Evaluation of the Antimicrobial Effects of AQUASTART Product of Iranian Company on Some Fish Pathogens

Nekuiefard A.[1]*; Khezri M. [1]; Seidgar M. [1]; Shiri S. [1]; Dadashpour B. [1]; Abdi K. [2]; Kakolaki Sh. [3]; Zorriehzahra J. [3]; Shirazdi M. [4]; Rahnama SH. [4]; Vahabli D. [5]

1-National Artemia Research Center, Iranian Fisheries Sciences Research Institute, Agricultural Research, Education and Extension Organization (AREEO), Urmieh, Iran.
2-Iran Veterinary Organization, Tehran, Iran.
3-Iranian Fisheries Sciences Research Institute, Agricultural Research, Education and Extension Organization (AREEO), Tehran, Iran.
4-Ramyar Shimi Co, Tehran, Iran.
5-Gezelmahi Trout Propagation Co, Urmieh, Iran.
*Corresponding autor's Email: a.nekoueifard@areeo.ac.ir

Abstract:
The rapid growth of the world's population and declining aquatic resources for a variety of reasons, including water pollution and environmental degradation, have led to a strong need for fish artificial reproduction and aquaculture. Identifying and using the appropriate and economically affordable disinfectant in fish reproduction systems without adverse side effects on the environment and human health can be effective strategies to improve the quality of fishery products and improve the aquaculture environment, especially in rainbow trout farming industry, which are often densely operated and have a high economic value in Iran. This study was designed to evaluate the antimicrobial effects of AQUASTART product of Iranian company on some fish pathogens at the Iranian Artemia Research Center in 2018. The in-vitro antimicrobial effect of AquaStart was performed by Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC) / Minimum Fungicide Concentration (MFC) on *Streptococcus iniae*, *Lactococcus garvieae*, *Yersinia ruckeri* and

Saprolegnia parasitica and the results were compared with two disinfectants of formalin and Malachite green. The results showed that AquaStart had MIC and MBC of 50 and 100 ppm, 50 and 100 ppm, 100 and 200 ppm against *Yersinia rucheri*, *Streptococcus iniae* and *Lactococcus garvieae.* Also, the MFC of AquaStart against *Saprolegnia parasitica* was 50 ppm. AquaStart showed higher antimicrobial activity than formalin, however, its antimicrobial activity was lower than Malachite green. Further investigations are suggested to evaluate the efficacy of AquaStart in fish reproduction and clarify its optimum use.

Keywords: AquaStart, Antimicrobial activity, *Oncorhynchus mykiss* reproduction