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DOCUMENTATION AND ASSESSMENT OF WILD MEDICINAL AND EDIBLE FLOWERS OF VALLEY DISTRICTS OF MANIPUR

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ABSTRACT

Manipur has a very rich floral diversity and has been considered as one of the hotspots of global significance. The state falls under the Indo-Myanmar centre of biodiversity ranging from tropical to sub-tropical and temperate deciduous forests. More than 60% of the geographical area is covered under forests and almost all the ethnic groups have been directly or indirectly depending upon natural resources for food. The present investigation recorded 45 different species of wild plants belonging to 27 families and 40 genera from the state where flowers are consumed either as vegetables or used for medicinal purposes. The people also have a tradition of conserving flowers and edible plants in nature based on various religious beliefs and herbal healthcare. The present study reveals the importance of different plant species with special attention in order to maintain and improve this important source of food supply. There are still ample numbers of available wild medicinal and edible plants in this region which could be refocused in near future.

KEYWORDS: Edible Flowers, Biodiversity, Medicinal, Traditional, Manipur

INTRODUCTION

Manipur, one of the biodiversity hotspots occupies a special place in North-eastern India located between 23º51'N to 25º41'N Latitude and 93º3'E to 94º6'E Longitude, covering a geographical area of 22,327 sq. km of which 90% are hilly region largely characterized by dense forests and inaccessible terrains. Manipur falls in the biogeographically tri-junction of three distinctive bio geographical regions: oriental regions of India, extensions of the Himalayan region and Malayan archipelago. The hilly region are inhabited by 34 ethnic tribes practicing their own culture, traditions and had survived through successive generations depending on wild plants and animals. The use of plants and animals as source of medicine and food is as old as humanity. Since time immemorial there is a tradition of using raw leaves young inflorescence, tender stalks, young plant parts as medicine or nutrient supplement in their diet. This traditional system of health care and treatment of ailments through herbal medicines have been very popular and significant in the state, so much that herbal medicines have become essential ingredients in food items of the Manipuris. Therefore, the present study was taken up to document the wild medicinal and edible flowers used by different community in the valley districts of Manipur.

METHODOLOGY

An extensive field work has been carried out and related literatures were used for reference to this subject. 30 males and 20 females between the age group of 45 to 80 were identified as key informants and prior consent was obtained from the informants before collection of data through oral questioning and discussion. The plants and flowers recorded are tabulated along with their botanical names, families, local names, plant parts used and their uses in the table 1.

RESULTS AND DISCUSSIONS

Botanical and family name, local name, growing habit and mode of use are enumerated in the table given below. The study resulted in documentation of 45 species belonging to 27 families and representing 40 genera. The flowers and inflorescence of these plants are either consumed wholly or partly as raw, cooked or cooked with other items like meat, fish or along with other edible vegetables. Wild edible flowering plants are locally available, inexpensive and have great socio-economic significance because of their food and medicinal values.

Table 1

Sl. No.	Scientific Name	Family	Local Name	Habitat	Mode of Uses
1.	*Amomum dealbatum* Roxb.	Zingiberaceae	Aigia (Zou)	Herb	Inflorescence is eaten cooked or steamed
2.	*Asparagus racemosus* Willd.	Liliaceae	Nungarei (Manipuri); Aipah (Zou)	Climber	Inflorescence is eaten cooked as vegetable
3.	*Bauhinia purpurea* L.	Cesalpinaceae (Fabaceae)	Chingthrao angangba (Manipuri) Vaibeh (Kuki)	Tree	Flowers are eaten as cooked vegetable
4.	*Bauhinia variegata* L.	Cesalpinaceae (Fabaceae)	Chingthrao angouba (Manipuri) Livosii (Mao Naga)	Tree	Flower extracts are used to treat diabetes
5.	*Brassica campestris* L.	Brassicaceae	Hangam (Manipuri) Ankam (Zou)	Herb	Inflorescence along with the leaves are boiled and consumed. It is also eaten raw with *morok-metpa*
6.	*Brassica juncea* (L.) Czern.	Brassicaceae	Hangam yella (Manipuri)	Herb	Inflorescence is eaten raw and also has anti constipation properties.
7.	*Carica papaya* L.	Caricaceae	Awathabi (Manipuri)	Tree	Flowers are consumed after frying in oil
8.	*Crassocephalum crepidiodes* Benth.	Asteraceae	Tera paibi (Manipuri)	Herb	Young inflorescence with young twigs are used against stomach ulcer
9.	*Crawfurdia fasciculate* Wall.	Genteanaceae	Letikorei (Mao Naga)	Climber	Flowers are eaten cooked along with rice
10.	*Crotalaria juncea* L.	Fabaceae	O-hawaimaton (Fabaceae)	Shrub	Inflorescence is used for blood purification

