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From Forest to Plate: Documentation of Wild Edible Plants Consumed by Tribal Communities of Kurkheda, Gadchiroli (MS)

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Abstract: *Tribals and rural people mainly depend on plants and plant products for their sustenance. This study reveals that the aboriginal people have considerable traditional knowledge of wild edible plants and their utilization. This paper report is based on survey, interview and field work studies on wild edible plants used by tribals and rural people of Kurkheda Taluka of Gadchiroli District, Maharashtra State, India during January 2024 to December 2025. The research area is predominantly populated by Gond tribes. During investigation a total of 43 plant species belonging to 31 families have been recorded as wild edibles in the study areas, of which trees are ranked first followed by herbs, climbers and shrubs. Among 43 wild plants, some plants part like leaf, fruit, flower, tuber, rhizome or even some time whole plant may consumed as vegetable.*

Keywords: Wild, edible, Plants, Tribals, Gadchiroli, traditional knowledge

I. INTRODUCTION

From ancient time plants have been used as a source of food, shelter, clothing, medicine, fibre, gum, resin, oil, etc. Several wild plants are used as food by tribals and other local people living in and around the forest areas [Bhogaonkar et al., 2010].Tribal communities have the ability to gather wild edible plant species from diverse natural environments that are neither cultivated nor domesticated [Shirsat and Koche, 2020]. Approximately 9500 wild plants are utilized by Indian tribes for various purposes, with 3900 of these species being consumed as food, although most of these plants are still underutilized [Deshpande et al., 2019]. Given their long-standing relationship with forests, local tribal communities possess significant knowledge regarding the availability of wild food resources [Jain and Tiwari, 2012].

Indigenous and local communities favor wild vegetables over cultivated varieties due to their natural growth; they offer superior flavor and health benefits. By marketing these wild edibles to nearby urban markets, they can generate additional income. Indigenous peoples hold the belief that certain seasonal wild vegetables are beneficial for health and enhance immunity during the rainy season, which is considered a particularly vulnerable time for various illnesses [Setiya et al., 2016]. Currently, the ancient individuals possess a comprehensive understanding of how to eliminate harmful substances from wild plants and create recipes for their sparse meals [Jain, and Tiwari, 2012].

Food plants serve not only as a supplement to the overall food supply but also represent a crucial resource for survival during periods of starvation, thereby making a significant contribution to human nutrition throughout the year. Nevertheless, the age-old traditional knowledge regarding the use of wild plants is rapidly diminishing. Contemporary scientific researchers are endeavoring to recognize the value of these traditional food items to bridge the gap between the increasing population and food production [Deb et al., 2013].

Wild edible plants possess the potential to assist the growing population in meeting its increasing food demands. However, knowledge regarding these edible plants is rapidly fading as it is often overlooked by the general public [Naik et al., 2017; Borse and Gunjal, 2022]. To ensure their sustainable utilization and conservation in the future, it is

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essential to conduct extensive research on the conservation and possibly the cultivation of wild edible plants [Koti and Katrahalli, 2021]. Considering all these factors, the current study was initiated to document the variety of wild edible plants utilized by the tribal communities in the Kurkheda Tahsil of Gadchiroli District (MS), India.

II. MATERIALS AND METHODS

Study Area

This research was carried out in 13 villages within the Kurkheda tehsil, which comprises a total of 124 villages. According to the 2011 census, the overall population of this tahsil is over 78,643, and it falls under the jurisdiction of the 'Gond Raja'. The 'Gond' tribe is the predominant ethnic group in this region. The entire area is enveloped by dense forests, with the state of Chhattisgarh located to the east, while the opposite side is bordered by other talukas of the Gadchiroli district (Fig 1).

