

## **Chemical composition of farmed and micropropagated *Kappaphycus alvarezii* (Rhodophyta, Gigartinales), a commercially important seaweed in Malaysia**

### **Abstract**

Micropropagation technologies play an important role in enhancing the nutritional composition of seaweeds. *Kappaphycus alvarezii* explants, obtained from two types of seedling production system viz. micropropagation and farm propagation, were analyzed. Results obtained from the post-farm cultivation seaweeds showed significantly higher total lipids in micropropagated compared to farm-propagated *K. alvarezii*. In the mineral and trace element analyses, micropropagated *K. alvarezii* yielded significantly higher calcium, magnesium, beryllium, cobalt, copper, lithium, manganese, and zinc compared to farm-propagated *K. alvarezii*. A lower concentration of metal contaminants was detected in micropropagated *K. alvarezii* compared to farm-propagated *K. alvarezii*. Both sources of *K. alvarezii* showed high SFA compared to MUFA and PUFA, where C16:0 and C18:0 were found to be in abundance. The study suggests micropropagated *K. alvarezii* is a better food source for consumption compared to farm-propagated *K. alvarezii* and justifies the rationale of using micropropagation technique for seedling production in the seaweed industry.