Table 1: Cond.,					
11.	*Cucurbita maxima* Duchesne	Cucurbitaceae	Mairen (Manipuri); Maai (Zou)	Climber	Inflorescence cooked as vegetable
12.	*Curcuma longa* L.	Zingiberaceae	Yaingang mapal (Manipuri)	Herb	Inflorescence is cooked as vegetable or eaten as *iromba*
13.	*Curcuma angustifolia* Roxb.	Zingiberaceae	Yaipal (Manipuri); Kodziipa (Mao Naga)	Herb	Inflorescence is cooked as vegetable
14.	*Elaeagnus umbelleta* Thunb.	Elaegnaceae	Heyai (Manipuri)	Tree	Flowers are used as cardiac stimulant and astringent
15.	*Elsholtzia blanda* (Benth.)	Lamiaceae	Lomba (Manipuri); Pheiri(Tangkhul)	Herb	Inflorescence is used for garnishing *iromba* and chutney
16.	*Eugenia caryophyllata* Thunb.	Myrtaceae	Loungpan (Manipuri)	Tree	Floral bud is made into paste from floral bud powder with little sugar to cure toothache
17.	*Euphorbia hirta* L.	Euphorbiaceae	Pakhang leiton (Manipuri)	Herb	Young twigs and inflorescence are used against diarrhea, dysentery and colic pain
18.	*Ficus rumphii* Blume.	Moraceae	Mawnglae (Zou)	Tree	Inflorescence cooked as vegetable
19	*Hibiscus cannabinus* L.	Malvaceae	Sougree (Manipuri)	Herb	Flower extract mixed with sugar and black pepper is used against biliousness with acidity
20.	*Hibiscus subdarrifa* L.	Malvaceae	Silo sougree (Manipuri)	Herb	-Matured sepals are used in preparing jams and jellies -Flowers in powdered form with hot water is used to cure dyspepsia and stomach diseases
21.	*Impatiens balsamina* L.	Balsaminaceae	Khujang (Manipuri)	Herb	Fresh crushed juice of leaves and flowers is used to reduce pain and poison of wounds caused by nails.
22.	*Justicia adhatoda* L.	Acanthaceae	Nongmangkha angouba (Manipuri)	Shrub	Inflorescence is used as antipyretic; against cold and bronchial congestation
23.	*Leucas aspera* Willd.	Lamiaceae	Mayanglambum (Manipuri)	Herb	Whole flower is eaten raw with *morok-metpa*
24.	*Meriandra strobilifera* Benth.	Lamiaceae	Kanghuman (Manipuri); Lengmasel (Zou)	Shrub	Inflorescence are either cooked as vegetable or consumed in raw form
25.	*Mesua ferrea* L.	Clusiaceae	Nageshor (Manipuri)	Tree	Decoction of flowers is taken orally to cure asthma
26.	*Musa balbisiana* Colla.	Musaceae	Lafu or Changbi lafoi angouba (Manipuri)	Stolonife rous herb	Finely chopped inflorescence are cooked or steamed to prepare *iromba* or *paknam*
27.	*Musa paradiasiaca* L.	Musaceae	Lafu tharo (Manipuri); Nahtang (Zou)	Stolonife rous herb	Inflorescence is cooked as vegetable
28.	*Nelumbo nucifera* Gaertn.	Nympheaceae	Thambal (Manipuri)	Aquatic herb	Flowers are used for the treatment of diarrhea, dysentery, cholera and dizziness

