



Research Article

CONSUMPTION OF *ESHING EKAI THABI*- AN AQUATIC VEGETABLE AMONG THE MEITEIS OF MANIPUR

SUPRIYA YENKOKPAM¹ AND RANJANA DEVI Y.^{2*}

¹Assam Agricultural University, Jorhat, Assam, 785013, India

²Central Agricultural University, Lamphelpat, Manipur, 795004, India

*Corresponding Author: Email - y_ranjana@yahoo.co.in

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Abstract: *Eshing Ekai Thabi*, commonly known as water mimosa, is a pantropical nitrogen-fixing perennial legume usually considered as an aquatic weed in some countries, however, the plant is used as a vegetable by the Meiteis, the valley inhabitants of the state of Manipur, and is considered as a local delicacy. The present study was undertaken to document the traditional mode of eating and the nutritional and medicinal benefit of consumption of water mimosa by the Meiteis of Manipur. It was observed that in addition to various use of the plant as a local delicacy, it is used for treatment against intestinal infections, dysentery, earache and also as vermifuge. The nutrient rich potential of the plant plays an important role against malnutrition in the weaker section of the society.

Keywords: Meiteis, Water Mimosa, Ethnic food, Nutrition, Medicine

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Introduction

Meitei, the valley inhabitants of the state of Manipur have the tradition of eating raw plants, the knowledge of which is handed over from generation to generation through the belief that they get direct nutritional and medicinal benefit by this mode of eating [1]. *Eshing Ekai Thabi* [Fig-1,2] commonly known as water sensitive plant or water mimosa (*Neptunia oleracea* Lour.) is an aquatic floating perennial herb native to several continents of the humid tropics of both hemispheres particularly in Asia, Africa and South America [3]. It is cultivated as vegetable throughout Southeast Asia, particularly in Indo-China and Thailand [4]. The north eastern region of India particularly Manipur provides favourable condition for growth and propagation of the plant owing to its ample rainfall, humidity and moderate range of temperature [5]. *Neptunia oleracea* Lour. grows on the banks or margins of water bodies and then spreads out over the water surface [6,7]. Tap roots are thick and becomes woody when matured. Stems are 1.5 m long, rarely branched and are detached from the primary root system, forming a spongy-fibrous indument between the nodes and producing fibrous adventitious roots at the nodes when growing in water. The white spongy tissue helps the plant to float in the water. The leaves are bi-pinnate with 2-4 pairs of pinnae with hairless leaflets are very sensitive to touch. It can be propagated from seeds but the conventional horticultural method is by stem cuttings. The plant is found cultivated during the rainy season in the ponds and wetlands in valley areas of Imphal and usually perish when the water level falls during the dry season. The market areas in Imphal valley are found to sell the fresh plants [Fig-3] during this season mostly from June to September with a pricing of about rupees 20-30 for a bundle consisting of 4-5 plants of 10-15 inches length. Till date very less research work has been conducted on *Eshing Ekai Thabi*, hence, an effort has been made through this study to document the mode of use and importance of this aquatic vegetable crop among the Meiteis of Manipur.

Methodology

The information about the mode of consumption of the plant was collected from the interaction and interviewing of the local people in the valley areas of Manipur. Local healers and practitioners (locally known as Maibas) were also consulted with

regard to the medicinal use of the plant.

Results and Discussion

The indigenous knowledge of the use of *Eshing Ekai Thabi* was mostly as a vegetable and also as a medicine and for its nutritional value. The young leaves, shoot tips, ends of stem and young pods are usually eaten raw or in stir-fries and the different ethnic food preparations of the plant are:

