
Received: 10 February 2026; Accepted: 27 February 2026; Published: 30 April 2026

DETECTION AND OCCURRENCE *BABESIA* SPP. AND *HAEMOBARTONELLA* SP. IN CAT PATIENT AT PET+VET ANIMAL CLINIC, CENTRAL JAKARTA

Deteksi Dan Kejadian Infeksi *Babesia* spp. dan *Haemobartonella* sp. pada Pasien Kucing Di PET+VET Animal Clinic, Jakarta Pusat

Meila Iscahyani, Tetty Barunawati Siagian *

Veterinary Paramedic Study Program, Vocational School, IPB University, Jl. Kumbang No. 14, Babakan, Bogor Tengah, Bogor City, West Java, Indonesia, 16128

*Corresponding author email: tettybarunawatisiagian@apps.ipb.ac.id

How to cite: Iscahyani M, Siagian TB. 2026. Detection and occurrence *Babesia* spp. and *Haemobartonella* sp. in cat patient at PET+VET animal clinic, Central Jakarta. *Bul. Vet. Udayana*. 18(2): 416-424. DOI: <https://doi.org/10.24843/bulvet.2026.v18.i02.p06>

Abstract

Blood parasites such as *Babesia* spp. and *Haemobartonella* sp. (*Mycoplasma haemofelis*) are important vector-borne pathogens in cats that can cause hemolytic anemia, fever, lethargy, jaundice, and systemic complications. In severe cases, these infections may lead to profound anemia, organ dysfunction, and potentially fatal outcomes, particularly in immunocompromised animals. Despite their clinical significance, epidemiological data on feline hemoparasites in Indonesia, especially in urban clinical settings, remain limited. This study aimed to detect and determine the occurrence of *Babesia* spp. and *Haemobartonella* sp. in cats examined at PET+VET Animal Clinic, Central Jakarta, and to describe their distribution based on breed, age, sex, and management practices. A total of 51 blood samples collected from December 2024 to November 2025 were examined using blood smear technique with methylene blue and eosin staining and observed under a light microscope at 1000× magnification. Fourteen samples (27.45%) were positive for blood parasites. *Babesia* spp. was the most prevalent (21.57%), followed by *Haemobartonella* sp. (3.92%) and co-infection (1.96%). Infections were more frequently observed in male, adult, domestic, and indoor-managed cats. These findings provide baseline data for improving early detection and vector control strategies in urban feline populations.

Keywords: *Babesia* spp., *Haemobartonella* sp., cat, blood parasites, prevalence

Abstrak

Parasit darah seperti *Babesia* spp. dan *Haemobartonella* sp. (*Mycoplasma haemofelis*) merupakan patogen tular vektor pada kucing yang dapat menyebabkan anemia hemolitik, demam, letargi, ikterus, serta gangguan sistemik. Pada kasus berat, infeksi ini berpotensi menimbulkan anemia parah, disfungsi organ, hingga kematian, terutama pada kucing dengan kondisi imun yang lemah. Meskipun memiliki dampak klinis yang signifikan, data epidemiologi hemoparasit pada kucing di Indonesia, khususnya di wilayah perkotaan, masih terbatas. Penelitian ini bertujuan untuk mendeteksi dan menentukan kejadian *Babesia* spp. dan *Haemobartonella* sp. pada kucing yang diperiksa di PET+VET Animal Clinic Jakarta Pusat,

serta mendeskripsikan distribusinya berdasarkan ras, usia, jenis kelamin, dan cara pemeliharaan. Sebanyak 51 sampel darah yang dikumpulkan pada periode Desember 2024 hingga November 2025 diperiksa menggunakan metode ulas darah dengan pewarnaan methylene blue dan eosin, kemudian diamati pada mikroskop cahaya perbesaran 1000×. Hasil menunjukkan 14 sampel (27,45%) positif parasit darah. *Babesia spp.* merupakan temuan tertinggi (21,57%), diikuti *Haemobartonella sp.* (3,92%) dan koinfeksi (1,96%). Infeksi lebih sering ditemukan pada kucing jantan, dewasa, ras domestik, dan dipelihara secara indoor. Temuan ini memberikan data dasar untuk mendukung deteksi dini dan pengendalian vektor pada populasi kucing perkotaan.

