



Original Research



Identification of Endoparasite in Feces of Cats (*Felis catus*) at APB Antasari Samarinda Clinic Using The Floating Method

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ABSTRACT

Parasites are organisms that rely on a host for survival and can be classified into ectoparasites, which live on the body surface, and endoparasites, which inhabit the internal organs. Transmission of gastrointestinal parasites in cats (*Felis catus*) occurs via eggs, cysts, or infective larvae present in contaminated soil, water, food, or feces. This study aimed to identify endoparasites in cat feces collected from the APB Antasari Samarinda Clinic using the floating method. Out of six fecal samples examined, two samples (33.3%) tested positive for endoparasitic infection: *Ancylostoma* spp. in Ciko and *Toxocara* spp. in Jamal. These results indicate that gastrointestinal parasites remain a significant health concern in domestic cats and may pose zoonotic risks to humans. The findings underscore the importance of routine deworming, proper hygiene management, and regular health monitoring of cats. Future research should increase sample size, employ molecular techniques for precise species identification, and explore environmental or seasonal factors influencing infection dynamics to better inform parasite control strategies.

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INTRODUCTION

Endoparasitic infections in cats, particularly helminths (such as *Toxocara cati* and *Ancylostoma* spp.) and protozoa (such as *Toxoplasma gondii*), have significant zoonotic potential and are a critical public health issue. Transmission of these parasites from cats to humans (zoonosis) can occur through various routes, including ingestion of infectious eggs spread in the environment through cat faeces, penetration of larvae through the skin, or consumption of contaminated food and water (Overgaauw and van Knapen, 2012). In humans, these infections can cause serious clinical manifestations, such as visceral and ocular migratory larva syndrome due to *Toxocara* spp.,

cutaneous manifestations due to *Ancylostoma* spp., as well as congenital and systemic toxoplasmosis affecting immunocompromised individuals (Nurhidayah *et al.*, 2019).

Given the close interaction between cats and humans in the concept of pet ownership (pet-human bond), confirming the parasite status of cats is an essential and preventive measure that must be carried out (Nurhidayah *et al.*, 2019). Routine fecal examinations and regular deworming/antiprotozoal program not only aim to maintain the health and well-being of the cat itself but also serve as a risk mitigation strategy for zoonotic transmission. Thus, endoparasite management in cats is an integral component of a holistic health approach, bridging



animal health and public health within the One Health framework.

Several types of worms that are often found in cat feces and have a high potential to cause zoonotic cause are: *Toxocara* spp, *Ancylostoma* spp, *Strongyloides* spp, *Clonorchis* spp, *Opisthorchis viverrini*, *Paragoniues westermani*, *Schistoma japonicum*, *Diphyllbothrium latum*, *Dipylidium caninum*, and *Echinococcus granulosus* (Wardhani, Rahmawati and Kurniabudhi, 2021).

The source of transmission of worm infections can be eggs, cysts or worm infective larvae that contaminate soil, water, plants (leaves, fruits, and vegetables), and reservoirs. Infection occurs when there is an infective stage of worms as the source of infection and the availability of a main host that is sensitive to a place and environmental conditions that cause contact between the two. Wild cats are more susceptible to diseases due to dirty environmental conditions, and their unmaintained way of life. Dirty environments are suitable places for the development of infective forms of worms (Charisma *et al.*, 2020). Therefore, this study was conducted to identify parasites in cat feces (*Felis catus*) at the APB Antasari Samarinda clinic using the floating method.

MATERIALS AND METHODS

This research was carried out by taking cat feces at the APB Pet Shop Antasari Samarinda Clinic and further examinations were carried out at the Laboratory of Animal Ecology and Systematics and the Laboratory of Animal Physiology, Building C, Faculty of Mathematics and Natural Sciences, Mulawarman University, Samarinda, East Kalimantan.

The tools used in this study are trays, micro tubes, dissecting sets, beaker cups, sample bottles, drip pipettes, scales, petri dishes, measuring tubes, spatulas, scissors, object glass, cover glass, microscope, and centrifuge. The materials used are cat feces, aquadest, NaCl solution, gauze, and water.

The type of research carried out was by surveying random picking techniques and diagnostic determination was carried out by the floating method. Fecal examination using a modified floating method from (Sasmita *et al.*, 2019), was carried out by weighing 3 grams of cat feces then adding 15 ml of water then stirring until homogeneous and left for 15 minutes. Next, the solution is filtered and 30 mL of saturated NaCl solution is added and then centrifuged for 10 minutes with a speed of 3000 and a temperature of 27°C. After being centrifuged, the supernatant formed on top is taken and placed on the glass object to be observed under a microscope with a magnification of 400x.

RESULTS AND DISCUSSION

Based on the examination of six fecal samples collected from cats at the APB Antasari Samarinda Clinic, two samples were identified as positive for endoparasitic infection, namely *Ancylostoma* spp. in Ciko and *Toxocara* spp. in Jamal (Table 1)

Table 1. Table of endoparasite identification results in cat feces samples at the APB Antasari Samarinda clinic, East Kalimantan

Cat Feces	Infected with Parasites
Ulil	-
Ciko	+
Chios	-
Jamal	+
Belang	-
Celo	-

Out of the six fecal samples examined, two (33.3%) were positive for endoparasitic infection, namely *Ancylostoma* spp. in Ciko and *Toxocara* spp. in Jamal (Table 1). This prevalence suggests that endoparasitic infection remains an important health concern in cats at the APB Antasari Samarinda Clinic.

