



## Plant and soil nematodes from Lokchao Yangoupokpi Wildlife Sanctuary, Manipur, India

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The Lokchao Yangoupokpi Wildlife Sanctuary, renowned for its rich biodiversity, is situated in Chandel District of Manipur (94°13'5"-94°23'51"E & 24°13'51"-24°26'N) covers an area of 184.80km<sup>2</sup>. The eastern side of the Sanctuary borders with Myanmar.

There is little information available on invertebrate fauna of the sanctuary, particularly on nematodes. In the present study soil samples were collected from the sanctuary to investigate about what nematode species are associated with different plant hosts. Nematodes are round, microscopic, un-segmented, transparent, thread-like animals, found in almost every kind of environment. These nematodes may be plant-parasitic, predaceous, or free-living feeding on bacteria and other detritus food. Each nematode trophic group plays a significant role in the energy cycle of the habitat.

Nematodes were extracted from soil by sieving and decantation methods using Baermann's funnels; fixed in warm 4% formalin-acetic acid (1:1) solution and mounted in anhydrous glycerin. The analysis yielded 18 species of plant-parasites, 12 of predatory and nine of free-living nematodes which belonged to 12 families under three orders (Table 1).

The present study shows rich nematode diversity in Lokchao Yangoupokpi Wildlife Sanctuary. Twenty-five genera of nematodes were encountered. Of these 12 genera consisting of 18 species belong to the phytonematode group, six genera consisting of nine species belong to the free-living group while seven genera consisting of 12 species belong to the predatory group. The parasitic nematodes encountered were ectoparasites. No significant external symptoms due to the parasitic nematodes could be found. More intensive survey in the deep interior areas of the sanctuary will yield more species of nematodes.

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Table 1. List of plant and soil nematode species recorded from Lokchao Yangoupokpi Wildlife Sanctuary

Nematodes	Host	Authors
<b>Plant-parasitic</b>		
<i>Aglenchus muktii</i>	Unidentified grasses	Phukan & Sanwal 1980
<i>Coslenchus assamensis</i>	<i>Cynodon dactylon</i> Pers	(Phukan & Sanwal 1980); Andrassy 1982
<i>Coslenchus costatus</i>	<i>Cynodon dactylon</i> Pers	(De Man, 1921); Siddiqi 1978
<i>Boleodorus citri</i>	<i>Plantago erosa</i>	(Javed 1982); Siddiqi 1986
<i>Boleodorus bambosus</i>	<i>Bambusa tulda</i>	Mohilal et al. 1999
<i>Basiria hissariensis</i>	Unidentified grasses	Bajaj & Bhatti 1978
<i>Helicotylenchus dihystra</i>	<i>Cynodon dactylon</i> Pers.	(Cobb, 1893); Sher 1961
<i>Ogma omama</i>	<i>Asplenium delitescens</i>	Mohilal & Dhanachand 1998
<i>Criconemella furniae</i>	Grass	(Luc 1959); Luc & Raski 1981
<i>Criconemella onoensis</i>	<i>Bambusa griffithiana</i>	(Luc 1959); Luc & Raski 1981
<i>Criconemella sphaerocephala</i>	<i>Ficus glomerata</i> Roxb.	(Taylor 1936); Luc & Raski 1981
<i>Criconemella ornata</i>	<i>Cynodon dactylon</i> Pers	(Raski 1958); Luc & Raski 1981
<i>Discocriconemella limitanea</i>	<i>Asplenium delitescens</i>	(Luc 1959); De Grisse & Loof 1965
<i>Hemicriconemoides dipteroctopus</i>	<i>Dipterocarpus tuberculatus</i> Roxb.	Mohilal et al. 2004
<i>Hemicriconemoides mangiferae</i>	<i>Bambusa balcooa</i> Roxb.	Siddiqi 1961
<i>Hemicyclophora typica</i>	<i>Ficus glomerata</i> Roxb.	de Man 1921
<i>Xiphinema americanum</i>	<i>Mangifera indica</i> Linn	Cobb 1913
<i>Xiphinema moreatum</i>	<i>Dipterocarpus tuberculatus</i> Roxb	Dhanachand et al. 1991
<b>Non-parasitic</b>		
<i>Belondira clava</i>	<i>Vanguirea spinosa</i> Hooke	Thorne 1939
<i>Axonchium saccatum</i>	<i>Spondias pinnata</i> (Linn.f.) Kurz.	Jairajpuri 1964
<i>Axonchium amplicolle</i>	<i>Dipterocarpus turbinatus</i>	Cobb 1920
<i>Axonchium asacculum</i>	<i>Quercus serrata</i>	Siddiqi 1968
<i>Thornemema cavalcantii</i>	<i>Tamarindus indica</i> Linn	(Lordello 1955); Andrassy 1959
<i>Lagenomena clavicaudatum</i>	<i>Punica granatum</i>	(Gambhir & Dhanachand 1990); Mohilal et al. 1996
<i>Tylencholaimus lokus</i>	<i>Dipterocarpus tuberculatus</i> Roxb.	Mohilal & Dhanachand 2003
<i>Tylencholaimus minutus</i>	<i>Quercus dealbata</i>	Vinciguerra 1986
<i>Proleptonchus amphidius</i>	<i>Cynodon dactylon</i> Pers.	Jairajpuri 1964
<b>Predatory</b>		
<i>Aquatides aquaticus</i>	<i>Psidium guajava</i> L.	(Thorne 1930); Thorne 1974
<i>Coomansus icarus</i>	<i>Vanguirea spinosa</i> Hooke	Jairajpuri & Khan 1982
<i>Coomansus conoidus</i>	Wild grass	Mohilal & Dhanachand 1998
<i>Cobbonchus impositus</i>	Grass	Mohilal & Dhanachand 1998
<i>Iotonchus indicus</i>	<i>Dipterocarpus tuberculatus</i> Roxb.	Jairajpuri 1969
<i>Iotonchus terminus</i>	<i>Imperata cylindrica</i> Beauv.	Mohilal et al. 2000
<i>Hadronchus denticulus</i>	<i>Imperata cylindrica</i> Beauv.	(Dhanachand et al. 1991); Andrassy, 1993
<i>Parahadronchus subhonicus</i>	<i>Dipterocarpus tuberculatus</i> Roxb.	Dhanachand et al. 1991
<i>Parahadronchus andamanicus</i>	<i>Psidium guajava</i> Linn	(Jairajpuri 1963); Mulvey 1978
<i>Mylonchulus index</i>	<i>Musa paradisiaca</i> L.	(Cobb 1906); Cobb 1917
<i>Mylonchulus minor</i>	Unidentified grass	(Cobb 1893); Andrassy 1958
<i>Mylonchulus sigmaturus</i>	Unidentified grass	(Cobb 1917); Altherr 1953

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