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Ethanobotanical Study of Less Known Wild Edible Plants of Hakki Pikki Tribes of Angadihalli, Hassan District, Karnataka

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Abstract

The study was to document the less known wild edible plants used by Hakki Pikki tribal people in Angadihalli, Hassan district. A total of 29 species belonging to 29 genera and 19 families were documented as wild plants used for food and medicinal purposes by Hakki Pikki people. Among these species, 13 species are trees, followed by 08 species are herbs, 05 shrubs, and 03 species are climbers. The study has been observed that the knowledge on less known wild edible plants is on declining drastically day by day. The documentation of wild edible plants are known for their importance in as food/ nutritional supplement and its medicinal value, if the information is not collected, it may be last in near future.

Keywords: Wild edible plants, Angadihalli, Hakki Pikki Tribe, Ethnobotany, Hassan

1. Introduction

Nearly 40,000 to 100,000 plants species have been commonly used for food, shelter and as medicine in the world [13]. In India, more than thousand species of wild edible plants are used as food and medicine by rural communities, particularly tribal communities [10, 20]. Wild edible food plants play a considerable role in the livelihood for rural communities in many countries. In today's agricultural based societies, people gather wild plants for food [6]. These plants have traditionally occupied an important position in the socio-cultural, spiritual and health aspects of rural and tribal lives [18]. Less known wild edible plants contribute enormously to family food security and serves as means of survival during time of scarcity [26]. Even under normal condition they played an important role in complementing staple food to provide balanced diet by supplying minerals, vitamins and nutraceuticals [25]. FAO estimates, around one billion people use wild food in their diet [1]. The importance of evaluating and estimation of the nutritional quality of the less known wild edible plants has been carried out by many researchers [14, 24]. Ethanobotanical survey of wild edible plants indicates that more than 7000 species have used for human food at some stage in human history [9]. And are important to document many of the less known species grown, managed and collected in rural areas [11]. Increasing public awareness about less known wild edible plants was prompted by various international publications [7, 8]. Many wild plant species are believed to possess edible value and not documented yet [3, 9]. In Hassan district, the data of floristic composition has been collected by Saldhana and Nicolson. The study of ethanobotanical knowledge of less known wild edible plants used by Hakki Pikki tribes not documented yet. The study trying to make taxonomic survey of less known wild edible plants species distributed in the study area and identify the edible form, or part used and utility among Hakki Pikki tribal communities.

2. Materials and Methods

2.1 Study area

Hassan district begins at the base of the steep Western Ghats and continues into the gently rolling Deccan plateau. It is located between 12° 13' and 13° 33' North latitudes and 75° 33' and 76° 38' East longitude. The extreme variations in climatic condition, especially in rainfall, naturally result in a wide range of vegetations. Angadihalli is village on the Hassan- Belur road and it has been selected for the rehabilitation of members of the Hakki Pikki tribe.



Fig 1.1: Map of Hassan district

2.2. People

The Hakki Pikki is a diminishing tribe in Karnataka; members were earlier living in forests, hunting animals and birds for their livelihood. These communities were originally residing in the Seegegudda State forest, they moved out of the forests after laws curtailing their right over forest produces were implemented. The population of Angadihalli is 1500, apart from Hakki Pikki, there are members of Sillekyatha, Budubuduke and most of them are nomads and wander from one place to other. Basically and essentially, the Hakki Pikkis are non-vegetarian. A very common food preparation is ‘hit’ a thick paste like substance prepared out of mixture of Ragi flour and water, and vegetables, including those of wild leaves, roots. The food habit is almost not completely isolated and independent of nomadic way of life. One of the reasons of Hakki Pikki nomadism is said to be their food habit [15]. Many members of the tribe are bare foot doctors; they collect medicinal plants from the forest and use them for medication. They give medicine for rheumatism and many diseases and go to nearby villages for selling of combs, safety pins, wild roots and medicinal plants.

