Ivermectin treatment of Hookworms in Captive Indian Gray Wolf (Canis lupus)
K. Senthilkumar1, K. Devaki2, S. Gomathinayagam3 and M.G. Jayathangaraj4

Hookworms occur in a wide range of hosts and are cosmopolitan in distribution. Most Hookworms have a direct life cycle and so cohabitation of host is the key factor in their development. The adult worms in the intestine take a plug of the intestinal mucosa into its powerful buccal cavity and suck blood with the teeth damaging the epithelium. This causes huge blood loss, which leads to hypochromic and microcyctic anaemia, general weakness, blood tinged diarrhoea with mucus, rough hair coat and dehydration in animals in the latter stages. The wild canids are also susceptible to almost all of the parasites that plague the domestic dog. Baylis and Daubney (1922), Alwar and Lalitha (1961) reported incidences of Ancylostoma caninum infection in wild dog, Wolf, Jackal and Fox. The present report is about the occurrence of the hookworm infestation in Gray wolf (Canis lupus).

Case History
A pair of wolf was brought to the Arignar Anna Zoological Park, Vandalur from Singapore Zoological Gardens as an animal exchange programme in October 2005. After few months, the wolves seemed to be very lethargic, weak, dull, depressed, and they had a poor appetite. Both of them were treated for general weakness by providing electrolytes in drinking water but their condition did not show much improvement and after few days both the wolves were having diarrhoea with blood tinged mucus. The faeces were dark tarry coloured with foul smell. The animals were segregated and shifted to zoo hospital for further treatment. Faecal samples were collected and subjected to microscopic examination. In the laboratory, samples were examined for the presence of parasite eggs/larvae, using floatation method. Egg identification was based on morphological characteristics (shape and structure of shell) and measurements.

Result and Discussion
Microscopical examination of faecal samples revealed the presence of hookworm (Ancylostoma sp.,) eggs. Popiolek et al. (2009) also recorded 12.5 per cent of Ancylostoma caninum in the wolf faeces in the Beskid S´la´ski Landscape Park (BSL) and Z´ywiec Landscape Park (ZL) in Poland. The EPG value was 5200. Since the animals were not having good appetite, regular feed of beef with bone was changed and chicken was provided. The treatment consisted of haematinic @ 150–250 U/kg mixed in the meat for 2 weeks and haemostatic tablets mixed in the meat and electrolyte powder in drinking water for 3 days. The appetite had returned normal after 3 days, which was followed by the treatment of wolves orally with Ivermectin tab @200µg per kg body weight and repeated after 15 days. The faecal examination was performed again after a month and revealed reduced mean egg counts of hookworms (Ancylostoma sp.,) by 94.6 %. Haematinic, calcium phosphorus tonic, vitamin syrup were mixed in the meat regularly. The resting room of the animal was thoroughly cleaned with common salt, turmeric powder and sterilized with flame gun and the outdoor enclosure was also treated with common salt, lime powder and sterilized with flame gun, so as to destroy the eggs and larvae. There after the ground area of the outdoor enclosure was refilled with new sand and potassium permanganate. As the main source of infection is the deposition of faecal matter, care was taken to dispose the faeces then and there in a safe place. Meredith and Beasy (1991) and Chandranaka et al. (2005) reported the use of Ivermectin against ascaris in cheetah and leopards. Devaki et al. (2006) reported the use of pyrantel pamoate against Ancylostoma infection in wild dogs Swapan kumar Sur et al. (2000) reported the use of ivermeciton in big cats for treating Ascarids and Ancylostoma infections, which coincides with the observations in the present study.

Summary
A rare case of hookworm infection in an Indian Gray wolf and its successful treatment with Ivermectin tablets along with other supportive therapy was reported.

Acknowledgement
Authors are thankful for administrative support received from The Director and Chief Conservator of Forests, Arignar Anna Zoological Park, Vandalur for permitting to conduct this study. Authors are also deeply indebted to the Dean, Faculty of Basic Sciences, Madras Veterinary College, Chennai for providing necessary facilities to conduct the study.

1Assistant Professor, Dept. of Wildlife Science, Madras Veterinary College, TANUVAS, Chennai. Email: senthilkumar.k.wls@tanuvas.ac.in
2Assistant Professor, Krishna Vigyan Kendra, Kattupakkam, TANUVAS, Chennai. Email: devaki.k@tanuvas.ac.in
3Professor, Dept. of Veterinary Parasitology, MVC, Chennai. Email: gomathinayagam.s@tanuvas.ac.in
4Professor & Head, Dept. of Wildlife Science, Madras Veterinary College, TANUVAS, Chennai. Email: jayathangaraj.m.g@tanuvas.ac.in
References


Announcement

World Fish Migration Day, 21 May 2016

WFMD 2016 is a one day event to create worldwide awareness of the importance of freshwater migratory fish and open rivers for the general public, especially students and their teachers, resource managers and engineers, and commercial and recreational anglers, as well as those individuals who influence public policy that affect rivers. It is a global initiative with activities organized to reach these audiences.

Around the world, coordination and promotion is done through local activities inspired, supported and coordinated by a central office of the World Fish Migration Platform in Washington DC (USA).

At the individual event level, organizations undertake the development of an activity to raise awareness and involve local people and media about fish migration and open rivers. Local events include a range of activities: field trips, events at a school or aquaria, the opening of fishways, races, food festivals, etc. At this local level, the logo and central message of the WFMD, Connecting fish, rivers and people, will be used to connect sites around the world.

Local events can take many forms: celebration on a dam/weir removal, inauguration of a fishway or a river restoration project, special trainings/workshops, research activities in the field, special school programs and involving student/citizens, etc.

You can register your event directly on our website http://www.worldfishmigrationday.com/join-wfmd.

For more information contact: Web: www.worldfishmigrationday.com, Email: info@fishmigration.org, Facebook: www.facebook.com/WorldFishMigrationday, Twitter: www.twitter.com/fishmigration