

## SCREENING OF POTENTIAL LOCAL SEAWEEDS FOR NANOCELLULOSE PRODUCTION

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### ABSTRACT

Act as multifunctional materials, nanocellulose offers important benefits such as low-priced, biodegradable, good mechanical characteristics and a high degree of surface polarity. Due to its biodegradable properties, nanocellulose is a suitable alternative to substitute plastic bags and food wrapper. It also has been found to be not harmful for application in biomedical and food industry. Among sources of cellulose, seaweed is proven to have roughly 95% of crystallinity which is the highest. Hence this study aims to screen local seaweeds for nanocellulose production. Around 13 seaweed samples were collected from Teluk Bidara, Dungun and Fisheries Research Institute Langkawi and were identified morphologically. Among the identified seaweeds were *Padina minor*, *Dictyota dichotoma*, *Laurencia intricata*, *Sargassum polycystum* and *Caulerpa lentillifera*. The identified samples were then subjected to vacuum filtration, hydrolysis and bleaching to obtain nanocellulose. Using particle size analyser, particles with the size of 50 - 100 nm were measured and proved that nanocellulose was successfully obtained from local seaweeds.

**Keywords:** Seaweeds; nanocellulose; biodegradable; crystallinity

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