2.3. Data collection

The study was conducted among Hakki Pikki tribes of Angadihalli through survey, interview and field work. All the traditional and other knowledge related to the collection and consumption on which the communities depend was documented. The data was collected about collections and consumption of less known wild edible plants such as frequency of consumption. An interview held in the village was used to determine villager’s perception of their own and other’s social attitudes towards collection and consumptions

were collected. Plants were photographed, collected and pressed in the field and poisoned as per the methods [16]. The dried specimens mounted on herbarium sheets with detailed labeling as following the methods [12]. Collected plant specimens were identified with the help of floras [21, 22, 23]. Botanically identified herbarium sheets were deposited in the (RRCBI) herbarium of SMPU, National Ayurveda Dietetics Research Institute, Bangalore.

3. Result and discussion

The present survey encompasses 29 wild edible plants species belonging to 19 families and 29 genera, maximum of 05 plants from Poaceae, 03 plants from Arecaceae, Papiolonaceae, 02 plants from Musaceae, Caesalpinaceae and 01 plant from Mimosaceae, Nelumbonaceae, Verbenaceae, Agavaceae, Burseraceae, Asclepiadaceae, Celastraceae, Lauraceae, Cucurbitaceae, Convolvulaceae, Lamiaceae, Typhaceae, Bambacaceae and Moringaceae, (Fig.1.3 and Table 1.). The percentage of habit wise distribution of plants and edibility of wild edible plant parts are represented in Fig.1.2. The species *sPhoenix humilis* petioles are removed from young shoots and the tender soft pith is collected and immediately eaten as raw, unless the pith taste converted in to bitter taste when exposed to air for long. The stem of *Saccharum spontaneum* used during thirst condition. The young tips *Ipomoea aquatica* is rich in protein are a good source of minerals and vitamins and it acts as a blood purifier and most frequently used and is considered as a laxative, is recommended for piles and in certain nervous conditions with sleepiness and headache [5]. The stem of *Caralluma umbellate* has high content of crude protein and crude fat as a good source of energy [17]. The flowers of *Moringa oleifera* have high medicinal value as stimulant, used to cure inflammations and contain nine amino acids, sucrose, rich in potassium, calcium and also reported to contain alkaloids, kaempferol, rhamnetin [4]. *Sesbania grandiflora* is cultivated in backyard, flowers are used as vegetable, rich in calcium and used to treat headache, while juice from flowers is used as an eye drop [19]. The plant species like stem pith of *Musa paradisiaca* flowers of *Sesbania grandiflora*, tender shoots of *Dendrocalamus strictus*, petiole of *Nymphaea nouchali* from collected from wild and from home garden for consumption and for sale in market to supplement their income. The plants species such as *Ensete superbum*, *Typha domingensis* *Musa paradisiaca* are used in treatment of urinary disorders. Wild edible plants form a good source of protein, fat, vitamins, sugar and minerals requirement of the tribal to a greater extent and interestingly they are available during different months/ seasons of the year [24].

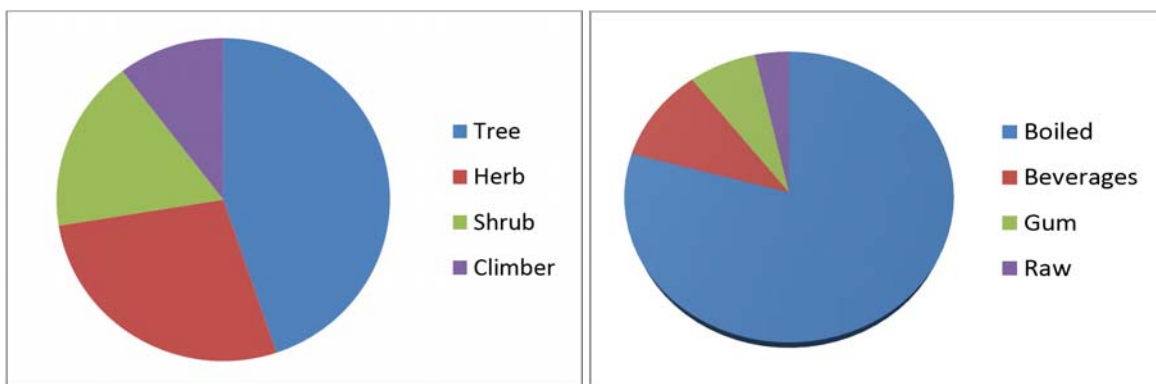


Fig 1.2: Percentage of less known wild edible plants in the form of (a) Habit, (b) Edibility

