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Cover: A mesmerising Indian Luna moth *Actias selene* is dancing through the starry night (by Vincent van Gogh) moonlit sky, displaying its ballistic display of feather tail. Digital artwork by Vyshnavee Sneha Jaijar.



Inventory of traditional medicinal plants and ethnobotanical knowledge from Hassan District, Karnataka, India

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Abstract: Global healthcare has long benefited from traditional medical systems. Hassan District, which is geospatially located in the Western Ghats, has a long history of using traditional medicines owing to the region's rich plant diversity. This study aims to document medicinal plants and their uses in Hassan District, Karnataka, based on information obtained from 172 traditional practitioners. Semi-structured interviews and conversations were conducted using a questionnaire to gather information about traditional medicine. The popularity and significance of each plant species were quantitatively assessed. A total of 220 species in 205 genera and under 93 families were reported for potential ethnomedicinal purposes, with a larger portion of them being herbs (74 species), followed by trees (60 species). Wild plants are the primary source of herbal remedies, with 181 species. Fabaceae and Apocynaceae are the major plant families, with 24 and 14 species, respectively. Leaves (41%) were the most used plant part in ethnomedicinal formulations, followed by fruits (14%), roots (12%), and bark (9%). The highest fidelity level of 96.3% was recorded for *Rauvolfia serpentina* for snakebite and 96% by *Aloe vera* for dermatological diseases. A total of 56 species were identified within the IUCN Red List evaluation. These findings hold significant potential, offering valuable insights for future phytochemical and pharmacological investigations, as well as informing strategies for medicinal plant conservation and sustainable utilisation.

Keywords: Ethnic communities, disease, ethnobotany, fidelity level, healers, leaves, phytochemicals, questionnaire, traditional medicine, Western Ghats.

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Author details: MR. AMARA K.V. and G.M. PRASHANTH KUMAR specialised in cryptogamic botany, plant taxonomy, and ethnobotany. DR. RAJKUMAR H. GARAMPALLI, currently professor and chairman of the Department of Studies in Botany, University in Mysore, Manasagangotri, Mysore is specialised in ethnobotany and medicinal plants.

Author contributions: All authors contributed equally to conception of the study and design of the study. Field survey, data collection and analysis were performed by Mr. Amara K.V. and G.M. Prashanth Kumar. The first draft of the manuscript was written by Mr. Amara K.V. and other authors involved in editing of the manuscript. The final editing and formatting of the manuscript was done by Dr. Rajkumar H. Garampalli. All authors read and approved the final manuscript.

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INTRODUCTION

Indigenous or traditional knowledge is defined as knowledge that has been accumulated over many generations by people for the appropriate use of their lands, natural resources, and surroundings; it is demonstrated in their innovations, practices, and way of life (Jain 2005). Traditional medicine is a collection of the knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to various cultures, whether explicable or not, used in the maintenance of health as well as the prevention, diagnosis, improvement, or treatment of both mental and physical illnesses (WHO 2002). Approximately 80% of people in developing countries depend on traditional medicine for primary health care, with plant extracts comprising about 85% of these treatments (Farnsworth 1988; WHO 2021). Natural products have historically been a rich source of novel drug leads, with many modern pharmaceuticals derived directly or indirectly from natural sources (Li et al. 2009). An estimated 39% of the 520 newly approved medications between 1983 and 1994 were natural compounds, and of those, 74% were found through the process of bio-prospecting, which involves using plants that are utilised in traditional medicine (Wangchuk 2008). India, one of the twelve mega-diversity nations in the world, is a major centre of origin and diversity, with more than 17,000 flowering plants, of which more than 7,000 have been reported to have medicinal properties (NMPB 2015). Rural Indian communities, distant from urban centres, rely on traditional herbal medicine for primary healthcare, owing to the affordability and accessibility of medicinal plants (Kamboj 2000). The Western Ghats of India are one of the world's biodiversity hotspots due to their species richness and endemism. Traditional knowledge encompasses a wealth of socio-cultural traditions and associated knowledge systems developed, and transmitted through generations, forming an integral part of community identities (World Intellectual Property Organisation [WIPO], n.d.). A rich tradition of usage of medicinal plants among the tribes and ethnic people makes India one of the ethnobotanical hotspots of the world. Researchers were successful in exploring ethnomedicinal information in different regions of the Western Ghats of Karnataka (Bhandary et al. 1995; Mahishi et al. 2005; Bhat et al. 2014; Yogeesha & Krishnakumar 2023). Hassan District presents a valuable region for ethnomedicinal research, characterised by its abundant plant diversity and the presence of diverse ethnic communities, including the Hakki-pikki, Soliga, Medhar, and Budbudike. Notably,

172 experienced traditional healers have been identified within the district, with a significant portion expressing concern over the declining use of traditional medicinal practices (Venkatesh & Garampalli 2023). Although a few reports are available from the study area on wild medicinal plants, ethno-veterinary medicinal plants, and ethnobotany (Ravikumar & Theerthavathy 2012; Doddamani et al. 2023), a detailed record of local communities' traditional knowledge on medicinal plants is lacking, which could be helpful for future pharmacological screening and conservation aspects. Hence, this study was undertaken to address the existing lacunae in ethnomedicinal documentation of the region.

MATERIALS AND METHODS

Study area

The present study was carried out during 2020–2022 to document traditional medicinal plant knowledge from Hassan District, Karnataka, India (Figure 1). The study area lies between 12.132–13.331°N and 75.331–76.812°E, with a total area of 6,814 km², and 2,574 inhabited villages. As per the Census of India 2011, Hassan District has 433,453 households and a population of 1,776,421, of which 883,667 are males and 892,754 are females. The geography is a mix of Malnad (mountainous), semi-Malnad (plains), and maidan, making it one of the most biodiversity-rich districts in India. Characterised by a wide array of vegetation types—evergreen forests, shola forests, stunted prickly forests, dry deciduous, grasslands, dry scrub, and dry thorn forests—the Hassan District also supports diverse ethnic communities such as the Hakki-Pikki, Soliga, Medhar, and Budbudike. The majority of the population resides in rural areas, and most of the families in rural areas practice traditional medicine for various ailments.

Identifying traditional healers

Data on traditional healers in the study area was obtained by referring to the People's Biodiversity Registers of local regions, which were procured from the Social Forestry Division, Hassan. A total of 172 renowned healers were shortlisted for interviews after discussions with the BMC (Biodiversity Management Committee), members of urban & local government bodies, non-governmental organisations, village residents, school teachers, and patients visiting the traditional practitioners. Informants and healers were chosen mostly based on their popularity among locals and their expertise in traditional medicine.

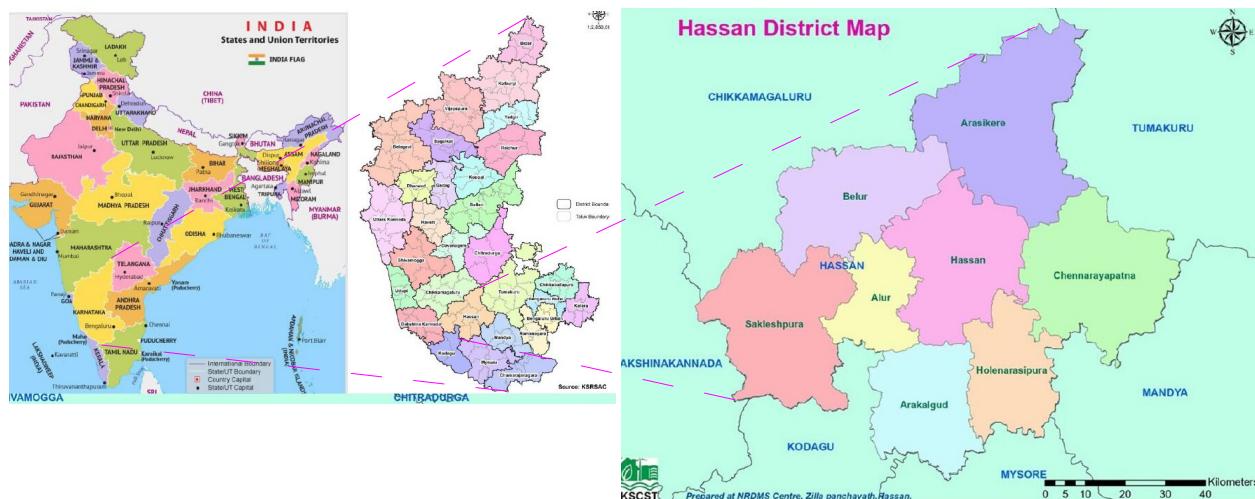


Figure 1. A detailed study area map of the Hassan District.

