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A SURVEY OF ETHNOMEDICINAL PLANTS USED BY LOCAL TRIBES OF AHERI AND BHAMRAGARH FOREST AREA OF GADCHIROLI DISTRICT IN MAHARASHTRA, INDIA

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ABSTRACT

Aheri tahsil is located on the southern part of Gadchiroli district. Among the 12 tehsils, Aheri is the largest tehsil in the Gadchiroli district covering an area of 2282.70 km², while Desaiganj (Wadsa) is the smallest in the district, covering an area of 262.74 km². Chamorshi is the most populous whereas Bhamragad is the least populous tehsil in Gadchiroli district. A major portion of Aheri and Bhamragad areas are covered by forest and the ethnic group is Gond. The major local language is Gondi, however these people also know Marathi and Telugu as well. The current study covers both Aheri and Bhamragad tahsils. These tribals depend on forest resources for their daily needs including medicines. Usually they visit hakims (local doctor who prepare medicines from locally available plants only), for the treatment of any ailment.

INTRODUCTION

A wide variety of plants are known to have medicinal properties and many of them are in use in different systems of medicine. There are many books which give information about medicinal uses of plants. India is one of the rich biodiversity spots of the world and about 43% of plants from this subcontinent (approximately 7,500 species) are reported to have medicinal value (Pushpangadan, 1995).

According to a book on medicinal plants in Maharashtra, the state has around 384 medicinal plants (Dhale & Patil, 2022). A survey of the Nashik district of Maharashtra found 50 medicinal plant species from 11 families and 48 genera (Karande et.al., 2021).

A brief ethnobotanical survey of plants used by Gond and Halbi the tribes of Chandrapur and Gadchiroli districts has been conducted by Tiwari and Padhye (1993) and Tiwari (1994). Sivaprasad and Mistry (2021) reported ethnomedicinal uses of local tribes of Mulchera tehsil.

Phanikumar and Chaturvedi (2010) had published a work on ethnobotanical observations of Euphorbiaceae family, from Vidarbha region of Maharashtra. Ethnobotanical plants of Markanda forest region was reported by Chavan and Margonwar (2015).

An information on ethnomedicinal diversity of a very few plants was described by Khonde & Halami (2020). The uses of some ethnomedicinal plants of Etapalli and Bhamragad in Gadchiroli district was reported earlier (Khonde et.al., 2014 ~~2012~~). Jakhi (2021) reported that many plants of Gadchiroli district are used as Herbal medicine. The current study was made to explore the ethnomedicinal uses of wild species in this specific area.

GEOGRAPHICAL DETAILS OF STUDY AREA

Gadchiroli district is covered by dense forest area in Maharashtra state (Fig. 1). Aheri tehsil is a forest sub-division of Gadchiroli district in Maharashtra state and is located on the banks of River Pranahita, which is a tributary of Godavari River (Jain S.K. et.al, 2007). Bhamragarh another sub-division, is located on the banks of confluence of three rivers – (1) Indravati River, a tributary of Godavari River, (2) Pearl Kota, and (3) Pamul Gautami (Fig.2).

