



Investigation on effect prepared vaccine by gamma irradiation on production rate and resistance to white spot disease in shrimp *Litopenaeus vannamei*

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Abstract

White Spot Syndrome Disease (WSD) is an important disease due to economic impacts in shrimp industries. Spreading of this disease in shrimp farms can cause a 100% mortality during 3-10 days. Therefore control of this disease is a strategy in shrimp industry. Vaccination is a way to control of WSSD. In several years ago during a project several type vaccine of this virus by association of Atomic Energy Organization is produced that among of them the virus inactivated by GAMA irradiation had better results in laboratory. To test of this vaccine in field, a research pilot was carried out. Initially 20000 shrimp nauplii were obtained from one of commercial hatchery in Bushehr province, then divided to two groups vaccinated and unvaccinated. The vaccinated group also divided to two groups, group A that vaccinated at postlarvae PL5 and received booster dose at PL15, group B vaccinated at PL12 and received booster dose at PL26. Results showed that growth performance and survival rate between vaccinated and unvaccinated without challenge with WSSV after 80 days is not significantly ($P < 0.05$). But survival rate in vaccinated groups after challenge with WSSV was significantly ($P < 0.05$) further the unvaccinated group so much that RPS (relative percent survival) in group A was 61.7% and the RPS in group B was 76.1%. This study revealed vaccination of shrimp post larvae with GAMA irradiation vaccine can control of shrimp mortality in incidence of WSSD in farms.

Keywords: Shrimp, WSSV, Vaccine, Gamma irradiation