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PROXIMATE ANALYSIS FOR NUTRITIONAL POTENTIAL OF EDIBLE MANGROVE FRUITS OF *SONNERATIA ALBA*SM FROM DEVGAD.DIST. SINDHUDURG

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ABSTRACT

In our study of proximate analysis of fruit of Sonneratia alba. In fruit of Sonneratia alba. Total minerals are 02.00%, Crude protein is 2.38%, crude Fat is 00.94% and Crude Fiber is 07.17%, Carbohydrates 20.09 %, and energy is 98.34 Kcal/100g. From our analysis it is clear that fruits of Sonneratia albaSm plant contains significant amount of Moisture, Total minerals, Crude protein, crude Fat, and Crude Fiber, Carbohydrates, and energy.

KEYWORDS: *proximate, Moisture, Crude protein, crude Fat, Crude Fiber, Carbohydrates,energy.*

INTRODUCTION

Mangrove ecosystems have always provided abundant food to man, constituting an important source of income for mangrove populations. According toSchaeffer-Novelli, (2003) a great part of protein consumed comes from the mangrove ecosystem where these populations practice self-subsistence extractivism.Fruits of different mangrove speciesplay a substantial role in the food and nutrient safety of the rural poor in general and coastal people community.Fruits are nutritionally rich and provide supplement nutritional requirements for the forest residents and many of the downgraded rural communities subsequently the common cultivar fruits are less familiar and not reachable for them. In opinion of the ever-increasing problem of human population and reducing natural resources, there is a requirement to feat the role of mangrove eatable fruits to the fullest amount possible. To the contrary, the mangrove fruits, which the communitiesusage, are not the aware to the urban populations.Information accessible on the eatable as well as beneficial properties of the mangrove fruits is sequestered and data on their nutrition aspect are insufficient or inadequate. During recent years, there has been an increasing interest to estimate various mangrove fruits for their nutritional value [Sudirman S*et al*., (2015), Patil P.D and Chavan N.S(2013)]. There are some studies have previouslyhas been carried out on the nutritive values and presence of potent micronutrient in the fruits of different plant species (Bellec F.L*et al*., 2006). But less studies have been documented with fruits of mangrove plants (Halder R,*et al*., 2013). Besides, providing nutritional properties, these mangrove edible fruits also can serve as natural antioxidant. Fruits are rich with antioxidants that help in lowering incidence of degenerative diseases such as cancer, arthritis, arteriosclerosis, heart disease, inflammation, brain dysfunction and acceleration of the ageing process (Feskanich D*et al*., 2000). Some

reports are available i.e*Bruguiera gymnorrhiza* fruits (Sudirman S*et al*., 2015),*Sonneratia caseolaris* fruit (Santoso J*et al.,* 2011) but reports on *S. alba* fruit still lacking. The present piece of work explores the nutritional status of edible mangrove fruits of *S.alba*with a view to assess some promising species which may be considered as non-conventional bio-nutritional sources based primarily on their nutritional properties like Crude protein, crude Fat, Crude Fiber, Carbohydrates , and energy of mangrove fruits.

MATERIAL AND METHODS:

Plant material fruits of *Sonneratia alba*were collected from Malayee Tal. Devgad. Dist. Sindhudurg. Fruits were washed thoroughly and blot to dry with clean and sterilized cotton cloth. Then the Plant material was dried in oven at the temperature 60°c for 10 days. Dried material was ground finely to form a powder with the help of Willey's grinding machine. And brought to recognized laboratory, Nikhil analytical research laboratory Sangli for further analysis. In laboratory we analyzed, Total carbohydrate content, crude proteins, moisture, total minerals, crude fats, crude fiber, and energy.

a) Total carbohydrate content:

The 0.2g oven dried, fruit powder of *Sonneratia alba* was subjected to extraction, with 80% neutral alcohol and determined according to (Nelsons 1944).

b) Total protein content :

For determination of protein,in the fruit of *Sonneratia alba* the standard method described by (Lowry *et al.,* 1951) was used. As a standard, Bovine serum albumin (BSA) was used and total protein content was expressed in mg/100g.

c) Total energy content

For determination of total energy,the standard method described by (Brett and Groves, 1979) was used. The energy content of fruit of *Sonneratia alba* was determined by multiplying the values obtained for protein, carbohydrate and lipid by 23.86, 17.16 and 36.42 kjg^{-1} respectively.

d) Total lipid content

For determination of total lipid content,the standard method by (Folch*et al.,* 1951) was used. The lipid content of fruit of *Sonneratia alba* was determined by extracting 0.5 g of homogenate with chloroform: methanol (2:1 v/v). Lipid extract was collected and solvent was evaporated with a rotary evaporator. The residue was considered as total lipid content, and measured gravimetrically.

d) Total dietary fiber:

For determination of total dietary fiber content,the standard method by (DeVries and Rader 2005) was used. The dietary fiber content of fruit of *Sonneratia alba* was determined by formula,

$$\textbf{Total dietary fiber} = \frac{[\text{Weight residue} - \text{protein} - \text{ash} - \text{blank}]}{\text{Weight test portion}}$$

