

Biological Aquaculture System (BAS) Design and Water Quality on Marble Goby (*Oxyeleotris marmoratus*): A Water Recirculating Technology

Authors : AnnWon Chew, Nik Norulaini Nik Ab Rahman, Mohd Omar Ab Kadir, C. C. Chen, Jaafar Chua

Abstract : This paper presents an innovative process to solve the ammonia, nitrite and nitrate build-up problem in recirculating system using Biological Aquaculture System (BAS). The novel aspects of the process lie in a series of bioreactors that specially arrange and design to meet the required conditions for water purification. The BAS maximizes the utilization of bio-balls as the ideal surface for beneficial microbes to flourish. It also serves as a physical barrier that traps organic particles, which in turn becomes source for the microbes to perform their work. The operation in the proposed system gives a low concentration and average range of good maintain excellent water quality, i.e., with low levels of ammonia, nitrite, nitrate, a suitable pH range for aquaculture and low turbidity. The BAS thus provides a solution for sustainable small-scale, urban aquaculture operation with a high recovery water and minimal waste disposal.

Keywords : ammonia, bioreactor, Biological Aquaculture System (BAS), bio-balls, water recirculating technology

Conference Title : ICABBBE 2015 : International Conference on Agricultural, Biotechnology, Biological and Biosystems Engineering

Conference Location : Paris, France

Conference Dates : January 23-24, 2015