Research & Reviews: Journal of Veterinary Science

e-ISSN: 2320-0189

# Veterinary Parasitology: Understanding and Controlling Parasitic Diseases in Animals

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## Editorial

**Received:** 02-Dec-2025, Manuscript No. jvs-25-177944; **Editor assigned:** 04-Dec-2025, Pre-QC No. jvs-25-177944 (PQ); **Reviewed:** 13-Dec-2025, QC No jvs-25-177944; **Revised:** 20-Dec-2025, Manuscript No. jvs-25-177944 (R); **Published:** 30-Dec-2025, DOI: 10.4172/2320-0189.9.005

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Thomas R. McNeil, Veterinary Parasitology: Understanding and Controlling Parasitic Diseases in Animals

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**Citation:** Thomas R. McNeil, Veterinary Parasitology: Understanding and Controlling Parasitic Diseases in Animals. RRJ Hosp Clin Pharm. 2025.9.005.



## Introduction

Veterinary parasitology is a specialized branch of veterinary science that focuses on the study of parasites affecting animals, including protozoa, helminths, and arthropods. These parasites are responsible for a wide range of diseases that impact animal health, productivity, and welfare. In addition to causing direct harm to animals, many parasitic diseases have zoonotic potential, posing risks to human health. Veterinary parasitology therefore plays a crucial role in animal healthcare, public health, and livestock management [1].

## Discussion

Parasites affect animals through complex life cycles and diverse transmission routes, including ingestion, skin penetration, and vector-borne spread. Endoparasites such as roundworms, tapeworms, flukes, and protozoa commonly inhabit internal organs, leading to symptoms like anemia, diarrhea, weight loss, and reduced growth. Ectoparasites, including ticks, mites, fleas, and lice, infest the skin and external surfaces, causing irritation, allergic reactions, and secondary infections. Many ectoparasites also act as vectors for bacterial, viral, and protozoal pathogens, increasing their significance in disease transmission [2,3].

Veterinary parasitology is essential for the diagnosis, treatment, and prevention of parasitic infections. Diagnostic techniques range from traditional microscopic examination of feces, blood, and skin scrapings to advanced molecular methods that improve accuracy and early detection. Effective parasite control relies on strategic use of antiparasitic drugs, integrated with management practices such as pasture rotation, hygiene, and vector control. However, the widespread and sometimes improper use of antiparasitic agents has led to increasing drug resistance, particularly in livestock parasites, posing a major challenge to sustainable control programs.

The field also contributes to the One Health approach by addressing zoonotic parasites such as Toxoplasma, Echinococcus, and Leishmania. Understanding parasite ecology, host–parasite interactions, and environmental influences helps in developing comprehensive control strategies that protect both animal and human populations. Research in veterinary parasitology supports the development of new diagnostic tools, vaccines, and alternative control methods, including biological and immunological approaches [4,5].

## Conclusion

Veterinary parasitology is fundamental to maintaining animal health, enhancing productivity, and protecting public health. Through continued research, improved diagnostics, and sustainable parasite control strategies, this field addresses the ongoing challenges posed by parasitic diseases. As environmental and management conditions evolve, veterinary parasitology will remain essential in promoting animal welfare and supporting global health initiatives.

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