

Probiotic microorganisms and antiviral plants reduce mortality and prevalence of WSSV in shrimp (*Litopenaeus vannamei*) cultured under laboratory conditions

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Abstract

The protective effect of a probiotic mixture (PM) and antiviral plants, against the white spot syndrome virus (WSSV) in *Litopenaeus vannamei*, was evaluated in three experiments. The PM was composed of four lactic acid bacteria (LAB) and one yeast strain. The plant mixture was composed of *Ocimum sanctum* and commercial antiviral plants (VPHs, HSVs). Shrimp in each experiment (weighing 2.7 0.7, 11.5 1.3, 11.70 2.5 g) were cultured in 120-L plastic tanks and fed twice a day with commercial feed plus additives (plants or bacteria and yeast). Animals were monitored for the occurrence of WSSV by single- step and nested PCR. The PM and powdered antiviral plants added to the commercial feed showed an increase in survival and a decrease in the prevalence of WSSV in shrimp. The results showed that both the PM and the powdered antiviral plants can provide protection for shrimp against WSSV.