Kata kunci: *Babesia spp.*, *Haemobartonella sp.*, kucing, parasit darah, prevalensi

INTRODUCTION

Cats are one of the most common pets kept by Indonesians, including purebred and domestic cats (*Felis catus*). Cat health is an important aspect that must be considered because cats often interact with humans (Rozaq *et al.*, 2025). Cats kept outdoors have a higher risk of exposure to pathogenic microorganisms (Onel and Esatgil 2025). Interaction between domestic and stray cats and the outdoor environment can increase exposure to blood parasites (Purba *et al.*, 2020). Blood parasites are organisms that live and develop in the host's circulatory system and are generally transmitted through vectors (Yolanda *et al.*, 2024). Protozoa and Rickettsia bacteria belong to the blood parasite group. Rickettsia bacteria are obligate intracellular microorganisms that infect blood vessel endothelial cells, spread through vectors, and can infect humans and animals (Putra *et al.*, 2023).

The common blood parasites of cats are *Babesia spp.* protozoa and *Haemobartonella sp.* hemotropic bacteria. *Babesia spp.* are intraerythrocytic protozoa transmitted through vector bites, namely ticks of the genus *Rhipicephalus* (Wira *et al.*, 2020). A study on domestic cats by Yi (2024) reported that the prevalence of *Babesia spp.* in Bogor City was 6.45% based on blood smear examination. Infection with this protozoan causes hemolysis, anemia, and systemic disorders in the host animal (Ganesan and Meena 2024). *Haemobartonella sp.*, now known as *Mycoplasma haemofelis*, is a gram-negative rickettsia bacterium found in red blood cells. Gulaydin *et al.* (2025) reported that 6 (9.67 %) of 62 cats tested positive for *Mycoplasma* infection in Turkey. This bacterium causes hemolytic anemia with common symptoms, such as fever, decreased appetite, paleness, lethargy, cachexia, hair loss, and dull coat (Putra *et al.*, 2023). The incidence of *Babesia spp.* and *Haemobartonella sp.* infections in cats is influenced by environmental factors, the presence of ectoparasite vectors, and management and care practices, leading to variations in disease prevalence across different regions (Hanif, 2022).

Studies on *Babesia spp.* and *Haemobartonella sp.* blood parasites in cats have been reported by Hanif (2022) in the Bogor City area; however, this has not been reported for the Central Jakarta area. This research should be conducted again because the prevalence of blood parasites in cats varies between regions and is influenced by various factors, such as the environment, maintenance, and vector control (Purba *et al.*, 2020). The presence of blood parasites also has the potential to pose an indirect zoonotic risk through ectoparasite vectors (ticks) that live in the human environment (Wira *et al.*, 2020). The objective of this study was to detect the presence of *Babesia spp.* and *Haemobartonella sp.* in the blood of cats examined at the PET+VET Animal Clinic and to determine the prevalence and incidence of infection with these two parasites during the study period.

RESEARCH METHOD

Research Subjects

The subjects of this study were cats undergoing blood smear examinations at the PET+VET Animal Clinic in Central Jakarta between December 2024 and November 2025. This study included cats that came in for clinical examinations. All examination procedures were performed by licensed veterinarians, and informed consent was obtained from the pet owners. This study did not involve laboratory animals or additional experimental procedures beyond standard medical protocols; therefore, it did not require animal ethics approval.

Research Design

This study was conducted by observing available data without treating feline patients. The cats used in this study showed clinical signs indicative of blood parasite infection, such as fever, weakness, pale mucosa, and deterioration of physical condition. The examination was performed by a licensed veterinarian. Blood samples were collected from the cats through the cephalic vein and placed in ethylenediaminetetraacetic acid (EDTA) tubes. Blood smears were stained using a methanol fixative solution and methylene blue and eosin dyes.

Research Variables

The variables observed included the presence of blood parasites in cats based on blood smear examination results and cat characteristics, including age, sex, breed, and maintenance conditions. The independent variables in this study were age, categorized as kitten (1–7 months), junior (7–24 months), and adult (24–64 months); sex, consisting of male and female; breed, including domestic, British Shorthair, Maine Coon, and mixed; and housing conditions, differentiated as indoor and outdoor. The dependent variable was the prevalence of blood parasite infection, classified as positive (*Babesia* spp. or *Haemobartonella* sp. found) and negative (no parasites found), while the control variable was that the cats examined were patients who came to the clinic during the same study period.