The prevalence found in this study (33.3%) is relatively comparable to previous reports in domestic cats in Indonesia. Sasmita *et al.* (2019) reported endoparasitic infections in cats from traditional markets in Surabaya, with prevalence rates exceeding 30%. Similarly, Wardhani, Rahmawati, and Kurniabudhi (2021) found a high occurrence of intestinal worm eggs in cats in Surabaya, indicating that gastrointestinal helminths remain widespread in urban environments. These findings suggest that endoparasitic infections in cats are not limited to stray populations but may also affect household cats with varying degrees of exposure.

Cats infected with *Ancylostoma* spp. are known to present with clinical signs such as anemia, bloody diarrhea, pale mucosa, dry coat, and intestinal malabsorption (Nugraha, Putriningsih and Batan, 2022). The severity of these symptoms is influenced by the host's age, nutritional status, and immune condition, as well as the parasite burden. Diarrhea occurs as a result of mucosal lesions and villous damage caused by *Ancylostoma* spp., which attach to the intestinal mucosa and ingest blood, leading to chronic blood loss (Sigiro, Widyastuti and Jayanti, 2024).

Helminthiasis in cats has also been associated with reduced growth, poor body condition, and gastrointestinal disorders (Nurmayani, Jayanti and Erawan, 2023). Although infections may be asymptomatic in some individuals, the risk of subclinical malnutrition and lowered resistance to other diseases should not be underestimated. Furthermore, several helminths in cats, including *Ancylostoma* spp., are zoonotic, with humans potentially becoming infected through environmental contamination (Charisma *et al.*, 2020; Winerungan, Sorisi and Wahongan, 2020). This highlights the importance of proper deworming programs, hygienic waste management, and public awareness to reduce both veterinary and public health risks.

Overall, the results of this study confirm that endoparasites remain a significant health problem in domestic cats in Samarinda. Preventive measures such as routine administration of anthelmintics,

improvement of environmental sanitation, and education of cat owners are essential strategies to reduce prevalence and prevent zoonotic transmission.

Ancylostoma spp. belongs to the class of nematodes, family Ancylostomatidae. *Ancylostoma* sp. can cause ancylostomiasis if infected. These worms have a hook-like arrangement with three pairs of teeth, elliptical and thin-shelled eggs. The life cycle takes place directly without involving an intermediary host. *Ancylostoma* sp. sucks blood by attaching to the intestinal mucosa. Adult worms suck blood in alternating locations, thus causing bleeding. In addition, these worms produce anticoagulants that keep blood flowing continuously and mixing with feces (Sigiro, Widayastuti and Jayanti, 2024).

Helminthiasis, also known as parasitic worm infection, is a disease that is often diagnosed in cats. Cats are the definitive hosts of many large parasites, some of which are zoos. Animal Parasitology Survey Removal is important. The accuracy of diagnosis leads to appropriate treatment and control strategies, reducing the risk of the occurrence of parasitic zoonoses. Animals, habits of local animal populations, seasons, cat population parameters (Nurmayani, Jayanti and Erawan, 2023).

Intestinal parasitic infections can cause different losses such as, reduced tolerance of the surroundings, absorbing important nutrients from the host, and can affect important organs that are sensitive to different types of diseases. Worm Parasitic infections can be asymptomatic, but clinical symptoms that can be found are weight gain, significant stomach, respiratory distress, and diarrhea. In case of infection, serious lock-up or intussusception in kittens can cause (Nurmayani, Jayanti and Erawan, 2023).

The percentage of infected with parasites based on their age shows that cats under 6 months and still with their mothers have a lower risk of being infected with parasites than cats ≥ 1 year old. Transmission of infection in ≥ 2 year-old cats occurs when cats come into direct contact with the environment, food, and even other cats that have been infected. Based on the results of the survey, it can be concluded that age is one of the risk factors for being infected with worm parasites. Based on their health conditions, wild cats have a higher risk of being infected with parasites because of the interaction between cats that have been infected/contaminated by worm eggs caused by the surrounding environment (Sasmita *et al.*, 2019).

The percentage of infected parasites by sex is higher in male cats than in female cats. Male cats are suspected to have a higher chance of leaving the house than female cats. This is because male cats often forage, and look for female cats to mate so that male cats can be infected with infected clay cats (Natasya *et al.*, 2021).

Factors that affect the spread of parasites in the surrounding environment include water sources that do not meet the health requirements for drinking, wastewater disposal and poor waste management can cause pollution of the surrounding

environment and can potentially cause pathogenic microbes that can be a source of infection in the body (Winerungan, Sorisi and Wahongan, 2020).

CONCLUSION

Based on an investigation of six fecal samples from felids (*Felis catus*) at the APB Antasari Samarinda Clinic, two samples (33.3%) tested positive for endoparasitic infestation, specifically identified as *Ancylostoma* spp. and *Toxocara* spp. Subsequent research is recommended to expand the sample size to enhance the representativeness of prevalence data, integrate molecular diagnostic techniques for more precise species identification, and conduct longitudinal studies to analyze the influence of environmental and temporal variables on transmission dynamics. This will contribute to a more comprehensive epidemiological understanding and inform the formulation of more optimal control strategies.

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AUTHORS' CONTRIBUTIONS

AM contributed to the journal in the introduction and conclusion sections, DR contributed to the journal in the percentage of parasitic infections based on sex and health conditions of cats, ME contributed to the journal in the types of parasites found in the AT APB Antasari Samarinda clinic, M contributed to the abstract and formatting, while SW is a comparison of results with previous research or national data, as well as factors that influence the spread of parasites in the surrounding environment.

CONFLICT OF INTEREST

The author states that there are no conflicts related to the publication of this manuscript.

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