



407/D

**Molecular identification of root-knot nematode *Meloidogyne arenaria* on tomato (*Solanum lycopersicum*) in Sri Lanka**

R V D U P Rajapakse<sup>1</sup>, G H C M Hettiarachchi<sup>1\*</sup> and R S Dasaanayake<sup>1</sup>

*Department of Chemistry, University of Colombo, Colombo 03*

Root-knot nematodes (RKNs), of the genus *Meloidogyne* are ubiquitous plant pathogens with a wide host range. Tomato (*Solanum lycopersicum*) is regarded as its most favorable host causing an estimated yield loss of 24-38% worldwide. In this study, we developed a sensitive and fast PCR based diagnostic assay and accurately identified *Meloidogyne arenaria* parasitizing tomato in Sri Lanka. Tomato samples with extensive root galling and severe stunting were collected from the fields in Colombo and Kalpitiya in the years 2013/2014. Genomic DNA was isolated from RKNs extracted from infected roots using incubation method, sieving and centrifugal floatation. Primers optimized successfully resulted in amplification of DNA obtained from RKNs. Amplification of rDNA with MF/MR universal primers yielded 500 bp DNA fragments specific for the genus *Meloidogyne* for both samples. Amplification of mtDNA with C<sub>2</sub>F<sub>3</sub>/1108 primers yielded 1100 bp products specific for *M. arenaria*. Both samples were further analyzed with *M. arenaria* specific Far/Rar primers and 420 bp size PCR products were amplified. The sequences of the PCR products were 100% identical with sequence of *M. arenaria* isolates from Indonesia (GenBank Accession No. KP234264.1). Therefore, the population of RKNs isolated from tomato samples were confirmed as *M. arenaria*. In Sri Lanka, this nematode were reported to infect economically important crop plants such as eggplant, bitter melon, chili, okra, spinach, snake gourd and pumpkin. However, thus far a comprehensive study on the RKN identification on tomato was not done in the country. To the best of our knowledge, this is the first report on infection of tomato by *M. arenaria* in Sri Lanka.

Acknowledgement: Financial assistance by the University of Colombo Research grant (AP/3/2012/CG/25)