Data Collection Methods

Data collection in this study involved combining primary and secondary data. Primary data were obtained through blood smear examinations of cats visiting the PET+VET Animal Clinic between October and December 2025. Secondary data were obtained from patient medical records, which included information on the age, sex, breed, and maintenance conditions of the cats. Cat blood samples were collected from the cephalic vein and placed in EDTA tubes. One drop of blood was placed on a glass slide, and a blood smear was prepared. The blood smear preparations were dried and stained using a methanol fixative solution and methylene blue and eosin dyes. The staining stage began by placing the preparations in a fixative solution, namely methanol, for 15 s, then placing them in eosin for 20 s, and placing them in a methylene blue solution for 30 s, and rinsing with water. After staining, the samples were observed using a light microscope at 100 × magnification to detect the presence of blood parasites, such as *Babesia* spp. and *Haemobartonella* sp. Based on their morphology, *Babesia* spp. are characterized by a round, oval, or pear-shaped appearance and can be found singly or in pairs (Sojka *et al.*, 2022). *Haemobartonella* sp. is microscopically visible, attached to the surface of erythrocytes, with a pleomorphic shape, such as cocci or short rods (Razgunait *et al.*, 2024). All data were systematically recorded in observation sheets and tabulated (tables) to facilitate analysis, with data collection procedures that took into account the ethics and confidentiality of patient information.

Data Analysis

Data analysis in this study was conducted descriptively to determine the prevalence of blood parasites in cats. Primary data from blood smear examinations were analyzed to determine the number of positive and negative samples for blood parasites, whereas secondary data from medical records were used to supplement information about the age, sex, breed, and maintenance conditions of the cats. The proportion of blood parasite-positive samples was calculated as a percentage of the total samples examined to illustrate the general distribution of infection. The results of the analysis are presented in tabular form to facilitate interpretation and comparison between categories.

RESULTS AND DISCUSSION

Results

Blood examination results using the blood smear method revealed that 14 of 51 samples (27.45%) were positive for blood parasites. The types of blood parasites found included *Babesia* spp. in 11 samples (21.57%), *Haemobartonella* sp. in two samples (3.92%), and co-infection with *Babesia* spp. and *Haemobartonella* sp. in one sample (1.96%). The distribution of blood parasite test results is presented in Table 1. The distribution of infection prevalence based on cat breed, housing type (indoor or outdoor), and age group is presented in Table 3. As shown in Table 3, the prevalence of blood parasite infection varied among cat breeds, age groups, and housing types. Regarding sex, male cats (9 cases) had a higher incidence of infection than female cats (5 cases). Based on breed, domestic cats had the highest number of cases (5 cases), while other breeds, such as British Shorthair, Maine Coon, and domestic mixes, showed lower numbers (3 cases each). Based on age, the adult group (2–6 years) had the highest number of cases (10 cases), followed by juniors (3 cases) and kittens (1 case). In terms of housing, indoor cats (9 cases) had a higher incidence of infection than outdoor cats (5 cases).

Discussion

Babesia spp. are protozoans that live inside red blood cells and are transmitted through tick bites (Wira *et al.*, 2020). Morphologically, *Babesia* spp. observed under a microscope in blood smears appear round, oval, or pear-shaped (similar to a pear) and are located inside erythrocytes, as shown in Figure 1a (Bosman *et al.*, 2019). The size of *Babesia* spp. is generally in the range of $\pm 1\text{--}2\ \mu\text{m}$. *Haemobartonella* sp. is morphologically similar to small pleomorphic bacteria in the form of cocci or short rods attached to the surface of the erythrocyte membrane. These bacteria can be arranged separately or in chains at the edge of erythrocytes (Pemayun *et al.*, 2024). The size of these bacteria is smaller than that of *Babesia* spp., measuring approximately $0.5\text{--}2\ \mu\text{m}$ (Almendros *et al.*, 2024). The morphology of *Haemobartonella* sp. is shown in Figure 1b.

Protozoan blood parasites (*Babesia* spp.) and rickettsial bacteria (*Haemobartonella* sp.) have life cycles associated with vectors, particularly ticks and fleas. *Babesia* spp. protozoa are transmitted through tick bites (*Rhipicephalus*), enter the bloodstream, infect erythrocytes, and reproduce asexually (merogony) until they cause red blood cell lysis (Baneth *et al.*, 2024). Infection with these hemoparasites is characterized by hemolytic anemia, fever, jaundice, lethargy, and thrombocytopenia (Almendros *et al.*, 2023). *Haemobartonella* sp. or *Mycoplasma haemofelis* is transmitted by *Ctenocephalides felis* fleas and attaches to the surface of erythrocytes, causing cell damage through immune and hemolytic mechanisms (Putra *et al.*, 2020). These bacteria enter the bloodstream through peripheral vessels and attach to erythrocyte surfaces. The incubation period in cats ranges from 2–34 days. In the acute phase, symptoms include anemia, lethargy, loss of appetite, and fever, whereas in the chronic phase, coordination

disorders may occur when walking, which can potentially lead to death (Purba *et al.*, 2020).