- Manipuri chilly salad locally known as "Morokmetpa" [Fig-4] is an ethnic cuisine of the Meitei community of Manipur. The spongy part and the roots of the *Eshing Ekai Thabi* plants are completely removed and the open stem, leaves and fresh shoots are washed properly. It is then sliced into small pieces and mixed with boiled king chilli, fermented fish, raw onions and salt. For more taste to the preparation seeds of *Euryale ferox* (locally known as thangjin) are added to the mixture.
- Manipuri Chutney "Iromba" [Fig-5] is a favourite side dish of Manipur. *Eshing Ekai Thabi* is used as one of the ingredients of Iromba where its sliced pieces are boiled along with potatoes and petiole of *Alocasia odora* (locally known as Yendem) which is then mashed along with chillies and fermented fish (locally known as Ngari). The dish is garnished with onions, corianders, chameleon plant, hoary basil etc.
- "Kanghou" [Fig-6] is another traditional Manipuri dish where the food is stirred fried in oil. *Eshing Ekai Thabi* is used as an ingredient where it is fried along with other vegetables like brinjal, okra, potatoes, cabbage, scarlet eggplant etc.
- The plant is also used as an ingredient in "Singju" an indigenous salad preparation which is prepared by smashing boiled fermented fish, chilli, salt and finely chopped raw plants parts [Fig-7].

Medicinal uses:

The plant is either consumed fresh or used as decoction or is locally applied for medicinal use. The pounded leaves and stem of the plant is applied over the nose to treat syphilitic ulcers/necrosis of the nose. The leaf of the plant is eaten raw to treat dysentery and intestinal infection.

Fig-1 Cultivation of *Eshing Ekai Thabi* in farmers pond in Imphal, ManipurFig-2 *Eshing Ekai Thabi* (*Neptunia oleracea* Lour)Fig-3 Women vendors selling *Eshing Ekai Thabi* in markets of Imphal, ManipurFig-5 *Ekai Thabi* Chutney (Iromba)Fig-4 *Ekai Thabi* Chilli Salad (Morokmetpa)Fig-6 Fried *Ekai Thabi* (Kanghou)Fig-7 *Ekai Thabi* Salad (Singju)

Decoction is prepared by crushing the leaves of the plant with water and given to the person twice a day (morning and evening) for three days to treat parasitic worm infections. The juice of the stem and leaf is also squeezed into the ear to cure earache. The medicinal properties of the plant have also been reported by other authors. It is used for treatment of yellow fever and Guinea worm infection in Nigeria [8] and also for treatment of sores on tongue, white discharge and epilepsy [9]. Extract of the herb was found to exhibit hepatoprotective activity [5]. The plant is considered as a refrigerant and an astringent agent [10]. An inhibitor of the tumour promoter induced Epstein-Barr virus activation, a chlorophyll related compound, Pheophorbide a, has been isolated from *N. oleracea* [11]. Whole plant extract exhibited cytotoxic activity on neoplastic cell lines and has anticancer, antioxidant and antimicrobial properties [5].

Nutritional value

The South Asian people have been consuming water mimosa for its nutritional values. Presence of micronutrients like Na, K, Ca, Mg, K, Mn, Cu, Zn, Fe, P, Pd and Ni in varying concentrations has been reported by number of authors [12-15]. Water mimosa is found to be nutritionally high in calcium (887mg/100g of edible portion of the shoot) [7]. The high calcium content in the plant plays a crucial role

in metabolic process of living cells, DNA repair and in production of natural steroid hormone [16]. The plant is also found to be high in fibre content (1.8g/100g of edible portion of the shoot) and is rich in vitamins especially ascorbic acid and niacin [7]. A recent study [17] found that the in vitro total antioxidant capacity (TAC) of water mimosa was found to be the highest (IC_{50} μ g/mL: 428 ± 5.79 and 403 ± 2.25 in stems and leaves, respectively) in comparison to other herbs. Moreover, the plant is cultivated in Asian countries as green manures for rice cultivation due to its nitrogen fixing ability [18]. The plant is being used as phytoremediation to treat waste and polluted water [16] and can remediate waste water polluted with Cd, Cu and Pb [19].

Conclusion

The consumption of wild edible plants by the Meiteis of Manipur has been since time immemorial, the knowledge of which has been transferred from generation to generation. There is an urgent need to preserve and conserve the indigenous technical knowledge on the use of these plants. *Eshing Ekai Thabi* / water mimosa is an important aquatic herb commonly eaten raw to benefit the people with its nutritional and medicinal properties and plays a major role against the weaker section of the society. Due to favourable climatic condition for growth, the large areas of unused wetland in north east of India may be cultivated with the plant which in turn will help generate sustainable income.

Application of research: Detailed studies on its use as a green manure and for phytoremediation to treat waste and polluted water may be carried out for the benefit of the common people.

Research Category: Vegetable science

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