Table 1: Cond.,					
29.	*Nymphoides indica* (L.) Kuntze	Nympheaceae	Thriktha macha (Manipuri)	Aquatic herb	Flowers with young stalk are used as aphrodisiac, and excess menstrual discharge
30.	*Nymphaea pubescence* Willd.	Nympheaceae	Tharo (Manipuri)	Aquatic herb	Flowers with young stalk are used as aphrodisiac, and excess menstrual discharge
31.	*Nymphea nochali* Burman	Nympheaceae	Thariktha (Manipuri)	Aquatic herb	Flowers with young stalk are used as aphrodisiac, and excess menstrual discharge
32.	*Ocimum canum* Sims.	Lamiaceae	Mayangton (Manipuri)	Herb	-Inflorescence is consumed in raw form with *morok metpa* or as condiments in *iromba* -inflorescence with young shoots are used as expectorant, antipyretic and against stomach ache
33.	*Parkia roxburghii* G. Don	Mimosaceae (Fabaceae)	Yongchak mapal (Manipuri)	Tree	-Inflorescence eaten as *singju* -young inflorescences are used medicinally as cardaminative against piles
34.	*Persicaria capitata* (Buch.-Ham. ex D.Don) H.Gross	Polygonaceae	Phak-pai (Manipuri) Tokhu pro (Mao Naga)	Herb	Inflorescences are used against ant bites
35.	*Phlagocanthes curviflorus* (Wallich) Nees	Acanthaceae	Lam-nongmangkha (Manipuri); Kolhou (Kuki)	shrub	Flowers are boiled with rice and eaten as cooked vegetable
36.	*Phlagocanthes thysiformis* Nees.	Acanthaceae	Nongmang-kha (Manipuri)	Shrub	-Flowers are eaten as fried vegetables or as sweet chutney -Inflorescence is also used as antidote to pox and prevent skin diseases like scabies and sores etc.
37.	*Portulaca oleracea* L.	Portulaceae	Leibak kundo (Manipuri)	Herb	Flowers along with the stems and leaves are consumed as vegetable with dried fish
38.	*Prunus persica* L.	Rosaceae	Chumbrei (Manipuri)	Tree	Flowers are used medicinally as anthelmintic.
39.	*Rhododendron arboreum* Smith.	Ericaceae	Ngeisoh (Kuki) Daipa (Pamei) Lidanipa (Mao Naga)	Tree	-Flower petals are eaten raw and its nectar is brewed to make wine -flower nectar is effective against diarrhoea and dysentery -corolla is administered in case of fishbone stuck in the gullet
40.	*Spilanthes acmella* L.	Asteraceae	Maanja-lei (Manipuri)	Herb	-Chewing of raw inflorescence is effective against toothache. -Paste of inflorescence and leaves are applied to wounds for blood clotting
41.	*Tithonia diversifolia* (Hemsl.)	Asteraceae	Lam numitlei (Manipuri)	Shrub	Inflorescence is used to cure wounds and bruises

Table 1: Cond.,					
42.	*Wendlandia glabrata* DC.	Rubiaceae	Ahthiphung (Kuki); Houkhusii (Mao Naga)	Small tree	Tender inflorescence are cooked and chopped into pieces for making chutney with dried or fermented fish
43	*Wendlandia tinctoria* (Roxb.) DC.	Rubiaceae	Pheija ammom (Manipuri)	Tree	Inflorescence freshly consumed to cure gastro-enteritis.
44.	*Zanthoxylum acanthopodium* DC.	Rutaceae	Mukthrubi (Manipuri); Raryum (Rongmei)	Tree	Inflorescence is eaten raw as condiments
45	*Zingiber officinalis* Roscoe.	Zingiberaceae	Siing (Manipuri; Zou)	Herb	Inflorescence is used as spices and condiments

CONCLUSIONS

From the above discussion it can be concluded that the flowers and inflorescence of the locally available wild plants not only supplement the food shortage but also contributes the necessary nutrient requirement of the people and helps in getting rid of ailments due to the hidden nutraceutical properties. The information about the delicious taste and the nutrient value of these wild flowers need to be disseminated among more people around. It is also felt that these flowers must be given the status of 'minor forest produce' which definitely be proved as a source of revenue among folk and help them upgrade their socio-economic condition.

