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WILD EDIBLE PLANTS CONSUMED BY LOCAL COMMUNITIES OF MALDAH DISTRICT OF WEST BENGAL, INDIA

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ABSTRACT

This work highlighting those plants (Angiosperm and Pteridophytes) used as leafy vegetable and wild fruits among the different local and tribal peoples in the remote areas of the district Maldah. A total of 84 angiosperms belong to 71 genera representing 46 families and 2 species of Pteridophytes belong to 2 genera representing 2 families have been enlisted from the district. Different parts of wild plants like leaves, young twig, seeds, petiole, rhizome etc are generally used as vegetables.

KEY WORDS: Ethnic community, wild edible, vascular plants, tribal or local community, Maldah

The district Maldah is situated at the left bank of river Ganga of West Bengal with global location in between the 24º 40′ 20″ and 25º 32′ 08″ N latitude and between 87º 45′ 50″ and 88º 28′ 10″ E longitude and is covering 3733 sq km. The district has no such conservatory but it is house of several reserve forest, scrubs, mango orchard and wetlands with rich biodiversity. The district exhibits a typical tropical climatic set up with temperature ranging between 36 ºC 41ºC during May June (summer) and winter temperature falling below 12 ºC and sometimes even dropping down to 3 ºC. The flora of this region is known to be quite rich (Acharya, 1998; Chowdhury, 2009) and famous for its mango orchards. The total tree cover of the district is 718.35 sq km of which 1694.392-hector is occupied by forests. The rich floras of wetlands, forest, agricultural land and waste lands provide materials for survival for numerous poor and ethnic local inhabitants. The district is very rich with different indigenous tribal population throughout the district mainly in Barind areas along Bangladesh boarder. The tribal population is 5.98% (1,96,587) of the total population of the district (Census, 2001). Some well known tribes of the district are Santals, Oraon, Mundas and Mal Paharias with considerable population structure. The main food of people of this region is boiled rice along with some fried leafy vegetables. Traditional communities always inhibit at the vicinity of forest areas and are very much dependent on wild edible plant to fulfill their nutrition, food security and income generation. Forest and its product supply several life supporting commodities and it is estimated that around 350 million people live within areas adjacent to different forests and fully depend on its resources (Arnold, 2001). India is one of the thickly populated countries of the world suffering from scarcity of food. But it does not affect those ethnic and poor people of remote areas because they from the beginning depend on the wild edible plants traditionally. This knowledge pool they pass through their next generation. H. B. Singh and R. K. Arora, (1978) have made great contribution to prepare a list of Indian wild edible plants. Different groups of researches of various institute exploring ethnobotanical work on wild edible plants (Hajra and Chakraborty, 1981; Bhujel et al., 1984; Jain, 1987; Rai et al., 1998) on region basis contributed substantially to ethnic knowledge-pool for the country. The earlier literature of Prain ,(1903); Acharyya (1998); Chowdhury and Das (2009) revealed that not much work has been done on edible wild plants used by different ethnic and poor communities of the district Maldah.

MATERIALS AND METHODS

Present work is the outcome of regular extensive survey work that has been conducted in six consecutive years (2008 2012) in different tribal villages of remote areas of the entire district. Data on the use of 84 species were collected through informed consent of and semi-structured interviews with local poor people of different remote areas. A semi-quantitative approach was used to document the relative importance of each species and to indicate differences in selection criteria for edible wild food species in the regions studied. Some data were also collected from different wetland, crop field and forest where some tribal or poor people collect those edible plants. The local poor and

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tribal (*Santal*, *Oraon*, *Malpaharias*) people of different age group were interviewed informally to record the information like vernacular name, used part, mode of use etc and make a long list plants. Likewise, several local markets of different remote areas also surveyed to know the economic value, demand and preference of such edible plants. The plants also collected from the surveyed area and go through the entire procedure of most conventional herbarium technique followed by Jain and Rao (1977). The specimens are than studied and identified with the help of different literature and matched with the pre-identified specimens in the North Bengal University herbarium and Malda College herbarium. Doubtful specimens are taken to CAL and BSIS (BSI Sikkim) and identified mostly by matching. Voucher specimens and field notebooks will be ultimately deposited to Malda College Herbarium.