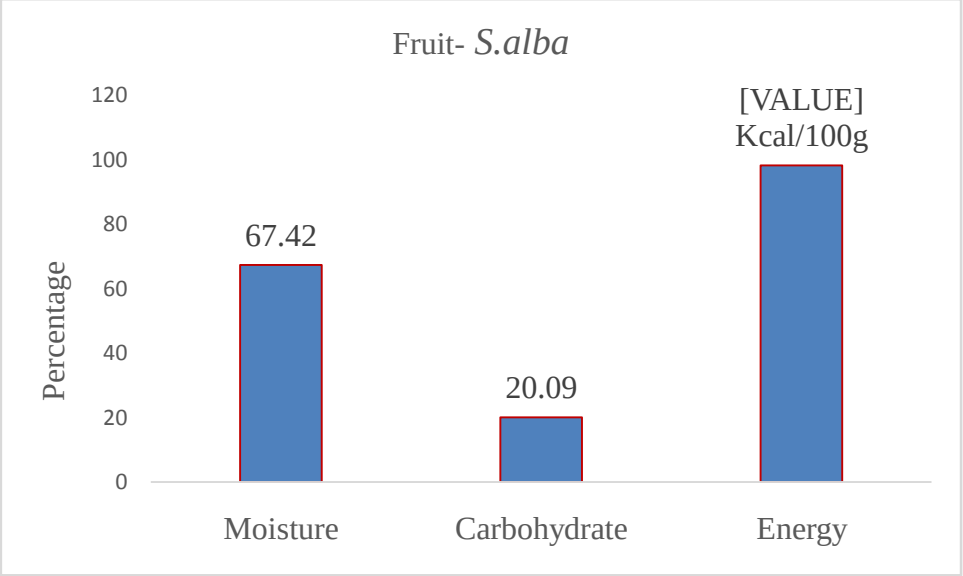
RESULT AND DISCUSSION:

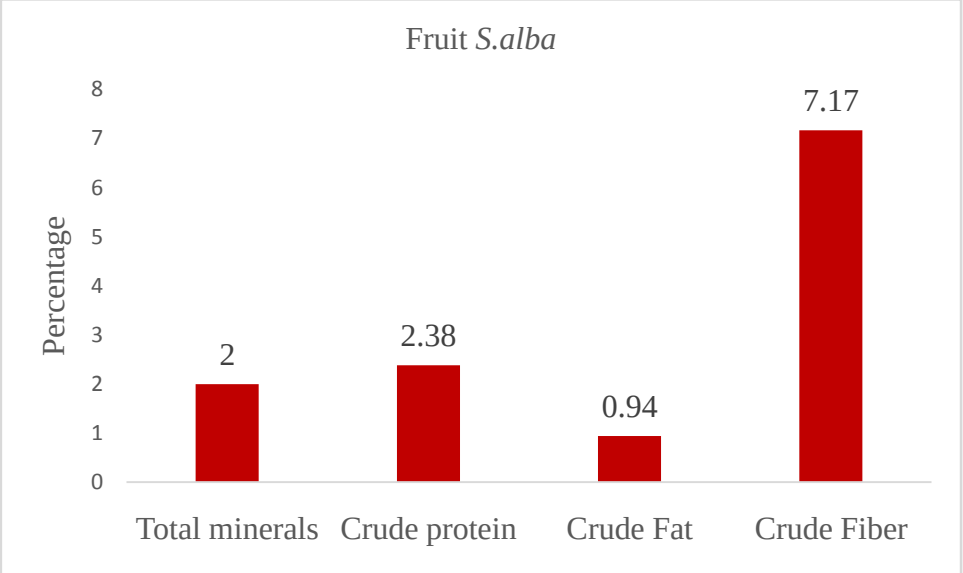
Crude protein content percentage in fruit of *Sonneratia alba* is 02.38%. Proteins are made up of carbon, hydrogen, oxygen and Nitrogen. These are complex compounds with high molecular weight. Protein molecules are made up of long chain of Amino acids. Proteins are essential for formation of structure of cell as well as these are essential for formation of different types of enzymes, hence proteins acts as structural as well as catalytic role. **Crude Fat** content percentage in fruit of *Sonneratia alba* is 00.94%, **Crude Fiber** content

percentage in fruit of *Sonneratia alba* is 07.17%, Food rich in dietary fiber subsidizes to the inhibition of various diseases such as, most of the spreading diseases like diabetes, constipation, colon cancer, hemorrhoids, diverticulosis, and , excess cholesterol**. Carbohydrate** content percentage in fruit of *Sonneratia alba*is 20.09%. Carbohydrates are main reserve organic compounds in the plants. In initial stage of growth of plants, carbohydrate is a main source of nutrients. **Energy** content in fruit of *Sonneratia alba* is 98.34 Kcal/100gm.

Table 3.3: Study of Proximate analysis of Fruit of *Sonneratia alba*

Sr.no	Parameter	Unit	*S. alba*
1.	Moisture	%	67.42
2.	Total minerals	%	02.00
3.	Crude protein	%	02.38
4	Crude Fat	%	00.94
5	Crude Fiber	%	07.17
6	Carbohydrate	%	20.09
7	Energy	Kcal/100g	98.34





CONCLUSION

Fruits of *Sonneratia alba* Sm.plantshows significant amount of Moisture, Total minerals, Crude protein, crude Fat, and Crude Fiber, Carbohydrates, and energy. Hence fruits are useful as a source of food. Further study is necessary.

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