Further investigation will throw more light about the vast wealth of ethnobotanical information possessed by the different communities of Manipur.

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APPENDICES

Figure 1

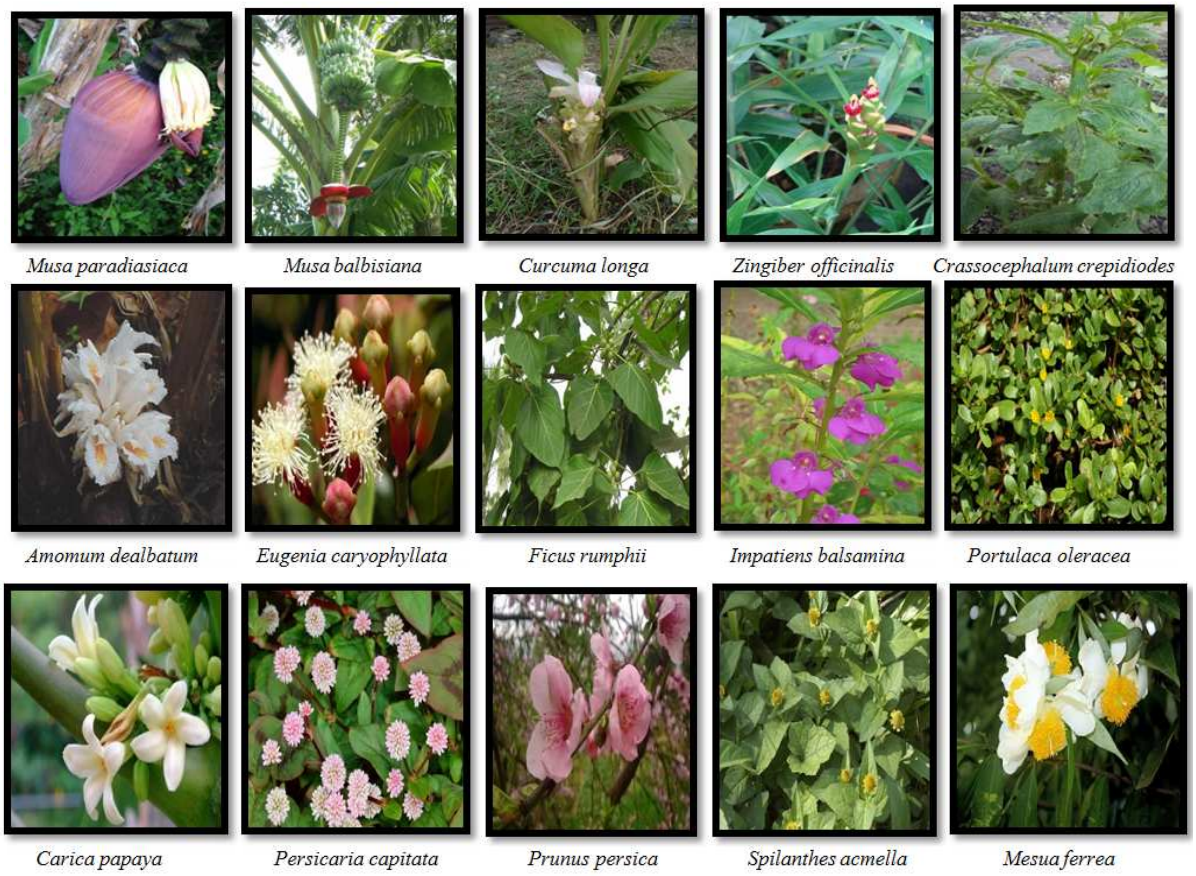
Musa paradiasiaca
Musa balbisiana
Curcuma longa
Zingiber officinalis
Crassocephalum crepidiodes
Amomum dealbatum
Eugenia caryophyllata
Ficus rumphii
Impatiens balsamina
Portulaca oleracea
Carica papaya
Persicaria capitata
Prunus persica
Spilanthes acmella
Mesua ferrea

Figure 1