

## **Comparative Study of Drying Methods on Seaweeds (*Kappaphycus* sp. and *Padina* sp.) Based on Their Phytochemical and Polysaccharide Content Located in Sabah**

### **ABSTRACT**

Seaweed, one of the marine resources is known for their precious active compound. The dehydration process is required before the utilization of the seaweed. It helps to increase the shelf life and play a major role in the extraction of specific chemical components. This study was conducted to evaluate the effects of different drying treatments of two different seaweeds on its phytochemical contents and carrageenan properties. Seaweed used include edible seaweed which are *Kappaphycus* sp., and locally abundant seaweed *Padina* sp. Four (4) different drying methods used; namely sun-drying for five (5) days, air-drying for 14 days, freeze-drying for five (5) days, and oven drying with three different temperatures at 60 °C, 80 °C and 100 °C for six (6) h, respectively. The moisture content was measured, and air-dried seaweeds contain highest moisture content (19.32% - 16.21%). Methanol, MeOH was used as extraction solvent in the determination of phytochemicals content for total phenolic content (TPC) and total flavonoid content (TFC). Sodium hydroxide, was used to extract carrageenan from *Kappaphycus* sp., which was evaluated on their percentage yield. Oven dried at 100 °C extracts possessed lowest retention of phytochemicals content and carrageenan yield among all drying methods. This finding suggests that various drying methods applied significantly influenced the composition of seaweeds. Identifying the most effective post-harvest drying procedure for seaweed would be commercially advantageous.