石斑魚虹彩病毒不活化疫苗之田間應用

生物研究組

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摘要

石斑魚虹彩病毒為侵害石斑魚養殖產業重要病原之一，台灣田間分離的虹彩病毒分離株中，發現主要有 3 基因型在田間流行，分別為石斑虹彩病毒 grouper iridovirus（GIV）；嘉鱲魚虹彩病毒 red sea bream iridovirus（RSIV）及魚類傳染性脾臟及腎臟壞死虹彩病毒 infectious spleen and kidney necrosis iridovirus（ISKNV）。本所研發之不活化疫苗於 100 年 11 月已取得製造許可證，目前先行製造 100 萬劑進行注射示範推廣，並無償供養殖魚戶申請使用，自 100 年 10 月開始第 1 場免疫注射截至 101 年 1 月共計業於田間施打了 315,000 劑，本疫苗已經過 2 年連續兩批次之安全性及效力評估於田間試驗之點帶石斑場，其產品經證實除可提昇 2-3 成之育成率外，免疫組的魚隻增長及增重均勻度皆明顯優於未免疫組。龍膽石斑於清淨場之田間試驗，雖其免疫組與對照組的存活率皆為 100%，但其免疫組魚隻增重狀況於免疫後 2 個月即明顯高於未免疫組；下游中間育成場其育成率亦高達 9 成以上，顯示本疫苗確實於田間能發揮實質保護效益。

關鍵字:*虹彩病毒、疫苗、石斑魚*

Application an inactive iridovirus vaccine of grouper in the field

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Abstract

Grouper iridovirus (GIV) is one of the major viral pathogens that infects grouper aquaculture. The iridovirus isolates from Taiwan could be divided into 3 major genotypes that were related to GIV, red sea bream iridovirus (RSIV) and infectious spleen and kidney necrosis iridovirus (ISKNV), respectively. Manufacturing license has been received in November 2012 for an inactive vaccine against GIV. To promote immunization program, one million injection doses of vaccine were producted and offered freely for farmers. The immunization program launched in October 2011 has been used 315,000 doses of vaccine in the field. The vaccine has been used in field trials to assess the safety and efficacy in orang-spotted grouper (*Epinephelus coioides*) for two years. The vaccinated fish showed an increase in the survival rates by 20-30% compared to non-vaccinated fish 1 year post vaccination, and those weight were significantly higher than the non-vaccined groups 6-8 weeks post vaccination. In addition, the vaccine used in giant grouper (*Epinephelus lanceolatus*) under clean field conditions showed 100% survival rates both in vaccinated and non-vaccinated fish groups, but the weight was significantly higher than the non-vaccine groups 8 weeks post vaccination. The survival rates were up to 90% in downstream farms. The results showed that the tested vaccine protects against iridoviruses in grouper cultured in field conditions that it is safe for use in the target species.

Keyword：*Iridovirus, vaccine, grouper*