**Impacts of Ascophyllum marine plant extract powder (AMPEP) on the growth, incidence of the endophyte Neosiphonia apiculata and associated carrageenan quality of three commercial cultivars of Kappaphycus**


## ABSTRACT

Three commercial cultivars of Kappaphycus (e.g., K. alvarezii—Crocodile and Giant) and K. striatus (Sacol) were grown in Semporna, Sabah, for three consecutive growth cycles, each for a duration of 45 days. The study intended to determine the impacts of Ascophyllum marine plant extract powder (AMPEP) on the daily growth rates (DGR), percentage incidence of endophytic Neosiphonia apiculata, and the commercial, quality characteristics of extracted carrageenan from the harvested biomass (i.e., yield, viscosity, and gel strength). Results showed that the performances of AMPEP-treated thalli were significantly different ($P < 0.01$), in terms of the three major assessment criteria used in this study. Amongst the three cultivars and under the conditions tested, K. striatus was the most resistant to the incidence of N. apiculata, especially when treated with AMPEP. The use of AMPEP as a red seaweed biostimulant for the promotion of thallus growth rate, reduction of biotic stress caused by endophytes, and important improvements to commercially valuable traits, such as carrageenan quality, are encouraging and could be adopted in crop management protocols to assist the industry.