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## DIVERSITY ON A PLATE: SHORT NOTES ON THE SPECIES IDENTITY OF SEAWEED 'JANGGUT DUYUNG' SOLD IN KUCHING WET MARKETS, SARAWAK

\*Mohd Nasarudin Harith, Siti Nadiah Salleh, Ahmad Syafiq Ahmad Nasir  
and Nur Atiqah Mohamad Yusoff

Faculty of Resource Science and Technology, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak.

\*corresponding author

hmnasarudin@unimas.my

### ABSTRACT

This study focuses on the morphological identification of the edible seaweed 'Janggut Duyung' sold in Kuching wet markets, Sarawak. Through market surveys and detailed morphological analysis, three species were identified: *Gracilaria changii*, *Gracilaria coronopifolia*, and *Gracilaria edulis*. The identification was based on distinctive features such as thallus color, branching patterns, and structure, observed using compound light and dissecting microscope. These seaweeds are an integral part of the local diet in Sarawak, often prepared and consumed in various traditional dishes. Although this study did not delve into detailed nutritional analyses, it highlights the need for further research to explore the nutritional content and potential commercial applications of these seaweeds. This research sets the groundwork for future studies and projects in Sarawak that aim to maximize the benefits of seaweeds. The precise identification of seaweed species' morphology ensures that future research can rely on accurate taxonomic data, crucial for understanding the specific characteristics and potential uses of each species. By offering detailed information on the availability and distribution of 'Janggut Duyung' in local markets, this study helps identify market trends and demand, guiding strategies to optimize supply chains and promote sustainable harvesting practices.

**Keywords:** *Gracilaria*, marine, phaeophyta, seaweed, Kuching, Sarawak, morphological identification

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## INTRODUCTION

Seaweeds are groups of benthic algae that live either in marine or brackish water environment (Mark & Diane, 2008). According to Dawes (1974), there are about 8000 species of seaweeds found along the world's coastlines, which can inhabit depths of up to 270 meters. Seaweeds - groups of macroalgae, contribute significantly to the total primary production of inshore environments, accounting for about 75% according to Meadow and Campbell (1988). Recent studies have further emphasized the critical role of macroalgae in coastal ecosystems and their substantial economic value (Buschmann *et al.*, 2017).

Seaweeds have been widely used for human consumption in many parts of the world (Rajasulochana *et al.*, 2010), serving as a source of minerals, vitamins, and free amino acids (Almela *et al.*, 2002). In the case of Malaysia, seaweeds are occasionally consumed as salad dish in certain coastal areas, especially along the east coast of Peninsular Malaysia and East Malaysia (Chan & Matanjun, 2017).

Seaweeds like *Gracilaria changii*, *G. edulis*, *G. salicornia*, *G. tenuispitata*, and *Gelidium* spp. are used as salads as well as for the preparation of desserts such as agar-agar, a gelatinous substance derived from seaweed that is used in various culinary applications (Chan & Matanjun, 2017). In Peninsular Malaysia, seaweeds like *Gracilaria*, *Caulerpa*, and *Solieria* are commonly consumed by the local community, often prepared as salads or eaten raw, although their consumption is typically restricted to small local fishing communities living near the coastal regions (Rajasulochana *et al.*, 2010; Nor *et al.*, 2011). Seaweeds in Malaysia are not considered a common food like they are in countries such as Japan and China, where they are prepared and served in many forms and have become a main source of income for fishermen (Rajasulochana *et al.*, 2010).

'Janggut Duyung' refers to a group of red seaweed, the name of which translates to 'Mermaid's Beard' in English. This name is derived from the appearance of the seaweed, which resembles the long, flowing hair often associated with mermaids in local folklore. The term reflects the cultural connection and the imaginative interpretation of the seaweed's physical characteristics by the local communities (Othman *et al.*, 2015). Well distributed in temperate and tropical seawaters, this macroalgae widely sold in Sarawak depicting its significant to the local people. Ecologically, seaweed plays a crucial role in marine environments as a primary producer and provides habitat for various aquatic organisms (Othman *et al.*, 2018)

Currently, there is a lack of detailed morphological identification of the edible seaweed 'Janggut Duyung' sold in Kuching wet markets. This gap in accurate identification poses a research problem as it can lead to potential misidentification, underutilization, and missed opportunities for commercial and nutritional benefits.

By providing precise morphological descriptions, this study addresses the need for reliable taxonomic data, which is essential for sustainable harvesting practices, effective market strategies, and the advancement of seaweed research in Sarawak. This short note provides enhanced morphological identification of the edible seaweed 'Janggut Duyung', providing classification and additional information of the species. Overall, this study lays a foundational framework for subsequent research and development initiatives aimed at maximizing the benefits of seaweeds in Sarawak. The accurate morphological identification of seaweed species ensures that future studies can build on reliable taxonomic data, which is essential for understanding species-specific characteristics and potential uses. By providing detailed data on the availability and distribution of 'Janggut Duyung' in local markets, the study helps identify market trends and demand, informing strategies to optimize supply chains and promote sustainable harvesting practices.

## METHODOLOGY

### Study Sites and Market Survey

This study was conducted at four local markets in Kuching, Sarawak: Satok Market, Santubong Market, Muara Tuang Street Markets, and Telaga Air Market (Figure 1). The sampling period spanned from November 2022 until April 2023. During this period, fresh seaweed samples were collected every weekend. Each visit involved purchasing fresh seaweed from the selected markets.



**Figure 1:** Map showing the location of Market (Green marks).