

Poster Presentation (PF-29)

Worms Infestation in Stray Cats at North BogorRisa Tiuria^{1*}, Tetty Barunawati Siagian²¹Division of Parasitology and Health Entomology, Department of Animal Disease and Veterinary Public Health, Faculty of Veterinary Medicine Bogor Agricultural University.²Veterinary Paramedic Study Program, Bogor Agricultural University Vocational School.

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Keywords: North Bogor, stray cats, worm.**INTRODUCTION**

Stray cats population are high in Indonesia, including in North Bogor area which is a part of Bogor City. North Bogor is the fourth largest area of 6 districts in the city of Bogor. North Bogor are an area of industrial with a lot of factories and housing. This vast area of North Bogor is a suitable place to live for stray cats. Stray cats can easy to breed and adapt in any environment. This is some of the factors in the increasing population of stray cats in North Bogor. Stray cats have a high interaction human life. The existence of this stray cats has the potential to cause zoonotic disease for humans. One of the problems caused by stray cats is the presence of zoonotic parasitic worms. Stray cats have the potential for occurrence of worm infections [1]. Research on zoonotic worm infections in stray cats is still rarely performed in Indonesia when compared to domesticated cats [2,3,4]. Specific worm infection studies such as *Toxocara cati* have been done in pet cats in Bogor city [5] and in Denpasar City, Bali [2,3] but have not been done to stray cats in the City of Bogor. For that it requires more studies on infection of worms in stray cats in the city of Bogor. This study aims to identify worms in stray cats in the area of North Bogor.

METHODS AND MATERIAL**Sample Collection**

The study was conducted in the area of North Bogor which is divided into 5 places namely traditional markets, 'angkot' terminals, campuses, housing residents and student hostels. The sample in this study is the feces of stray cats. The amount of each sample at each place is 10 samples with a total of 50 samples. Sampling is done by capturing and keeping the cat up to defecation. The fecal samples were collected and stored in plastic bags and given information using label paper. The fecal sample was taken to the laboratory and stored in the refrigerator at 4°C until the sample was examined. Stray cats that had the feces collected are marked with permanent markers of varying colors based on where they are found.

Sample Inspection

Sample examination was done by using two qualitate methods, flotation and McMaster method. The McMaster method is used to calculate the number of eggs per gram of stool (TTGT). The first stage of the flotation method. Flotation method were done by weighing 4grams of feces using digital scales and inserted into mica glass. The samples were added with a saturated salt solution with specific gravity of 1.2 for 56 ml then stirred and filtered using a tea strainer. The mixture is then poured into the test tube until it is full and meniscus formed. The glass cover is placed on top of the test tube and allowed to stand for 10 minutes. Glass cover is then taken and placed on a glass object. The observations were performed under a microscope with 100x magnification. Samples with positive result were then examined with the McMaster Method. The fecal mixture in the test tube are filtered and dropped into the McMaster counting chamber and left for 5 minutes until the eggs float. Observations were performed with 100x enlargement and calculated [6].

RESULT AND DISCUSSION

Results from the fecal examination of 50 stray cats samples in the North Bogor region of 5 places showed 6 positive samples of the egg nematode worms of *ascarid* eggs and eggs *strongylid*. Presentation of stray cats infected by worm in North Bogor region is 12%. More data such as Tables 1 and 2.

Table 1. Total number of stray cats with positive worm infection

| Area of study | Number of infected stray cats | Percentage (%) |
|--------------------|-------------------------------|----------------|
| Traditional Market | 1 | 2 |
| 'Angkot' Terminal | 1 | 2 |
| Campus | 1 | 2 |
| Housing Area | 1 | 2 |
| Hostels | 2 | 4 |

Table 2. Type of worm eggs found in infected stray cats

| Sample | Area of study |
|--------|--------------------|
| 1 | Traditional Market |
| 2 | 'Angkot' Terminal |
| 3 | Campus |
| 4 | Housing Area |
| 5 | Hostels |
| 6 | Hostels |