RESULTS AND DISCUSSION

The present work revealed a total of 84 edible plant species of Maldah district as enumerated in Table, 1 in which scientific name of those plants are arranged alphabetically along with vernacular name, part use and mode of utilization of those plants. Different part of those species like fresh green leaves, rhizomes, unripe fruits, young pseudo stem, petals, inflorescence, young twig, seeds, petiole etc are selected as vegetable. On the other hand ripe or unripe fruits, fermented milky juice and dried pulp are also consumed. Observation shows that species like *Aegle marmelos* (L.) Corr., *Amaranthus spinosus* L., *Boerhabia diffusa* L., *Enydra fluctuans* Lour., *Hygrophila auriculata* (Schumacher) Heine, *Leucas Indica* (L.) R. Br. *ex* Vatke, *Marsilea minuta*, *Diplezium esculentum* (Retz.) Sw., *Ipomoea aquatica* Fossk. *Musa bulbisiana* Colla., *Sesbania grandiflora* (L.) Poir. *Paederia foetida* L. are consumed throughout the year and are very popular for its leafy vegetable, fruits and flowers among the local and ethnic communities. Rhizomes and petioles of *Alocasia macrorrhiza* (L.) G. Don, *Amorphophalus paeoniifolius* (Dennst.) Nicolson, *Colocasia esculenta* (L.) Schott.,

Dioscorea alata L., *Dioscorea bulbifera* L. and *Nymphaea pubescens* Willd. are very popular among the rural people during winter season. The nature of habit of estimated plant species revealed that herbs occupied highest position (Fig. 1) with 36 species followed by trees (29 species), climbers (11 species) and shrubs (8 species). Leaves and tender shoots are the most dominant plants part and as per present study the 39 species are vital for its leafy vegetable (Fig. 2). Based on mode of utilization total 84 enlisted species were differentiated and it as found that different parts of 73.81 % plants used as vegetables (Fig. 3) followed by fruit or seeds (19.05 %), pickle (3.57 %), condiment (1.19 %) and fermented milky latex as alcohol (2.38 %) by ethnic and local villagers.

It is also very interesting observation that have been recorded during various rural market survey that poor and ethnic people of this region also sell different parts of various species as vegetable in local markets to earn their livelihood. The survey work estimated that out of 84 species 46 species are found to be sold in different rural markets (Fig. 4).

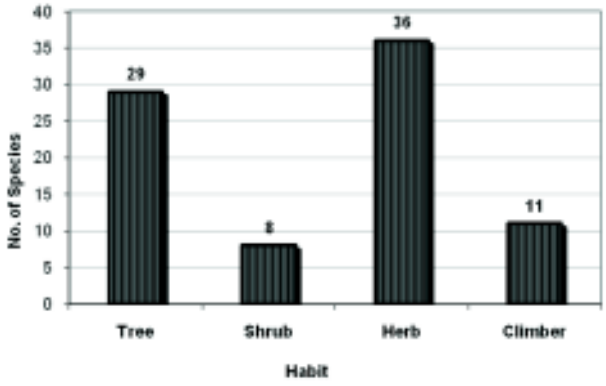

Fig. 1: Habit Characteristics of wild edible plants of the Maldah district

CONCLUSION

The ethnic and local people use different wild edible plants which are available in their vicinity of various geographical region of the world. The present study also reveals that time has come to include those wild edible plants in daily diet for our survival. This is very important way to reduce food scarcity in the country like India. Some of preferred leafy vegetable can be included for cultivation as alternative crops. On the other hand rest of the fragmented ecological habitat where from the people collecting those wild edible plants also very important to conserve from socio-economic point of view.