4. Conclusion

Most of the wild edible plants are commonly found in the areas surrounding villages, including the weed of field crops and home garden and they are consumed regularly in small quantities when food is adequately available, but in large quantities when food is scarce. Some wild edible plants are collected occasionally, mainly known by old aged peoples and

are rarely used. These wild edible plants are facing threat in their natural habitat from various human activities. It is necessary to cultivate these species to take up proper conservation methods to preserve. Further nutritional studies of these wild edible plants species may provide better nutritional source for future.



Agave americana L



Bambusa arundinacea (Rerz.) Roxb.



Caralluma umbellate Haworth.



Cassia auriculata L.



Caryota urens L.



Crotalaria juncea L.



Ensete superbum (Roxb.)
Cheesman



Phoenix humilis (L.) Cav.



Sesbania grandiflora (L.) Poir

Fig 1.3: Photographs of less known wild edible plants of Hassan district

Table 1: List of less known wild edible plants parts used by Hakki Pikki people of Hassan district

Sl. No	Botanical name	Family name	Local Name (Kannada)	Edible Parts	Time of availability	Mode of Consumption	Medicinal uses
1	<i>Acacia ferruginea</i> DC.	Mimosaceae	Kiribanni	Gum	April	Gum edible	Gum has aphrodisiac properties, used in fainting and fever
2	<i>Agave americana</i> L.	Agavaceae	Kattale	Flowers	All seasons	Flowers are cocked as vegetable	Used in treatment of ascites, venereal sores and dysentery
3	<i>Bambusa arundinacea</i> (Rerz.) Roxb.	Poaceae	Biduru kalale	Young tender shoot	Jan.-March	Young tender shoots are cocked as vegetable	The young shoots are used in wasting diseases
4	<i>Bauhinia variegata</i> L.	Caesalpinaceae	Kanchavala	Flowers	Nov.-Feb.	Flower buds are cocked as vegetable	The flowers and dried buds of the plants are anthelmintic and used in diarrhea, dysentery
5	<i>Bombax ceiba</i> L.	Bombacaceae	Kempuburuga	Flowers	Feb.	Flower buds are cocked as vegetable	Flowers are used in preparing tonic to improve body vigor
6	<i>Boswellia serrata</i> Roxb. Ex. Colebr.	Burseraceae	Maddimara	Gum	Jan.-March	Gum edible	Gum is used in cutaneous and nervous diseases
7	<i>Butea monosperma</i> (Lam) Taub.	Pailionaceae	Muttuga	Flowers	Sept.-Nov.	Flowers are used to prepare local drinks	Boiled flowers are tied over to abdomen in pain
8	<i>Calamus thwaitesii</i> var. <i>canaranus</i> Becc.	Arecaceae	Handibetta	Young stem	All seasons	The young stem are cocked as vegetable	Young buds are used in burning sensation
9	<i>Caralluma umbellata</i> Haw.	Asclepiadaceae	Maganakodu	Tender stem	March-Aug.	The tender stems are used as vegetable and also eaten as raw	Used in constipation
10	<i>Caryota urens</i> L.	Arecaceae	Baganimara	Stem pith	All seasons	The sap of this tree is fermented to make <i>sendhi</i> a refreshing drink	The fleshy drawn sap from the spathe is used as a laxative
11	<i>Cassia auriculata</i> L.	Caesalpinaceae	Avarike	Flowers	All seasons	Young flower buds are powdered and used as tea powder instead of common tea powder	Flowers are used to check excessive menstrual flow