Collection of data

Shortlisted traditional healers were contacted and visited with the help of BMC members and villagers, and the theme of the study was explained. Semi-structured interviews and conversations were conducted using a questionnaire to gather information about the traditional medicine, and consent signature was obtained after collecting the data on the questionnaire. Both qualitative and quantitative data were gathered using a questionnaire (Image 1) which included information like vernacular name, botanical name of the plant, mode of collection, part used, disease cured, mode of preparation of the formulation, and success rate. The interviews and questionnaire studies were conducted two to three times among informants in order to verify and confirm the authenticity of their plant-based knowledge. Data about the practitioner's age, gender, educational level, and language used were also obtained. Plant specimens were collected to ensure accurate identification and herbarium preparation.

Identification of plant species

Plant specimens, accompanied by digital photographs and field documentation, were gathered for subsequent herbarium preparation, and taxonomic identification. Processed plant specimens were dried and poisoned with 5% $HgCl_2$ to mount on herbarium sheets with detailed labelling by following the methods described by Jain & Rao (1977). Collected medicinal plants were identified with the help of local flora (Saldanha & Nicolson 1976; Saldanha 1984; Saldanha 1996). The plant names were rechecked for authenticated and updated nomenclature by visiting World Flora Online

(<http://www.worldfloraonline.org>) and Royal Botanic Gardens, Kew (<http://www.mpns.kew.org>), and the synonyms were removed to avoid taxonomic inflation. The conservation status was examined as per the IUCN Red List of Threatened Species (IUCN 2024).

Quantitative analysis of ethnobotanical data

Several quantitative indices, such as the informant consensus factor (ICF), use value (UV), family use value (FUV), fidelity level (FL), and relative popularity level (RPL), were used to analyze the ethnobotanical data.

Informant consensus factor (ICF)

The ICF value analyses the reporter's agreement with the species of medicinal plants and the degree of variation in the way those plants are used to treat diseases that have been reported. Before determining the ICF value, diseases must be generally classified into several groups. When a species' maximal ICF value is near to 1, it means that a significant share of the local population uses it to treat a certain ailment. Conversely, a species' low ICF index, which is almost equal to 0, indicates that the informants treat reported illnesses with this species at random. The formula was used to determine the ICF value (Heinrich et al. 2009).

$$ICF = (Nur - Nt) / (Nur - 1)$$

Nur = total number of use report for each disease category

Nt = the number of species used in said category.

Use value (UV)

The use value (UV) establishes the proportional significance of plant species' applications (Phillips &


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**Inventory of traditional medicinal plants and ethnobotanical knowledge from Hassan district,
Karnataka, India**

Date collection sheet

Ethno-medicinal usage	
Plant local name:	Part used:
Disease cured:	Source of plant:
Mode of preparation/ Formulation:	
Success rate:	

Details of the plant:	
Botanical Name:	Collection location:
Family Name:	Part collected:
Abundance of availability:	
Season of availability:	
Description:	

Information of the practitioner	
Name :	Age:
Gender:	
Educational background:	Years of experience:
Address:	

Declaration:

As I'm is a resident of Village and above mentioned information are given by me and are true to my knowledge.

Signature

Image 1. Questionnaire used for field study.

Gentry 1993).

$$UV = \sum U_i / N$$

UV = use value of individual species.

Ui = number of uses reported for each species.

N = number of informants who reported that species.

Relative frequency of citation (RFC)

The relative importance of a species in a study area is indicated by its RFC. The number of informants mentioning a beneficial species (FC) divided by the total number of informants in the survey (N) yields this indicator (Phillips & Gentry 1993).

$$RFC = \frac{FC}{N} \quad (0 < RFC < 1)$$

Fidelity level (FL)

FL is the proportion of informants in a study location who indicate using specific plant species to treat a given disease (Friedman et al. 1986). The maximum FL indicates the frequency and high use of the plant species for treating a particular ailment by the informants of the study area.

$$FL (\%) = \frac{N_p}{N} \times 100$$

Np = number of informants claimed a use of certain plant species for a particular disease.

N = total number of informants citing the species for any disease.

Data processing and interpretation

MS Excel 2010 was used for tabulation analysis. The results were presented as percentages, diagrams, cross-tabulation, and graphs.

RESULTS AND DISCUSSION

Demographic features of the informant

A total of 172 traditional healers were interviewed in the present study from 112 villages across 61 gram panchayats, with 80.23% being male, and the rest female. The majority of the healers were in their middle and upper-middle age group. The literacy rate of healers and practitioners (72.7%) is much lower than that of the overall district's literacy rate, which stands at 88.36%. Due to the geospatial location of Hassan District in the Western Ghats region, the area is inhabited by a significant number of traditional healers, a testament to the fact that the region's abundant medicinal plants have sustained this practice. Of the healers surveyed,

112 (65%) learned traditional medicine from their ancestors, and 36 (21%) gained their knowledge from other practitioners in their vicinity, either as apprentices or through observation. Sixteen (9%) healers from the region acquired knowledge by self-practice or experimentation, and eight (5%) by reading books. Around 31% of healers provide free services to patients, whereas 57% accept payment, with 12 healers charging fixed fees for different disease categories. Additionally, 12% of the healers have a custom of receiving products like clothes, rice, grains, and coconuts. The findings show that the practice of traditional medicine is reducing with time, with allopathic medicine taking over the majority of the study area, which corroborates an earlier report (Venkatesh & Garampalli 2023).

Taxonomic distribution of medicinal plants

A total of 220 species from 205 genera and 93 families were reported for possible ethnomedicinal use. Table 1 and Images 2–4 displays information on the scientific name, popular name, family name, habit, longevity, disease treated, conservation status, and part used, as well as the application route, mode, and procedures. The study mainly focuses on important medicinal plants of the area and specifically angiosperms. According to plant habit, herbs (74 species) were determined to be the most utilised plants (Figure 2), followed by trees (60 species), climbers (44 species), shrubs (38 species), and parasitic angiosperms, and epiphytes (4 species) in descending order. The use of herbs as medicinal plants in higher proportion was also reported in other parts of world (Tabuti et al. 2003; Muthu et al. 2006; Uniyal et al. 2006; Ralte et al. 2024) due to their availability.

Among 220 plants listed in the present study, 181 plants were categorised as wild plants, while 24 as cultivated and 15 plants were available in both wild, and cultivated habitats. The most represented families in the study area with maximum number of utilised medicinal plants in the study were Fabaceae (24 species), Apocynaceae (14 species), Rutaceae (9 species), Menispermaceae (6 species), Acanthaceae, Araceae, Asteraceae, Euphorbiaceae, Rubiaceae, Solanaceae, Verbenaceae, & Zingiberaceae (5 species each), Asparagaceae, Cucurbitaceae, Lamiaceae, Loranthaceae, Malvaceae, & Poaceae (4 species each), and Amaranthaceae, Apiaceae, Combretaceae, Convolvulaceae, Meliaceae, Phyllanthaceae, Rhamnaceae, & Zygophyllaceae (3 species each). The other 11 families are represented by two genera each and 55 families have a single genus. Earlier reports also suggest that the family Fabaceae is recognised for its global distribution and classification as

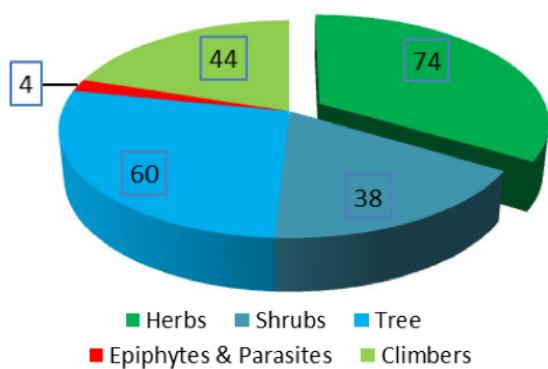


Figure 2. Plants habit.

the third largest plant family (Maroyi 2023). There are substantial investigations concerning its biochemical and pharmacological constituents (Wink 2013), and it has been the major contributor of medicinal plant species (Prabhu et al. 2014).

Plant part(s) used and mode of application

Ethnomedicinal information about the formulations in the study area revealed that leaves were the most used (41%), followed by fruits (14%), roots (12%), and bark (9%). Sap and latex are the least used parts with just 1% of medicines prepared from them (Figure 3). The results of the present survey corroborate with earlier reports where, aerial parts, especially leaves, are preferred for harvesting in herbal practices to protect plants, and ensure sustainability (Giday et al. 2009). Leaves are abundant, easily harvested, regenerate

quickly, are available year-round (Baidya et al. 2020), and contain many secondary metabolites which are effective in treating ailments related to digestive system, urinary and genital system, nervous system, respiratory system and cardiovascular system (Focho et al. 2009).