The findings of *Babesia* spp. protozoan blood parasites and *Haemobartonella* sp. or *Mycoplasma haemofelis* rickettsial bacteria in cats in this study are consistent with the research by Ceylan *et al.* (2024a), which states that cats are hosts of hemoparasites. A study by Latrofa *et al.* (2020) in Italy showed that the prevalence of *Mycoplasma haemofelis* was 16%, while that of *Babesia* spp. was 2%. *Babesia* spp. infection in cats can cause severe regenerative hemolytic anemia, despite its low prevalence in cats. The study obtained different results compared with previous studies, with a higher prevalence of *Babesia* spp. infection (21.57%) than *Haemobartonella* sp., which only reached 3.92%. The variation in prevalence between studies is related to differences in climate, vector density, indoor and outdoor cat management, and diagnostic methods used (Fernández *et al.*, 2022).

In this study, out of 51 cats examined over a one-year period, 14 (27.45%) were found to be positive for *Babesia* spp. and *Haemobartonella* sp. bacteria, with eight males and six females being infected. This finding indicates that male cats were more infected than female cats. This pattern is in line with the study by Do *et al.* (2021), which stated that male cats are at a greater risk of infection by vector-borne pathogens (VBPs), including *Babesia* spp. and hemoplasma, than females. This is related to the wider roaming range, higher level of aggression, and higher frequency of fighting in male cats. According to Latrofa *et al.* (2020), unneutered and feral male cats are at a higher risk of exposure to pathogens.

The occurrence of protozoan parasite infections with *Babesia* spp. and *Haemobartonella* sp. was dominated by domestic cats (five cats, 35.8%), while other breeds included British Shorthair, Maine Coon, and mixed-breed cats (three cats, 21.4% each). Previous studies have indicated that domestic cats are more frequently infected with hemoparasites because of their large population size and greater outdoor activity (Panait *et al.*, 2023). Several previous studies have shown different findings, with *Babesia* infection not clearly differing between breeds but more frequently detected in non-pedigree cats that have access to the outdoors and are in contact with vectors (Almendros *et al.*, 2024). The high proportion of infection in domestic cats in this study is likely to be influenced by environmental, management, and population density factors.

The occurrence of *Babesia* spp. and *Haemobartonella* sp. infections in 51 cats showed that 14 cats were positive, with one cat in the kitten group (1–7 months), three cats in the junior group (7 months–2 years), and the highest number found in the adult group (2–6 years), namely, 10 cats. The high number of cases in adult cats is consistent with several hemoparasite studies reporting that cats over 1 year of age are more frequently infected than younger cats. This condition is thought to be related to the accumulated exposure to vectors, such as fleas and ticks, as well as the increased frequency of contact between cats as they age (Ceylan *et al.*, 2024a). A hemoplasma study in Konya, Turkey, reported a significantly higher prevalence of infection in cats over 1 year of age than in cats under 1 year of age (Ceylan *et al.*, 2024b). Similar results were reported by Do *et al.* (2020) in Bangkok, which showed the highest risk of infection in cats over 5 years of age, associated with chronic exposure and a decline in immune response with age.

The occurrence of blood parasite infections, *Babesia* spp. and *Haemobartonella* sp., based on the husbandry methods listed in Table 3, showed that nine indoor cats and five outdoor cats tested positive. These findings indicate that blood parasite infections occur not only in cats that frequently engage in outdoor activities. Theoretically, outdoor cats are at a higher risk because they are often exposed to vectors such as fleas and ticks in outdoor environments (Almendros *et al.*, 2024). This condition is also supported by Sasmita *et al.* (2019), who reported a high prevalence of parasites in feral cats and poor sanitation. The finding of blood parasites in indoor

cats in this study is likely due to ectoparasite infestation indoors, contact with other infected cats, and suboptimal parasite control. Cat owners often perceive the risk of parasites as low; therefore, ectoparasite control is not routinely performed. Therefore, the difference in the number of cases between indoor and outdoor cats in this study reflects the quality of maintenance management and vector control, not just their maintenance status alone.

