

Effect of Temperature and Dose-size on Infectivity and Reproduction of Entomopathogenic Nematode, *Heterorhabditis* sp. Gyeongsan Strain

Ho Yul Choo, Dong Woon Lee, Hye Jin Chung, Pan Jung Ha¹,
Hyeong Hwan Kim and Sang Myeong Lee²

Department of Agricultural Biology, Gyeongsang National University,
Chinju, Gyeongnam, 660-701, Korea,

¹Agricultural Technology Research Institute, Dongbu Hannong Chemical,
Hwasung, Kyungki, 445-960, Korea,

²Nambu Forestry Experiment Station, Forestry Research Institute, Chinju,
Gyeongnam, 660-300, Korea

Effects of temperature and dose-size on infectivity and reproduction of Korean entomopathogenic nematode, *Heterorhabditis* sp. Gyeongsan strain (HG) were examined. The greater wax moth, *Galleria mellonella* larvae were exposed to 5, 10, 20, 40, 80, and 160 infective juveniles (Ijs)/larva in 60 x 15mm petri dishes and kept in 13°C, 18°C, 24°C, 30°C and 35°C incubators. Each petri dish contained one larva weighed from 180 to 200 mg. Infectivity and reproduction were observed everyday for 15 days and 30 days, respectively. The infectivity of HG was influenced by temperature and dose-size. Mortalities of insects by HG were higher at 24°C and 30°C than other temperatures even at low concentrations, 5 or 10 infective juveniles/larva. Mortalities of insects by HG were increased with increasing exposure time. Number of Ijs established in *Galleria* larvae was influenced by temperature and dose-size. Ijs were more established at 30°C than 18°C and 24°C. However, establishment was not made at 13°C and 35°C at all concentrations although insects were infected by HG. More progenies were reproduced with increasing dosages. The highest number of progenies was obtained at 30°C at the rate of 160 infective juveniles. Progenies were not produced from cadavers at 13°C and 35°C. Reproduction time was the shortest at 30°C. Reproduction was made within 8 days. The results indicated that optimum temperatures for infectivity and reproduction was 30°C.