The present survey results also revealed that oral administration (61.75%) is usually recommended for the majority of ailments. Topical applications (37.51%) are recommended for skin conditions, snake bites, and wound healing, and inhalation is used to treat 0.7% formulations, which is in concurrence with earlier similar studies in other regions (Ignacimuthu et al. 2006; Luitel et al. 2014; Umair et al. 2017). Oral administration was favoured for better absorption and utilisation of bioactive compounds, and might be due to the prevalence of internal diseases in the study area (Benkhaira et al. 2021). To create a formulation for the treatment of different illnesses, traditional healers construct formulations in a variety of forms, such as decoction, powder, paste, infusion, extract, juice, poultice, tea, and ash, among others.

Informant consensus factor (ICF)

In the present study, reported illnesses were categorised into 12 distinct disease groups to calculate the ICF (Table 2) based on their use report. Among different disease categories, gastrointestinal diseases and dermatological were dominated with 102 and 88 use reports, respectively. Around 62 plant species were used to treat gastrointestinal diseases, followed by 42 species for dermatological diseases. The highest ICF

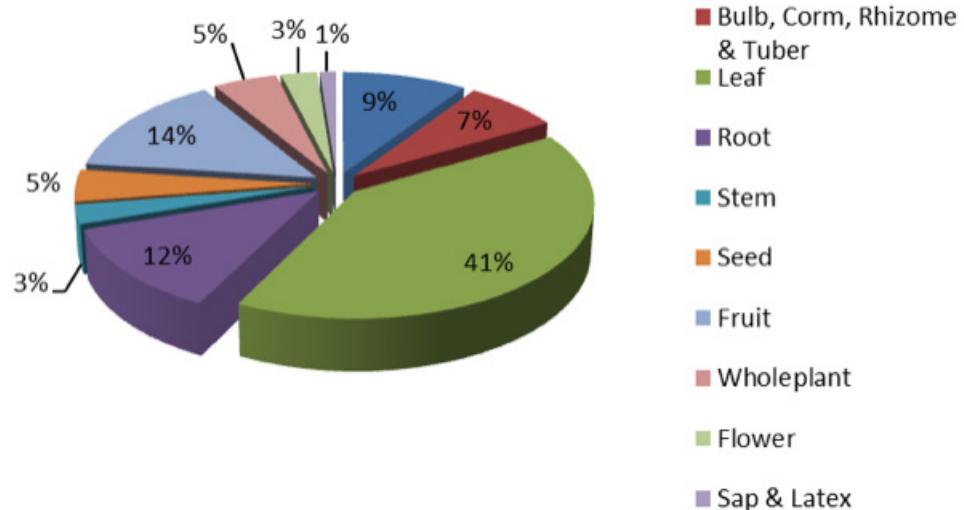


Figure 3. Plant parts used.

Table 1. Traditional medicinal plants of Hassan District.

	Local name	Scientific name	Family	Life habit and habitat/ forms			Part used	Disease treated	Application mode	Formulation or mode of preparation	UV	RFC
1	Gulaganji	<i>Abrus precatorius</i> L.	Fabaceae	W	C	A	Seeds	Paralysis	Topical	Seed paste is applied over affected area	0.38	0.18
2	Uthharani	<i>Achyranthes aspera</i> L.	Amaranthaceae	W	H	P	Whole plant	Ear fluid & earache	Topical	Filtered diluted plant extract is used as ear drop	0.66	0.22
							Leaves	Snake bite & scorpion bite	Topical	Leaf paste is applied over the bitten area		
3	Vanamugli	<i>Acmella oleracea</i> (L.) R.K.Jansen	Asteraceae	W	H	A	Leaf & Fruit	Toothache & mouth ulcers	Topical	Flower & leaf paste is diluted and gargled 3-5 time per day.	0.10	0.01
							Flowers	Toothache	Topical	Pills made from crushed flowers kept on affected teeth		
4	Irole Kande	<i>Adenia hondala</i> (Gaertn.) W.J.de Wilde	Passifloraceae	W	C	P	Leaves and roots	Skin diseases	Topical	Paste of leaves and roots applied over affected area	0.25	0.04
5	Katamahara gida	<i>Aeginetia indica</i> L.	Orobanchaceae	W	H	P	Whole plant	Diabetes & liver diseases	Oral	Juice is taken orally to empty stomach	0.11	0.02
6	Bilvapatre	<i>Aegle marmelos</i> (L.) Corrêa	Rutaceae	W/C	T	P	Fruits	Dysentery, diarrhea & piles	Oral	Ripened/ semi ripened fruit pulp grinded with milk and taken	0.50	0.11
7	Pashana bedhi	<i>Aerva lanata</i> (L.) Juss. ex Schult.	Amaranthaceae	W	H	A	Root	Kidney stone	Oral	Leaf juice is taken orally twice in a day for 3 days	0.61	0.14
8	Bhootahale	<i>Agave Americana</i> L.	Asparagaceae	W/C	H	P	Fruit	Kidney stone	Oral	Fresh fruits are chopped, boiled in salt solution & eaten	0.25	0.07
9	Mudrasada	<i>Aglaia lawii</i> (Wight) C.J.Saldanha	Meliaceae	W	T	P	Bark	Fever, influenza & cough	Oral	Bark decoction is taken orally	0.16	0.03
10	Ankole mara	<i>Alangium salvifolium</i> (L.f.) Wangerin	Cornaceae	W	T	P	Bark	Hernia	Topical	Bark paste with honey is taken orally	0.25	0.04
11	Lolesara	<i>Aloe vera</i> (L.) Burm.f.	Asphodelaceae	C	H	P	Leaves	Liver & spleen infection	Oral	Fresh leaf juice taken orally	0.75	0.26
							Leaves	Skin infections & wounds	Topical	Leaf paste is applied over affected area		
12	Dumbarasme	<i>Alpinia galanga</i> (L.) Willd	Zingiberaceae	C	H	P	Rhizome	Hypertension & heart diseases	Oral	Rhizome juice taken orally	0.54	0.16
13	Haale mara	<i>Alstonia scholaris</i> (L.) R.Br.	Apocynaceae	W	T	P	Bark	Fever	Oral	Bark decoction is taken orally	0.33	0.07
14	Hongone soppu	<i>Alternanthera sessilis</i> (L.) DC.	Amaranthaceae	W	H	A	Leaves	Blurred vision & kidney stone	Oral	Leaves are eaten raw or cooked to prepare recipe as leafy vegetable	0.22	0.03
15	Suvarnagedde	<i>Amorphophallus bulbifer</i> (Roxb) Bl	Araceae	C	H	A	Corms	Piles & gastritis	Oral	25 grams of washed corms are taken raw to empty stomach	0.40	0.09
16	Kaadu dhraakshi	<i>Ampelocissus tomentosa</i> (B.Heyne & Roth) Planch.	Vitaceaa	W	C	P	Root	Edema & wound healing	Topical	Root paste is applied over the affected area	0.15	0.02
17	Kagemari gida	<i>Anamirta cocculus</i> (L.) Wight & Arn.	Menispermaceae	W	C	P	Leaves	Headlice	Topical	Leaf juice is applied to head and washed with warm water	0.12	0.02
							Leaves & stem	Headache & fever	Topical	Paste is applied over forehead and chest respectively		

