DEVELOPMENT AND EFFICACY A TRIVALENT VACCINE AGAINST BACTERIAL PATHOGENS in RAINBOW TROUT, *Oncorhynchus mykiss*

Aysegul Kubilay\(^1\), Pinar Yildirim\(^1\)

\(^1\)Department of Aquaculture, Faculty of Fisheries, SuleymanDemirel University, Isparta, TURKEY, 32260

ABSTRACT

In this study, a new trivalent vaccine was developed and evaluated the efficacy with adjuvants (Freund’s Complete Adjuvant and glucan) and non-adjuvanted vaccine in rainbow trout (20g) against pathogens; *L. garvieae*, *V. anguillarum* and *Y. ruckeri*. For this purpose, four experimental groups were formed including control. The vaccine was prepared formalin-killed bacteria and then combined with adjuvants that were given into fish by intraperitoneal injection. Control fish were received only phosphate buffered saline-PBS. A booster was applied the fish which were vaccinated with a non-adjuvanted vaccine 21 days post-injection. All the groups were challenged against three pathogens at day 30\(^{th}\), 90\(^{th}\), 120\(^{th}\) and 270\(^{th}\) post vaccination. The results showed that fish had a high level of protection of pathogens in the vaccinated groups up to 9 months. The level of protection was calculated by obtaining the Relative Percent Survival (RPS). RPS was determined as in the non adjuvanted plus a booster injected group: *Y. ruckeri* 96.77%, *V. anguillarum* 100%; *L. garvieae* 96.66%, Glucan: *Y. ruckeri* 93.54%; *V. anguillarum* 96.77%, *L. garvieae* 93.33%, FCA : *Y. ruckeri* 100%, *V. anguillarum* 87.09 %, *L. garvieae* 93.33% at 270\(^{th}\) day. The efficacy of the vaccine has been found to provide long-term protection against to three pathogens in the experimental condition.

Key Words: Rainbow trout, *Yersinia ruckeri*, *Lactococcus garvieae*, *Listonella(Vibrio) anguillarium*, vaccine, adjuvant, Long-term protection