

## **Performance of red seaweed (*Kappaphycus* sp.) cultivated using tank culture system**

### **Abstract**

Little is known on the performance of seaweed cultivated in land-based facilities. The present study was conducted to determine the performance of *Kappaphycus* sp. cultivated in tank culture system with the effect of seaweed density, usage of Acadian Marine Plant Extract Powder (AMPEP), AMPEP fertilizer and the observation on the disease occurrence. Two red seaweed species (*K. alvarezii* variety Brown Tambalang, BT and *K. striatum* variety Green Flower, GF) were selected and mutually cultivated using hanging culture method. Three 40 days trials were conducted with different seaweed density (Trial 1:2.40, Trial 2:1.92 and Trial 3:0.96 g L<sup>-1</sup>). Besides, four treatments were performed in each trial: T1 (filtered seawater only), T2 (filtered seawater enriched with 13 mg L<sup>-1</sup> AMPEP fertilizer), T3 (filtered seawater enriched with sands and corals and T4 (filtered seawater enriched with 13 mg L<sup>-1</sup> AMPEP fertilizer, sands and corals). Based on the result, the maximum daily growth rate ( $2.00 \pm 0.03\%$  day<sup>-1</sup> for *K. striatum* and  $1.46 \pm 0.06\%$  day<sup>-1</sup> for *K. alvarezii*) was recorded during Trial 3 with the lowest seaweed density using T4 treatment under natural culture parameters of light intensity, DO level, pH, temperature and salinity. In the present study, the performance of seaweed culture in tank was challenged by diseases such as "ice-ice" and seawater epiphyte infection that might cause bleached stems and weight loss to the seaweed. These findings are significant to provide a baseline data and facilitate the land-based seaweed farming in the future. © 2015 Academic Journals Inc.