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18	Nelabevu	<i>Andrographis paniculata</i> (Burm.f.) Nees	Acanthaceae	W	H	A	Leaves	Fever, cough & cold	Oral	Whole plant is soaked overnight, and the solution is consumed empty stomach	0.50	0.12
19	Kaasina sarada gida	<i>Andrographis serpyllifolia</i> (Vahl) Wight	Acanthaceae	W	H	P	Whole plant	Viper bite	oral	Whole plant grinded with cow urine taken orally immediately after bite	0.23	0.05
20	Datthuri	<i>Argemone mexicana</i> L.	Papaveraceae	W	H	P	Stem & root	Mycosis	Topical	Stem latex and dried root powder paste is applied over affected area	0.35	0.10
							Root	Asthma	Oral	Dried root powder taken with milk twice a day		
21	Uganiballi	<i>Argyreia elliptica</i> (Roth) Choisy	Convolvulaceae	W	C	P	Latex	Wound healing & skin infections	Topical	Latex mixed grinded with ginger is applied over affected area	0.23	0.05
22	Havumaari gedde	<i>Arisaema tortuosum</i> (Wall) Schott & Endl. var. <i>tortuosum</i>	Araceae	W	H	A	Rhizome	Rheumatis & Bone fracture	Oral	Rhizome decoction is taken orally	0.24	0.03
23	Eeshwari balli	<i>Aristolochia indica</i> L.	Aristolochiaceae	W	C	P	Leaves	Biliousness	Oral	Diluted leaf juice taken orally	0.66	0.24
							Whole Plant	Arthritis	Topical	Plant paste with limestone powder is packed around affected joint		
							Root	Menstrual inducing & abortifacient	Oral	Diluted root juice is taken orally		
							Root	Skin infections	Topical	Root paste is applied over affected area		
24	Shathavari	<i>Asparagus racemosus</i> Willd.	Asparagaceae	W	S	P	Leaves	Diarrhoea & dysentery	Oral	Young leaves are eaten raw	0.52	0.09
25	Adavi nimbe	<i>Atalantia monophylla</i> (Roxb.) A.D.C.	Rutaceae	W	T	P	Leaf	Paralysis & skin infection	Topical	Dried leaves grinded paste is applied over affected area	0.45	0.09
26	Beevu	<i>Azadirachta indica</i> A.Juss.	Meliaceae	C/W	T	P	Leaves	Chickenpox	Topical	Leaves paste applied over body & leaves used in bathing water	0.52	0.11
							Leaves, bark, fruit	Dental & gastritis	Topical	Leaves are eaten raw		
27	Ganjimullu	<i>Azima tetracantha</i> Lam.	Salvadoraceae	W	S	P	Leaves	Clogged ear & mouth ulcers	Topical	Leaf juice dropped into ears. Leaf juice gargled for ulcers	0.22	0.04
28	Golisoppu	<i>Bacopa monnieri</i> (L.) Pennell	Plantaginaceae	W	H	P	Leaves	Dementia & Delayed speech	Oral	Leaf crushed with ginger is made into pill taken twice a day for 7 weeks	0.33	0.06
29	Ingudi mara	<i>Balanites aegyptiaca</i> (L.) Delile	Zygophyllaceae	W	T	P	Bark	Tumour	Oral	Bark decoction is administered orally	0.22	0.06
							Fruits	Jaundice & piles	Oral	Fruits are soaked in warm water overnight & taken orally		
30	Mullu jaaji	<i>Barleria buxifolia</i> L.	Zygophyllaceae	W	T	P	Leaves & root	Dry cough	Oral	Boiled decoction is used in gargle	0.46	0.10

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31	Mullu goranti	<i>Barleria prionitis</i> L.	Acanthaceae	W	S	P	Root	Tooth decay	Oral	Root crushed, boiled in water and decoction is used in gargle	0.29	0.05
32	Samudrakai	<i>Barringtonia racemosa</i> (L.) Spreng.	Lecythidaceae	W	T	P	Leaves	Cough & asthma	Oral	Vapors from Boiling leaf decoction is inhaled and taken orally	0.15	0.03
33	Basavanapadha	<i>Bauhinia racemosa</i> Lam.	Fabaceae	W	T	P	Leaves & Bark	Diarrhea, ringworms & tapeworms	Oral	Decoction of leaf & bark taken orally	0.60	0.20
34	Mandarahoovu	<i>Bauhinia variegata</i> L.	Fabaceae	W	T	P	Leaves	Jaundice	Oral	Leaf juice taken orally	0.42	0.09
35	Gajjalige	<i>Biancaea decapetala</i> (Roth) O. Deg.	Fabaceae	W	T	P	Root	Arthritis	Topical	Root paste is applied to affected area	0.15	0.03
							Leaves & Seeds	Jaundice	Topical & oral	Leaf paste is rubbed over body 30 min before bathing & seeds decoction is taken orally		
36	Punrnava	<i>Boerhavia diffusa</i> L.	Nyctaginaceae	W	H	P	Whole plant	Odema, diuretic, asthma & urinary disorders	Oral	Leaf & root dried powdered decoction is taken orally	0.59	0.16
37	Guggal mara	<i>Boswellia serrata</i> Roxb.	Burseraceae	W	T	P	Leaves	Arthritis	Topical	Leaf paste packed over affected joints. Powdered resin is sprayed on burning charcoal & the smoke is inhaled against cold	0.55	0.18
38	Bisila Balli	<i>Bridelia scandens</i> (Roxb.) Willd.	Euphorbiaceae	W	S	P	Root	Piles	Oral	Root powder is taken orally with coconut water	0.32	0.07
39	Murkallu mara	<i>Buchanania cochinchinensis</i> (Lour.) M.R.Almeida	Anacardiaceae	W	T	P	Seeds & bark	Impotence & premature ejaculation	Oral	Decoction from mixture of dried seeds & bark is taken orally	0.12	0.02
40	Mutthuga	<i>Butea monosperma</i> (Lam.) Taub.	Fabaceae	W	T	P	Seeds	Abortive	Oral	Seed extract taken orally for 3 days	0.25	0.04
							Bark	Piles	Oral	Bark paste is applied over the protruded hemorrhoids		
41	Maragadegida	<i>Cadaba fruticose</i> (L.) Druce	Capparidaceae	W	S	P	Leaf	Worm infestation & constipation	Oral	Leaf juice is taken orally	0.33	0.08
42	Dodda naathada gida	<i>Callicarpa tomentosa</i> (L.) L.	Verbenaceae	W	T	P	Leaves & bark	Mouth ulcers & fever	Topical	Bark paste is applied over forehead & chest for fever & Leaf decoction is gargled for ulcers	0.25	0.08
43	Yekka	<i>Calotropis procera</i> (Aiton) W.T.Aiton	Apocynaceae	W/C	S	P	Leaves	Wound healing	Topical	Milky sap is applied on the wound directly	0.62	0.26
							Leaves	Balagraha/ malnutrition	Topical	Leaves along with Basil leaves are dried, powdered and paste is applied over & tagged in a white cloth to neck.		
44	Thotteballi	<i>Capparis zeylanica</i> L.	Capparaceae	W	C	P	Lf & Fr	Wounds & boils	Topical	Paste is applied over affected area	0.41	0.09

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45	Bettha menasu	<i>Capsicum frutescens</i> L.	Solanaceae	C	S	P	Fruits	Cough	Oral	Fruits crushed with leaves of <i>Rubia cordifolia</i> and taken orally	0.19	0.02
46	Undimara	<i>Carallia brachiata</i> (Lour.) Merr.	Rhizophoraceae	W	T	P	Leaf	Oral ulcer & bad breathe	Oral	Leaves are chewed and swallowed	0.31	0.07
47	Kaage kaayi	<i>Careya arborea</i> Roxb.	Lecythidaceae	W	T	P	Bark, leaves, fruits	Sinus	Topical	Bark decoction is used as nasal drop	0.42	0.13
48	Chikka Kavali hanu	<i>Carissa spinarum</i> L.	Apocynaceae	W	S	P	Fruit	Sore throat & cough	Oral& topical	Fruits are eaten raw & leaf paste applied over throat	0.15	0.03
49	Baine mara	<i>Caryota urens</i> L.	Arecaceae	W	T	P	Sap	Gastric, stomach, & urinary problems.	Oral	Freshly collected Sap is taken orally	0.25	0.04
50	Kakke	<i>Cassia fistula</i> L.	Fabaceae	C/W	T	P	Bark Root	Dysentery Migraine	Oral Topical	Bark crushed and juice is taken orally Root crushed and filtered extract is used as nasal drops	0.71	0.31
51	Akashaballi	<i>Cassytha filiformis</i> L.	Lauraceae	W	C	P	Stem Fruit	Hair fall Conjunctivitis	Topical Topical	Stem is dried and powdered, paste is applied to hair 1 hour prior to bath Ripened fruit juice pulp used as eye drop	0.45	0.14
52	Nithyapushpa	<i>Catharanthus roseus</i> (L.) G.Don	Apocynaceae	C	S	P	Leaves & flowers Nithyapushpa	Diabetes Menorrhagia	Oral	Fresh leaves & petals are eaten raw Leaf juice taken with coconut milk twice a day	0.52	0.30
53	Buddhi mara	<i>Celastrus paniculatus</i> Willd.	Celastraceae	W	C	P	Leaf & Seeds	Insomnia	Topical	Thick paste is applied over forehead	0.56	0.20
54	Ondhelaga	<i>Centella asiatica</i> (L.) Urban	Apiaceae	W	H	A	Leaves	Cardiac problems	Oral	Leaf juice is taken with honey or cow milk	0.62	0.29
55	Pushakara moola	<i>Cheilocostus speciosus</i> (J.Konig) C.Specht	Costaceae	W	H	A	Rhizome	Diabetes, headache & body heat	Oral	Rhizome juice prepared kept overnight and taken orally	0.15	0.03
56	Nelasekkare/ Bhumisakkare	<i>Chlorophytum laxum</i> R.Br.	Asparagaceae	W	H	A	Tuber	Bronchitis & piles	Oral	Tuber juice is taken orally	0.23	0.04
57	Huragalu mara	<i>Chloroxylon swietenia</i> DC.	Rutaceae	W	T	P	Leaf & Bark Leaf & Bark	Contusions & painful joints. Wounds & rheumatism	Oral Topical	Bark decoction is taken orally Leaf paste is applied on wounds and in rheumatism	0.16	0.02
58	Sandhuballi	<i>Cissus quadrangularis</i> L.	Vitaceae	C	C	P	Whole plants	Fracture, paralysis & leg pain	Topical	Whole plant is crushed and dressed on the affected part for 12 hours daily till cure	0.53	0.16
59	Herilkayi	<i>Citrus medica</i> L.	Rutaceae	C	T	P	Fruits	Cardiac problems & diabetes	Oral	Fruit peel is boiled with salt and decoction is administered orally	0.46	0.08
60	Baari jwarada balli	<i>Clematis gouriana</i> Roxb.	Ranunculaceae	W	C	P	Leaves	Leprosy & fever	Topical	Leaf paste applied over forehead & chest for fever and over affected area for leprosy	0.33	0.06

