Occurrence of endoparasites in Bonnet Macaque in Thrissur Zoo


Strongyle ova


Buxtonella

The study aimed to analyze and describe the endoparasite profile of the Bonnet Macaque *Macaca radiata* housed at Thrissur Zoo in order to develop effective management strategies against these parasites.

The Bonnet Macaque is a highly social primate, similar to other primate species. It is more prone to endoparasitic infections during the summer season. However, changes in diet can also facilitate the entry of parasites. As these macaques rely heavily on plant-based food, vegetation can act as a potential source of parasitic infection.

Muraleedharan (2016) conducted a study on endoparasites of wildlife of Karnataka. Varadharajan et al. (2001,) and Varadharajan and Subramanian (2003) studied the influence of season on the prevalence of helminthic infections among wild mammals in the Thrissur Zoo.

A total of 15 samples were collected from selected captive Bonnet Macaques for the examination of endoparasites and they were screened using parasitological techniques sedimentation and floatation methods. Faecal droppings were collected in sterile plastic vials in the early morning from the Thrissur Zoo on intermittent days. The collected samples

were analysed in university veterinary hospital Kokkalai, Thrissur. The faecal samples were subjected to routine parasitological analysis for the presence of egg or oocyte by standard sedimentation and floatation techniques.

Out of 15 samples examined two samples (13.33%) were found positive for endoparasites – one with strongyle ova and the other with buxtonella.

The present investigation revealed that wild mammals in the zoo generally did not exhibit significant or specific clinical symptoms due to parasitic infections. This finding is in agreement with the observation of Muraleedharan (2016), who noted that although such infections may not produce immediate clinical signs, they can lead to long-term effects such as emaciation and weakness, thereby predisposing the animals to secondary infections by other pathogens.

Some researchers also studied the seasonal prevalence in wild animals and reported different findings than the study like Moudgil et al. (2020) who reported monsoon season prevalence of 37.73% and 53.12% in animals and birds of MC Zoological Park, Chhatbir, Punjab and in the animals and birds of Bir Moti Bagh Deer Park, Patiala, respectively. During the rainy season, there will be lush growth of grasses and other plants, and the climate is most suitable for the development and existence of infective stages of helminth parasites. So, the infection recurs repeatedly throughout the year. The study conducted by Lingayat et al. (2022) on the prevalence of gastrointestinal endoparasites in captive wild animals at Aurangabad Municipal Corporation Zoo, Maharashtra revealed an overall gastrointestinal endoparasite prevalence of 48.4% and statistically significant variation in the prevalence between different seasons.

Most of the parasitic infections recorded from carnivorous animals are of zoonotic importance and those handling them should be aware to follow all hygienic cares to prevent infection to them (Muraleedharan 2016). Based on information provided in the 2011–2012 Annual Report of Mysore Zoo, 1,032 faecal materials were examined and *Toxocara*, strongyle oocysts were detected in carnivores. During 2012–13, 1,109 samples were subjected for screening of which 208 (18.76%) were positive for various ova. In a study conducted on the influence of season on the prevalence of helminthic infections among wild mammals in the Thrissur Zoo infection was comparatively higher during both the rainy seasons viz the south-west monsoon and the north-east monsoon Varadharajan et al. (2001) and Varadharajan and Subramanian (2003).

The study on prevalence of GI parasites has been conducted in various zoos and national parks throughout the world by different researchers (Maske et al. 1990; Rahman et al. 2014; Thawait et al. 2014; Mir et al. 2016). The prevalence of GI endoparasites observed in our study was lower than the previous findings of researchers.

Similar findings were also observed by some researchers like Varadharajan et al. (2001) who reported higher prevalence of helminthic infection in herbivores (71.62%) than the

omnivores (65.9%). Usually, overcrowding in herd animals, competition for food and water results in stress and decreased immunity lead to more vulnerability to parasitic infections. Lower prevalence in carnivores in comparison to herbivores and omnivores could be contributed to their individual confinement and good management practices. Some researchers observed lower prevalence in carnivores than our study like Thawait et al. (2014).

Moudgil et al. (2020) studied the prevalence of GI parasitic infections in zoo-housed birds of various zoological/deer parks and an aviary of Punjab, India screening 1,273 samples from the birds of the MC Zoological Park, Bir Moti Bagh Deer Park, Patiala, Patiala Aviary, Bir Talab Deer Park, Bathinda and Tiger Safari, Ludhiana showing an overall GI parasitic burden of 37.52%, 25.54% 37.50%, 45.39 %, and 67.64%, respectively. The protozoan infection mainly involved coccidian infection of *Eimeria*.

References

Lingayat, S.S., T.A. Shafi, M.P. Sakhare, M.F. Siddiqui, G.M. Chigure, A.M. Syed & R.S. Naikwade (2022). Prevalence of gastrointestinal endoparasites in captive wild animals at Aurangabad Municipal Corporation Zoo, Maharashtra, India. *International Journal of Zoology and Animal Biology* 5(3): 000378.

Maske, D.K., N.G. Bhilegaonkar & M.R. Sardey (1990). Prevalence of parasitic infections in domestic animals at Nagpur (Maharashtra). *Journal of Veterinary Parasitology* 4(2): 23–25.

Mir, A.Q., K. Dua, LD. Singla, S. Sharma & M.P. Singh (2016). Prevalence of parasitic infection in captive wild animals in Bir Moti Bagh Mini Zoo (Deer Park), Patiala, Punjab. *Veterinary World* 9(6): 540–543.

Moudgil A.D., L.D. Singla & M.P. Singh (2020). Seasonal variation in gastrointestinal parasitism of zoo-housed birds of Punjab, India. *Biological Rhythm Research* 51(7): 1075–1086.

Muraleedharan, K. (2016). Endoparasites of wildlife (carnivore) of Karnataka state, India. *Veterinary Research International* 4(2): 54–62.

Rahman, S.M., A.R. Dey, U.K. Kundu & N. Begum (2014). Investigation of gastrointestinal parasites of herbivores at Dhaka National Zoological Garden of Bangladesh. *Journal of the Bangladesh Agricultural University* 12(1): 79–85.

Thawait, V.K., S.K. Maiti & A.A. Dixit (2014). Prevalence of gastro-intestinal parasites in captive wild animals of Nandan Van Zoo, Raipur, Chhattisgarh. *Veterinary World* 7(7): 1–4.

Varadharajan, A. & H. Subramanian (2003). Influence of age on the prevalence of parasitic infections among wild mammals in Thrissur Zoo, Thrissur, Kerala. *Zoos' Print Journal* 18(4): 1065–1066.

Varadharajan, A, C. Pythal & H. Subramanian (2001). Investigation on the prevalence of helminth parasites of wild animals in the Thrissur Zoo, Kerala. *Indian Council of Agricultural Research* 30(1–2): 12–15.

P. Sunil Kumar
PG Department of Zoology, Sree Kerala Varma College, Thrissur, Kerala 680011, India.
Email: sukkuedavetty2012@gmail.com

Citation: Kumar, P.S. (2026). Occurrence of endoparasites in Bonnet Macaque in Thrissur Zoo. Vet Brief #17, In: *Zoo's Print* 41(5): 33–35.