CONCLUSIONS AND SUGGESTIONS

Conclusions

The prevalence of blood parasites in cats at the PET+VET Animal Clinic in Central Jakarta was 27.45%, with *Babesia* spp. being the dominant parasite compared to *Haemobartonella* sp. Blood parasite infections were more common in male cats, domestic breeds, and adult age groups, which is related to their behavior and higher exposure to vectors. Infection cases were found in both indoor and outdoor cats, indicating that the risk of blood parasites is not limited to cats that are active outside their home environments. The results of this study provide an initial overview of the prevalence of blood parasites in cats in Central Jakarta, and can serve as a basis for preventive efforts and improvement of cat health.

Suggestions

Cat owners can conduct routine health checks, including blood tests, for the early detection of blood parasite infections. Ectoparasite control, such as fleas, needs to be carried out regularly on both indoor and outdoor cats to reduce the risk of transmission to humans. Veterinary clinics are expected to increase education for cat owners regarding the importance of maintenance management and the prevention of parasitic diseases. Further research is warranted, using a larger sample size and more sensitive diagnostic methods, such as PCR, to obtain a more accurate picture of the prevalence. Further studies are needed on environmental risk factors and potential zoonoses to support blood parasite control efforts. This study has limitations, including a relatively small number of positive samples and an unbalanced distribution of categories, which prevented the optimal statistical evaluation of the relationship between variables. Therefore, the results of this study are descriptive in nature. Further research with a larger sample size is required to test the relationship between the variables more accurately.

ACKNOWLEDGMENTS

The author would like to thank the management and veterinarians at PET+VET Animal Clinic, Central Jakarta, for facilitating this study.

REFERENCES

- Almendros, A., Choi, Y. R., Leung, T. L., Tam, W. Y. J., Muguero, D. H., Woodhouse, F. M., Gray, J. J., Beatty, J. A., & Barrs, V. R. (2024). Ticks and Tick-borne Diseases Low prevalence of *Babesia* Hongkongensis Infection in Community and Privately-owned Cats in Hong Kong. *Ticks and Tick-Borne Diseases*, 15(1), 102278. <https://doi.org/10.1016/j.ttbdis.2023.102278>
- Baneth, G., Biala, Y. N., Dvorkin, A., Arogeti, I., Amiel, S., Soueid, Y., Shwartz, D., Mumcuoglu, K. Y., & Salant, H. (2024). Description of *Babesia* galileei sp. nov. A piroplasmid Species Causing Cevere Disease in Domestic Cats. *Parasites & Vectors*, 17(297), 1–15. <https://doi.org/10.1186/s13071-024-06371-w>
- Bosman, A. M., Penzhorn, B. L., Brayton, K. A., Schoeman, T., & Oosthuizen, M. C. (2019). A novel *Babesia* spp. Associated with Clinical Signs of Babesiosis in Domestic Cats in South Africa. *Parasites & Vectors*, 12(138), 1–12. <https://doi.org/10.1186/s13071-019-3395-x>
- Ceylan, C., Culha, M. H., Sonmez, G., Selcuk, M. A., & Ider, M. (2024a). Feline Hemotropic

Mycoplasma Species of Apparently Healthy Domestic Cats in Konya Province of Türkiye. *Veterinary Sciences*, 11(1), 1–13. <https://doi.org/10.3390/vetsci11110530>

Ceylan, O., Ma, Z., Ceylan, C., Ider, M., Evci, A., Mavinehir, A., & Xuan, X. (2024b). Feline Vector-borne Haemopathogens in Türkiye: the First Molecular Detection of Mycoplasma wenyonii and Ongoing Babesia ovis DNA Presence in Unspecific Hosts. *BMC Microbiology*, 20(365), 1–15. <https://doi.org/10.1186/s12917-024-04209-2>

Do, T., Kamyngkird, K., Chimnoi, W., & Inpankaew, T. (2021). Evaluation of Hematological Alteration of Vector - borne Pathogens in Cats From Bangkok, Thailand. *BMC Veterinary Research*, 17(28), 1–9. <https://doi.org/10.1186/s12917-020-02737-1>

Fernández, A. Á., Maggi, R., Eduard, G., Valls, M., Baxarias, M., Breitschwerdt, E. B., & Gallego, L. S. (2022). Prospective Serological and Molecular Cross - sectional Study Focusing on Bartonella and Other Blood - borne Organisms in Cats from Catalonia (Spain). *Parasites & Vectors*, 15(6), 1–14. <https://doi.org/10.1186/s13071-021-05105-6>

Ganesan, P. I., & Meena, O. P. (2024). A case report on Babesia felis in a Persian cat and its hemato-biochemical changes. *International Journal of Veterinary Sciences and Animal Husbandry*, 9(5), 101–103.

