

This study evaluated the effect of *Pediococcus pentosaceus* and *Staphylococcus hemolyticus* as probiotics in whiteleg shrimp *Litopenaeus vannamei* naturally infected with WSSV and IHHNV. All bacteria were isolated from the gut of wild brown shrimp (*Farfantepenaeus californiensis*). Presumptive lactic acid bacteria were characterized for hemolytic and enzymatic activity, hydrophobicity, growth, and molecular identification. Two mixtures of four isolates were tested and their effect measured on the hemocyte number, survival, and prevalence of WSSV and IHHNV. Each mixture was applied at two different concentrations in a 15-day bioassay with shrimp naturally infected with WSSV and IHHNV as determined by single and/or nested PCR. In the treated animals total hemocyte count and survival were similar to control group. All shrimp fed with bacterial mixtures showed a decrease in the prevalence of WSSV but not IHHNV. The results obtained in this preliminary study revealed a protective effect of the two bacterial mixtures against WSSV latent infections.