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61	Nantuballi	<i>Clematis zeylanica</i> (L.) Poir.	Ranunculaceae	W	C	P	Leaves	Cold & headache	Inhalation	Leaf & stem grinded, boiled, vapour is inhaled	0.15	0.02
62	Naramballi	<i>Cleome gynandra</i> L.	Cleomaceae	W	H	A	Leaves	Migraine	Topical	Leaf juice is used as nasal drops	0.45	0.15
63	Gantubharangi	<i>Clerodendrum serratum</i> (L.) Moon	Verbenaceae	W	S	P	Leaves & flower	Stomach worm	Oral	Young shoot & buds paste is taken orally.	0.35	0.05
64	Shankapushpa	<i>Clitoria ternatea</i> L.	Fabaceae	W	C	P	Leaves	Stress & depression	Oral	Leaf juice is taken orally	0.22	0.05
65	Dadgiballi	<i>Cocculus hirsutus</i> (L.) Diels	Menispermaceae	W	C	P	Root	Diabetes	Oral	Dried root powder decoction is taken to empty stomach for 3 months	0.56	0.12
							Leaves	Leucorrhoea	Oral	Leaf juice taken with milk twice a day		
66	Kesavina beru	<i>Colocasia esculenta</i> (L.) Schott.	Araceae	C	H	A	Tuber	Hairfall	Topical	Corm paste is applied 30 minutes prior to bath	0.22	0.06
67	Hasaraani	<i>Convolvulus arvensis</i> L.	Convolvulaceae	W	C	A	Leaves	Constipation	Oral	Leaf juice is taken orally	0.09	0.01
68	Senabu	<i>Corchorus capsularis</i> L.	Tiliaceae	C	S	A	Root	Dysentery	Oral	Root paste with curd taken orally	0.10	0.01
69	Vishamunguli	<i>Crinum viviparum</i> (Lam.) R.Anvari & V.J.Nair	Amaryllidaceae	W	H	A	Leaves & bulb	Skin diseases & herpes	Topical	Paste mixture with salt is applied to affected area	0.15	0.02
70	Medhugoli hambu	<i>Cryptolepis dubia</i> (Burm.f.) M.R.Almeida	Apocynaceae	W	C	P	Root	Myalgia & arthritis	Oral	Root decoction is taken orally	0.45	0.11
71	Kowte kaayi	<i>Cucumis sativus</i> L.	Cucurbitaceae	W	H	A	Fruits	Whitlow	Topical	Make a whole in the fruit, put infected finger into it and kept it inside for an hour.	0.36	0.06
72	Nela tengu	<i>Curculigo orchoides</i> Gaertn.	Hypoxidaceae	W	H	A	Roots	Diabetes	Oral	Root extract is taken orally before food	0.23	0.02
73	Arishina	<i>Curcuma longa</i> L.	Zingiberaceae	C	H	A	Rhizome	Antiseptic	Topical	Rhizome juice or powder paste is applied over wound	0.65	0.22
							Rhizome	Gastritis	Oral	Powder is mixed in warm water & taken to empty stomach		
74	Amara balli	<i>Cuscuta reflexa</i> Roxb.	Convolvulaceae	W	C	P	Whole plant	Epilepsy & Anxiety	Oral	50 ml of Leaf & stem decoction with 5 gms of sugar taken orally	0.18	0.06
75	Yemme gedde	<i>Cyanotis tuberosa</i> (Roxb.) Schult. & Schult.f.	Commelinaceae	W	H	A	Tuberous root	Diabetes	Oral	Root paste with lemon juice administered orally to empty stomach for 30 days	0.29	0.06
76	Haadeballi	<i>Cyclea peltata</i> Hook.f. & Thoms.	Menispermaceae	W	C	P	Leaves	Leucorrhoe	Oral	Leaf paste given early in the morning orally for 7 days	0.45	0.13
77	Majjige hullu	<i>Cymbopogon citratus</i> (DC.) Stapf.	Poaceae	C/W	H	P	Leaves	Gastritis	Oral	Leaves are crushed and juice is drink with mixing in hotwater Leaves are boiled in water and salt for 20 min., filtered and drank	0.32	0.09

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78	Garike	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	W	H	P	Leaves	Urinary problems & kidney stone	Oral	Leaf juice with milk taken orally	0.15	0.02
79	Konnari gedde	<i>Cyperus rotundus</i> L.	Cyperaceae	W	H	A	Whole plant	Intestinal worms & bowel complaints	Oral	Plant juice is taken orally to empty stomach	0.21	0.04
80	Beete	<i>Dalbergia Latifolia</i> Roxb.	Fabaceae	W	T	P	Bark	Fever	Oral	Bark boiled & decoction taken orally	0.12	0.03
81	Mardhuballi	<i>Dalbergia volubilis</i> Roxb.	Fabaceae	W	C	P	Leaves	Mouth ulcer & sore throat	Topical	Leaf juice is gargled thrice a day	0.09	0.01
82	Ummatthi/ Kolave hoo	<i>Datura stramonium</i> L.	Solanaceae	W/C	S	P	Leaves	Toothache	Topical	Seeds paste wrapped in cloth & kept over affected teeth (should not swallow saliva)	0.64	0.26
							Leaves	Herpes	Topical	Leaf & seed paste is applied over affected area		
83	Meese kayi gida	<i>Decalepis hamiltonii</i> Wight & Arn.	Apocynaceae	W	C	P	Root	Intestinal ulcers & gastritis	Oral	Root powder decoction is administered orally	0.59	0.23
84	Badhanike	<i>Dendrophthoe falcata</i> (L.f.) Ettingsh	Loranthaceae	W	S	P	Whole plant	Kidney stones & abortifacient	Oral	Dried powdered fruit taken with milk or buttermilk	0.15	0.03
85	Handiballi	<i>Derris scandens</i> (Roxb.) Benth.	Fabaceae	W	C	P	Stem	Myalgia	Oral	Dried stem powder decoction is taken orally with milk	0.35	0.07
86	Kaadu gumbala	<i>Dioscorea pentaphylla</i> L.	Dioscoreaceae	W	C	P	Tubers	Boils & burns	Topical	Tuber paste with coconut oil is applied over affected area	0.16	0.02
87	Boothkannu	<i>Diploclyisia glaucescens</i> (Blume) Diels	Menispermaceae	W	C	P	Leaf	Biliousness	Oral	Dried & powdered leaf is taken orally with milk	0.12	0.01
88	Lingathonde balli	<i>Diplocyclos palmatus</i> (L.) C.Jeffrey	Cucurbitaceae	W	C	A	Fruit	Infertility	Oral	Fruit juice is taken orally	0.09	0.01
89	Bandarike	<i>Dodonaea viscosa</i> Jacq.	Sapindaceae	W	S	P	Leaves	Bone fracture & arthritis	Topical	Leaf paste is packed over affected area	0.12	0.01
90	Kadu erulli	<i>Drimia indica</i> (Roxb.) Jessop	Asparagaceae	W	H	P	Bulb	Asthma	Oral	Boiled bulb decoction is taken orally	0.20	0.03
91	Krimi nashini	<i>Drosera indica</i> L.	Droseraceae	W	H	P	Whole plant	Corns & calluses	Topical	Grinded paste is applied over affected area	0.08	0.01
92	Brahmadande	<i>Echinops echinatus</i> Roxb.	Asteraceae	W	H	A	Leaves & root	Roundworm treatment	Oral	Mixer of root and leaves powder is consumed with milk to empty stomach.	0.32	0.10
93	Gurugadha soppu	<i>Eclipta prostrata</i> L.	Asteraceae	W	H	P	Whole plant	Liver problems, catarrh & cough	Oral	Leaf juice taken orally	0.62	0.18
94	Eleadike soppu	<i>Ehretia microphylla</i> Lam.	Boraginaceae	W	S	P	Leaves	Stomach pain & diarrhea	Oral	Leaf juice taken orally	0.10	0.01
95	Tupra	<i>Elaeocarpus serratus</i> L.	Elaeocarpaceae	W	T	P	Fruit	Food poisoning & dysentery	Oral	Fruit paste with butter taken orally	0.35	0.12
96	Vayu vidanga	<i>Embelia ribes</i> Burm.f.	Primulaceae	W	S	P	Fruits	Stress, headache & insomnia	Topical	Fruit juice taken orally	0.32	0.08
97	Kadu kottamri soppu	<i>Eryngium foetidum</i> L.	Apiaceae	W	H	A	Leaves	Constipation & intestinal worms	Oral	Leaf decoction made with jiggery is taken orally	0.10	0.01