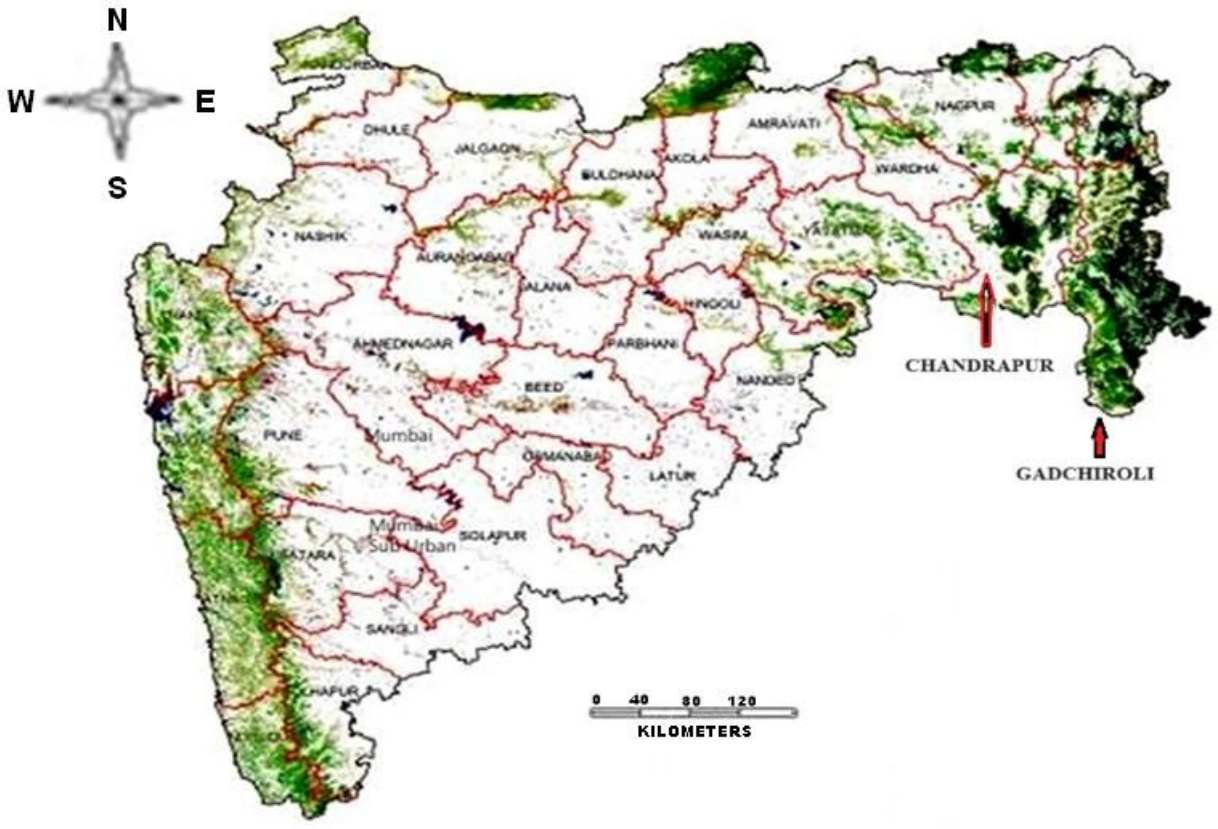

Fig. 1: Map showing forest cover in Maharashtra state

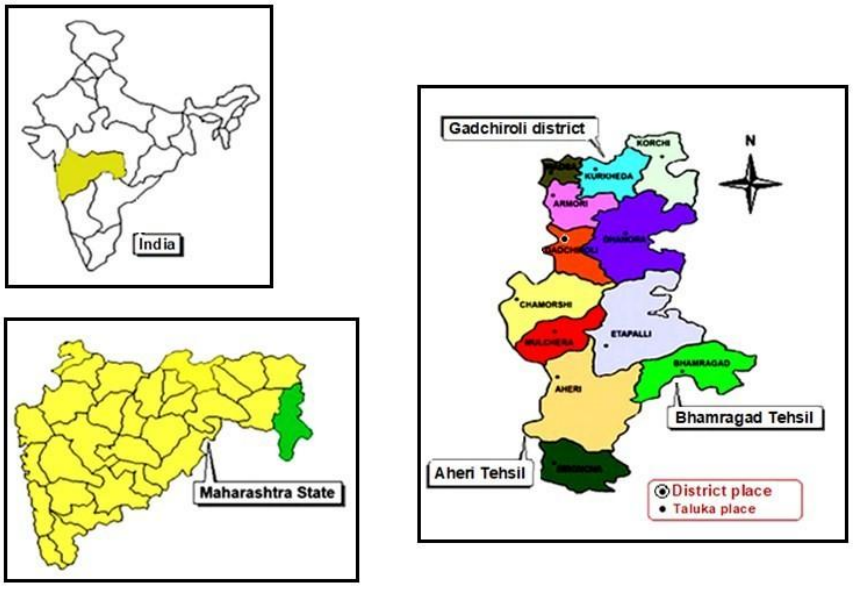

Fig.2: Geographical details of study area

A brief floristic survey of Gadchiroli district was done by Suresh and Sourav (2013). The dominant species is *Tectona grandis*. The other plants which are frequently found in this district include *Aegle marmelos, Annona squamosa, Anacardium occidentale, Annona reticulata, Azadirachta indica, Bombax ceiba, Borassus flabellifer, Buchanania lanzan, Clerodendron* species, *Diospyros melanoxylon, Dioscorea bulbilifera, Ficus bengalensis, F. racemosa, F. religiosa, Gardenia resinifera, Gloriosa superba, Limonia acidissima, Madhuca indica, Mangifera indica, Manilkara hexandra, Momordica dioica, Phylanthus emblica, Phoenix sylvestris, Pithecellobium dulce, Pongamia pinnata, Pterocarpus marsupiam, Semecarpus anacardium, Syzygium cumunii, Terminalia arjuna, T. bellirica, T. chebula, T. indica, T. tomentosa, Vitex nigundo. Ziziphus mauritiana, Z. oenoplia,*

Material and Methods:

The current survey has been conducted during winter and summer seasons to collect the information from tribal people, hakims. The data obtained through personal interviews with tribal group leaders and hakims was analysed. More than 70 plants are used by hakims for major diseases like blood pressure,

diabetes, broken bones, different types of pains and even Cancer.