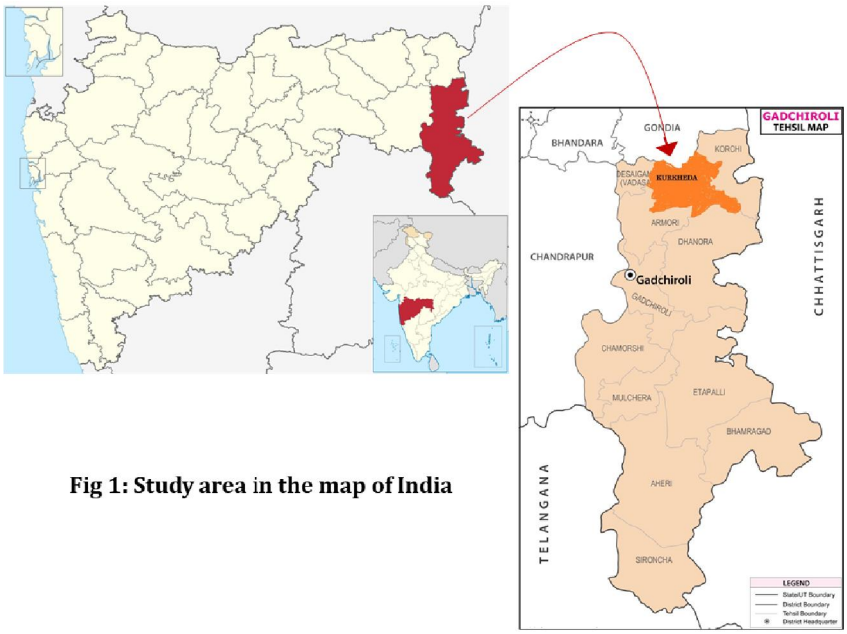

Fig 1: Study area in the map of India

Data Collection

The study was conducted over a period of two years, specifically from January 2024 to December 2025. The information regarding wild edible plant species is a result of an ethnobotanical field survey and interviews conducted with elderly tribal individuals, as well as ethnic men and women, following the standard methodologies proposed by S. K. Jain (1989). Data collection involved a comprehensive field survey, during which plant specimens were gathered and identified using established floras (Cook 1958; Sharma et al., 1996; Singh, NP. and Karthikeyan 2000; Singh, and Karthikeyan 2001; Ugemuge 1986).

III. RESULT AND DISCUSSION

In total 53 informants were interviewed from 10 different villages of Kurkheda taluka regarding their knowledge about use of wild edible plants available in the study area. Among these informants some were farmers, some were village heads, some were herbal healers (Vaidoo), some were house wife's and some were old age peoples. Data was collected by interviewing them. Some collected live specimens and available photographs were shown to them for confirmation and identification was done using standard literature. All the collected data on wild edible plants used by the Tribal communities of Kurkheda tahsil during this study was documented in table 1.

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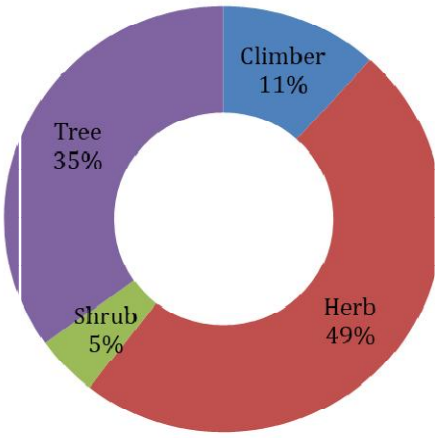
In the course of this investigation, a total of 43 plant species from 31 families were collected and identified. In the collected data it was observed that Herbs was prominently used (49%) followed by Trees (35%), Climbers (11%) and Shrubs (5%) (Fig. 2). They are presented here along with their family, local name, botanical name, and the parts that were used or consumed.The largest number of documented edible species belongs to the Amaranthaceae family (6), followed by the Araceae family (3). Additionally, the Arecaceae, Caesalpiniaceae, Convolvulaceae, Rutaceae, and Solanaceae families each contributed two species. The most commonly utilized edible parts were leaves or leafy shoots, followed by fruits, flowers, seeds, and others (Table 1 and Fig 2).

Fig 2: Occurance of Plant Habit in study



It was noted that the tribes of Kurkheda tahsil incorporated 42% leaves and 32% fruits from the forest ecosystem into their diet. A significant portion of the ethnic population collects, cooks, and consumes leafy vegetables alongside their staple foods. Additionally, some of these plant species are utilized in the preparation of curry, chutney and pickles also. These ingredients are either gathered from forest regions or identified as weeds in the damp areas of cultivated and open fields. Fruits are consumed both in their raw state and when fully ripened.

IV. CONCLUSION

It is essential to gather and document invaluable knowledge from tribal and remote regions before it is entirely lost due to the disinterest of the younger generation in traditional wisdom, rapid socio-economic and environmental changes, urbanization, and the unscientific exploitation of natural forests. Additionally, there is a need to raise awareness among tribal communities regarding the sustainable use and conservation of their plant resources. Furthermore, it is important to investigate wild edibles that can be harvested with minimal impact on specific species, adhering to the principles of sustainable genetic resource utilization. Comprehensive education is also required to highlight the significance of wild natural edibles as a nutritionally balanced food source and as both a direct and indirect means of income, particularly for impoverished families.

