detection Of Ticks.

Ticks Were Collected From The Different Part Of The Body Of The Individual Buffalo By Hand Picking, When Required, Use Small Hairbrush Dipped In Ethanol Was Used For The Collection Of Ticks. Ticks Were Preserved In 70% Alcohol In Clean, Well Stopper Glass Vials Which Were Labeled Properly.

Morphology Of Ectoparasites Was Studied In The Laboratory Under Stereomicroscope, Byputting The Tick On Petridish And Using Brush, The Mouth Part, Ornamentation Coaxa Spur, The Presence Of Festoon, Punctuation Distribution Leg Coloration, Posterior Median Strip Arrangement, Genital Aperture And Base Of Capituli Used For Identification Of Ticks Genera As Per The Procedure Recommended By Ectoparasites Were Identified According To The Keys And Description Given By Identification Was Carried Out At Entomology Laboratory In Department Of Zoology At Shinde College Paranda. Dharashiv.

Collection of Ticks

For Collection Of Ticks , A Piece Of Cotton Soaked In Chloroform Was Applied At The Site Of Tick Attachment To Make It Dislodged. Then These Ticks Were Collected With The Help Of Fine Toothed Forceps But Utmost Care Was Taken To Keep The Mouthparts And Appendages Of The Ticks Intact. Ticks Thus Collected Were Put Into Clean Glass Vials After Proper Labeling. The Collected Ticks Were Preserved In 70% Alcohol In Clean, Well-Stoppered Glass Vials And Labeled Properly.

Scope of Research

The Regions In Which They Are Found Are Growing Along With The Frequency Of The Tick-Borne Illness.

Therefore, It Becomes More And More Crucial To Identify Different Types Of Ticks In Order To Support The Prevention Of Tick-Borne Illnesses.

Future Epidemiological Research Will Build On The Findings Of This Study, And More Research Will Be Required To Determine The Ticks' Role As Vectors In This Region.

Objectives Of Research

To Investigate The Morphology Of The Recognized Tick (Ixodidae) Species.

- Examination Of Oral Structures
- Examining External Elements

To Research The Variety Of Tick (Ixodidae) Species Found In The Sangam Park (Paranda).

To Research of The Tick (Ixodidae) Host Specificity.

- Cattles With Ticks
- Ticks On Pets
- Ticks On Chickens (Roosters And Hens)

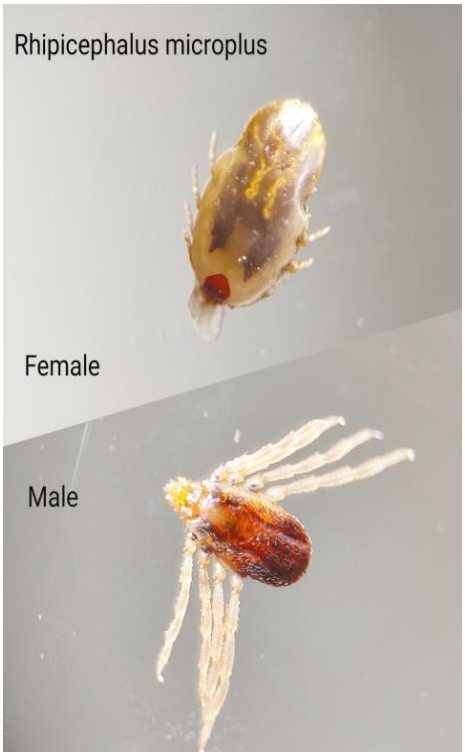
To Study The Species Abundance Of Tics (Ixodidae) In Sangam Park .

To Study The Ethonological Control And Management Practices Of Ticks (Ixodidae) In Sangam Park Pranda.