Based on the results of the worm infection of feline in 5 stray cats in the area of North Bogor, showed 12% of stray cats infected with nematode worms. The types of eggs found are ascarid eggs and strongylid eggs. Ascarid eggs found are determined to be of the species of *Toxocara cati*. While, strongyloid eggs found are identified as from the species of *Ancylostoma braziliense*, *Ancylostoma tubaeforme* and *Uncinaria stenocephala*. This type of nematode worms often infects the cats of both the pet cats and the stray cats [1]. Stool samples with positive results were found highest in hostels as compared to terminals, campus, housing and markets with a percentage of 4%. The high infection of worms in a student hostel is caused by higher stray cats populations in this place compared to the 4 other places. This large population allows the easiness in transmission and infection on stray cats. Environmental factors, sanitation and lifestyle become one of the factors supporting the spread of worm infections. The vast area of North Bogor is one of the factors of many hostels dedicated to factory employees. Low sanitation, denser populations, high humidity, density of boarders and hostel lifestyles leads to the predisposing factor to worm infections in stray cats and humans. A high humidity area and poor sanitation are suitable places for the development of infective forms of worm eggs [7,8]. Stray cats populations are increasing in densely populated hostels because stray cats need food to live on. Wild cats will scavenge food from the rest of the boarder's food. The percentage of stray cats infected with worms in North Bogor is lower than in Denpasar Bali area of 47.5% in cats infected with *Ancylostoma Spp* worms [2] and 32% in stray cats infected with worms of *Toxocara cati* [3,9]. The results of the examination and calculation of 50 stray cats fecal samples in North Bogor showed that the worm infection in each wild cat was not the same case that varied between the fecal samples with each other in 5 places in North Bogor. The results obtained according to eggs per gram of feces (TTGT) for each sample is between 0-3000 TTGT with degree of moderate infection. This difference is probably caused by several factors; the number of worms infecting each stray cats is not the same and the difference in resistancy toward worms of each stray cats. The average number of eggs per gram of faeces was 1566.6

TTGT with moderate infection status for strongylid worm eggs and 533.3 TTGTs with mild degree of infection of ascarid eggs. *Strongylid* worm egg infections are higher than *ascarid* eggs. Worms that infect stray cats are worms that can be a risk in transmitting zoonotic infections to humans [10].

| | |
|------------|------|
| Strongylid | 700 |
| CONCLUSION | 3000 |
| Ascarid | 800 |

Based on the examination of wild cat feces samples at 5 locations in North Bogor, it can be concluded that 6 fecal samples of stray cats are found to have worm infection with the percentage of 12%. The type of worm eggs found is the worm nematode egg type Ascarid and Strongylid. The highest worm infection in stray cats are found in hostels more than in terminals, campus, housing area, and markets.

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REFERENCES

- [1] Bowmann DD, Barr SC, Hendrix Cm, Lindsay DS, Barr SC. 2003. Gastrointestinal parasitology of cat. *Comp and Exotic Animal Parasitol.* 221:21-34.
- [2] Oktaviana PA, Dwinata M, Oka IBM. 2014. Prevalensi infeksi cacing *Ancylostoma Spp* pada kucing lokal (*Felis catu*) di Kota Denpasar. *Buletin Veteriner Udayana* 6(2):161-167. ISSN:2085-2495.
- [3] Nealma S, Dwinata IM, Oka IBM. 2013. Prevalensi infeksi cacing *Toxocara cati* pada kucing lokal di wilayah Denpasar. *J Med Vet Indones* 2(4):428-436.
- [4] Manurung RS, Lambok S. 2012. Infeksi *Toxocara* pada hewan peliharaan di Kelurahan Padang Bulan tahun 2012. *E Journal* 1(1):1-3.
- [5] Murniati, Sudarnikah E, Ridwan Y. 2016. Prevalensi dan faktor resiko infeksi *Toxocara cati* pada kucing peliharaan di Kota Bogor. *Jurnal Kedokteran Hewan* 10(2):139-142. E- ISSN:2502-5600.
- [6] Cardillo N, Sommerfelt I, Farina F, Pasqualetti M, Perez M, Ercole M, Rosa A, Ribicich M. 2014. A *Toxocara cati* eggs concentrations methods from cats feces, for experimental and diagnostic purposes for experimental and diagnostic purposes. *Vet Parasitol.* 56:198-205.
- [7] Abu-Madi MA, Al-Ahbabi DA, AL-Mashadani MM, Al-Ibrahim R, Pal P, Lewis JW. 2008. Patterns of parasitic infections in fecal sampel form stray cat populations in Qatar. *J Helminth* 81:281-286.
- [8] Palmer CS, Rebeca JT, Ian DR, Rusell PH, Aileen E, Lyndon W, Robert R, Andrew T. 2007. The

veterinary and public significance of hookworm in dogs and cats in Australia and the status of *Aceylanicum*. *Vet Parasitol.* 145:304-313.

- [9] Kusnoto. 2005. Prevalensi toksokariasis pada kucing lokal di Surabaya melalui bedah saluran pencernaan. *Media Kedokteran Hewan.* 21(1):7-11.
- [10] Hotez PJ, Broker S, Bethony JM. 2004. Hookworm infection. *Vet Med.* 351(8):799-807.