International Journal of Science and Research (IJSR)
ISSN (Online): 2319-7064
Impact Factor (2012): 3.358

Distribution of Plant Parasitic Nematodes in Sugarcane

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Abstract: ***A survey of plant parasitic nematodes associated with sugarcane. A field survey of the sugarcane Nizamabad district, Telangana State, Hyderabad, India. The plant parasitic nematodes survey was conducted to identify the diverse nematode species associated with the soil and roots of sugarcane. Ten species of plant parasitic nematodes were found in association with the roots and rhizosphere of the sugarcane plants. They include Pratylenchus, Meloidogyne, Hoplolaimus. Rotylenchus, Rotylenchulus. Tylenchus, Tylenchorhynchus, Heterodera, Longidorus, Ditylenchus.***

Keywords: Survey, Diverse. Rhizosphere, Plant parasitic nematodes

1. Introduction

Sugarcane is an important food crop of the tropics and subtropics (Sivanesan and Waller, 1986). Sugarcane is of the major crop in Nizamabad district. Plant parasitic nematodes have been reported in sugarcane fields (William 1969; Prasad, 1972). Nematodes have been reported to constitute serious impediments to intensified production of sugarcane in various part of the world (Michel et al., 2005). Plant nematodes attack all crops grown in Florida, causing farmers millions of dollars in crop loss annually. Nematodes are generally cylindrical shape that attack mainly on roots of plants at the anterior region stylet is present which is hypodermal needle like structure with the help of stylet. Identification of nematodes species in sugarcane based on morphological characters such as stylet, oesophagal region vulva and tail region

2. Materials and Methods

Plant parasitic nematodes are generally from the roots of plants they infect or from the soil surrounding the roots on which they feed. Roots and soil samples collected from sugarcane fields in Nizamabad district, Telangana state (India).After collection the soil and root samples were carrying and stored in a polythene bag. Collected samples were placed following Baermann Funnel Technique. The active nematodes moved through the tissue paper and transfer to the bottom of the rubber tube (M.M.Rahman and I.H.Mian 2010). After 24-48 hours we collected suspected nematodes containing water funnel in to Syracuse dish and observed it under dissecting microscope and plant parasitic nematodes were observed under compound microscope, noted different structures possessing stylet, and finally identified with the help of pictorial key to genera of plant parasitic nematodes (Mai and Lyon 1975).

3. Result and Discussion

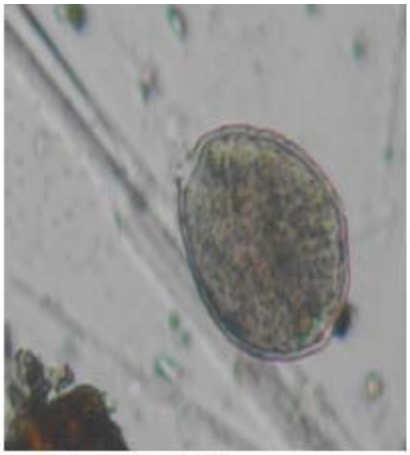
Identified the ten plant parasitic nematodes was done with the aid of a compound microscope using the simplified pictorial nematode key of Mai and Lyon (1975).

S. No	*Plant parasitic nematode*
1	Pratylenchus (Root lesion nematode)
2	Meloidogyne (Root -knot nematode)
3	Heterodera (Cyst nematode)
4	Hoplolaimus (Lance nematode)
5	Rotylenchus
6	Rotylenchulus (Reniform nematode)
7	Tylenchus
8	Tylenchulus (Stunt nematode)
9	Longidorus (Needle nematode)
10	Ditylenchus

Plant parasitic nematodes have been reported in sugarcane fields (Williams 1969,Prasad 1972).several nematode species particularly those belonging to the order Tylenchida, plant parasitic nematodes damage the roots and yield losses of the crop.

Meloidogyne

Pratylenchus



Heterodera (cyst)

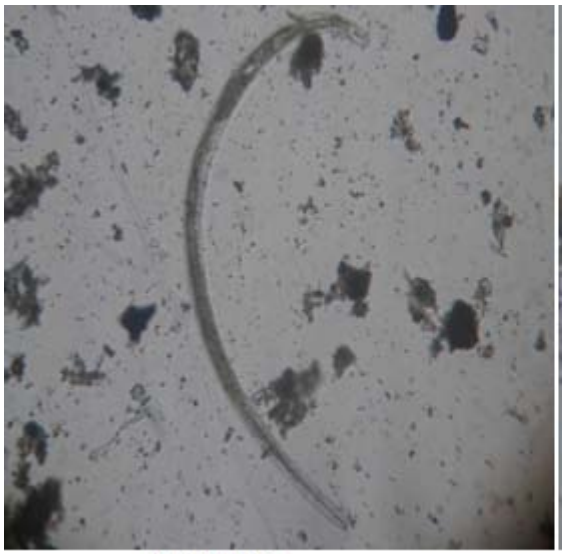
Hoplolaimus

Rotylenchus (female)

Rotylenchulus

Tylenchus

Tylenchorhynchus



Longidorus

Ditylenchus

4. Conclusion

Many plant parasitic nematode species diversity associated with the soil and roots of sugarcane in Nizamabad district. Pratylenchus and Meloidogyne species during growing season were above damage threshold level at many locations although population levels of other plant parasitic nematodes were below economic or damaging levels.

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