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98	Akki gida	<i>Euphorbia hirta</i> L.	Euphorbiaceae	W	H	A	Root	Fever & stress	Oral	Root & leaf juice taken orally (Not more than 3 days)	0.25	0.05
							Leaves	Respiratory disorders & asthma	Oral	Leaf boiled in water, filtered, taken orally thrice a day (Not more than 3 days)		
99	Kalli	<i>Euphorbia tirucalli</i> L.	Euphorbiaceae	W	T	P	Leaves	Arthritis	Topical	Latex / milk is applied over the joints	0.19	0.03
100	Aralimara	<i>Ficus religiosa</i> L.	Moraceae	C	T	P	Leaves	Asthma & cough	Oral	Leaf boiling decoction is inhaled & fresh leaf juice is taken orally	0.32	0.10
							Bark	Paralysis	Topical	Bark paste is massaged over affected area		
101	Punarpuli	<i>Garcinia gummi-gutta</i> (L.) N.Robson	Clusiaceae	W/C	T	P	Fruit	Ulcers & weight loss	Oral	Juice made from fruits is taken orally	0.25	0.06
102	Bikke hannu	<i>Gardenia latifolia</i> Ait.	Rubiaceae	W	T	P	Fruit	Tooth decay & snake bite	Oral	Fruits are chewed & fruit juice is taken as antidote during snakebite	0.26	0.03
103	Kamsadhaballi	<i>Getonia floribunda</i> Roxb.	Combretaceae	W	C	P	Leaves	Fever	Oral	Leaf decoction taken orally	0.12	0.01
104	Thurike soppu	<i>Girardinia diversifolia</i> (Link) Fris.	Urticaceae	W	H	P	Root	constipation, gastritis	Oral	Decoction of the roots, mixed with <i>Centella asiatica</i> and taken orally	0.32	0.06
							Root	Hydrocele & oedema	Leaves	Leaves dried powdered boiled & paste applied over affected region (fresh leaves should not be touched with bare hands)		
105	Gowri gida	<i>Gloriosa superba</i> L.	Colchicaceae	W	H	A	Leaves & rhizome	Head lice	Topical	Rhizome & leaves are grinded to paste and applied to hairs with castor oil	0.55	0.16
							Tuber, seeds	Snakebite	Topical	Rhizome paste applied over bitten area		
106	Vadimadige	<i>Glycosmis pentaphylla</i> (Retz.) DC.	Rutaceae	W	S	P	Leaves & root	Liver damage & jaundice	Oral	Juice of leaf & root mixture is taken orally	0.15	0.02
107	Tadasalu	<i>Grewia tiliifolia</i> Vahl	Tiliaceae	W	T	P	Leaves & bark	Bone fracture & wound healing	Topical	Paste is plastered around the affected area	0.26	0.08
108	Madhunashini	<i>Gymnema sylvestre</i> (Retz.) R.Br. ex Sm.	Asclepiadaceae	W	C	P	Lf & Rt	Diabetes & bad cholesterol	Oral	Thoroughly boiled Decoction made from leaf & root is taken to empty stomach	0.33	0.10
109	Panchagini gedde	<i>Habenaria roxburghii</i> Nicolson	Orchidaceae	W	H	A	Tubers, leaves	Snake bite	Topical	Tubers eaten raw or juice is taken orally	0.12	0.03
110	Gandasaathi	<i>Hedychium spicatum</i> Sm	Zingiberaceae	C	H	A	Leaf, rhizome	Cough, asthma & bad breathe	Oral	Boiling decoction vapors are inhaled thrice a day	0.25	0.05
111	Mayina badanike	<i>Helianthus elastica</i> (Desr.)	Loranthaceae	W	P	P	Leaves	Kidney stone & abortifacient	Oral	A cup of leaf juice is taken orally early in the morning	0.12	0.02

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112	Sogade beru	<i>Hemidesmus indicus</i> (L.) R.Br. ex Schult.	Apocynaceae	W	H	P	Root	Impotence, infertility & blood purification	Oral	Root decoction with milk is taken orally	0.62	0.25
							Root	Impotence, urinary tract infection & skin infections	Oral	Juice of Root & leaf mixer is taken orally		
113	Kodasige	<i>Holarrhena pubescens</i> Wall. ex G.Don	Apocynaceae	W	T	P	Bark & seed,	Gastritis, intestinal worms & diarrhea	Oral	A teaspoon of dried bark & seed powder with a pinch of salt in water is kept overnight & taken on empty stomach	0.15	0.02
114	Thapsi	<i>Holoptelea integrifolia</i> (Roxb.) Planch.	Ulmaceae	W	T	P	Bark	Ringworm & scabies	Topical	Bark paste applied over affected area	0.12	0.01
115	Haasige mara	<i>Humboldtia brunonis</i> Wall.	Fabaceae	W	T	P	Leaves	Diabetes & arthritis	Oral	Decoction is taken orally and packed over joints for arthritis	0.08	0.01
116	Kaadubrami	<i>Hydrocotyle sibthorpioides</i> Lam.	Apiaceae	W	H	A	Leaves	Fever & edema	Oral & topical	Leaf juice taken orally, paste is applied over chest for fever & over legs for edema	0.11	0.01
117	Koolavalike	<i>Hygrophila auriculata</i> Schumach.	Acanthaceae	W	H	A	Leaves & root	Dysuria, renal calculi & diuretic	Oral	Pills made from grinded root and leaves, taken orally twice a day	0.12	0.01
118	Nojehullu	<i>Imperata cylindrica</i> (L.) P.Beauv.	Poaceae	W	H	P	Rhizome	Hematuria & hypertension	Oral	Cleaned rhizome is eaten raw or cooked	0.15	0.02
119	Kadu bellulli	<i>Iphigenia indica</i> (L.) A.Gray ex Kunth	Liliaceae	W	H	A	Whole plant	Gout	Oral	Juice is taken orally	0.08	0.01
							Corm	Acne & eczema	Topical	Paste is applied over affected area		
120	Kemou Kepula	<i>Ixora coccinea</i> L.	Rubiaceae	C	S	P	Flowers	Body heat	Oral	Petals juice mixed with milk and taken orally	0.25	0.02
121	Kaadu nallige	<i>Jasminum angustifolium</i> (L.) Willd.	Oleaceae	W	C	P	Leaves	Bone fracture	Oral	Leaves are grinded with egg white and taken orally	0.05	0.01
122	Mallige	<i>Jasminum sambac</i> (L.) Aiton	Oleaceae	C	S	P	Leaves	Wet dreams	Oral	Leaves grinded and mixed with buttermilk, taken to empty stomach for 7 days	0.09	0.01
123	Howtlukayi gida	<i>Jatropha curcas</i> L.	Euphorbiaceae	W/C	S	A	Leaves & fruit	Paralysis & arthritis	Topical	Crushed and boiled mixture is massaged over affected area	0.19	0.03
							Sap	Eczema & ringworm	Topical	Sap is applied over affected area		
124	Patrajeeva	<i>Kalanchoe pinnata</i> (Lam.) Pers.	Crassulaceae	W	H	P	Leaves	Leprosy	Topical	Leaf paste with turmeric is applied over the body	0.20	0.04
125	Mehandi	<i>Lawsonia inermis</i> L.	Lythraceae	C	S	P	Leaves	Heat exhaust	Topical	Leaves are grinded and paste is applied over the head and leave overnight	0.15	0.03

