

Efficacy of feed-based adjuvant vaccine against *Streptococcus agalactiae* in *Oreochromis* spp. in Malaysia.

ABSTRACT

This study was conducted to determine the systemic, mucosal immunity and protective capacity of the feed-based adjuvant vaccine (FAV) of *Streptococcus agalactiae* following oral vaccination against streptococcosis in tilapias. Two hundred and sixteen red tilapia fish were divided into three major groups. Each major group consisted eight tilapia kept in nine 2000 L glass aquaria. At day 0, all fish from the FAV group were fed with feed that had been incorporated with an adjuvant, while fish in the feed-based vaccine (FNV) group were fed with vaccine incorporated into the pellet without adjuvant. Fish in the control-unvaccinated group, FC, were fed with normal commercial pellet. Booster dose was performed on day 14 post immunization. Fish from each group were sacrificed on a weekly basis for the entire 7 weeks. Serum, body mucus and gut lavage fluid were evaluated for antibody responses by indirect ELISA, while histological examination was carried out on the gut following intraperitoneal challenge. The FAV group had a significantly higher protection ($P < 0.05$) following challenge with 3.4×10^9 CFU mL⁻¹ of live *S. agalactiae* than FNV group. This level of protection may be due to high antibody responses, increase in size of gut-associated lymphoid tissue and high number of lymphocytes in the FAV group

Keyword: *Streptococcus agalactiae*; Oral; Adjuvant; Tilapia.