RESULTS AND DISCUSSION

Information on around seventy one Ethnomedicinal plants were collected, of which 67 plants belong to dicot families and rest are monocots. In the present observation, as many as 5 plants are from Fabaceae, followed by Asclepiadaceae and Acanthaceae 4 from each, while 20 families are represented by single useful species. The plants are used for common cold, cough, to kidney stones, urinary infections, and even for cancer treatment by the tribals.

The present survey revealed much of information which is not available in literature. This is completely new and many untold stories about the local plants and cure have been gathered from tribal groups of this division. One must accept the truth that extracting information from these tribals and hakims is not easy as they fear of mainly two things – first is exploitation of these plants for commercial use will destroy the nature which they treat as sacred one; secondly the hakims (local medical practitioners) feel a threat to their livelihood. For these reasons they prefer to speak in their own tribal language Gondi only, even though they knew state language Marathi and other local language Telugu.

Though, secretly, we have observed that the tribals perform pooja before excising the part (which is used as medicine) from the plant (leaves, flowers, fruits or Bark). If it is root part they prefer late in the evening or very early in the morning and more importantly, small and young plants are selected for this purpose. The probable reason is they never destroy large plants as it is useful for further flowering and fruiting. The specific time for excising is that no outsider could able to find out the plant. Literally, all plants look alike and there is a chance to get lost in the jungle.

Some tribals, even perform pooja and spell some words before preparing medicine and applying to the patient, without which they believe the medicine would not work well and the ailment persists long.

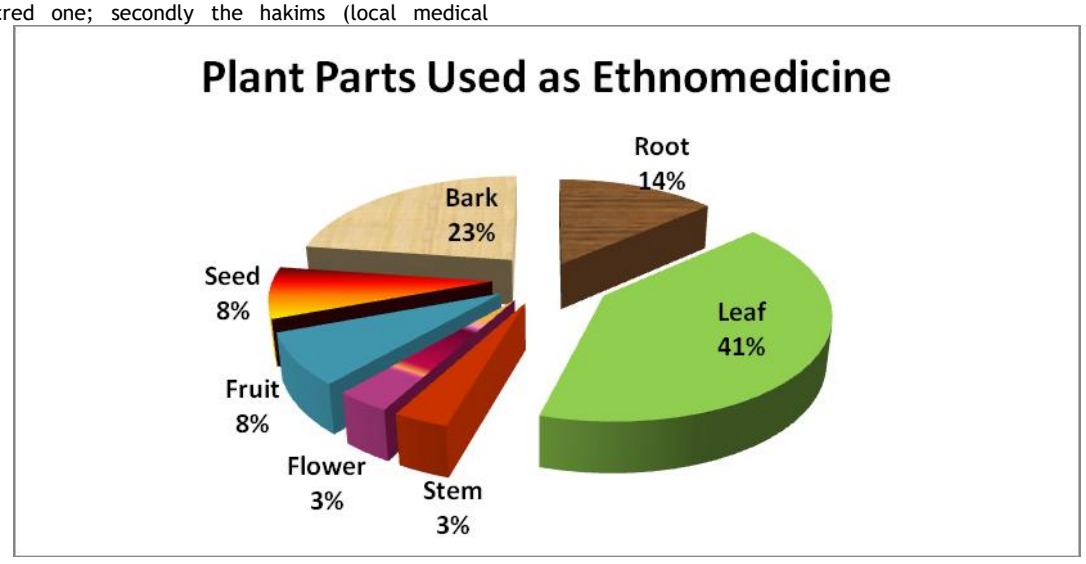

Fig. 3: Pie chart showing Plant parts used as ethnomedicine

It is observed that the tribal people are losing their traditional identity due to several developmental activities in and around tribal areas that are not related to their welfare, resulting in the loss of such treasures of plant genetic resources (Shankar, 1995). The plants are being used by the tribals for different diseases, some of which are already known to us as available in texts, but not for the ailment told by them (Table 1).