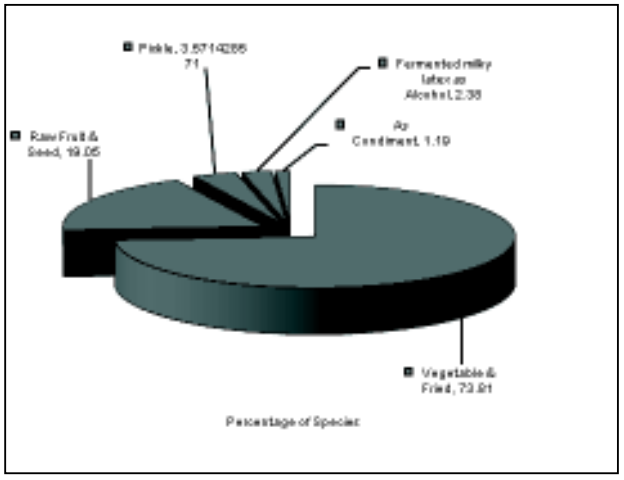

Fig. 2: Percentage of species as per their mode of Utilization

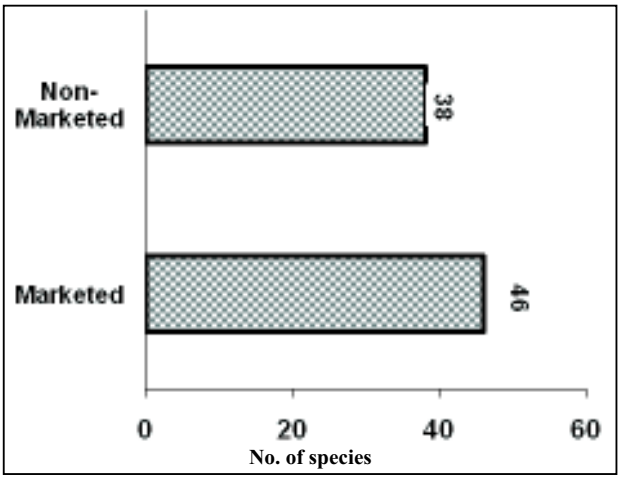

Fig. 4: Marketed and Non-Marketed wild edible plant species of Malda district

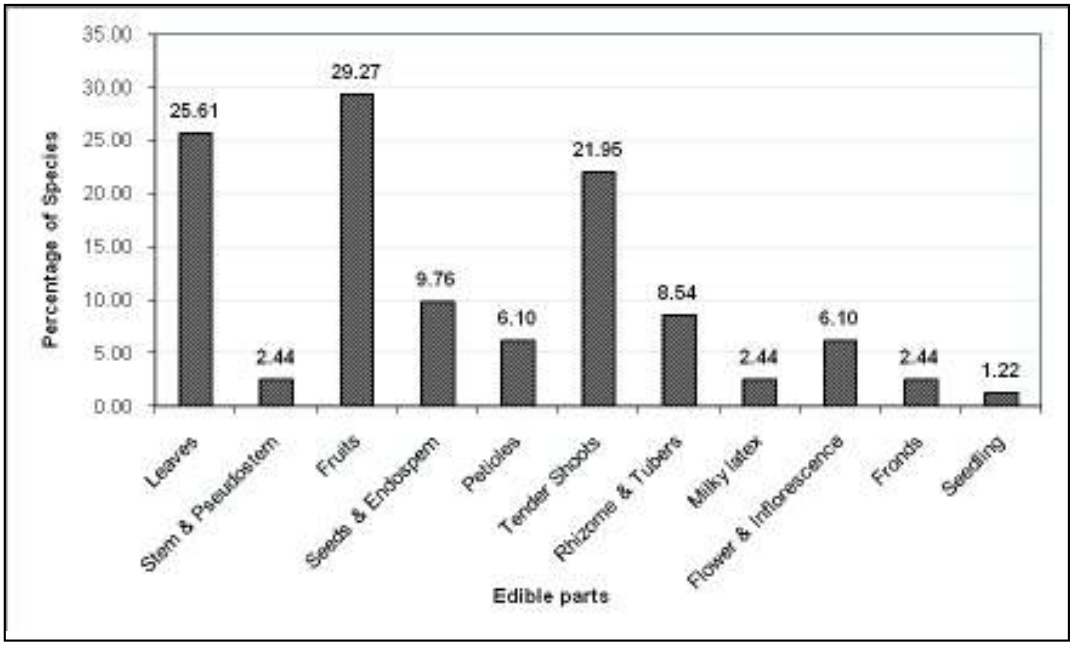

Fig. 3: Percentage of usable parts of wild edible plants of the Maldah district

Table 1: List of Wild edible fruits and vegetables found in the district Malda

Scientific name with Family	Habit	Vernacular Name	Parts used	Mode of Use
Aegle marmelos (L.) Corr. [Rutaceae]	Tree	Bel	Ripen fruits	Eaten raw, dried pulp as tea
Alocasia macrorrhiza (L.) G. Don [Araceae]	Herb	Man kachu	Petiole, leaves, Rhizome	In curry
Alternanthera sessilis (L.) R.Br. *ex* DC. [Amaranthaceae]	Herb	Khenchisak	Leaves & Tender Shoot	Cooked as Vegetable
Amaranthus lividus L. [Amaranthaceae]	Herb	Danguasak	Tender Shoot	Cooked as Vegetable
Amaranthus spinosus L. [Amaranthaceae]	Herb	Khuria	Tender Shoot	Cooked as Vegetable
Amaranthus tricolor L. [Amaranthaceae]	Shrub	Lal note	Leaves & Stems	In curry
Amaranthus viridis L. [Amaranthaceae]	Herb	Kata Khuria	Tender Shoot	Cooked as Vegetable
