

Use of probiotics, chlorination and WSSV free PLs to reduce the occurrence of white spot syndrome (WSS) and vibriosis in cultured shrimp, *Penaeus monodon*

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Abstract

Fermented rice had been a very popular breakfast among the farming communities in the Asian region. However, with the popularization of other breakfast items, it is now rarely consumed. Fermented rice is known to possess therapeutic properties mainly due to its probiotic potential. Probiotics are live microorganisms which provide health benefits through improving the intestinal microbial balance of the host. This study was carried out to isolate and identify potentially probiotic *Lactobacillus species* from fermented rice and incorporate into food products. Raw and cooked white and red rice were separately fermented and subsequently used as sources of potentially probiotic bacteria. MRS, MRS sorbitol (0.2%) and MRS L-cysteine (0.25%) culture media were used for isolation of different types of probiotic bacteria. The samples of fermented rice were serially diluted, plated and incubated at 37 °C for 2-3 days under anaerobic conditions. The resulting colonies were purified and tested for catalase production and Gram reaction. Distinct clusters resembling Gram positive and catalase negative cocci, diplo-cocci and rods were observed. These rods were tested for motility, endospore production and sugar fermentation using API 50CH I medium. The biochemical characters, colony and cell morphology of seven rod shaped bacteria resembled the genus *Lactobacillus* and have been identified to species level by API 50CH kits. The subsequent physiological and molecular methods for identification to species level and probiotic characterization of these *Lactobacillus spp* will further confirm the possibility of using them as probiotic starter culture in food industry.

Keywords: Fermented rice, *Lactobacillus*, Probiotic.