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TABLE 1: ETHNOMEDICINAL USES PLANTS USED BY LOCAL TRIBAL COMMUNITY

S. No.	Botanical Name of Plant (Common Name)	Local name	Family	Part used	Uses
1	*Achyranthus aspara*	Khini, aghadamarra	Amaranthaceae	Root Seeds	Fits Powder of Seeds mixed with toothpowder for dental problems
2	*Adina cordifolia*	Haldumarra	Rubiaceae	Leaf	Wound healing
3	*Aegle marmelos*	Belmarra / Belptrimarra	Rutaceae	Leaf	Diabetes
4	*Amaranthus spinosus*	Kantemaath	Amaranthaceae	Leaf	Constipation
5	*Amarphophallus commutatus*	Janglisuran	Araceae	Rhizome	Dysentery
6	*Andrographis paniculata*	Kalgor marra	Acanthaceae	Roots Fruit/Seed paste	Blood pressure; Typhoid fever Lower back pain
7	*Argyreia nervosa*	Vardhara	Convolvulaceae	Leaves	Skin disease, arthritis.
8	*Asparagus racemosus*	Shatavarmarra	Asparagaceae (earlier Liliaceae)	Root	Galactagogue
9	*Bauhinia racemosa*	Sonamarra/ aptamarra	Fabaceae	Leaves	wound healer
10	*Barleria prionites*	Sonerimarra	Acanthaceae	Leaves, Flowers	Paralysis
11	*Boerhaavia diffusa*	Khapar khutti	Nyctaginaceae	Leaves	Vegetable for Sugar
12	*Bombax ceiba*	Savarimarra	Malvaceae (Bombacaceae)	Bark	Dysentery
13	*Bryophyllum pinnatum*	Panfuti	Crassulaceae	Leaf Chewing	Kidney stones
14	*Buchnania lanzan*	Charoli	Anacardiaceae	Leaves Bark	Cold, Cough Vomiting
15	*Butea monosperma* (Yellow flower variety)	Modukmarra / modugmarra – pivla	Fabaceae	Stem ash Flowers (dired) Flower juice Gum, bark	Piles Stomachachic Kidney stones Wound healing
16	*Butea superba* (Climber)	Yel palas	Fabaceae	Bark	Anti-ulcer; Liver protectant
17	*Calatropis gigantea*	Rui	Asclepiadaceae	Leaf	Mad dog bite †
18	*Calatropis procera*	Ruimarra	Asclepiadaceae	Root Leaf (fried with oil)	Cobra bite Knee/joint pains (external)
19	*Cardiospermum ~~helicabamum~~ helicacabum*	Kanphutimarra	Sapindaceae	Leaf	Ear ache
20	*Carica papaya*	Popay	Caricaceae	Leaf juice	increasing platelets; Dengue fever
21	*Cassia fistula*	Rela marra	Caesalpiniaceae	Bark	Fistula, Piles
22	*Cassia tora*	Tarotamarra	Caesalpiniaceae	Leaf	Anti-parasitic
23	*Catharanthus roseus # (=Vinca rosea)*	Baromashi	Apocynaceae	Leaf	Diabetes (direct chewing early in the morning- on empty stomach)
24	*Celastrus paniculatus*	Malkangoni	Celastraceae	Roots, seeds	acidity, worms, memory
25	*Centella asiatica*	Brahmi	Apiaceae	Leaf	Kidney and Liver

