

## PDF - THE ISOLATION AND IDENTIFICATION OF NEMATODE AFFECTING TOMATOES -

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### **ABSTRACT**

Four (4) sites or area were sampled, using the "simple random sampling technique" to make up the study group namely; Malali, Ungwan Rimi, Stadium round about, Kawo for soil or root-rot nematodes from tomatoes plant. Ten (10) plants uprooted randomly at each site(s) visited making a total of forty (40) plants. Isolation and identification of nematodes was done at the Department of Crop Protection, Institute of Agricultural Research (I.A.R.) Ahmadu Bello University Zaria based on movement action, tail, shape and a tutorial book. Result obtained shared occurrence of nematodes as follows; Malali, 342; Ungwan Rimi 40; Stadium Round About, 66; Kawo, 261; making a total of 708 nematodes. Of this number, *Criemonemoides* accounted for 7 (0.990Co); *Helicotylenchus* 544 (76.840Co); *Meloidogyne* larva 62 (8.760Co); *Pratylenchus* 19 (2.680Co); *Rotylenchus* 64 (9.040Co) and *Tylenchus* 12 (1.690Co). The researcher, considering the negative effect of these on the yield/production of tomatoes, suggests/profers/and also, when transplanting, intercropping.

## **CHAPTER ONE**

### **1.0 INTRODUCTION:**

Nematodes are tiny, thread-like worms measuring 0.015 inch to 0.187 inch in length. They are either free living parasitic or saprophytic, identified on the basis of shapes, size and special structures. The females become swollen and flask-shaped as a result of accumulation of eggs with the anus virtually terminal in position, while the males are vermiform (Sherf and Macnab, 1986; Chitwood, 1949; Taylor and Sasser, 1978; Idowu, 1979 and Idowu, 1983)

Nematodes are known for causing destructive diseases of crops as they have a wide range of feeding habit, constitute about 80% of all multicellular animals, attacking nearly every crop that is grown in the field and as a result crop yields is greatly affected reducing quantity and quality of crops on field, orchard, home garden and green houses (Mai, 1985; Symth, 1994; Sasser, 1952). Among the favoured host in Nigeria as a whole include tomato, yam, tobacco, papaw, citrus and sweet potato (Sasser, 1954).

#### **1.1 Tomato:**

Tomato (*Lycopersicon esculentum*) belongs to the family Solanaceae and sub class polypetalae of the dicotyledonous group of plants. Tomato is a slight modification of tomato the name used by the Indians of Mexico, who have grown the plant for food since prehistoric times. Other names reported by early European explorers were tomato, tumatle and tomatas, probably variants of Indian words (Wener, 2004).

#### **1.2 Origin:**

The precise origin of tomato remains a mystery but there is reason to believe that the original tomato came from Peru called tomatillo, it was taken to Mexico by migrating Peruvians. It found its way to Italy through the explorations of Christopher Columbus. Tomatoes were taken back to Europe along with silver and gold and they were grown on the continent as a pretty curiosity (Fallagatter, 1999). Though, tomato has become one of the most popular and widely grown vegetables in the world (Chung, 1998), until the 19th century, it was grown chiefly as an ornamental plant for its colourful fruit (Villareal, 1980). This is because it was regarded with suspicion due to the reputation of Solanum-like fruits being poisonous (Philips and Rix, 1993)

#### **1.3 Study Area:**

Kaduna is the State capital of Kaduna State in north central Nigeria. The city, located on the Kaduna River, is a trade center and a major transportation hub for the surrounding agricultural areas with its rail and road junction.

The Kaduna River is a tributary of the Niger River which flows for 550 kilometers through Nigeria. It got its name from the crocodiles that lived in the river and surrounding area. Kaduna in the native dialect, Hausa, was the word for "crocodile" (<http://maguzawa.dyndns.ws/> Retrieved on 2009-07-09). Activities going on there include; fishing, packing of sand and farming such as maize, tomato, spinach, cocoa-yam, okro, pepper etc.

#### 1.4 Purpose of the study:

The destruction of plants comes from organisms including nematode and insect pest. However, this study is restricted only to those plant nematodes that affect tomatoes grown in some selected area of River Kaduna. Many plants are damaged by plant parasitic nematodes which feed and multiply in or on root, stem spreading soil borne viruses or facilitate secondary infection by bacteria and algae.

All kinds of living organisms are dependent on plants in one way or the other for their food supply. Therefore, controlling nematode that destroy our crops, it is almost important both agriculturally, economically and socially for the well-being of both living organisms. Although important contributions in nematology are coming in from many countries. Like Nigeria, generally expanded it is in view of hope that it help in one way or the other in preventing or controlling plant nematodes, as the knowledge of the nematodes themselves is important towards successful nematode control.

#### 1.5 Aims and objectives:

- To isolate and identify nematode
- To determine the distribution or assessment of nematode populations
- Proper suggestion on minimizing infection.

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