

## Prevalence of ectoparasites on a stray cat population from “Town of Knowledge” Kota Samarahan, Sarawak, Malaysian Borneo

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**Abstract:** Stray cats survive on their own and scavenge the surrounding areas for food to survive. Their exploitation to investigate the prevalence of ectoparasites can be of great medical importance for humans as they harbour a variety of zoonotic pathogens. Therefore, a survey of ectoparasites on stray cats was carried out from November 2017 to March 2018 around the Town of Knowledge to determine the prevalence of ectoparasites in stray cats and their potential to threaten the public health by infesting stray cats around Kota Samarahan, Sarawak, Malaysian Borneo. A total of 150 individuals of stray cats have been examined for ectoparasites. Of these hosts, 113 individuals (75.3%) of the stray cats were infested by at least one species of ectoparasites. There were nine species of ectoparasites belonging to four groups (louse, flea, mite, and tick). Louse (*Felicola subrostratus*, 44.7%) is the most frequent species of ectoparasite infesting the hosts in this area, followed by flea species, namely, *Ctenocephalides felis* (18.7%) and *Ctenocephalides felis orientis* (16.0%). *Lynxacarus radovskyi* (24.0%), *Otodectes cynotis* (0.7%), mite sp. 1 (0.7%), and mite sp. 2 (0.7%) constitute the four most common species of mites. *Haemaphysalis* sp. 1 (0.7%) and *Haemaphysalis* sp. 2 (0.7%) are the ticks discovered in this area. The result of this study highlights the importance of managing stray cats and controlling their population to minimize the number of individuals that can serve as ectoparasites hosts.

**Key words:** Ectoparasite, Kota Samarahan, Sarawak, prevalence, stray cats, zoonoses

### 1. Introduction

Ectoparasites are arthropods that spend most of their lives outside the host either by inhabiting the skin or outgrowth of skin for various periods to survive [1]. In domestic animals, ectoparasites are widely spread throughout the world as they are easier to attract humans' attention worldwide. For example, pedigree cat breeds will be exported elsewhere due to high demands of cat lovers, and the migration of animals will lead to the spread of any parasitic pathogens, especially those which are capable of transmitting to humans [2]. Even though the discussion is still going on about the significant role of domestic cats as a source of zoonotic transmission, despite lacking evidence, stray cats need not be neglected for their capability of becoming carriers. Some ectoparasites are identified as vectors because they are able to transmit zoonotic pathogens to the host through feeding and defecating [3].

Domestic cats are categorized into two types, which are stray cats and housed cats. Stray cats or free-roaming (feral cats) are commonly not considered as pets because they are not owned and live exclusively outdoors. Meanwhile, housed cats have closer associations with humans. They

mostly have veterinary care and live indoors. Historically, domestic cats and humans have been living together and have coexisted in the past a few thousand years. However, they still can risk human life by being a suitable host for pathogen vectors [4]. Stray cats can be regularly found almost anywhere in all human populations. Most stray cats were once humans' pets, and they were dumped and abandoned in time because of several factors such as allergic reactions, human migration, and the loss of interest, or simply because they were not wanted anymore. Stray cats may have an important role in the transmission of diseases and understanding the pathogenicity and epidemiology of potential zoonotic agents in stray cat populations and other animals that are closely associated with humans, which is fundamental to public health [5]. A stray cat population especially from an area with a dense human population could provide a valuable resource to understand and fill the knowledge gap of their parasitic infestation.

Dead bodies were observed in Kuching, the capital of Sarawak, and free-roaming animals were found and impounded on roadsides. The statistic of these stray

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