INTERNATIONAL JOURNAL OF FRUIT SCIENCE
https://doi.org/10.1080/15538362.2018.1555507

Taylor & Francis
Taylor & Francis Group

Mangrove Fruit Bioprospecting: Nutritional and Antioxidant Potential as a Food Source for Coastal Communities in the Rawa Aopa Watumohai National Park, Southeast Sulawesi, Indonesia

Kangkuso Analuddin [a,b], Andi Septiana[a,b], Nasaruddin[b], Yusuf Sabilu[b,c], and Sahadev Sharma[d,e]

[a]Study Program of Biotechnology, Faculty of Mathematics and Natural Sciences, Halu Oleo University, Kendari, Indonesia; [b]Department of Biology, Faculty of Mathematics and Natural Sciences, Halu Oleo University, Kendari, Indonesia; [c]Department of Publics Health, Faculty of Publics Health, Halu Oleo University, Kendari, Indonesia; [d]Department of Natural Resources and Environmental Management, University of Hawaii at Manoa, Honolulu, HI, USA; [e]Institute of Ocean and Earth Sciences, University of Malaya, Kuala Lumpur, Malaysia

ABSTRACT

The present study aimed to identify the nutritional and antioxidant potential of mangrove fruits of *Xylocarpus granatum, Sonneratia alba*, and *Bruguiera gymnorrhiza* growing in Rawa Aopa Watumohai National (RAWN) Park. The protein content of *X. granatum* fruits (4.50 mg/g) was recorded to be higher than that *S. alba* (0.93 mg/g) and *B. gymnorrhiza* (1.09 mg/g), while the fat content in fruits of *X. granatum* (4.88%), *S. alba* (4.42%), and *B. gymnorrhiza* (4.74%) was similar. The total sugar content in fruits of *X. granatum* (14.8 mg/100 g), *S. alba* (14.9 mg/100 g), and *B. gymnorrhiza* (13.52 mg/100 g) was also similar. The ascorbic acid content in *X. granatum* fruit (65 mg/100 g) was higher than that in *S. alba* (40 mg/100 g) and *B. gymnorrhiza* (41.87 mg/100 g). However, the fruits of *S. alba* contained much higher micronutrients of Mn (0.063 mg/g), Zn (0.72 mg/g), and Fe (0.51 mg/g) than those of in *X. granatum* (0.052, 0.52, and 0.38 mg/g, respectively), and *B. gymnorrhiza* (0.012, 0.11, and 0.34 mg/g, respectively). Moreover, the fruits of *X. granatum* contained much higher macronutrients of K and Na compared to fruits of other mangroves. Thus, the findings of this study showed the promising values of all studied mangrove fruits as bio-nutrition and antioxidant sources, and high potentiality to use as renewable food sources for the coastal communities in RAWN Park.

KEYWORDS

Mangrove fruits potential; nutritional content; antioxidant; renewable food; coastal community; RAWN Park

Introduction

Mangroves are well known to play many important roles, such as providing carbon and nutrients in coastal areas that support primary and secondary

CONTACT Kangkuso Analuddin zanzarafli@gmail.com Study Program of Biotechnology, Faculty of Mathematics and Natural Sciences, Halu Oleo University, Kendari, Indonesia

Color versions of one or more of the figures in the article can be found online at www.tandfonline.com/wsfr.
This article has been republished with minor changes. These changes do not impact the academic content of the article.