Table 1: Wild Edible plants used by Tribal communities of Kurkheda Tahsil in Gadchiroli district (MS) India

SN	Plant Name	Family	Vernacular Name	Part Used	Habit	Use/s
1	*Aegle marmelos* (L.) Correa	Rutaceae	Bael	Fruit	Tree	Fruits pulp is eaten raw with salt and chilly powder. It is used to prepare sharbat, Jam and Chutneys.

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2	*Alangium salvifolium* (L. f.) Wangerin	Alangiaceae	Aakola, Ankol	Fruit	Tree	Ripened Fruits are eaten.
3	*Allmania nodiflora* (L.) R. Br. ex Wight	Amaranthaceae	Dhan Bhaji	Leaf	Herb	Leaves are cooked as vegetable.
4	*Alternanthera paronychioides* St. Hil. Voy.	Amaranthaceae	Patur Bhaji	Leaf	Herb	Leaves are cooked as vegetable.
5	*Amaranthus polygamous*	Amaranthaceae	Tandulka	Leaf	Herb	Leaves are cooked as vegetable.
6	*Amaranthus spinosus*	Amaranthaceae	Chawli Bhaji/maath	Leaf	Herb	Leaves are cooked as vegetable.
7	*Amaranthus tricolor*	Amaranthaceae	Lalmath	Leaf	Herb	Leaves are cooked as vegetable.
8	*Amaranthus viridis*	Amaranthaceae	Khedabhaji	Leaf	Herb	Leaves are cooked as vegetable.
9	*Amorphophalus paeonifolius* Dernst	Araceae	Suran	Corm	Herb	Tuber preboiled with tamarind and after that vegetable or curry is prepared.
10	*Argyreia nervosa* (Burm.f.) Bojer	Convolvulaceae	Samudrasok	Leaf	Climber	A thick, spiced paste (flour, tamarind, jaggery, chili, and turmeric) is applied generously to the both side of the leaf. Multiple leaves are stacked on top of each other.The stack is folded at the sides and rolled into a tight log. These logs are steamed for 20–30 minutes until the flour paste firm up and the leaves are fully cooked.Once cooled and firm, the log is sliced into pinwheels. These "wadis" or "patras" are then shallow-fried or deep-fried until the edges are crispy and golden.
11	*Bambusaarundinacea* (Ritz.) Willd.	Poaceae	Bamboo Vaaste, Katraanji	Shoot	Culms	Young shoots, approximately 2 feet in length, are harvested, their outer layer removed, and subsequently finely chopped and boiled. Following this, spices are added to prepare the vegetable. The finely chopped and boiled shoots are then combined with various types of flour to create tasty fries. Additionally, a pickle is prepared using the same finely chopped shoots. Although

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						cutting these shoots is prohibited, tribal communities continue to enjoy them, often disregarding the law, particularly during the rainy season. This food has been a staple in tribal diets since ancient times. Certain tribal groups traditionally wrap the shoots in Wild Turmeric Leaves, bury them in the soil or place them in covered earthen pots, adhering to a strict 24-hour timeline before retrieving and cooking them as a vegetable for consumption.
12	*Boerhavia diffusa* (L.) Hook.	Nyctaginaceae	Khaparfuti	Seed	Herb	Leaves are cooked as vegetable.
13	*Borassus flabellifer* L.	Arecaceae	Taad	Leaf	Tree	Seeds of unripened fruit are eaten raw
14	*Buchanania cochinchinensis* (Lour.) Almeida	Anacardiaceae	Charoli, Rekka	Fruit	Tree	Ripened fruits are eaten raw. Dried seeds are eaten
15	*Capparis zeylanica*	Capparaceae	Varaakli	Fruit	Climber	Fruits are boiled, chopped and cooked as stir fry (Bhaji).
16	*Cassia fistula* L.	Caesalpiniaceae	Bahava	Flower	Tree	Flowers are boiled and Bhaji (Flower Stir-fry) is preapred.
17	*Cassia tora* Sensu Baker.	Caesalpiniaceae	Tarota, Cherota	Leaf	Herb	Tender leaves are cooked as vegetable.
18	*Celastrus paniculatus* Willd.	Celastraceae	Pimpli cha baar, Warandul Tonda	Flower	Climber	Flowers are cooked as vegetable.
19	*Cheilocostus speciosus* (J.Koenig) C.D.Specht	Costaceae	Besemati, Halduli	Corm	Herb	Corms are excavated and then cleaned and boiled and eaten during famine. Corms are excavated and then cleaned – crushed and cooked as a vegetable by adding some spices also curry is prepared from are scaled and chopped rhizome.
20	*Chenopodium album* L.	Chenopodiaceae	Batwa	Leaf	Herb	Leaves are cooked as vegetable.
21	*Colocasia esculenta* (L.) Schott	Araceae	Kochai/ Dhopa	Leaf	Herb	A thick, spiced paste (flour, tamarind, jaggery, chili, and