Gulaydin, O., Yesilyurt, M., & Akgul, G. (2025). Haemotropic Mycoplasma species in cat blood samples by PCR. *Veterinarni Medicina*, 70(8), 294–301. <https://doi.org/10.17221/7/2025-VETMED>

Hanif, M. Q. (2022). *Tingkat Kejadian dan Terapi Pengobatan Babesiosis dan Haemobartonellosis pada Kucing di Klinik RVet Bogor Periode September 2020-September 2021*. IPB University.

Latrofa, M. S., Iatta, R., Toniolo, F., Furlanello, T., Ravagnan, S., Capelli, G., Schunack, B., Chomel, B., Zatelli, A., Roldan, J. M., Torres, F. D., & Otranto, D. (2020). A Molecular Survey of Vector - Borne Pathogens and Haemoplasmas in Owned Cats Across Italy. *Parasites & Vectors*, 13(116), 1–8. <https://doi.org/10.1186/s13071-020-3990-x>

Onel, E., & Esatgil, M. U. (2025). Current status of intestinal helminths in cats of Istanbul, Türkiye Erhan. *Journal of Istanbul Veterinary Sciences Research*, 9(2), 88–93. <https://doi.org/10.30704/http-www-jivs-net.1702690>

Panait, L. C., Ionică, A. M., Cazan, C. D., Coroian, M., Diacu, A. M., Boncea, A. M., Mateescu, C., & Mihalca, A. D. (2023). Apicomplexan Haemoparasites in Domestic Cats in Romania. *Parasites & Vectors*, 16(56), 1–9. <https://doi.org/10.1186/s13071-023-05683-7>

Pemayun, T. I. A. P. D., Widyastuti, S. K., Suartha, I. N., & Asih, N. P. T. (2024). Haemobartonellosis in Domestic Short Hair Cats. *Jurnal Ilmu Dan Kesehatan Hewan*, 6(4), 364–377. <https://doi.org/https://doi.org/10.24843/vsmj.2024.v06.i04.p05>

Purba, D. J., Widyastuti, S. K., & Anthara, M. S. (2020). Laporan Kasus : Hemobartonella felis pada Kucing Lokal. *Indonesia Medicus Veterinus*, 9(2), 157–167. <https://doi.org/10.19087/imv.2020.9.2.157>

Putra, H. Y., Maulana, N. H., Ihsan, N., Bahtiar, A., Pratiwi, P., Vadya, D., & Mayori, G. (2023). Evaluasi terapi doxycycline kasus infeksi Haemobartonella felis pada kucing. *ARSHI Veterinary Letters*, 7(2), 31–32. <https://doi.org/10.29244/avl.7.2.31-32>

Razgunait, M., Lipatova, I., Paulauskas, A., Zamokas, G., & Radzijeuskaja, J. (2024). Prevalence and Diversity of Haemotropic Mycoplasma Species in Cats and Their Ectoparasites (Fleas and Ticks). *Veterinary Sciences*, 77(81), 1–13.

<https://doi.org/ps://doi.org/10.3390/vetsci11020081>

Rozaq, M. A., Amir, Y. S., Zelfhina, E., & Siregar, R. (2025). Prevalence of Gastrointestinal Protozoal Infections in Local Cats in Harau District , Limapuluh Kota Regency Prevalensi Infeksi Protozoa Saluran Cerna pada Kucing Lokal di Kecamatan Harau Kabupaten Limapuluh Kota. *Journal of Applied Veterinary Science and Technology*, 06(1), 6–9. <https://doi.org/10.20473/javest.V6.I1.2025.6-9>

Sasmita, R., Mussa, O. R. P. A., Benu, H. A., & Widhowati, D. (2019). Infeksi Endoparasit pada Kucing Domestik (*Felis domesticus*) di Pasar Tradisional Kecamatan Sawahan Kota Surabaya. *Jurnal Vitek Bidang Kedokteran Hewan*, 9(1), 1–6.

