

Species Identification of Entomopathogenic Nematode (*Steinernema* spp.) by Sequencing of ITS Region in Ribosomal DNA

**Hyerim Han, Hyeong Hwan Kim, Ho Yul Choo*, Myoung Rae Cho,
Heung Yong Jeon and Han Ik Jang**

Horticultural Environment Division, National Horticultural Research Institute,
RDA, Suwon, 441-440, Republic of Korea

*Department of Applied Biology and Environmental Biology,
Division of Applied Life Science, Institute of Agriculture & Life Sciences,
Gyeongsang National University, Jinju, Gyeongnam, 660-701, Republic of Korea

Two isolates of *Steinernema* species were collected from different locations in Korea. *Steinernema* 55 was originated from Pocheon, Gyeonggi and *Steinernema* 223 was from Sangju, Gyeongbuk. Both isolates represented high pathogenicity to *Plutella xylostella*, *Spodoptera litura*, and *Spodoptera exgua* in laboratory experiment. The mortality of juvenile(2-3rd stage) *Plutella xylostella* reached 96.7% and 93.3% by the 25 nematodes inoculation of *Steinernema* 55 and *Steinernemema* 223, respectively. Under the same inoculation level *Spodoptera litura* showed 90.0% and 73.3%, and *Spodoptera exgua* showed 86.7% and 90.0% mortality by *Steinernema* 55 and *Steinernemema* 223, respectively. The mortality of *Plutella xylostella* increased almost to 100% when they became 4th stage juvenile. Currently the species identification work was approached by PCR amplification of ribosomal DNA. The amplified sizes of target gene including ITS-1 and ITS-2 were approximately 1 kb in both isolates, and now the PCR product is in the process of sequencing. The result of sequencing data will be informative to identify unknown *Steinernema*. species which have high potential to be a biocontrol agent in agriculture.