



"Studies on Soil Nematodes of Aurangabad Region"

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Abstract : The study was conducted to investigate the status of soil nematode community in Aurangabad .although the various kinds of research done on nematode but the soil nematodes are neglected the plant parasitic nematodes are present along with free living Bactereovoros which necessary is for healthy soil system. The soil of Aurangabad having varied kind of combination in form of silt, loamy and clay and each and every type has its impact on the nematode population.

Key words: Nematodes, Plant Parasitic, and Bactereovoros

Introduction:

The ecological condition of Aurangabad is much favourable to the diverse fauna and flora due to its climatic condition. As agricultural area it has a valuable position due to cultivation of various kind of fruits, grains, and vegetables .which directly or and indirectly influence by nematodes community.

Material and Methods:

The survey was carried out in Aurangabad city which is located mainly in the Godavari basin and its some parts towards North West of the Tapi river basin.

The Aurangabad district located at North longitude is 19^0-20^0 and East longitude 74^0-76^0

Three sites were selected according to soil type, the sites are, from Daultabad area, Himayat Baugh area and Harsuool area .the soil is considerably good in organic content, clay in soil texture mostly acid in soil reaction.



Soil sampling were done in the month of June 2013 to august 2014 from the selected sites and local and domestic area 65 soil samples were collected from different fruits from agricultural areas as well as local domestic area soil were collected about 20cm in depth around roots and feeder roots.

Extraction of Nematodes:

Nematodes were extracted by direct sieving followed by modified Baerman funnel technique nematodes were identified using stereo binocular microscope. The abundance was represented by individual 100 cm³ soil represented by plant parasitic and free living.

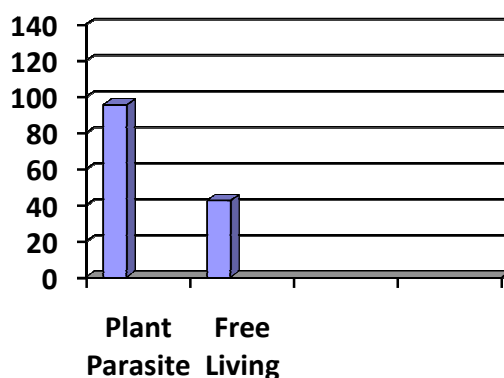
Soil status of Aurangabad (M.S. , (V V Naver Khele , A.A Shaikh 2009)

PARAMETER	SOIL PARAMETER	SOIL TYPE
Status of texture	1) Loamy 2) Coarse loamy 3) Fine loamy 4) Coarse silty 5) Clay	Mixed Black Red Soil
Organic content	Moderate Fine	----- -----
pH (soil reaction)	Saline and alkaline	-----

	Organic matter	%
1	Organic carbon %	0.5% medium
2	Available phosphorous	25
3	Combine calcium	58.24 medium
4	Free calcium carbonate	7%
5	pH	7 – 10

Result & Discussion:

Nematodes analysis of soil showed that the plant parasitic nematodes were the most abundance ($95.7 \text{ inch} / 100\text{cm}^3$) soil. as plant parasitic group *Tylenchulus*, *Meloidogy*, *Pratylenchs*, *Xiphinema*, are abundantly found.



Abundance of Nematodes by mean standard deviation

In free living category Bactereovoros were the second wide speed parasitic Nematodes

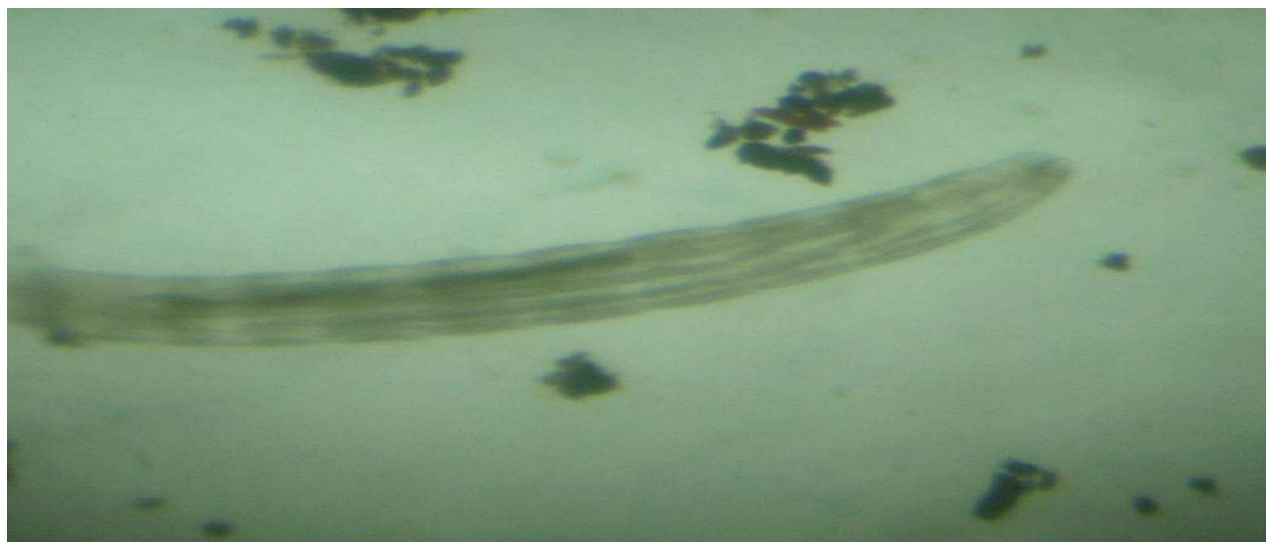
The *Aphelenchulus* are recorded in all samples. At the end of the investigation *Meloidogy* frequency are higher than other the other than *Tylenchulus* (Siddiqui 2000 reported that *Tylenchulus* feed on Algae and Lichens.



SCUTILUNEMA



MELOIDOGENE



DORYLIMUS



PRATILUNCHUS



HTERODERA



Mean frequency of accuracy % and nematode Abundance (100cm³ per soil sample)

Soil type	Group	Number of +ve samples	Frequency %	Abundance 100 cm ³ / Soil
Black soil	Plant parasitic			
	Tylenchus	9	8.2	0.6
	Paratylenchus	18	16.5	1.6
	Meloidogyne	48	42	2.3
		32	296	1.9
Loamy soil		7	6.4	5
	Xiphinema			
	Heterodera			
Black & Loamy Soil	Free living			
	1)Rhabditis	25	22.7	2.7
	2)Dorylaimus	56	50.9	2.5
	3)Aproclaimus	59	53.6	5

The abundance was about 100 sp/ 200gm soil all though observation reveals that plant parasitic Nematodes abundantly found but their damage potential yet to know.

The free living either in the form of fungivorous, bacteriovores or predator maintain ecology of soil. The predator eats nematodes.

Soil properties on nematode communities cannot be overlook (M.Csorley and Fredrick 2002) when percentage of clay increased, root penetrating ability decreased. The pH is inhibitory to most Nematodes activities bellow 5% and above 8 (Ravichandra 2008).

This survey pointed out the status of nematodes in the particular locality and detail study of particular species

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