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						turmeric) is applied generously to the both side of the leaf. Multiple leaves are stacked on top of each other.The stack is folded at the sides and rolled into a tight log. These logs are steamed for 20–30 minutes until the flour paste firm up and the leaves are fully cooked.Once cooled and firm, the log is sliced into pinwheels. These "wadis" or "patras" are then shallow-fried or deep-fried until the edges are crispy and golden.
22	*Cordia dichotoma* Forst.	Boraginaceae	Shembadi, Shelvati	Leaf	Tree	Tender leaves are cooked as vegetable.
23	*Cucumis melo* L.	Cucurbitaceae	Bodele	Fruit	Climber	Fresh fruits are eaten raw
24	*Diospyros melanoxylon* Roxb.	Ebenaceae	Tembhru	Fruit	Tree	Fresh fruits are eaten raw
25	*Ficus racemosa* Linn.	Moraceae	Umber, Toya	Fruit	Tree	Fresh fruits are eaten raw
26	*Glinus oppositifolius* (L.) A. DC.	Molluginaceae	Kadubhaji, Kayata bhaji	Fruit	Herb	Leaves are cooked as vegetable.
27	*Holorrhena pubescens* Wall. ex G.Don	Apocynaceae	Pandhara kuda	Flower	Tree	Flowers are boiled and squeeze an then using chopeed onions and tomamto ccoked as vegetable.
28	*Ipomea aquatica* Forssk.	Convolvulaceae	Nalichi-bhaji	Young leaves	Herb	Leaves are cooked as vegetable.
29	*Limonia acidissima* L.	Rutaceae	Kawath	Fruit	Tree	Fruits are edible. Used to prepare sharbat and jam.
30	*Madhuca longifolia* (Koen.) Mac Bride	Sapotaceae	Moha, Irpi	Leaf, Fruit	Tree	Fleshy flowers are eaten. Similarly, dried flowers are stored and eaten throughout the year.
31	*Moringa oleifera* Lam.	Moringaceae	Shevaga	Leaf, Fruit	Tree	Leaves and Fruits prepared in a thick, savory gravy. Dry vegetable and also paratha is prepared from leaves.
32	*Nilumbo nucifera* Gaertn	Nelumbonaceae	Kamal, Kokomba	Fruit	Herb	Seeds are eaten raw and roasted.
33	*Olax scandens* Roxb.	Olacaceae	Haratfari	Leaf	Tree	Leaves are cooked as vegetable.
34	*Oroxylum indicum*	Bignoniaceae	Tattu	Flower	Tree	Flowers are boiled and cooked

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	(L.) Vent.			and Fruit		as a vegetable. Fruits are chopped to small pieces and used to make pickle.
35	*Oxalis corniculata* L.	Oxalidaceae	Chihoda Bhaji	Fruit, Flower	Herb	Leaves are cooked as vegetable.
36	*Phoenix sylvestris* (L.) Roxb.	Arecaceae	Shindi, Gaavthi heendi	Fruit	Tree	Ripened fruits are eaten.
37	*Portulaca oleracea L.*	Portulaceae	Ghor Bhaji	Leaf and Stem	Herb	Whole plant except roots is cooked as vegeteable.
38	*Scripus grossus* (L.f.) Palla	Cyperaceae	Kachar Kaandaa,	Root	Herb	Rootstocks are boiled and external layer is scaled and eaten as food.
39	*Sesbania grandiflora* (L.) Pers	Papilionaceae	Heti	Flower	Tree	Pakodas are made from flowers.
40	*Smilax zeylanica* L.	Smilacaceae	Sherdire	Tendril	Climber	Young tendril and shoots are boiled and cooked as vegetable.
41	*Solanum nigrum* L.	Solanaceae	Kamoni	Fruit	Herb	Ripe black berries are eaten raw. Green Stir-fry made from leaves. Savoury Flatbread is made from finely chop the leaves by mixing them with Jowar flour, Gram flour, and Wheat flour
42	*Solanum torvum* Swartz.	Solanaceae	Marang	Fruit	Shrub	Fruits are chopped and cooked as a vegetable.
43	*Theriophonum minutum* (Willd.) Baill.	Araceae	Undirkani	Leaf and Tubers	Herb	Wadi from leaves is prepared using flour just like Colocasia. Tubers first washed, boiled and then Bhaji (Tuber Stir-fry) is made.

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