Amorphophalus paeoniifolius (Dennst.) Nicolson [Araceae]	Herb	Ool	Rhizomes	In curry
Annona reticulata L. [Annonaceae]	Tree	Ata	Ripen fruits	Eaten raw
Argemone mexicana L. [Papaveraceae]	Herb	Sialkata	Stems	In curry
Artocarpus lakoocha Buch.-Ham. [Annonaceae]	Tree	Dahua	Ripen fruits	Eaten raw
Azadirachta indica A. Juss. [Meliaceae]	Tree	Neem	Young red leaves	Cooked as Vegetable
Bacopa monnieri (L.) Pennell [Scrophulariaceae]	Herb	Bramhi	Tender Shoot	Cooked as Vegetable
Bambusa balcooa Roxb. [Poaceae]	Tree	Banse	Young shoots	In curry
Bambusa tulda Roxb. [Poaceae]	Tree	Banse	Young shoots	Cooked as curry
Bassia latifolia Roxb. [Sapotaceae]	Tree	Mahua	Fruits	Eaten raw
Benincasa hispida (Thunb.) Cong. [Cucurbitaceae]	Climber	Chalkumro	Young Fruits	In curry
Boerhabia diffusa L. [Nyctaginaceae]	Herb	-	Tender Shoot	Cooked as Vegetable
Borassus flabellifer L. [Aracaceae]	Tree	Tal	Ripen Fruit, endosperm & latex	Eaten raw, Fermented latex consumed
Carissa carandas L. [Apocyanaceae]	Tree	Koramcha	Ripen fruits	Eaten raw
Cassia sophera L. [Caesalpiniaceae]	Shrub	Kalkasunda	Leaves	In Curry

