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SOIL FAUNA OF NEMATODES ASSOCIATED WITH ONION (*ALLIUM CEPA*) IN GUNA DISTRICT OF M.P.

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Analysis of soil samples of important onion growing areas of Guna District in M.P. revealed the presence of 10 genera and 14 species of the nematodes. The parasitic nematodes responsible for the major losses include species of *Helicotylenchus*, *Aphelenchus* and *Tylenchus*. However, the root knot nematode, *Meloidogyne* sps. was found only in few areas with poor populations.

Keywords : *Allium cepa*; Survey; Plant parasitic nematodes.

Although the existence of nematode problems in Agriculture is well established in our country, yet in many areas the knowledge regarding various types of nematodes present in the soil, their role and behaviour, frequency and distribution etc. are lacking. In the present investigation a survey was undertaken during 1988-89 to study the occurrence, population density and distribution of nematodes associated with the onion in the Guna district of M.P. The important vegetable growing areas syrveyed include, – Ashoknagar, Raghogarh, Madhusudangarh, Sahrok, Cantt, Nanakheri and Purani Chhawani.

Soil samples were collected from the root zone of the onions at diifferent locations. Samples were collected by composite sampling method from each field. For extrcation and counting of nematodes 100 gm soil was analysed from each samples. The nematodes collected were stored in fixative like F.A. or FAA. The distribution of the genera and species of the nematodes as a whole is recorded in the Table 1. About 10 different genera and 14 species were found associated with onion roots. The distribution frequency of the different genera based on their occurrence in the soil samples were as follows—

Tylenchus (70%); *Aphelenchus* (80%); *Aphelenchoides* (20%); *Helicoylenchus* (90%); *Scutellonema* (30%); *Pratylenchus* (40%); *Paratylenchus* (30%); *Meloidogyne* (30%); *Dorylaimus* (100%) *Rhabditis* (40%).

The results of nematological analysis indicated that species of *Helicotylenchus*, *Aphelenchus* and *Tylenchus* are the most prevalent plant parasitic nematodes of onion. The

Table 1. Record of soil Population of Nematodes as from root zone of onion

(per 100g soil

Nematode	AREAS SURVEYED						
	A	R	M	S	C	N	P.C.
TYLENCHIDAE							
Tylenchus filiformis (Butschli, 1873)	20	—	130	—	—	—	—
Tylenchus davainie (Bastian, 1865)	—	—	—	40	—	—	—
Tylenchus caustatus (De Man, 1921)	—	—	—	10	—	—	—
APHELENCHIDAE							
Aphelenchus avenae (Bastian, 1865)	140	50	—	30	60	60	60
Aphelenchoides sps.	—	—	—	—	—	60	60
HOPLOLAIMIDAE							
Helicotylenchus dihystera (Cobb, 1893) sher 1961	—	30	60	30	140	80	80
Helicotylenchus Paradihysteroides (Dharekare & E. Khan 1978)	—	—	—	10	40	—	—
Helicotylenchus solani (Rashid, 1971)	—	10	—	—	—	—	—
Scutellonema Sps.	—	—	—	—	10	40	40
PRATYLENCHIDAE							
Pratylenchus sps.	10	10	—	—	—	10	10
HETERODERIDAE							
Meloidogyne incognita (Kofoid & white, 1919) Chit-Wood, 1949	—	—	—	—	100	50	—
PARATYLENCHIDAE							
Paratylenchus sps	20	—	—	10	10	—	—
DORYLAIMIDAE							
Dorylaimus	60	30	40	40	60	90	90
RHABDITIDIS							
Rhabditidis	—	—	30	10	—	80	80

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root knot nematode *Meloidogyne*, *Aphelenchoides* and *scutellonema* confined to few areas with limited distribution and population density. *Pratylenchus* and *Parartylenchus* were the nematodes commonly encountered in the samples but their number was found much below the damazing level. However, presence of high population of non-parasitic nematodes in the soil samples like *Dorylaimus* and *Rhabditis* show some ecological significance in the distribution of soil fauna.

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