conventional way of presenting survey results by mere listing species. This is so because the importance value incorporates the energetics of the ecosystem rather than the ever-fluctuating rupee value of the crop.

RNA AND RNAse ACTIVITY FROM TOMATO PLANTS IN RELATION TO RESISTANT RESPONSES AGAINST THE ROOT-KNOT NEMATODE, *MELOIDOGYNE INCOGNITA* : D. Premachandran, Division of Nematology, Indian Agricultural Research Institute New Delhi-12.

Investigations aimed at exploring the basic molecular mechanism in the plant-nematode interaction in relation to the resistance of tomato plants to *Meloidogyne incognita* were carried out. The total RNA content increased in roots of both the varieties, the increase being remarkable in the resistant var. SL-120. A general increase in RNA nucleotides was noticed in the inoculated plants; the increase was in the adenylic and guanylic acids in Pusa Ruby (susceptible var.) while in SL- 120 cytidylic and guanylic acids had increased. In parallel, the soluble proteins were also observed to increase. A bimodal increase in RNase activity in galled tissues, one early and the other quite late during infection was noticed. Contrary to this, only a unimodal increase was seen in the resistant reacting variety. The possible contribution of the nematode as contaminants to the increase in plant RNase was judged to be insignificant. Purification and characterization of the RNase activity from the inoculated and healthy plants of both the varieties gave clear indications for *do novo* synthesis of RNase isozyme in the inoculated SL-120. The results are hence suggestive of preferential synthesis of RNA in the inoculation tomato, especially in the resistant reacting plants. Indications are there to suggest an acceleration of the protein biosynthetic machinery of the cell quite early during infection. On the basis of the studies conducted in this laboratory and elsewhere, a hypothesis on the molecular events taking place in plant-nematode interaction has been suggested.

POPULATION ESTIMATION OF CITRUS NEMATODE, *TYLENCHULUS SEMIPENETRANS* COBB, 1913 : S. B. Sharma and M. L. Chawla, Division of Nematology, Indian Agricultural Research Institute, New Delhi-12.

For developing diagnostic and advisory services as guides to effective control of nematode diseases, accurate estimation of population is the foremost necessity

in the field of applied research in nematology. However, the complete census on the nematode population in a given area is not possible because of their high number as they constitute a major portion of the metazoans inhabiting soil. It is therefore, imperative that sampling and processing techniques, which are basic tools for reliable estimation of popultions, be developed and standardized atleast for nematode problems of economic importance. With this objective and taking into consideration the almost universal distribution of the citrus nematode, *Tylenchulus semipenetrans* and its association with the citrus die-back complex, the present studies were under taken to analyse factors influencing recovery of the nematode from soil as well as roots so that precise informations are obtained which may be ultimately helpful in the understanding of host-parasite relationship. Attempts were made to evaluate i) sampling methods (distance and depth of sampling from tree trunk, root and soil sample size. ii) storage conditions of the sample, iii) extraction procedure and iv) effect of temperature on the recovery of second stage larvae through modified Baermann funnel technique.

Cobbs decanting and sieving followed by 0.2% separan treatment or 2% detergent treatment or 2% ferric chloride treatment or modified Baermann funnel technique; Seinhorst two flask method and sugar centrifugal floatation method were evaluated. Five soil sample size (50, 100, 150, 200 and 250 cc); six temperature conditions (15, 20, 25, 27, 30 and 35°C); period of storage of soil samples (7, 17, 27, 37, 47, and 57 days) under six temperature conditions (5, 15, 20, 25, 27 and 30°C) and one room temperature, three different root weights (3,7 and 10 g) treated with four different concentrations of hydrogen peroxide and exposed to four different temperature conditions were evaluated also. All the tested methods were at par with each other with maximum recovery between temperature range of 15-27°C. The higher temperatures of 30° and 35°C were not conducive for the recovery of nematode population. Sample size, root weight and storage of samples had a marked effect on the recovery of larvae. 50 cc of soil sample size was found to be optimum. Storage of soil samples below 20°C for seven days did not change the population but storage at 25°C for seven days resulted in higher recovery. Size of 3 g of chopped feeder roots immersed in 30 ml of 5% hydrogen peroxide and incubated at 20°C for 48 hours was the most effective size for the maximum recovery of nematode larvae. Sampling at 120 cm radial distance from tree trunk at a depth of 30 cm was an ideal combination for maximum recovery. These studies have clearly indicated that not only temperature at the extraction time but also the sample size, the condition of storage of samples, the root weight and also the sampling sites are important determining factors in proper evaluation of the population dynamics of citrus nematode.