

Food and medicinal aspects of freshwater snail *Filopaludina bengalensis* (Lamarck, 1822)

Abstract

Food is becoming more and more scarce due to several negative factors. People only focused 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 nutraceutical and have fewer scientifically known taxa in medico-food aspects. In this communication, the food, and medicinal uses of *Filopaludina bengalensis*, a freshwater snail, are discussed, and further advance work is recommended to do value addition for the sustainable utilization.

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

Introduction

In contemporary world, food scarcity is a major problem that leads to hunger, malnutrition and finally death. People only focus on foods available from nearby markets for consumption which are limited in amount and varieties. There is a need to search the foods from the 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. The 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 urgent need. Plants are the major source of food and medicinal agents. Several documentations are available on medico-food agent from plant wealth but less documentation is available from faunal wealth. Some commonly consumed wild animal foods are fish, crabs (Rout and Kumar 2023; Hanumant et al. 2023), prawns, red weaver ants (Kumar et al. 2022), 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 (Rout et al. 2022). Among them, freshwater snails are important and unexplored. They indicate water quality and play a vital role in the lifecycle of trematodes (Gittenberger et al. 2017). Our knowledge about snails is limited to the diseases like fascioliasis caused by parasites where snails act as a host. There is a negative notion in our mind that snails cannot be used as food as they cause diseases. If the snail meat is cooked properly then there is no risk of parasitic infections in humans. They have anti-inflammatory, anti-arthritic, 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 (Ahmad et al. 2018). They are also used for the treatment of eyesight problems, joint pain, diarrhoea, and other stomach-related disorders (Kanchan 2020). Datta et al (2015) reported the biology and commercial aspects of freshwater snail. Keeping the importance of freshwater snail 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.

Methodology

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



Figure 1: Field survey for the collection of information on snail



Figure 2: Collected snail by the Munda tribal community



Figure 3: Nutraceutical potential of *Filopaludina bengalensis*

Result and Discussion

The freshwater snail, *Filopaludina bengalensis* is found in ponds, streams, and rivers of the study areas. They are commonly consumed for the food purposes and mainly tribal communities of the study areas collected them from December to April (**Figure 2**). The survey also revealed that snails have some medicinal values which makes them a nutraceutical food (**Figure 3**). They believe that cooked snails as meat or soup can be used in the treatment of conjunctivitis (Munda tribe of Keonjhar), night blindness, eyesight improvement (Santhal tribe of Mayurbhanj), diarrhoea, gastrointestinal 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 from the state. Hence, it might be the first communication on the medicinal values of *Filopaludina bengalensis* from the Odisha state, India.

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 the ethnic communities of the world. In the present study, an unexplored medico-food, *Filopaludina bengalensis* 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 of advance research work on *Filopaludina bengalensis* and its farming in rural and urban areas.

References

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