




Assessment of Soil Nematode Among Different Habitats of Gangotri National Park, Uttarakhand

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Background

- In soil, nematodes have direct contact with their microenvironment indicating the community structure and occupy key positions in soil food webs (Neher, 2011).
- Nematodes community are potential instrument for assessing soil conditions and bio monitoring system (Bongers, 1989)
- Nematode community structure is sensitive to environmental disturbances (e.g. Bongers & Bongers, 1998).
- Work has been done for eight years where climate manipulation has showed negative effect on soil nematode in dry valley of Antarctica (Simmon et al., 2009). Drying induced by temperature and warming are most important factors affecting soil nematode community under the current global warming scenario (Xiumin Yan et al., 2017).
- The parameters such as abundance and diversity reflect their role in soil ecosystem. However, research in the study area across different vegetation along elevation gradient is still lacking and therefore the proposed study will be useful in monitoring long term impact of climate change on nematode community structure in the IHR.

Result

We have identified five orders, five families & eight genus. Out of which teretocephalobus was found only from two sampling point at elevation above 3600m.



Orders	Families	Genera
		
Dorylaimida, Rhabditida, Mononchida, Araeolaimida, Tylenchida	Cephalobidae Aphelenchidae Teratocephalidae Plectidae Mononchidae	Zeldia, Acrobeles, Plectus, Acrobeloides, Nothacrobeles, Chiloplacus, Cephalobus, Teratocephalobus,

Objectives:

- To analyze soil nematode diversity across different vegetation types.
- To determine the relation between soil nematodes and soil physiochemical parameters.
- To study the effect of change in temperature and humidity on soil nematode through experimental setup of open top chamber (OTC) in sub-alpine and alpine region of Gangotri National Park.

Methodology

Open top chambers were installed in sub-alpine & alpine region of GNP and Data loggers were placed for monitoring temperature & Humidity. Control sites are monitored adjacent to OTCs. Soil samples collected and processed as mention below.



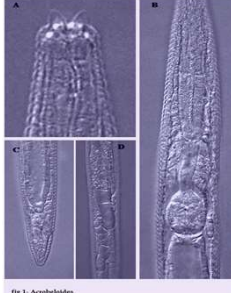


Fig 1- Acrobeloides



Fig 2- Chiloplacus



Fig 3- Cephalobus

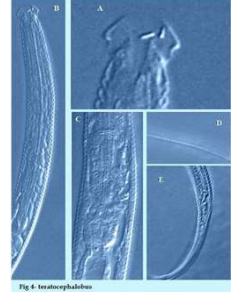


Fig 4- Teratocephalobus

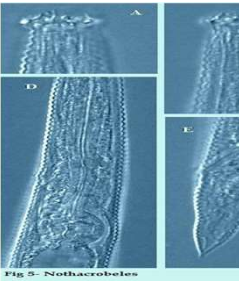


Fig 5- Nothacrobeles

Conclusion

- Order Dorylaimida, Tylenchida are commonly distributed along elevation gradient in the study area.
- Genus Teratocephalobus has been found at higher altitude above 3600m.
- The detailed identification is in progress.

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