



ORIGINAL RESEARCH ARTICLE

Diversity and traditional knowledge on some less known edible wild herbaceous plant resource from district Khunti, Jharkhand, India.

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Abstract: The studies on the importance of wild edible herbaceous species to combat food insecurity and to resource poor household in most of the rural economies of the State Jharkhand had been almost neglected. This is because most of the wild herbaceous species grows in forests, marginal lands or in barren fields, and are considered of no use. The aim of this research paper is to prepare an inventory of some less known wild herbs which are used as edibles by the indigenous Munda tribe of district Khunti. As a result of ethnobotanical study about thirty-two less known edible herbaceous species were recorded. The local people had noted a decline in the availability of these wild herbs and related traditional knowledge, although not much had been done to cultivate them. However, these underutilized wild growing herbs if popularized and cultivated in large scale have the potentiality to combat food scarcity, food insecurity and malnutrition and could eventually raise the socio-economic status of rural households.

Key words: Wild; Edible; Herbs; Food Insecurity; Traditional Knowledge

Introduction

Khunti, the 23rd district of the State Jharkhand, is located at 23.08° N and 85.28° E, at an average elevation of 611 m (2,005 ft.) above the sea level. It has almost southern location in the State of Jharkhand (Plate-3). Khunti district is spread in about 2,467 Sq. Kms. areas. It is estimated that approximately 40% of the total area is covered by forest. The forest vegetation of Khunti district is of dry deciduous type with gregarious *Shorea robusta* (Sal) vegetation. The Mundas are the major tribal community, but other tribes like Pahariya, Asur, Birhor, Oroans etc. are also present.

Munda tribes are considered as the earliest aboriginals of the state Jharkhand [1]. The Munda people are traditionally bound with the natural resources for multifaceted uses such as food, fodder, dyes, ornamentals, medicines etc. They use local wild plants and plant products as fruits and vegetables. Locally, they are of great relevance for nutrition and food security [2,3,4]. The Munda people through their hereditary traditional knowledge know what to eat and what not to eat. They consume wild edible plants products both raw and cooked. Other than tribals, most of the people are unaware of this traditional knowledge of identifying the wild plants and consuming them as a source of food.

The wild herbaceous species are found growing in wide varieties of habitats, viz., under the shades of trees in forests, in marshy areas along the rivers, in wetlands, in marginal lands or in barren fields as weeds and are mostly considered of no use. Since wild edible plants are freely accessible within natural habitats, indigenous people have their own unique traditional knowledge of gathering and

preparing foods from the wild sources. The documentation and preparation of inventory of these less known wild herbaceous plants used indigenously by the Munda tribe would conserve their hereditary traditional knowledge and will make the plants familiar to rest of the world. The documentation and correct identification of these wild edibles is essential for their utility, conservation and to avoid confusion with similar look-alikes.

Materials and Methods

The present ethnobotanical research work was carried out in different seasons for three consecutive years, among the knowledgeable individuals of Munda tribe residing in remote forest areas of district Khunti, through survey, interview and field work; more or less following the standard methodologies used for ethnobotanical studies [5,6,7,8]. The collected plant specimens were processed dried and herbarium were prepared according to conventional herbarium techniques [5,6,7]. The coloured photographs were also taken for their correct identification and future use. Care was taken to identify the plant specimens when they were fresh. The collected plant specimens were identified with the help of literatures and local Floras [9,10].

Results and Discussion

During the course of study, it was observed that several wild herbaceous plants were playing an important role as a food source among the Munda people of Khunti district but many of them were less known as edibles among the urban population Jharkhand. About thirty-two less known wild

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herbaceous plant species belonging to twenty-one different families were identified and are presented

in Table 1 and the coloured photographs in Plate 1 (Figures: 1 to 16) and Plate 2 (Figures: 16 to 32).