12	<i>Celastrus paniculata</i> Willd.	Celastraceae	Gangunge	Flowers	April-June	The flowers are cocked as vegetable	Used as nerve stimulant and brain tonic
13	<i>Cinnamum malabratrum</i> (Burman.f.) Blume	Lauraceae	Kadu dalchini	Stem bark	Jan.-June	The bark is used as a spice for flavoring food	Bark used in treating rheumatism
14	<i>Clerodendrum viscosum</i> Vent. Jard. Malm	Verbinaceae	Parake	Young shoots	All seasons	Young shoots are cocked as vegetable	Used for skin diseases and scorpion stings
15	<i>Crotalaria juncea</i> L.	Papilionaceae	Senabina soppu	Flowers	Nov.-Mar.	Flowers are cocked as vegetable	Used in constipation, blood disorder
16	<i>Cucurbita maxima</i> Duchesne.	Cucurbitaceae	Kumabala	Tender shoot	Feb.	Tender shoots are cocked as vegetable	Used in burns and inflammations
17	<i>Cymbopogon nardus</i> (L.) Rendle	Poaceae	Majjige hullu	Stem	July-Sept.	The centre of the stem are cocked in curries	Used to treat bronchitis, the aromatic oil applied externally to relieve chronic rheumatism
18	<i>Dendrocalamus strictus</i> (Roxb.) Nees.	Poaceae	Biduru	Young shoots	Jan.-April	Young shoots are used as vegetable and preparation of pickles	Used in indigestion
19	<i>Ensete superbum</i> (Roxb.) Cheesman	Musaceae	Kallubale	Stem pith	All seasons	The stem pith are cocked as vegetable,	Used in treatment of kidney stones
20	<i>Ipomoea aquatica</i> Forssk.	Convolvulaceae	Ballesoppu	Young shoots	Nov.-Jan	Young shoots are used as vegetable	Juice of the plant used as laxative and it acts as a blood purifier
21	<i>Mentha arvensis</i> L.	Lamiaceae	Bettada pudina	Tender stem	All seasons	The tender stem, leaves are used to preparation of herbal tea	Used in congestive disorder, headache and toothache
22	<i>Moringa oleifera</i> Lam.	Moringaceae	Nugge	Flowers	All seasons	Flowers are cocked as vegetable	Flowers are used as diuretic and stimulant
23	<i>Musa paradisiaca</i>	Musaceae	Baledantu	Pseudo	All seasons	Pseudostem cocked as	Used in intestinal disorder,

	L.			stem		vegetable	uremia and other vascular diseases
24	<i>Nymphaea nouchali</i> Burm.f.	Nymphaeaceae	Nela tavare	Leaf petiole	Oct.-May	Leaf petiole cocked as vegetable	Used in dyspepsia and dysentery
25	<i>Oryza rufipogon</i> Griff.	Poaceae	Kalule	Seeds	Aug.-Dec.	Seeds are used as cereals boiled and eaten and also crushed seeds eaten raw	Used in diuretic and abdominal pain
26	<i>Phoenix humilis</i> (L.) Cav.	Arecaceae	Sanna echalu	Stem pith	Oct.-Dec.	The petiole bases are removed from the young shoots and the tender white soft pith is eaten	The sap from the trunk called <i>Nira</i> is cooling, slightly narcotic and digestive
27	<i>Saccharum spontaneum</i> L.	Poaceae	Kadukabbu	Stem	Oct.-Feb.	Green stems yield a Juice	Used in burning sensation
28	<i>Sesbania grandiflora</i> (L.) Pers.	Papilionaceae	Agase	Flowers	Feb.-Mar.	Flowers are eaten as vegetable	Flowers juice dropped in eyes to improve vision
29	<i>Typha domingensis</i> Pers.	Typhaceae	Ane jondu	Young shoots	Aug.-Feb.	Young shoots are used as vegetable	Used in urinary calculi and dysuria

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