

## **Efficacy of purple non-sulfur bacterium *Afifella marina* strain ME to control dissolved inorganic nutrients in aquaculture system**

### **Abstract**

Experiment was conducted to determine the possibility of using locally isolated purple non-sulfur bacterium *Afifella marina* strain ME to improve the dissolved inorganic nutrients (DIN) in *Tilapia Oreochromis niloticus* culture tank. The experiment was conducted for seven days without changing water. Ammonia (mg/L), nitrite (mg/L), nitrate (mg/L) and phosphate-phosphorus (mg/L) in the *Tilapia* culture tank were monitored. Sixteen tails of *Oreochromis niloticus* juveniles with mean weight of  $0.7 \pm 0.05$ g were stocked in ten liter aquarium. Juveniles were fed with commercial feed twice daily by ad-libitum feeding method. Purple non-sulfur bacterium *Afifella marina* strain ME, and established probiotic commercial *Bacillus* with four inclusion levels, 0.005(g/L), 0.01(g/L), 0.02(g/L), and 0.03(g/L) were added everyday into culture tank. At the end of experiment no significant difference ( $P > 0.05$ ) were observed among all the inclusion levels with the concentration of ammonia, nitrite, nitrate and phosphate. The lowest concentration of ammonia, nitrite, nitrate and phosphate were observed in both *Afifella marina* strain ME, and commercial *Bacillus* with the inclusion level of 0.03g/L. Obtained results were comparable with commercially established probiotics *Bacillus* sp. Locally isolated purple non-sulfur bacterium *Afifella marina* strain ME could be one of the potential candidate in controlling dissolved inorganic nutrients in aquaculture system.