

PRESENT INFORMATION SITUATION ON NEMATODE

PROBLEMS ON ONION.

By

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An unidentified disease that plagued the onion crop for several years (especially in the Maha Season) and resulted in severe yield reductions was reported in June, 1980 by Dr. N. Wignarajah (Half-yearly report submitted to D.L.A. (Research)). The symptoms observed in onion indicated the possibility of nematode attack. During the course of his assessments, he sent samples to Mr. G. Gunasingham, E.O., (Plant Pathology), Thirunelveli and to the Division of Entomology, C.A.R.I., Peradeniya. The disease symptoms indicated that the causal agent could be the onion stem and bulb nematode, Ditylenchus dipsaci. The leaves became pale in colour and showed twisting or spiralling symptoms. On examination Mr. Gunasingham confirmed the presence of two fungi, *Fusarium* sp. and *Alternaria* sp. Subsequently, in the samples sent to C.A.R.I., Peradeniya, the plants were observed to be infested by some plant parasitic nematodes.

During this period, the Division of Entomology, CARI initiated nematological research. In November, 1979, Prof. F. Lamberti from Italy arrived as a FAO Consultant in Plant Nematology, and the onion problem was posed to him. On analysis of soil and plant material of onion Prof. Lamberti determined that the major onion nematode, Ditylenchus dipsaci was absent and only a few foliar nematodes, Aphelenchoides sp. were present in onion leaves. During an island-wide survey of plant parasitic nematodes carried out by Prof. Lamberti and Ekanayake, a wide variety of crops including onion from all the agroclimatic regions of Sri Lanka were examined. In this survey no Ditylenchus species could be identified.

In order to determine the damage caused by nematodes in onion cultivation Prof. Lamberti and the Division of Entomology, CARI conducted two nematicidal experiments in Trincomalee (May-August, 1980 and Nov. 1980 - Jan. 1981). The role of nematode as a casual agent of onion bulb rot could not be confirmed in these experiments, but beneficial effects of carbofuran application were obtained. Hence a tentative recommendation of carbofuran for a suspected nematode problem was given due its ease of application and availability. This was a blanket recommendation for

nematode problem. Investigations are required to determine the appropriate dose of nematicide for different crops and nematode species.

During a period of two years (1982-1984) several samples of onion plants with suspected nematode problems from Thirunelvely, Kalpitiya, Ratnapura, Matale, Kandy, Maha-Illuppallama, Jaffna and Angunakolapelessa were examined. None of them were found to be infested with Ditylenchos dipsaci. Nematodes extracted from these samples were sent to the Institute of Nematology, Bari, Italy for confirmation of identity of D. dipsaci. The nematodes were identified as saprophagous. This leaves us with a lot of unanswered questions on the nematode problem on onion. Hence, the present need is a more basic approach to identify the nematodes or pathogens involved.

From International Agricultural
Research Centres

1. High Yielding Manioc

The International Institute of Tropical Agriculture (IITA) (in Nigeria), in a series of trials had found, the variety TMS 30555 to Yield 69 tons/Ha.

2. The high Yielding Variety of sweet Potato from IITA, TIS 1499 has produced 32.5 tons/Ha. This is a 90 day variety.

3. Most Soya bean varieties selected for low elevations higher than 1000 M. One variety that matured in less than 120 days at low elevation took 300 days to mature at a mid altitude location. In a trial 182 lines were tested and 22 lines gave Yield exceeding 2 tons/ha when grown between 1000-1500 M above sea level. The best two yielders were TGx 888-49C and TDx 536 - O2D, yielding more than 2.1 tons/Ha.

4. In a study on the performance of plantains it was observed that,

1. Taller Pseudostems produce leaves at a faster rate, flower earlier and produce heavier infructescences which need more time to mature.

2. High yield is favoured by vigorous initial growth of the planted sucker.