Celosia argentea L. [Amaranthaceae]	Herb	Suggi sak	Tender Shoot	Cooked as Vegetable
Chenopodium album L. [Chenopodiaceae]	Herb	Bothua sak	Tender Shoot	Cooked as Vegetable
Cissus quadrangularis L. [Vitaceae]	Climber	Harzora	Tender shoot	In Curry
Coccinia grandis (L.) Voigt. [Cucurbitaceae]	Climber	Telakucha	Young fruits	In curry
Colocasia esculenta (L.) Schott. [Araceae]	Herb	Kachu	Leaves, Inflorescence and rhizomes	In curry
Colocasia nymphaefolia Kunth [Araceae]	Herb	Kachu	Leaves, Inflorescence and rhizomes	In curry
Corchorus capsularis L. [Tiliaceae]	Shrub	Pat	Leaves	Cooked as Vegetable
Corchorus olitorius L. [Tiliaceae]	Shrub	Tita Pat	Leaves	Cooked as Vegetable
Digera muricata (L.) Martius [Amaranthaceae]	Herb	Jamaika sak	Tender Shoot	Cooked as Vege table
Dillenia indica L. [Dilleniaceae]	Tree	Chalta	Fruits	Cooked as Vegetable
Dioscorea alata L. [Dioscoriaceae]	Climber	Kham aloo	Tubers	In curry
Dioscorea bulbifera L. [Dioscoriaceae]	Climber	Methe aloo	Tubers	In curry
Diospyros embryopteris Pers. [Ebenaceae]	Tree	Makarkenda	Fruits	Eaten raw
Diplezium esculentum (Retz.) Sw. [Polypodiaceae]	Herb	Dheki sak	Fronds	Cooked as Vegetable
Enydra fluctuans Lour. [Asteraceae]	Herb	Helancha	Tender Shoot	Cooked as Vegetable
Euryale ferox Salisb. [Nymphaeaceae]	Herb	Makhna	Seeds	Cooked as Vegetable
Ficus hispida L. [Moraceae]	Tree	Khoksa	Unripe Fig	In curry
Ficus religiosa L. [Moraceae]	Tree	Asatha	Young leaves	Cooked as Vegetable
Ficus rumphii Blume. [Moraceae]	Tree	Dumur	Unripe Fig	In curry
Glinus oppositifolius (L.) A. DC. [Molluginaceae]	Herb	Gimma	Tender Shoot	Cooked as Vegetable
Hygrophila auriculata (Schumacher) Heine [Acanthaceae]	Herb	Kulekhara	Tender Shoot	Cooked as Vegetable
Ipomoea aquatica Fossk. [Convolvulaceae]	Climber	Kolmi	Tender Shoot	Cooked as Vegetable

