

NUTRACEUTICAL USAGE OF WILD EDIBLE PLANTS AMONG THE GARO TRIBE OF MEGHALAYA, INDIA

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Abstract: Nutraceutical usage of wild edible plants among the Garo tribe of Meghalaya, India was studied during 2009 to 2013. This research was carried out through extensive review of published and unpublished literature, extensive field survey and personal interviews with the traditional health practitioners' and elders of the West Garo Hills district. In the present study 13 wild edible plant species belonging to 11 families were listed which were found to be ethnobotanically important among the Garo tribe. The information gathered were systematically documented with their botanical name, family, English and vernacular names, plant type, parts used and mode of usage.

Keywords: Wild edible plant, Nutraceutical, Ethnobotany, Garo tribe.

Introduction

The West Garo Hills, abode of the Garo tribe of Meghalaya lies between 26° to 25°20' N latitude and 90° 30' and 89° 40' E longitude. It is one of the largest districts of Meghalaya located in the western part of the State. West Garo Hills of Meghalaya is one such place having huge wealth of plant species that has great significance from ethnobotanical point of view. The population is predominantly inhabited by the Garo tribe following a matrilineal society belonging to the Bodo family of the Tibeto-Burman race. Other inhabitants of the district are Hajong, Koch, Rajbangshi, Mechis, Kachari, and Dalu. The District is also inhabited by Bengali, Assamese, Nepali, Marwari, Bihari and people from other parts of India. Its population is around 6, 43,291 (2011 census). The Garos are natural good hunters, gatherers as well as agriculturist. Their life is very much associated to nature and its products. They access the wild plant wealth directly and use in various aspects. Wild edible plants are rich source of nutrition as well as medicine. Especially during adverse climatic conditions like natural calamities or famine these wild edible plants may be utilized as alternate source of food. These plants are well utilized by most of the tribal communities across the world and Garo tribe is no exception. In spite of its multifaceted uses in the day to day lives of the

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Garos, they are still unknown to other parts of the world. Currently, there is renewed global interest in documentation of ethnobotanically important but neglected wild edible food sources (Bharucha and Pretty, 2010). Due to rapid modernization and development many indigenous communities have transformed their traditional customs and thereby lose their knowledge about the wild edible plants and its uses overtime (Benz *et al.*, 2000; Byg and Balslev, 2001; Ladio and Lozada, 2003; Kayang, H. 2007).

Materials and Method

The present investigation was conducted in the West Garo Hills District of Meghalaya, India during 2009 to 2014. Data were collected from both primary and secondary sources through extensive literature review and personal interview. Respondents were selected purposively based on available resourceful people such as local herbal medicine practitioners (locally known as 'Oja'), village headmen (Nokmas) and elders of the Garo tribe to collect the ethnobotanical information regarding wild edible plants and its nutraceutical usages. Systematic data collection, mode of utilization and identification of plants were carried out as per standard procedure (Martin, 1995). Initially several rapport-building visits were conducted in the study area. During these visits discussions with local leaders, extension workers and other key informants were carried out. Rapport with local inhabitants, village headman (Nokma), writers and religious men helped in collecting valuable information. Community-wise meetings introducing the research activity and its purpose prompted selection of respondents from several villages within the selected districts. Information about wild edible plants within the forest areas was gathered from key informants from local residents' and personnel from government departments. The information thus gathered were systematically listed with their botanical name, family, English and vernacular names, plant type, parts used and mode of usage.

Results and Discussion

Various literature study and personal interviews revealed that the Garo tribes uses various plant parts *viz.* tuberous starchy roots, rhizomes, leafy herbs or leaves, flower, flower bud, fruits and seeds, nuts and kernel etc. These foods are the major source of nutrients like carbohydrate, protein, fat, minerals and vitamins etc. which are basic needs of the body. Wild edible plants not only provide food but also act as curative medicines which are required by man in his day to day life. In the study 13 wild edible plant species belonging to 11 families were found to be used by the Garo tribe for various medicinal and nutritional uses since time

immemorial. This indigenous knowledge has been passed on through generations after generations through word of mouth.

The Garo tribe of West Garo Hills district of Meghalaya consumes many wild edible plants and its parts as subsidiary food sources and as well as medicine to check or cure many seasonal communicable diseases and epidemics. These plants play vital role against malnutrition and as local herbal medicines among the weaker section of the society and they depend on these plants during adverse situations such as flood, famine, epidemics etc. However, these invaluable knowledge of plant resources of the region and their indigenous nutraceutical uses are on the verge of extinction in the areas where environmental and cultural transformations have led to changes in the feeding practices. Ironically many of these plants are still unknown to other parts of the world. Therefore, in this paper efforts were made to identify the ethnobotanically important wild edible plants of West Garo Hills district of Meghalaya and document its nutraceutical usages. The detail information of the wild edible plant identified in the study is given below:

1. Botanical Name: *Moringa oleifera*, Lam.

Family: Moringaceae

English Name: Drum stick

Vernacular Name: Sajana

Plant Type: Medium sized tree

Parts used: Flowers, pod as food and leaves as medicine

Mode of usage: Leaf extract is given for curing scurvy and applied on wounds. It is also used for fever, liver disease epilepsy etc.

