



In vitro Isolation of extracellular digestive enzymes producing bacteria from white shrimp (*Litopenaeus vannamei*) intestine, water and sediment

Abstract

In aquaculture, farming of white shrimp is an important economic activity. On the other hand, in recent years, the use of dietary supplementation with probiotic bacteria has been interested in the marine shrimp farming. One of the criteria for measurement of probiotic bacteria potency is ability to produce extracellular enzymes is. In this study, bacterial isolates were collected from 180 shrimp intestine, 27 water and 27 sediment samples at different times. In total, 43 strain were isolated in MRS Agar, MYP Agar and KAA agar media. Then the bacterial ability to produce lipase, amylase, protease and phytase enzymes was evaluated. Based on the results, more of *Bacillus* isolates were able to produce lipase, amylase, and protease enzymes. None of *Enterococcus* and lactic acid bacteria isolates were capable of producing enzymes. All of isolate had any phytase activity. Therefore, based on the results of this study, the *Bacillus* isolates can be used for the nutritional purposes and use of native probiotics in aquaculture, especially shrimp industry in the study of area, after more in vitro and in vivo studies.

Keywords: extracellular digestive enzymes, *Litopenaeus vannamei*, *Bacillus*, probiotic, Choebde.

