

# Ivermectin treatment of Hookworms in Captive Indian Gray Wolf (*Canis lupus*)

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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 microcytic 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 tary 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 Beasey (1991) and Chandranaik *et al.* (2005) reported the use of Ivermectin against ascarids 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 ivermectin 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.

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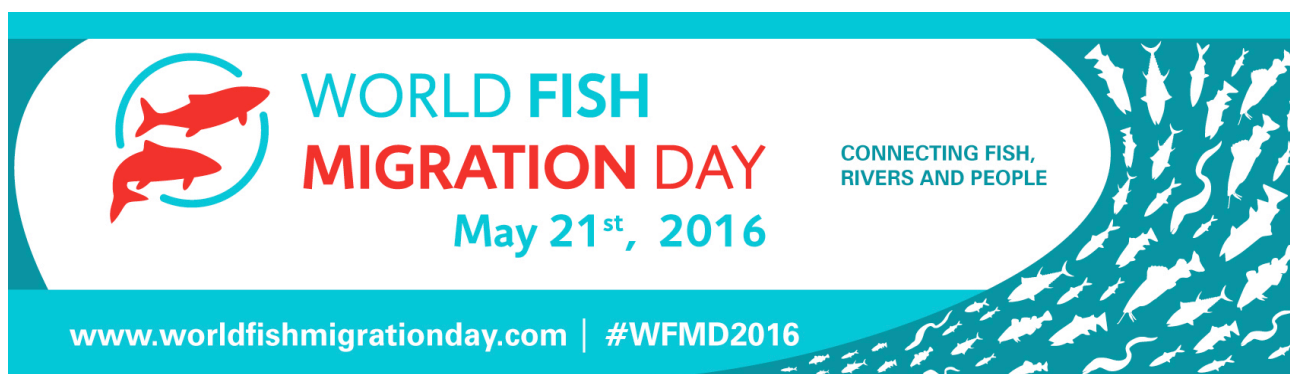
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## Announcement

### 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>.

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