Lasia spinosa (L.) Thwaiys [Araceae]	Herb	Kata kachu	Petioles	In curry
Leucas Indica (L.) R. Br. *ex* Vatke [Lamiaceae]	Herb	Dorpi	Tender Shoot	In curry
Limonia acidissima L. [Rutaceae]	Tree	Kat Bel	Ripen fruits	Eaten raw or as pickle
Luffa aegyptica Hook.f. [Cucurbitaceae]	Climber	Dudhul	Fruits	In curry
Malva verticillata L. [Malvaceae]	Herb	Laffa	Leaves	Cooked as Vegetable
Marsilea minuta L. [Marsileaceae]	Herb	Susni	Fronds	Cooked as Vegetable
Moringa oleifera Lamk. [Morrindaceae]	Tree	Sajina	Leaves & fruits	In curry
Morus alba L. [Moraceae]	Tree	Tunt	Ripe fruits	Eaten raw by Childrens
Murrya koenigii (L.) Spreng. [Rutaceae]	Shrub	Karipata	Leaves	As condiment
Musa bulbisiana Colla. [Musaceae]	Tree	Kola	Fruits, inflorescence, pseudostem	consume as vegetable
Nelumbo nucifera Gaertn. [Nelumbonaceae]	Herb	Padda	Fleshy seeds	Eaten raw
Nyctanthus arbortris-tris L. [Nyctaginaceae]	Tree	Seuli	Leaves	In Curry
Neolamarckia cadamba (Roxb.) Bosser [Rubiaceae]	Tree	Kodam	Inflorescence	In curry
Nymphaea nauchali Burm.f [Nymphaeaceae]	Herb	Sapla	Petioles	In curry
Nymphaea pubescens Willd. [Nymphaeaceae]	Herb	Bhat	Petioles & seeds	Cooked as Vegetable, fried seed as dry food
Ottelia alismoides (L.) Pers. [Hydrocharitaceae]	Herb	Panikola	Seeds	Eaten raw by Childrens
Oxalis corniculata L. [Oxalidaceae]	Herb	Amrul	Leaves	Cooked as vegetable
Paederia foetida L. [Rubiaceae]	Climber	Padani pata	Leaves	Cooked as vegetable
Phoenix sylvestris (L.) Roxb. [Aracaceae]	Tree	Khejur	Ripen fruits, latex	Eaten raw, fermented latex consumed
Phyllanthus emblica L. [Euphorbiaceae]	Tree	Amlaki	Unripe Fruits	Eaten raw, as pickle
Physalis minima L. [Solanaceae]	Herb	Bantipariya	Leaves	Cooked as vegetable
Piper longum L. [Piperaceae]	Climber	Janli pan	Leaves & Seeds	As condiment

Pithecellobium dulci (Roxb.) Benth. [Fabaceae]	Tree	Jilepi phal	Seeds	Eaten Raw
Polycarpon prostratum (Forssk.) Asch. & Sch. [Caryophylaceae]	Herb	Bangima	Tender Shoot	Cooked as vegetable
Portulaca oleracea L. [Portulaccaceae]	Herb	Baralaynia	Tender Shoot	Cooked as vegetable
Ricinus communis L. [Euphorbiaceae]	Shrub	Reri	Seeds	Seed oil consumed
Rumex maritime L. [Polygonaceae]	Herb	Ban palang	Tender shoot	In Curry
Schoenoplectus articulatus (L.) Palla [Cyperaceae]	Herb	Chirchiri	Seeds	Fried seeds as dry food
Sesbania grandiflora (L.) Poir. [Fabaceae]	Tree	Bakphul	Flowers	Cooked as vegetable
Solanum nigrum L. [Solanaceae]	Herb	Kakmachi	Leaves	Cooked as vegetable
Spondias pinnata (L. f.) Kurz [Sapotaceae]	Tree	Amra	Unripe fruits	As pickle
Syzyzium cumini (L.) Skeels [Myrtaceae]	Tree	Jam	Ripen fruits	Eaten raw
Tamarindus indica L. [Fabaceae]	Tree	Tetul	Ripen fruits	Eaten raw or as cooked
Tricosanthes cordata Roxb. [Cucurbitaceae]	Climber	Bhui kumro	Rhizomes	Cooked as vegetable
Tricosanthus cucumerina L. [Cucurbitaceae]	Climber	Banpatal	Unripe Fruits	Cooked as vegetable
Typhonium trilobatum (L.) Schott. [Araceae]	Herb	Ghet kachu	Leaves with Petioles	Cooked as vegetable
Vitex negungo L. [Verbenaceae]	Tree	Nishindra	Leaves	In Curry
Xanthium indicum L. [Asteraceae]	Shrub	Bon Okra	Seedling	In Curry
Xanthosoma sagitifolia Schott [Araceae]	Herb	Dudh kachu	Leaves with Petioles	In Curry
Zizyphus mauritiana Lamk. [Rhamnaceae]	Tree	Gol kul	Ripen fruits	Eaten raw
Zizyphus oeonoplia (L.) Mill. [Rhamnaceae]	Shrub	Ban kul	Ripen fruits	Eaten raw

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