

## Worms Infestation on Stray Cats in Central Bogor

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### INTRODUCTION

Stray cats are cats that roam freely in the environment around human beings. Central Bogor is one of the administrative region that is located right at the downtown of Bogor. This region consists of diversity of places such as markets, terminals, campus, schools, housing areas, and many more. The human population in Central Bogor are much more compared to other regions. The diversity of places and dense residential population are one of the factors that increases the cat population in Central Bogor due to the characteristics of the cats that breed and adapt to the environment easily. Stray cats are usually close to human beings, without realizing that their presence has the potential to cause health problems to the society. The outspread of zoonotic parasitic worms is one of the problem caused by stray cats. Research about infestation of zoonotic parasitic worms in Indonesia is still rare compared to pet cats [1,2,3]. Specific research about worm infestation had been done in Central Bogor on pet cats [4] but has never done any on stray cats. The objective of this research is to determine the presence of worm infestations on stray cats in the Central Bogor region.

### MATERIALS AND METHODS

#### Sampling

The research was conducted in Central Bogor area which is divided into 5 places namely traditional market, public transportation terminal, school, middle class residential area and hostels. Samples in this research are in the form of faeces from stray cats. Ten samples were taken from each place with a total of 50 samples. Sampling was taken using capturing and caging technique to defecation. Samples are collected, kept in labeled plastic bags, brought to the laboratory and kept in the refrigerator with the temperature of 4 °C. The stray cats are given marked with different colors of permanent marker according to the different places in this research.

#### Sample examination

Sample examination was done using two methods, qualitative with flotation test and

qualitative with Mc Master technique. Mc Master method are used to count the number of eggs in every gram of faeces (TTGT). The first stage of sample examination was using flotation method. The procedure of this method are weighing 4 grams of stray cats' faeces using digital weighing machine and and are put in mica glass. Samples that are weighed are added 56 ml of concentrated sugar salt solution with specific gravity of 1.2. The mixture was then stirred and filtered with tea strainer. The mixture was poured into a test tube to full with miniscus formed. Cover glass was placed at the tip of the test tube and was left for 10 minutes. After that, cover glass was taken and placed on object glass. Observation was done under microscope with the 100x magnification. Samples that shows positive results were counted with the Mc Master method. Positive samples were put into the Mc Master counting chamber and left for five minutes until the eggs float. Observations were done with the magnification of 100x and were counted [5].

### RESULT AND DISCUSSION

Results show that 15 out of 50 faeces samples from stray cats in five places of Central Bogor are positive nematode eggs such as ascarids and strongyloides eggs. This shows that the percentage of worm infestation in Central Bogor is 30%. Table 1 and 2 show the data collected

Table 1. Number of stray cats that are positive infested with parasitic worms in Central Bogor

Research area	Number of cat infested parasitic worms	Percentage (%)
Traditional market	5	10
Terminal	2	4
School	3	6
Residential area	3	6
Hostels	2	4

Table 2. Types of eggs on stray cats in Central Bogor that are infested parasitic worm worms

Sample	Research area	Egg type	TTGT
1	Market	Strongylid	2100
2	Market	Ascarid	500
3	Market	Ascarid	600
4	Market	Ascarid	200
5	Market	Ascarid	400
6	Terminal	Ascarid	800
7	Terminal	Ascarid	600
8	School	Ascarid	200
9	School	Ascarid	100
10	School	Ascarid	400
11	Housing	Strongylid	500
12	Housing	Strongylid	800
13	Housing	Strongylid	600
14	Rental room area	Strongylid	1000
15	Rental room area	Ascarid	8000

Based on the results, 30% of the stray cats at five places of Central Bogor are infested with nematodes. Eggs of nematodes found were Ascarids and Strongyloides. Worms with ascarids egg as much as 66.7% on infested stray cats whereas 33.3% strongyloides egg on infested stray cats. Ascarids egg are *Toxocara cati* while strongyloides eggs are *Ancylostoma tubaeforme*, *Ancylostoma braziliense* and *Uncinaria stenocephala*. These types of nematode worms often infect cats [6]. Positive faeces sample are found more at the market compared to terminals, schools, residential area and hostels with the percentage of 10%. Higher parasitic worm infestation at the traditional market are due to a high stray cat population compared to the other four places. Higher population at the market might contribute the outspread of the infestation on stray cats. Environmental factors such as temperature, climate and moist do contribute much in the transmission of parasitic worms. Environmental moist at the market is higher compared to the other four places. The dirty and wet condition of the market is a suitable place for infective stage of eggs to grow [7,8]. Stray cats that are infested with parasitic worms at the terminal are the least because their population at the terminals are lesser. Population of stray cats are much influenced by the availability of feed at one place for live sustainability. Percentage of infested parasitic worm on stray cats are lesser compared to Denpasar Bali region as much as 47.5% *Ancylostoma Spp* [1] and 32% *Toxocara cati* [1,9]. The average of eggs present in each gram of faeces are 820 TTGT strongyloides and 1180 TTGT ascarids eggs which shows degree of mild infestation. Parasitic worm infestation of ascarids are higher compared to strongyloides eggs. This

causes higher risk in outspreading zoonotic infestation to humans. A dense human population in Bogor region is one of the factors that causes the transmission of zoonotic parasitic worms [10].

## CONCLUSION

Based on the faeces sample examination of stray cats at five different places in Central Bogor, it can be concluded that 15 samples shows positive infestation with the percentage of 30%. The type of worms found are nematodes ascarids and strongyloides. Parasitic worm infestations on stray cats at the market are higher compared to public transport terminals, schools, residential area and hostels.

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## REFERENCES

- [1] 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.
- [2] Nealma S, Dwinata IM, Oka IBM. 2013. Prevalensi infeksi cacing *Toxocara cati* pada kucing local di wilayah Denpasar. *J Med Vet Indones* 2(4):428-436.
- [3] Manurung RS, Lambok S. 2012. Infeksi *Toxocara* pada hewan peliharaan di Kelurahan Padang Bulan tahun 2012. *E Journal* 1(1):1-3.
- [4] 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.
- [5] Cardillo N, Sommerfelt I, Farina F, Pasqualetti M, Perez M, Ercole M, Rosa A, Ribicich M. 2014. *Toxocara cati* eggs concentrations methods from cats feces, for experimental and diagnostic purposes for experimental and diagnostic purposes. *Vet Parasitol.* 56:198-205.
- [6] Bowmann DD, Barr SC, Hendrix Cm, Lindsay DS, Barr SC. 2003. Gastrointestinal parasitology of cat. *Comp and Exotic Animal Parasitol.* 221:21-34.
- [7] Abu-Madi MA, Al-Ahbab DA, AL-Mashadani MM, Al-Ibrahim R, Pal P, Lewis JW. 2008. Patterns of parasitic infections in fecal sampel from 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 an the

status of *Aceylanicum*. *Vet Parasitol.* 145:304-313.

- [9] Kusnoto. 2005. Prevalensi toksokariasis pada kucing liar 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.