Preliminary study on the use of Bacillus sp., Vibrio sp. and egg white to enhance growth, survival rate and resistance of Penaeus monodon fabricius to white spot syndrome virus

ABSTRACT

Research in low cost feeds with high nutritional value and immunogenicity is important to reduce production cost and increase yields in the shrimp industry. In this study, immunostimulants of bacterial origin (peptidoglycan and lipopolysaccharides) and egg white were incorporated in shrimp diets as feed additives to determine the growth, survival and tolerance of Penaeus monodon to white spot syndrome virus (WSSV). Although the results obtained were not statistically significant ($p>0.05$) among the treatments, shrimp fed with bacterial additives and egg white showed higher weight gain, specific growth rate and survival than those fed on commercial shrimp diet. Shrimp fed with artificial diet showed 100% mortality when challenged with WSSV. However, shrimp fed on peptidoglycan supplemented diet had higher survival than their counterpart, whereas shrimp fed on egg white supplemented diet had a higher specific growth rate and better tolerance when challenged with WSSV. Further studies are required to determine the effectiveness and optimization of bacterial strains and egg white as feed additives to increase production and enhance the shrimp immune response to diseases.

Keyword: Bacteria; Egg white; Immunostimulant; Penaeus monodon