

Thesis Title Comparison of DNA Fingerprints of
 Macrobrachium rosenbergii de Man
 (Jumpers and Laggards), Penaeus monodon
 and Penaeus vannamei

Name Somjai Wongtripop

Degree Master of Science (Anatomy)

Thesis Supervisory Committee

 Boonsirm Withyachumnarnkul, M.D., Ph.D.
 Vichai Boonsaeng, Ph.D.
 Prasert Sobhon, Ph.D.
 Chainarong Wongteerasupaya, M.Sc.

Date of Graduation May 12 B.E. 2536 (1993)

ABSTRACT

Individual male Macrobrachium rosenbergii de Man have different growth rate; the phenomenon is known as heterogeneous individual growth (HIG). Fast-growing individuals or "jumpers" grow 15-times faster than slow-growing individuals or "laggards". Past studies suggested that environmental factors play role in HIG. Genetic factor is believed not to be implicated in this phenomenon, although a direct positive evidence has not been demonstrated. In this study DNA of jumpers and laggards were digested by either PstI or BamHI restriction enzyme, hybridized with M13 probe and detected by non-radioactive method. The result revealed that both jumper and laggard DNAs have identical patterns of DNA fingerprints, suggesting that HIG may not be due to a difference in genetic materials in the two groups. The enzymes and probe were also used to study DNA fingerprints

of two brackish-water species, Penaeus monodon and Penaeus vannamei, which revealed a smear pattern suggesting different genetic traits from that of Macrobrachium rosenbergii.