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126	Thumbe	<i>Leucas aspera</i> (Willd.) Link	Lamiaceae	W	H	P	Leaves	Fever	Oral	Leaves grinded and consumed with honey	0.65	0.29
							Leaves & stem cuttings	Scabies & rosacea	Topical	Leaves & stem decoction taken orally		
							Leaves & stem cuttings	Snake bite & scorpion sting	Oral	Leaves & stem decoction taken orally		
127	Bela	<i>Limonia acidissima</i> L.	Rutaceae	W/C	T	P	Leaves	Constipation & gastritis	Oral	Leaf juice is taken orally to empty stomach	0.16	0.03
128	Sampige	<i>Magnolia champaca</i> (L.) Baill. ex Pierre	Magnoliaceae	C	T	P	Leaves & flowers	Psoriasis	Topical	Leaves & flowers are grinded with coconut oil and paste is applied to the affected region	0.10	0.01
129	Kumkumadha mara	<i>Mallotus philippensis</i> (Lam.) Müll.Arg.	Euphorbiaceae	W	T	P	Leaves	Semen leakage	Oral	Leaves paste prepared with camphor is taken orally with honey	0.29	0.06
							Fruit	Intestinal worms	Oral	Fruit powder with raw milk is taken orally		
130	Bevu	<i>Melia dubia</i> Cav.	Meliaceae	W/C	T	P	Leaves	Skin infections	Topical	Leaf paste is applied over affected area	0.20	0.04
							Leaves	Food poison	Oral	Leaf juice with pinch of salt is taken to empty stomach		
131	Kadu kepula	<i>Memecylon umbellatum</i> Burm.f.	Melastomataceae	W	T	P	Leaves	Gonorrhoea	Oral	Leaf decoction boiled kept overnight and taken orally	0.15	0.02
132	Menthe	<i>Mentha arvensis</i> L.	Lamiaceae	C	H	P	Leaves	Indigestion, nausea, cold, bad breath & loose gums	Oral	Leaves are eaten raw	0.11	0.01
133	Nagasampige	<i>Mesua ferrea</i> L.	Calophyllaceae	W	T	P	Flowers	Piles	Oral	A teaspoon of Flowers paste with butter taken thrice a day	0.06	0.01
134	Anachae mara	<i>Miliusa velutina</i> (Dunal) Hook.f. & Thomson	Annonaceae	W	T	P	Bark	Gout	Topical	Bark paste is applied over affected joints	0.15	0.02
							Bark & leaves	Aphrodisiac	Oral	Leaf and bark decoction is taken orally		
135	Muttidhare muni	<i>Mimosa pudica</i> L.	Fabaceae	W	H	P/A	Root	Carbuncles	Topical	Roots grinded with lemon, pepper & garlic and applied over carbuncles	0.25	0.06
							Seeds & root	Piles, enlarged prostrate & sinus.	Oral	10 ml of diluted decoction of seeds & root is taken orally twice a day		
136	Pagade mara	<i>Mimusops elengi</i> L.	Sapotaceae	W	T	P	Bark	Tooth ache & tooth decay	Topical	Bark and leaves chewed with pinch of salt	0.08	0.01
							Leaves	Tooth cavity & loose gums	Topical	Crushed leaf with salt made into pill and kept over affected teeth		
							Fruits	Gastritis & intestinal ulcers	Oral	Ripened fruits are eaten raw.		

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137	Midi hagala	<i>Momordica dioica</i> Roxb. ex Willd.	Cucurbitaceae	W	C	A	Leaves	Fever	Oral	One glass leaf extract twice a day is consumed for 2 days	0.25	0.08
138	Noni	<i>Morinda citrifolia</i> L.	Rubiaceae	C	T	P	Fruit	Menstrual problems	Oral	Fermented fruit juice is taken orally	0.22	0.05
139	Nasgunni	<i>Mucuna pruriens</i> (L.) DC.	Fabaceae	W	C	P	Seeds	Snake bite & scorpion sting	Topical	Seed powder paste is tightly packed over bitten are	0.23	0.06
140	Karibevu	<i>Murraya koenigii</i> (L.) Sprengel	Rutaceae	C	T	P	Leaves	Iritis & cooling	Topical	Use neem water as eye drops and wash it with it.	0.32	0.12
							Leaves	Piles & edema	Topical	Leaf juice taken orally		
141	Tavare beru	<i>Nelumbo nucifera</i> Gaertner.	Nelumbonaceae	W	H	P	Leaves & rhizome	body heat, diabetes & insomnia	Oral	Juice of leaves & rhizome with buttermilk is taken orally	0.05	0.01
142	Durvasane mara	<i>Nothapodytes foetida</i> (Wight) Sleumer	Icacinaceae	W	T	P	Leaves	Cancer	Oral	Leaf decoction is administered orally	0.32	0.09
143	Thaavare	<i>Nymphaea nouchali</i> Burm.f.	Nymphaeaceae	W	A	P	Rhizome & leaves	Menorrhagia & diarrhea	Oral	Juice is taken orally	0.08	0.01
144	Thulasi	<i>Ocimum tenuiflorum</i> L.	Lamiaceae	C	H	P	Leaves & flower	Diabetes, blood pressure, nausea & vomiting	Oral	Fresh leaves & flowers are eaten raw	0.32	0.08
145	Kedige	<i>Pandanus odorifer</i> (Forssk.) Kuntze	Pandanaceae	W	S	P	Roots	Jaundice	Oral	Roots boiled in water are made into small pieces to be taken daily to empty stomach for 21 days.	0.09	0.01
146	Kosale hullu	<i>Panicum antidotale</i> Retz.	Poaceae	W	H	A	Whole plant	Sore throat	Topical	Grass is grinded with ash and applied over affected area	0.10	0.01
147	Thalavara	<i>Pergularia daemia</i> (Forssk.) Chiov.	Apocynaceae	W	C	P	Leaves	Asthma	Oral	Leaves crushed with salt, made into a pill & taken orally	0.19	0.03
148	Chatnisoppu / Pandara basale	<i>Persicaria chinensis</i> L.H.Gross	Polygonaceae	W	H	P	Leaves	Cataracts	Topical	Leaves Grinded & mucilage is filtered and used as eye drop during morning	0.08	0.01
149	Neerunji mara	<i>Ochreinauclea missionis</i> (Wall. ex G. Don) Ridsd.	Rubiaceae	W	T	P	Leaves	Rheumatism & paralysis	Topical	Leaf paste is applied over affected area	0.09	0.03
							Bark	Constipation & piles	Oral	Bark decoction taken orally		
150	Jalahippali	<i>Phyla nodiflora</i> (L.) Greene	Verbenaceae	W	H	A	Leaves	Constipation	Oral	Leaf juice is taken orally twice a day before food	0.10	0.01
151	Nelanelli	<i>Phyllanthus amarus</i> Schumach. & Thonn.	Phyllanthaceae	W	H	A	Leaves	Jaundice	Oral	Leaf juice taken orally twice a day	0.61	0.26
152	Bettadha nelli	<i>Phyllanthus emblica</i> L.	Phyllanthaceae	W	T	P	Fruit	Diarrhea & jaundice	Oral	Fruit pulp eaten raw	0.56	0.25
							Fruit, leaves	Hairfall & dandruff	Topical	Thick juice of leaf & fruit and applied as oil kept overnight		
153	Karihuli	<i>Phyllanthus reticulatus</i> Poir.	Phyllanthaceae	W	S	P	Bark	Syphilis	Topical	Bark paste is applied over affected area	0.15	0.03
							Fruits	Diabetes & diarrhea	Oral	Fruits are eaten raw		