Plate - 1 : Less known wild herbaceous edible plants



Figures : 1. *Celosia argentea* L. 2. *Arisaema tortuosum* (Wall.) Schott. 3. *Aerva lanata* (L.) Juss. Ex Schult. 4. *Butomopsis latifolia* (D. Don) Kunth. 5. *Begonia picta* Sm. 6. *Cleome monophylla* L. 7. *Commelina benghalensis* L. 8. *Hygrophila auriculata* Heine. 9. *Dentella repens* (L.) J.R. Forst. & G. Forst. 10. *Commelina cyanea* R. Br. 11. *Linnophila repens* (Benth.) Benth. 12. *Leucas aspera* (Willd.) Link 13. *Linnophila aromatica* (Lam.) Merr. 14. *Linnophila rugosa* (Roth.) Merr. 15. *Marsilea minuta* L. 16. *Medicago denticulata* Willd.

The botanical name, family, local name, parts used as edibles, month of availability and season of availability were recorded. The Munda tribe of the district Khunti speaks a very ancient dialect called Mundari which belongs to Austro-Asiatic family. The language has no script of its own, but still the language exists and is orally being transferred from one generation to the next. The Mundari names of these wild edible herbs were recorded exactly as they were spelled, which would benefit future researchers working in this study area. The Munda people were using various parts like roots, tubers, leaves, shoots, fruits and even seeds as edibles. It was observed that among herbaceous edibles in most of the plants tender leaves were consumed most (26 species), followed by tender shoots (20

species), roots (2 species), fruits (2 species) and seeds (2 species) (Fig.33). Out of thirty-two species nine plant species viz., *Butomopsis latifolia* (D. Don) Kunth., *Hygrophila auriculata* Heine., *Linnophila aromatica* (Lam.) Merr., *Linnophila repens* (Benth.) Benth., *Linnophila rugosa* (Roth.) Merr., *Marsilea minuta* L., *Monochoria vaginalis* (Burm. f.) C. Presl., *Rungia quinqueangularis* Koen. and *Sagittaria sagittifolia* L. are found in aquatic and marshy areas [3]. It was also observed that the months and seasons of availability of edible plant parts vary considerably in different herbaceous species, ranging from few months to whole year. But the Munda people usually store the edible parts of these plant species in dried form for off-seasons to fulfil their dietary and nutritional requirements.

They usually consume them in dried or fresh forms in traditional ways by roasting, boiling, steaming or eating raw, which are considered good

for health. Thus, maintenance of good health by the tribal people seems to be due to consumption of such healthy diet.

Plate - 2 : Less known wild herbaceous edible plants



Figures : 17. *Leucas cephalotes* (Roth.) Spreng. 18. *Lobelia alsinoides* Lam. 19. *Pycnocycla glauca* Lindl. 20. *Sauromatum venosum* (Dryand ex Aiton) 21. *Monochoria vaginalis* (Burm. f.) C. Presl. 22. *Physalis minima* L. 23. *Ophioglossum reticulatum* L. 24. *Polygala crotonarioides* var. *glabrescens* Buch.-Ham. ex D.C. 25. *Polygonum plebeium* R.Br. 26. *Portulaca quadrifida* L. 27. *Rungia quinqueangularis* Koen. 28. *Sagittaria sagittifolia* L. Kunth. 29. *Solanum xanthocarpum* Schrad. & Wendl. 30. *Vicia sativa* L. 31. *Vicia hirsuta* (L.) Gray 32. *Spergula pentandra* L.

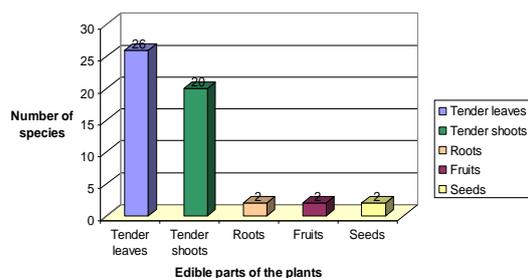
During this research work it was found that for most of the herbaceous species, the edible parts were not even sold in local markets. This was due to decline in traditional knowledge, limited availability or availability only in a particular season. The tribal people usually procure them in limited quantity from nearby forest to fulfil their own family dietary needs.

Scrutiny of literatures revealed that much work have been done to document medicinal uses of plants, but scanty and sporadic researches have been carried out to document the edible wild herbaceous plant species in the tribal inhabited regions of the state Jharkhand [2,3,4,11,12,13,14].

