

**Inclusion of purple non-sulfur bacterial biomass in formulated feed to promote growth, feed conversion ratio and survival of Asian seabass *lates calcarifer* juveniles**

**Abstract**

Phototrophic bacterium, *Rhodovulum* sp. (purple non-sulfur bacteria, PNSB) was isolated from the seabass broodstock tank at the Hatchery of Universiti Malaysia Sabah and mass-cultured in synthetic media 112 under anaerobic light condition. The dry cell of bacterial biomass was included in the commercial formulated seabass feed by mixing the fresh biomass with the ground pellet, re-pelleted and air-dried. The *Rhodovulum* sp. biomass was added at 0.3, 0.6 and 0.9% in the diets. The control diet was prepared without addition of bacterial biomass. Experimental diets were fed to triplicate groups of seabass juveniles twice a day at apparent satiation level over a 12-week feeding trial. Even though there were no significant differences detected in the growth performance, feed conversion ratio and survival rate of fish fed the experimental diets, there were trends of increased growth, improved survival rate and better feed conversion ratio when fish fed with 0.3% bacterial biomass. At the end of feeding trial, weight gain and specific growth rate of fish in this group were 419 and 1.87 %/d, respectively, compared to 373 and 1.82 %/d, respectively, in the control group. The best Feed Conversion Ratio (FCR; 1.95) and survival rate (86.7%) were also obtained in fish fed 0.3% bacterial biomass. Apparently, increasing level of bacterial biomass above 0.3% did not give any significant benefit to growth, feed conversion ratio and survival of seabass juveniles. This study suggested the potential of PNSB *Rhodovulum* sp. at lower inclusion level to promote growth, FCR and survival of Asian seabass juveniles.