					problems, jaundice
26	*Clerodenrdrum infortunatum*	Khandukchakka/ khandukmarra	Verbanaceae	Leaf	Bone fracture, skin disease, arthritis
27	*Cullen corylifolium*	Babechimarra	Fabaceae	Dried fruit/seed	Psoriasis
28	*Dendrocalamus strictus*	Vedurmarra	Poaceae	Young stem	Tuberculosis, cough
29	*Diaspyros melanoxylon*	Tendumarra	Ebenaceae	Young leaf Bark	Sunstroke Anti-malarial; anti-diabetic
30	*Diospyros montana*	Tembru	Ebenaceae	Bark	Snake (Krait) bite
31	*Dillenia pentagyna*	Michcho marra / Michad marra	Dilleniaceae	Bark	Blisters (External)
32	Drimia indica	pedda-ullimarra	Asparagaceae	Bulb	Urinary problems, Cardiac problems, Cough
33	*Elephantopus scaber*	Hastipatamarra	Asteraceae	Root	bleeding piles **
34	*Euphorbia hirta*	Anikkaya	Euphorbiaceae	aerial part decoction	Stomach worms
35	*Feronia limonia*	Marmimarra	Moraceae	Fruits	white discharge
36	*Ficus racemosa*	Umbermarra	Moraceae	Root	Kidney stone
37	*Heliotropium indicum*	Hatisur	Boraginaceae	Leaf	Diabetes
38	*Hemidesmus indicus*	Khobarveli	Asclepiadaceae	Root, leaves, bark	Urinary infections, cough, worms,
39	*Hibiscus sabdariffa*	Pullakura	Malvaceae	Leaves	Sunstroke
40	*Holarrhena pubescens*	Kudamarra	Apocynaceae	Bark	Malarial fever, Paralysis
41	*Hygrophila auriculata*	Kulekhara	Acanthaceae	Leaf juice	Haemoglobin content in RBC increases (taken on empty stomach)
42	*Ixora pavetta*	Lokhandimarra	Rubiaceae	Bark, Root	weakness; Urinary infections in females
43	*Justicia adathoda (=Adathoda vasica)*	Adulsamarra	Acanthaceae	Leaf juice	Cold, coughs (along with Ginger juice + honey)
44	*Litsea glutinosa*	Geda-marka (ranamba)	Lauraceae	Leaves, bark	Arthritis
45	*Manilkara hexandra*	Pala marra	Sapotaceae	Bark Bark-paste	Chest pain; Paralysis; Skin infection (external use) Broken bones*
46	*Mimosa hamata*	Chilalimarra	Mimosaceae	Bark	Fevers
47	*Mimosa pudica*	Lajulimarra	Mimosaceae	Leaf	Toothache
48	*Murraya konigii*	Kalyammarra	Rutaceae	Leaf	Digestion
49	*Nyctanthes arbor-tristis*	Pungamarra / Parijatamarra	Oleaceae	Leaf juice	Malaria; Typhoid fevers
50	*Oroxylum indicum*	Tattumarra	Bignoniaceae	Leaf juice Roots, fruit, flowers,	Wound healing, tuberculosis, digestive tract problems, delivery related problem
51	*Phyllanthus maderaspatensis*	Nalla-usirika	Phyllanthaceae	Root, Leaf	Severe Stomach pain
52	*Phyllanthus niruri*	Bhui avlae	Euphorbiaceae	Leaf	Diabetes

53	*Pergularia daemia*	Utaranveli	Asclepiadaceae	Leaf	fevers (liver disorders)
54	*Pongamia glabra*	kanugamarra / karajamarra	Fabaceae	Seed	Oil in rheumatism and skin diseases
55	*Phyllanthus emblica*	Usarimarra	Euphorbiaceae	Fruits	Burning pain
56	*Ricinus communis*	Erandimarra /	Euphorbiaceae	Leaf (fried)	Piles
57	*Santalum album*	Chandanmarra	Santalaceae	Dried stem paste	Reduce body heat
58	*Schleichera oleosa*	Kusumbamarra	Sapindaceae	Seeds	seed powder for ulcers; mixed with coconut oil for skin diseases
59	*Semicarpus anacardium*	Coccamarra	Anacardiaceae	Seeds	heart disease, asthma
60	*Soymida febrifuga*	Sami mara / Somi marra	Meliaceae	Bark	Malaria fever; Asthma
61	*Spermacoce* spp.	Madanaghanti Ghantichi bhaji	Rubiaceae	Root, root bark	Snake bite
62	*Tamarindus indica*	Chintamarra	Caesalpiniaceae	Leaf juice	Viral fevers
63	*Terminalia arjuna*	Arjuna	Combretaceae	Bark powder	Blood pressure, heart burning
64	*Terminalia bellerica*	Baheda	Combretaceae	Bark	Scorpion bite
65	*Terminalia elliptica*	Maddimarra	Combretaceae	Bark	Bone fracture
66	*Tinospora cordifolia*	Gudvel	Menispermaceae	Leaves	Jaundice
67	*Tribulus terrestris*	Gokhru jaddi	Zygophyllaceae	Fruit	rheumatism, sex power, urinary tract infection
68	*Tridax procumbens*	Kambarmodi	Asteraceae	Leaf juice	Wound healing
69	*Vitex negundo*	Nirgundi	Verbanaceae	Leaf	Insomnia, vertigo
70	*Wrightia tinctoria*	Nallkuda	Apocynaceae	Bark	Skin infections
71	*Zizyphus jujuba*	Rengamarra	Rhamnaceae	Fruit	Toothache

† = Treatment can be done successfully only when the patient is brought within 5-7 days only.
# = White flowered plant is more preferred than pink flowered one.

* = not only pain is relieved but broken bones could also be joined in some cases.
** = root is mixed with some ingredient(s) – which are not disclosed by the hakims – to prepare the exact medicine

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