PCR-RFLP Identification of Major Species of *Meloidogyne* (Nematoda: *Meloidogynidae*) in Korea

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Partial mitochondrial DNA from single root-knot nematode was successfully amplified by PCR, and the further analysis of PCR-RFLP provided the identification profile for major *Meloidogyne* species (*M. incognita, M. arenaria, M. hapla*). DNA was extracted from both single female and second stage juvenile (J2) by simple grinding method in nuclease-free water. The sizes of PCR product and PCR-RFLP patterns obtained from single female nematode were consistent with the results from single J2 within same species. *Meloidogyne hapla* was easily differentiated from other root-knot nematode species by comparison of the PCR product. Total 500bp was generated by *M. hapla,* while *M. arenaria* and *M. incognita* produced 1.7 kb size in PCR amplification. *M. arenaria* and *M. incognita* could be distinguished by analysis of restriction enzyme digestion especially with Hinf I or Alu I. Hinf I had no digestion site in mitochondrial DNA of *M. arenaria* however, it generated 1,300bp and 400bp fragments in *M. incognita.* Alu I digestion resulted in 1000bp, 460bp, and 250bp fragments in *M. arenaria*, but showed different patterns in *M. incognita* by generating 800bp, 460bp, and 250bp fragments.