- Physical Control
- Biological Control
- Chemical Control

Sample Photographs of Ticks Observed During Study



Results Obtained

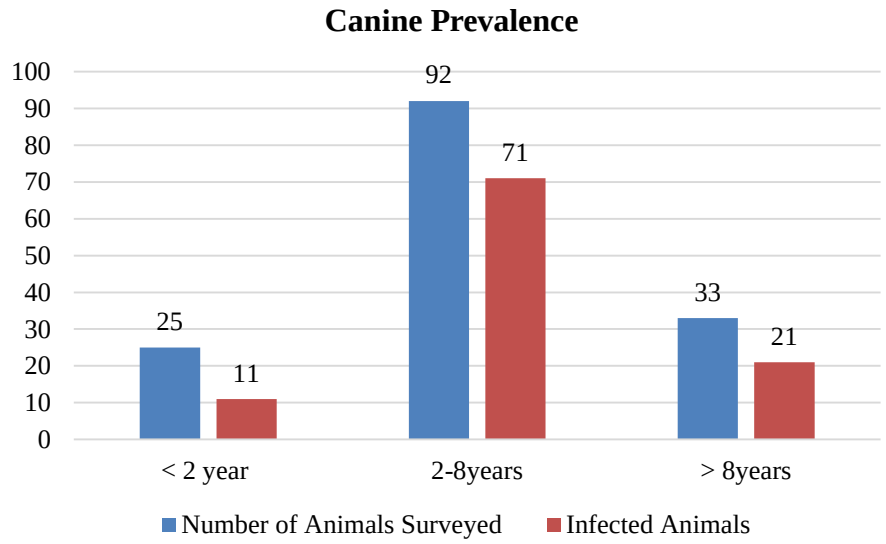
Species	Animals
Rhipicephalus sanguineus	Dog
Rhipicephalus microplus	Cow, Buffalo

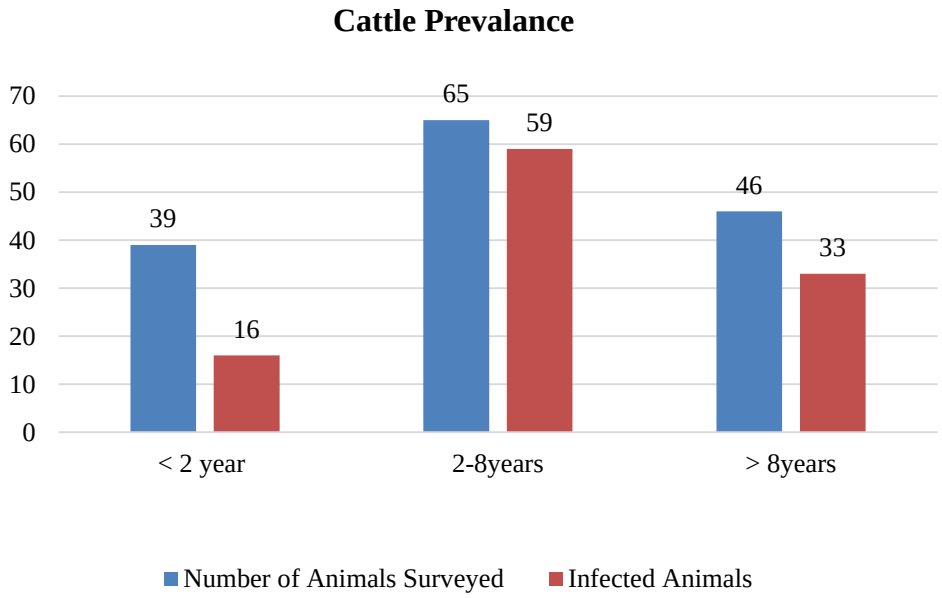
Species	Animal Surveyed	Infected Animals	Rate of Prevelence in %
Rhipicephalus sanguineus	150	103	68.66
Rhipicephalus microplus	150	108	72

Cattle Prevalence			
Age of Animals in years	**Number of Animals Surveyed**	**Infected Animals**	**Prevalence in %**
< 2	39	16	41.02
8-Feb	65	59	75.38
> 8	46	33	71.73
Total	**150**	**108**	**72**

Canine Prevalence			
Age of Animals in years	**Number of Animals Surveyed**	**Infected Animals**	**Prevalence in %**
< 2	25	11	44
8-Feb	92	71	77.17
> 8	33	21	63.63
Total	**150**	**103**	**68.66**

Charts Obtained From the Above Data





Results Obtained

- In the selected study area, the tick identified belongs to *Rhipicephalus sanguineus* (Brown Dog Tick) which commonly found on the dogs.
- *Rhipicephalus microplus* is the tick species infesting cattle.
- The tick infestation occurs higher in the middle life stages of animals (2 years to 8 years).
- When ticks were removed with the help of hands and the blood of such animals was examined it was found that the pathogens like *Kocuria rosea* and *Staphylococcus haemolyticus* found in the blood of that animals.
- No tick species has been found on cat since the study started.

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