However, good number of efforts have been taken in our country to document wild edible plant species [15,16,17,18]. Concern has grown worldwide to document wild plant species which are being traditionally used through several generations by the indigenous people around the world; and to explore them as an alternative, cheaper and healthier source of food to fight the problem of food scarcity [19,20,21,22,23,24,25].



Figure-33: Use frequency of various edible parts of wild herbs



Conclusion

After literature survey through different source, it was found that the herbs which are used by Munda people of Khunti district are quite different from the species which are already documented from

India and different other parts of the world. When compared to cultivated and domesticated plant food sources, the uncultivated wild plant foods tends to be overlooked in modern societies. However, the indigenous Munda people of district Khunti still retain their rich hereditary traditional knowledge of gathering and preparing foods from the wild sources in traditional ways. The herbaceous wild species are now facing several threats for their existence due to destruction of their natural habitats caused by overgrazing, unplanned developmental activities, deforestation and conversion of forest areas into agricultural fields. The people, who are unaware of utilities of these herbaceous wild edible plants, usually consider them as weeds and of no use. Thus, it is important to document and propagate the knowledge among masses about the utility of these wild growing plants, so that they could be conserved and brought into cultivation. The finding suggests further investigation on nutritional aspects, cultivation techniques, conservation strategies and market prospects for their wider acceptability as alternative food resources, which could reduce our dependency on few cultivated herbaceous crop plants generally cultivated for leafy vegetables like spinach, amaranthus etc. These wild edible herbaceous plant species can be popularized as an alternative, inexpensive, nutritious source of food to substitute the conventional herbaceous leafy vegetables, in the era of food scarcity and growing price rise of food commodities. Large scale commercial cultivation of these wild edible could eventually raise the socio-economic status of rural households and could reduce our dependency over few conventional, staple and cultivated crop plants.

Table 1: Some less known wild herbaceous plants used as edible by the Munda tribe of district Khunti, Jharkhand.

S.N.	Botanical Name	Family	Hindi Name	Mundari Name	Parts Used as Edibles	Months of Availability	Season of Availability
1.	<i>Aerva lanata</i> (L.) Juss. Ex Schult.	Amaranthaceae	Chaya	Lupu Ara	Tender young shoots Tender leaves	Whole Year Whole Year	Whole Year Whole Year
2.	<i>Arisaema tortuosum</i> (Wall.) Schott.	Araceae	Samp-Ki-Kumb	Olgondra	Tender young shoots Corm	June - August August - September	Rainy Rainy
3.	<i>Begonia picta</i> Sm.	Begoniaceae	Pattharchatta	Mukri Ara	Tender leaves	July - October	Rainy
4.	<i>Butomopsis latifolia</i> (D. Don) Kunth.	Alismataceae	Karchhul Saag	Lundi Ara	Tender leaves	July - October	Rainy
5.	<i>Celosia argentea</i> L.	Amaranthaceae	Safed Murgha,	Sirgiti Ara	Tender young shoots Tender leaves	July - October July - October	Rainy Rainy
6.	<i>Cleome monophylla</i> L.	Capparidaceae	Sarwari Hurhura	Charmani Ara	Tender young shoots Tender leaves	July - November July - November	Rainy Rainy
7.	<i>Commelina benghalensis</i> L.	Commelinaceae	Kanchira, Kanchara	Kena Ara	Tender young shoots Tender leaves	September - January September - January	Winter Winter
8.	<i>Commelina cyanea</i> R. Br.	Commelinaceae		Undku Ara	Tender young shoots Tender leaves	September - January September - January	Winter Winter
9.	<i>Dentella repens</i> (L.) J.R. Forst. & G. Forst.	Rubiaceae	Kantha sag, Helencha	Kantha Ara	Tender young shoots Tender leaves	March - September March - September	Summer and Rainy Summer and Rainy
10.	<i>Hygrophila auriculata</i> Heine.	Acanthaceae	Kanta Kalia, Talmakhana	Koila Khari, Koila Ara	Tender leaves	Whole Year	Whole Year

