



Food and Medicinal Aspects of Freshwater Snail *Filopaludina bengalensis* (Lamarck, 1822)

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Food is becoming more and more scarce due to several negative factors. People only focus on the readily available foods in their vicinity that are limited and well-known. Unexplored foods from the forest are out of our food baskets due to a metallic lifestyle that creates a lot of health problems and retards the development of a nation. From the forest's wealth, plants are more known, but edible insects, snails, fish, and other such species are less known and need to be explored. Keeping this in view, an attempt has been made to find medicinal foods from the faunal wealth of Odisha. A survey was carried out in selected districts (Sundargarh, Mayurbhanj, Cuttack, and Keonjhar) of Odisha state in 2023 and enumerated the species from the faunal wealth having food and medicinal values. Results revealed that snails are most common and consumed as a nutraceutical and have fewer scientifically known taxa in medico-food aspects. In this communication, the food and

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medicinal uses of *Filopaludina bengalensis*, a freshwater snail, are discussed, and further advanced work is recommended to do value addition for sustainable utilization.

Keywords: Hunger; faunal food; snail; sustenance; nutraceutical; ethnic knowledge; tribal community.

1. INTRODUCTION

In the contemporary world, food scarcity is a major problem leading to hunger, malnutrition, and death. People only focus on foods available from nearby markets for consumption which are limited in amount and variety. There is a need to search for decent foods from nature that have some medicinal value along with nutritional benefits to solve the issue of food scarcity and several health problems. The information about these foods is well known to the indigenous community globally. Indigenous knowledge is also going to vanish due to the impacts of urbanization in rural and tribal areas. Therefore, the preservation of such knowledge is an urgent need. Plants are the major source of food and medicinal agents. Several documents are available on medico-food agents from plant wealth but less documentation is available from faunal wealth. Some commonly consumed wild animal foods are fish, crabs [1,2], prawns, red weaver ants [3], snails, termites, grasshoppers, and crickets. The tribal people catch fish, crabs, snails, prawns, and some insects using traditional methods which are known to the indigenous ethnic people [4]. Among them, freshwater snails are important and unexplored. They indicate water quality and play a vital role in the lifecycle of trematodes [5]. Our knowledge about snails is limited to the diseases like fascioliasis caused by parasites where snails act as a host. Our mind has a negative notion that snails cannot be used as food as they cause diseases. If the snail meat is cooked properly, there is no risk of parasitic infections in humans. They have anti-inflammatory, anti-arthritis, anti-oxidant, anti-asthmatic, and anti-rheumatic activity. Snails are collected from ponds and are kept in freshwater in an earthen pot for a night and the water is used like eye drops for the treatment of conjunctivitis [6]. They are also used for the treatment of eyesight problems, joint pain, diarrhoea, and other stomach-related disorders [7]. Datta et al. [8] reported the biology and commercial aspects of freshwater snails. Keeping the importance of freshwater snails and contemporary medico-food problems, an attempt has been taken to document the food and medicinal uses of *Filopaludina bengalensis* used

by different tribal communities of selected districts of Odisha state, India.

2. METHODOLOGY

A survey was carried out in the selected districts of Odisha (Sundargarh, Mayurbhanj, Cuttack, and Keonjhar) in 2023 through a set of questionnaires (Fig. 1) and data was collected on food and medicinal uses of *Filopaludina bengalensis* from different tribal communities.



Fig. 1. Field survey for the collection of information on snail

3. RESULTS AND DISCUSSION

The freshwater snail, *Filopaludina bengalensis* is found in ponds, streams, and rivers of the study areas. They are commonly consumed for food purposes and mainly tribal communities of the study areas collected them from December to April (Fig. 2). The survey also revealed that snails have some medicinal values which makes them a nutraceutical food (Fig. 3). They believe that snails can be consumed as meat or soup

for the treatment of conjunctivitis (Munda tribe of Keonjhar), night blindness, eyesight improvement (Santhal tribe of Mayurbhanj), diarrhoea, gastro-intestinal problems (Bhuiyan tribe of Sundargarh), asthma, and joint pain (Deori tribe near Anshupa lake, Cuttack & Oran

tribe of Sundargarh). The medicinal values of these snails are less or not reported by the state. Hence, it might be the first communication on the medicinal values of *Filopaludina bengalensis* from Odisha state, India.



Fig. 2. Collected snails by the Munda tribal community

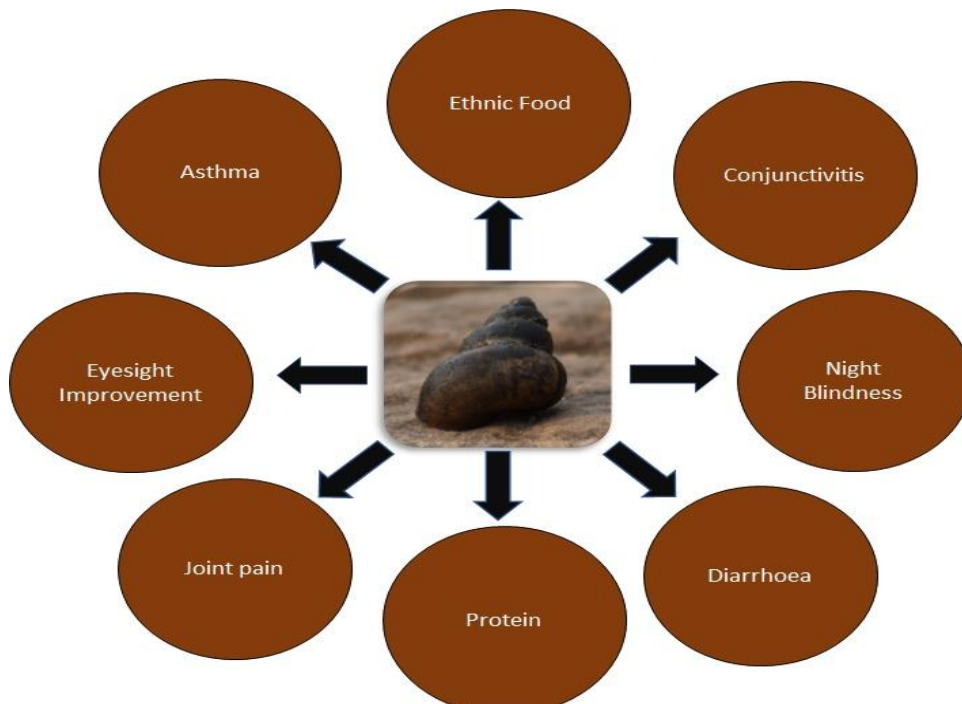


Fig. 3. Nutraceutical potential of *Filopaludina bengalensis*

4. CONCLUSION

Getting adequate food and medicine is a prime concern for any nation. Several such unexplored medico-food agents are available in the forest and are practiced by ethnic communities around the world. In the present study, an unexplored medico-food, *Filopaludina bengalensis* is discussed, and it is found that it could be a suitable nutraceutical for people of the 21st century with economic values. Therefore, the present study recommends that there is a need for advanced research work on *Filopaludina bengalensis* and its farming in rural and urban areas.

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COMPETING INTERESTS

The authors have declared that there is no competing interests exist.

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