Sojka, D., Jaloveck, M., & Perner, J. (2022). *Babesia*, Theileria, Plasmodium and Hemoglobin. *Menara Ilmu*, 10(1), 1–12. <https://doi.org/https://doi.org/10.3390/microorganisms10081651>

Wira, A., Batan, I. W., Widyastuti, S. K., & Sukoco, H. (2020). Studi Kasus : Babesiosis (Piroplasmosis) disertai Infestasi Caplak yang Berat pada Anjing Gembala Jerman. *Jurnal Sains Dan Teknologi Peternakan*, 1(2), 30–35.

Yi, T. M. (2024). *Identification of Babesia spp. in Cats From RSHP Using Molecular Approach (PCR)*. IPB University.

Yolanda, W., Elisia, R., & Susalam, M. K. (2024). Literature Review : Identification Of Surra (Blood Protozoan) Disease in Ruminants. *Jurnal Tropicalanimal*, 2(2), 66–72.

Tables

Table 1. Results of blood smear examination in the identification of blood parasite findings in feline patients from December 2024 to November 2025.

Description	Number of Samples (n)	Percentage (%)
Positive for blood parasites	14	27.45
Negative for blood parasites	37	72.55
Total feline blood samples	51	100

Table 2. Prevalence of protozoan blood parasite infection *Babesia* spp. and bacterial infection *Haemobartonella* sp. in feline patients from December 2024 to November 2025

Category	Negative	<i>Babesia</i> spp.	<i>Haemobartonella</i> sp.	Coinfection
Number of samples (n)	37	11	2	1
Prevalence (%)	72.55	21.57	3.92	1.96

Table 3. Prevalence and significance values of protozoan *Babesia* spp. and bacterial *Haemobartonella* sp. findings based on epidemiological aspects (sex, breed, age, and management system)

Factor (Category)	Number of Positive Samples	Prevalence (%)
Sex		
Male	8	57.14
Female	6	42.86
Breed		
Domestic	5	35.8
British Shorthair	3	21.4
Maine Coon	3	21.4
Mixed breed	3	21.4
Age		
Kitten (1–7 months)	1	7.2
Junior (7–24 months)	3	21.4
Adult (24–64 months)	10	71.4
Management system		
Indoor	9	64.3
Outdoor	5	35.7

Figure

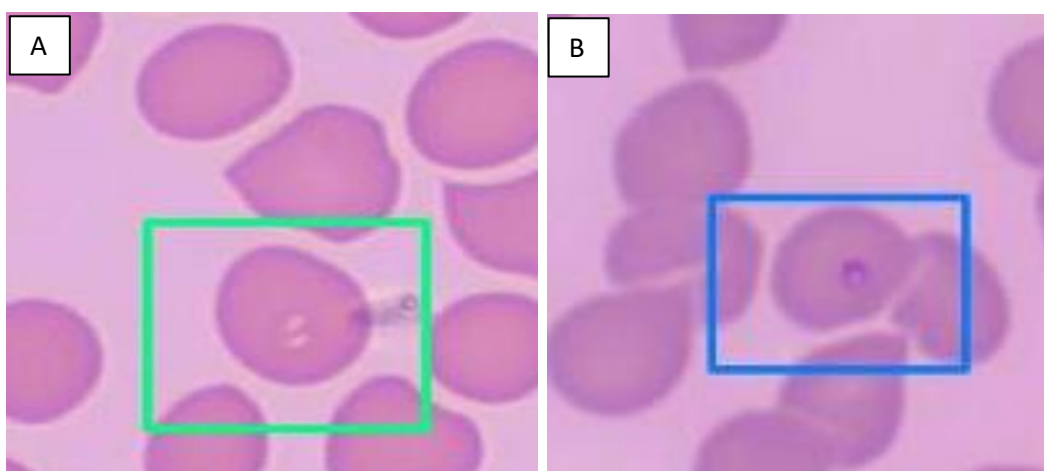


Figure 1. Blood smear preparations observed at 1000× magnification using methylene blue and eosin staining. *Babesia* spp. (A) appears as intraerythrocytic ring-shaped or pyriform forms (Sojka *et al.*, 2022), whereas *Haemobartonella* sp. (B) appears coccoid and located on the surface of erythrocytes (Razgunait *et al.*, 2024).