2. Botanical Name: *Corchorus capsularis*, Linn.,

Family: Tiliaceae

English Name: Wild jute

Vernacular Name: Sag pata

Plant Type: Medium sized shrub

Parts used: Matured leaves.

Mode of usage: Young tender leaves are cooked as vegetable.

3. Botanical Name: *Momordica cochinchinensis*, Spreng.,

Family: Cucurbitaceae

English Name: Not available (NA)

Vernacular Name: Kakrol or Bhatkarela / Gulkarka (Hindi)

Plant Type: Climber
Parts used: Matured fruit and leaves as food and seed and fruit as medicine.
Mode of usage: Seeds are used in ulcers. Fruit and leaves are used for external application on fracture and ulceration. Seed extract is also used in cough, chest congestion and stimulates urinary problem.

4. Botanical Name: *Murraya koenigii*, Spreng.

Family: Rutaceae

English Name: NA

Vernacular Name: Khari pata / Curry pata (Hindi)

Plant Type: Medium sized shrub

Parts used: Leaves as vegetable and condiments.

Mode of usage: It is used as spice and condiment to add flavor to various dishes. Bark is used for tanning. Root, seed and seed have medicinal value.

5. Botanical Name: *Bambusa arundinaceae* L.

Family: Poaceae

English: Bamboo

Vernacular Name: Mia

Plant Type: Shrub

Parts used: Young shoot as vegetable

Mode of usage: The shoot is sliced into pieces and cooked with ground rice, chicken or pork with soda (a local dish). The fermented form of shoot is also very popular among the people. Boiled decoction is used against ring worms.

6. Botanical Name: *Dioscorea bulbifera*, Linn

Family: Dioscoreaceae

English Name: Yam

Vernacular Name: Ta. krak

Plant Type: Creeper as well as climber

Parts used: Tuber as food

Mode of usage: Tubers are eaten raw / boiled and are useful in piles. It is also used as an ingredient for making medicine for gonorrhoea and leprosy etc.

7. Botanical Name: *Microcos paniculata*, Linn

Family: Tiliaceae

English Name: Silver berry

Vernacular name: Sokua

Plant Type: Tree

Parts used: Matured fruit as food

Mode of usage: The fruit is eaten raw or boiled with jaggery.

8. Botanical Name: *Amaranthus gangeticus*, Linn

Family: Amaranthaceae

English Name: Amaranth

Vernacular Name: Denga sag

Plant Type: Shrub

Parts used: Young shoot as both food and medicine.

Mode of usage: Crushed shoot with lime is applied to soreskin. Paste is applied to boils and burns. The shrub is recommended for eruptive fever.

9. Botanical Name: *Rauwolfia tetraphylla*, Linn

Family: Apocynaceae

English Name: Rauwolfia

Vernacular Name: Sarpagandh

Plant Type: Herb

Parts used: Young shoot is used as food and medicine.

Mode of usage: It stimulates mammary glands in mothers, so given to lactating mothers. Crushed rhizomes are applied to snake bite and roots are used to kill worm in cattle.

10. Botanical Name: *Dryopteris filix-mas* L.

Family: Aspidiaceae

English Name: Fern

Vernacular Name: Gonginjak

Plant Type: Fern

Parts used: Young shoot

Mode of usage: It is eaten as common vegetable. Rhizome has rejuvenating properties and used by aged people.

11. Botanical Name: *Cucumis melo*, Linn.

Family: Cucurbitaceae

English Name: Musk melon

Vernacular Name: Te.mit

Plant Type: Creeper as well as climbing herb

Parts used: Fruit (matured and ripe) as food.

Mode of usage: It is consumed as raw during summer. Pulp is useful for chronic eczema and allergy.

12. Botanical name: *Solanum indicum*, Linn

Family: Solanaceae

English Name: Indian night shade

Vernacular Name: Kimkha

Plant Type: Shrub

Parts used: Fruit (Green/ripe) as food as well as medicine.

Mode of usage: The raw fruits are fried in oil or extracted with honey and used to cure cold cough, stomach disorders, sore throat viral fever etc. Root is useful in colic and intestinal worms, asthma etc.

13. Botanical Name: *Phoenix humilis*, Royle.

Family: Arecaceae

English Name: Date palm

Vernacular Name: Khajur

Plant Type: Tree

Parts used: Fruit (Matured) as food. Pith of stem is also edible.

Mode of usage: The seeds are used in treating diabetes, toothache etc. Leaves are used for making mat, hand fan, basket, roofs, etc.

Due to ignorance, unawareness, extensive deforestation, unscrupulous exploitation of forest as well as lack of timely conservation activities, many of the wild edible plants are in the verge of extinction from this region. The people started to abandon or change their traditional customs and thereby lose their plant knowledge over time. Therefore, it is necessary to take up steps for preservation and conservation of these wild edible plants and its traditional knowledge. The current research findings open up scope for further research and exchange of knowledge across the boundaries. This paper highlights a preliminary study and leaves ample scope for further scientific and analytical research.

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