11.	<i>Leucas aspera</i> (Willd.) Link	Lamiaceae	Chota Halkusa	Gomha Ara	Tender young shoots Tender leaves	June - January June - January	Except Summer Except Summer
12.	<i>Leucas cephalotes</i> (Roth.) Spreng.	Lamiaceae	Dhurpi Saag, Deldona, Goma	Marang Gomha	Tender young shoots Tender leaves	June - January June - January	Except Summer Except Summer
13.	<i>Limnophila aromatica</i> (Lam.) Merr.	Scrophulariaceae	Kuttra, Kapur	Loson Ara, Losodh Ara	Tender young shoots Tender leaves	June - January June - January	Except Summer Except Summer
14.	<i>Limnophila repens</i> (Benth.) Benth.	Scrophulariaceae	Kapur	Uli ara	Tender young shoots Tender leaves	June - January June - January	Except Summer Except Summer
15.	<i>Limnophila rugosa</i> (Roth.) Merr.	Scrophulariaceae	Kala Kapur	Loson Ara, Losodh Ara	Tender young shoots Tender leaves	June - January June - January	Except Summer Except Summer
16.	<i>Lobelia alsinoides</i> Lam.	Campanulaceae	Painmali (in Oriya)	Bari Ara	Tender young shoots Tender leaves	July - October July - October	Rainy Rainy
17.	<i>Marsilea minuta</i> L.	Marsiliaceae	Sunsunia Saag	Chatom Ara	Tender leaves	Whole Year	Whole Year
18.	<i>Medicago denticulata</i> Willd.	Fabaceae	Khokhani	Piring Ara	Tender young shoots Tender leaves	December - February December - February	Winter Winter
19.	<i>Monochoria vaginalis</i> (Burm. f.) C. Presl.	Pontederiaceae	Nanka, Indivar	Sadom Lochkor Ara	Tender leaves	July - January	Rainy and Winter
20.	<i>Ophioglossum reticulatum</i> L.	Ophioglossaceae	Sugga Saag	Kyan Ara, Meru Ara	Tender leaves	August - January	After Rainy and in Winter
21.	<i>Physalis minima</i> L.	Solanaceae	Tulatipati	Tusu	Ripe fruits	November - January	Winter
22.	<i>Polygala crotalaroides</i> var. <i>glabrescens</i> Buch.-Ham. ex D.C.	Polygalaceae		Chauli Chapi Dah	Root	July - November	Rainy and Winter
23.	<i>Polygonum plebeium</i> R.Br.	Polygonaceae	Chinti Saag	Mooiin Ara	Tender young shoots Tender leaves	October - March October - March	Winter and Spring Winter and Spring
24.	<i>Portulaca quadrifida</i> L.	Portulacaceae	Nunia Saag	Nuni Ara, Uri-Alang-Ara	Tender young shoots Tender leaves	July - November July - November	Rainy and Winter Rainy and Winter
25.	<i>Pycnocycla glauca</i> Lindl.	Apiaceae		Chauli sanga	Root	October - April	Winter and Summer
26.	<i>Rungia quinqueangularis</i> Koen.	Acanthaceae	Kauwa Saag	Kauwa Ara	Tender young shoots Tender leaves	July - October July - October	Rainy Rainy
27.	<i>Sagittaria sagittifolia</i> L.	Alismataceae	ChotoKut	Lochkor	Tender leaves	July - January	Rainy and Winter
28.	<i>Sauromatum venosum</i> (Dryand ex Aiton) Kunth.	Araceae	Nirbish	Chakad	Corm	October - May	Winter and Summer
29.	<i>Solanum xanthocarpum</i> Schrad. & Wendl.	Solanaceae	Rangeni	Tokon Bengra	Unripe fruits	March - June	Summer
30.	<i>Spergula pentandra</i> L.	Caryophyllaceae	Kharika Saag	Chari Ara	Tender young shoots Tender leaves	November - February November - February	Winter Winter
31.	<i>Vicia hirsuta</i> (L.) Gray	Fabaceae	Mun-muna	Masuri Ara	Tender young shoots Tender leaves Seeds	October - January October - January February - March	Winter Winter Winter
32.	<i>Vicia sativa</i> L.	Fabaceae	Akra	Chirgi	Tender young shoots Tender leaves Seeds	October - January October - January February - March	Winter Winter Winter

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