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A report on occurrence of nematodes on medicinal plants of Narendrapur Medicinal Plants Garden (West Bengal)

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ABSTRACT

The present paper reports for the first time occurrence of 27 species of nematodes belonging to 7 genera under 7 families and 5 orders which included nematodes of different trophic groups like phytophagous, predatory, omnivorous, bacteriovorous, etc along with their respective hosts/habitats.

KEYWORDS : Nematodes, West Bengal, Phytophagous, Omnivorous, Predatory, Bacteriovorous.

Introduction:

Among the non-insect pests of Medicinal Plants the nematodes and mites are recently becoming increasingly important doing substantial loss of active ingredients which are used for preparation of drugs. Since the Ramakrishna Mission Ashrama Narendrapur is maintaining a rich medicinal plant garden with over 380 medicinal plants species and as not much has been done to work out nematodes occurring on those plants, surveys were undertaken during November, 2014 - September, 2015 for collection of nematodes and the present paper reports the preliminary identities of those specimens along with their host/habitat records and trophic levels.

Material and Methods:

The soil samples adjoining the roots of different medicinal plants were collected at fortnightly interval from medicinal plants garden of Narendrapur during November, 2014 - September,2015 .The nematodes were extracted following modified Bearman Funnel Method (Viglierchio, and Schmitt, 1983), further processed following Ravichandra(2010) and identification was done following keys of Ahmed and Jairajpuri (1982) for the order Dorylaimida, Jairajpuri and Khan (1982) for the order Mononchida, Andrassy(1976,1984) for the order Rhabditida and Enoplida and Siddiqi (2000) for Tylenchida.

Results and Discussion:

The identification of nematode specimens revealed the occurrence of a total of 27 species belonging to 7 genera, 7 families under 5 orders as listed in Table 1, along with their respective host habitat records and trophic levels.

Table-1: List of nematodes collected from Narendrapur medicinal plants garden.

Sl no.	Species	Host/Habitat	Trophic level
Order 1 :Dorylaimida, Family 1. Aporcelaimidae			
1	*Aporcelaimellus obscures* Throne and Swanger,1936 Heyns,1965	Ramtulshi (*Ocimum gratissimum)*	Omnivorous
2	*Aporcelaimellus* indicus Baqri & Jairajpuri,1968	Ramtulshi **(***Ocimum gratissimum)*	Omnivorous
3	*Aporcelaimellus* sp.1 near A.indicus	Ramtulshi **(***Ocimum gratissimum)*	Omnivorous Likely to be new
4	*Aporcelaimellus* sp. 2	Nayantara (*Catharanthus roseus)*	Omnivorous Likely to be new
5	*Aporcelaimellus* sp. 3	Somraj (*Centratherum anthelminticum)*	Omnivorous Likely to be new
6	*Aporcelaimellus chauhani* Baqri & Khan,1975	Satamuli (*Asparagus racemosus)*	Omnivorous
7	*Aporcelaimellus* sp.4	Kalmegh (*Andrographis paniculata)*	Omnivorous Likely to be new
Order 1: Dorylaimidae , Family 2 : Qudsianematidae			
8	*Discolaimus similis* Throne,1939	Ramtulshi (*Ocimum gratissimum)*	Predatory
9	*Discolaimus* sp. 1	Ramtulshi **(***Ocimum gratissimum)*	Predatory Likely to be new
10	*Discolaimus* sp. 2	Ramtulshi (*Ocimum gratissimum)*	Predatory Likely to be new
11	*Discolaimus* sp. 3	Ramtulshi **(***Ocimum gratissimum)*	Predatory Likely to be new
12	*Discolaimus texanus* Cobb, 1913	Somraj (*Centratherum anthelminticum)*	Predatory
13	*Discolaimus* sp.4 Near D.texanus	Satamuli (*Asparagus racemosus)*	Predatory Likely to be new
14	*Discolaimus major* Throne,1939	Sarpagandha (*Rauvolfia serpentina)*	Predatory
Order 2 : Tylenchida, Family 3: Hoplolaimidae			
15	*Hoplolaimus indicus* Sher, 1963	Ramtulshi (*Ocimum gratissimum)*	Phytophagous
16	*Hoplolaimus* sp. 1 (Near to *H.indicus* but differ in their tail region)	Ramtulshi (*Ocimum gratissimum)*	Phytophagous Likely to be new
17	*Hoplolaimus* sp. 2	Sarpagandha (*Rauvolfia serpentina)*	Phytophagous ?
19	*Hoplolaimus* sp. 3	Nayantara (*Catharanthus roseus)*	Phytophagous ?
20	*Hoplolaimus* sp. 4	Aloe vera	Phytophagous Likely to be new
21	*Hoplolaimus* sp. 5	Satamuli (*Asparagus racemosus)*	Phytophagous Likely to be new

Order 3 : Enoplida , Family 4 : Ironidae			
22	*Ironus longicaudatus* (De Mann, 1884)	Ramtulshi (*Ocimum gratissimum)*	Predatory
23	*Ironus* sp. 1 Near *longicaudatus* but differ in tail region	Somraj (*Centratherum anthelminticum)*	Predatory ?
24	*Ironus* sp.2	Ayapan (*Eupatorium triplinerve* Vahl)	Predatory ?
Order 4: Rhabditida ,Family 5: Rhabditidae			
25	*Rhabditis* sp. 1	Ayapan (*Eupatorium triplinerve* Vahl)	Bacteriovorous Likely to be new
Order 5: Mononchida , Family 6: Mononchidae			
26	Mononchus truncates Bastain, 1865	Kuch (*Abrus precatorius* L.)	Predatory
Order 5:Mononchida, Family 7: Antonchidae			
27	Iotonchus indicus Jairajpuri, 1969	Karpas (*Gossypium herbaceum)*	Predatory

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