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154	Hippali	<i>Piper longum</i> L.	Piperaceae	C	C	P	Fruit	Menstrual problems (menorrhagia & dysmenorrhea)	Oral	Pepper powder is taken orally with honey	0.60	0.24
155	Doddapathre	<i>Plectranthus amboinicus</i> (Lour.) Spreng.	Lamiaceae	C	H	A	Leaves	Bronchitis & asthma	Oral	Leaves eaten raw	0.12	0.03
156	Antu mallige	<i>Plumbago zeylanica</i> L.	Plumbaginaceae	W	H	P	Root	Poor appetite	Oral	Fresh roots are grinded with cardamom, mixed with tender coconut & drank in empty stomach	0.71	0.30
							Root	Wound healing, arthritis & tumor	Topical	Root paste is applied over the affected area		
157	Poude Mullu	<i>Polycarphaea corymbosa</i> (L.) Lam	Caryophyllaceae	W	H	A	Whole plant	Urinary calculi	Oral	Juice made with cow milk is taken orally, twice a day for 15 days	0.11	0.02
158	Gadde gonisoppu	<i>Portulaca pilosa</i> L.	Portulacaceae	W	H	A	Leaves	Fever & diuresis	Oral	Leaf juice is taken orally	0.15	0.03
159	Amarakeshi	<i>Potamogeton nodosus</i> Poir.	Potamogetonaceae	W	H	P	Leaves	Tuberculosis	Oral	Leaf juice is taken orally	0.08	0.02
160	Adke beelu	<i>Pothos scandens</i> L.	Araceae	W	C	P	Whole plant	Herpes & muscle cramp	Topical	Plant paste/ juice is applied over affected area	0.35	0.12
161	Gummadiballi	<i>Pueraria tuberosa</i> (Willd.) DC	Fabaceae	W	C	P	Tuber	Menorrhagia & Asthma	Oral	Tuber is eaten raw	0.26	0.08
162	Sarpagandha	<i>Rauvolfia serpentina</i> (L.) Benth. ex Kurz	Apocynaceae	W	S	P	Root	Snakebite, insomnia & diabetes	Oral	Root paste with curd in a copper vessel taken orally	0.62	0.28
163	Marakesu	<i>Remusatia vivipara</i> Schott	Araceae	W	E	P	Root	Pruritus & arthritis	Topical	Root paste is applied over affected area	0.06	0.01
164	Nagamallige	<i>Rhinacanthus nasutus</i> (L.) Kurz	Acanthaceae	W	S	P	Root & leaves	Eczema & scabies	Topical	Root & leaf paste with sea salt is applied over affected area	0.10	0.01
165	Kadu gulabi	<i>Rosa multiflora</i> Thunb.	Rosaceae	W	S	P	Leaves	Stress & anxiety	Oral	Leaf juice is taken orally	0.06	0.02
166	Gantubharangi	<i>Rotheeca serrata</i> (L.) Steane & Mabb.	Verbenaceaa	W	S	P	Leaves	Malarial fever & eye inflammation	Oral	Leaf juice is taken orally for Malarial fever & Diluted juice is used as drops for eyes.	0.10	0.01
167	Manjishta	<i>Rubia cordifolia</i> L.	Rubiaceae	W	C	P	Stem	Dermatitis & skin ulcers	Topical	Spiny twig is rubbed over the affected area, leaf paste applied after that	0.65	0.30
							Root	Blood purification & bad cholesterol	Topical	Root powder mixed in water & taken orally		
168	Naagadale	<i>Ruta graveolens</i> L.	Rutaceae	C	H	P	Leaves	Headache, joint pain, tendonitis & ligament damage	Topical	Leaf paste is applied on affected area and dressed with a cloth	0.54	0.24
169	Goddu mumbe	<i>Sansevieria roxburghiana</i> schult. & schult.f	Asparagaceae	W	H	P	Leaves	Cardiac problems	Oral	Leaf juice is taken orally	0.08	0.01
170	Srigandha	<i>Santalum album</i> L.	Santalaceae	C/W	T	P	Stem	Pimples, acne & blackheads	Topical	Stem paste with aloe vera applied over pimples	0.30	0.20

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171	Antawala	<i>Sapindus laurifolius</i> Vahl	Sapindaceae	W/C	T	P	Fruits	Leprosy	Topical	Paste of whole dried fruit is applied over the affected area	0.19	0.13
							Fruits	Abortifacient	Oral	Fruits soaked in water overnight and taken orally		
172	Ashoka	<i>Saraca asoca</i> (Roxb.) Willd.	Fabaceae	W	T	P	Bark	Dysentery	Oral	Pills prepared from grinded bark taken orally to empty stomach	0.15	0.06
173	Konadhaballli	<i>Sarcostigma kleinii</i> Wight & Arn.	Icacinaceae	W	C	P	Fr & Se	Rheumatism	Topical	Dried powdered paste is applied over affected area	0.12	0.02
							Bark	Leprosy & ulcer	Oral	Powdered bark is taken to empty stomach with honey		
174	Gundu badanike	<i>Scurrula parasitica</i> L.	Loranthaceae	W	P	P	Leaves	Schizophrenia & diabetes	Oral	one teaspoon of leaves powder is taken with coconut water	0.10	0.01
175	Kaadu seege	<i>Senegalia caesia</i> (L.) Maslin, Seigler & Ebinger	Fabaceae	W	C	P	Bark	Skin infections	Topical	Bark paste is applied over affected area	0.25	0.12
176	Segee kayi	<i>Senegalia rugata</i> (Lam.) Britton & Rose	Fabaceae	W	C	P	Fruit & seed	Hairfall & dandruff	Topical	Dried & powdered mixture is used as shampoo.	0.25	0.15
177	Aavarike	<i>Senna auriculata</i> (L.) Roxb.	Caesalpiniaceae	W	S	P	Root	Fever	Oral	Dried root powder is mixed with Water & taken orally	0.69	0.30
							Leaf & fruit	Diabetes	Oral	Paste mixed with lemon taken orally		
178	Agati	<i>Sesbania grandiflora</i> (L.) Poiret	Fabaceae	W	T	P	Leaves	Gastritis & body heat	Oral	Leaf juice is taken with buttermilk	0.20	0.01
							Flowers	Hairfall	Topical	Petal paste/ juice with castor oil is applies to hair one hour prior to bathing.		
179	Kadlegida	<i>Sida cordifolia</i> L.	Malvaceae	W	H	P	Leaves	Lumpy skin	Topical	Leaves are grinded with garlic & lemon, applied over the affected area	0.55	0.18
180	Baralukaddi	<i>Sida rhombifolia</i> L.	Malvaceae	W	S	P	Leaves	Inflammation, gastritis & fever.	Oral	Leaf & seeds warm decoction is taken orally	0.32	0.12
							Leaves	Rheumatism	Topical	Root paste is applied over the affected area		
181	Kalthambari	<i>Smilax zeylanica</i> L.	Smilacaceae	W	C	P	Fruit	Dental cavity	Topical	Dried fruit pill is placed over affected teeth in early stage	0.60	0.21
							Root	Arthritis	Oral	Root decoction is taken orally		
182	Ganaganike	<i>Solanum nigrum</i> L.	Solanaceae	W	H	P	Leaves & fruits	Diabetes	Oral	Leaves & fruits boiled with and taken orally to empty stomach	0.25	0.06

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				W	H	P						
183	Sunde gida	<i>Solanum virginianum</i> L.	Solanaceae	W	H	P	Fruit	Whitlow	Topical	Insert the affected finger into a ripe fruit.	0.20	0.03
							Leaves, fruit	chest pain & asthma	Oral	Decoction of fruit & root taken orally		
							Seeds	Tooth decay	Oral	Seeds pestle with pepper, made into a capsule & kept over affected teeth		
184	Moodugatti-nagida	<i>Sphaeranthus indicus</i> L.	Asteraceae	W	H	A	Leaves	Jaundice & liver problems	Oral	Leaf juice taken orally	0.55	0.19
185	Vanapaatha	<i>Stephania japonica</i> (Thunb.) Miers	Menispermaceae	W	C	P	Leaves	Dizziness & headache	Oral	Leaf juice taken with milk & sugar taken orally	0.18	0.02
186	Hegalu balli	<i>Stephanotis volubilis</i> (L.f.) S.Reuss, Liede & Meve	Apocynaceae	W	C	P	Leaves	Sneezing	Oral	Vapors from boiling leaf decoction is inhaled	0.16	0.01
187	Vishakoralu	<i>Strychnos nux-vomica</i> L.	Loganiaceae	W	T	P	Seed	Anxiety & migraine	Oral	Diluted seed decoction is taken orally	0.45	0.13
188	Nerale	<i>Syzygium cumini</i> L.	Myrtaceae	W	T	P	Bark & leaves	Dysentery	Oral	Leaf & bark juice is taken orally with raw milk	0.25	0.10
189	Hunase	<i>Tamarindus indica</i> L.	Fabaceae	W/C	T	P	Fruit	Constipation & diarrhoea	Bark & fruits	Bark decoction is taken orally	0.35	0.12
190	Pavatike	<i>Tarenna asiatica</i> (L.) Kuntze ex K.Schum.	Rubiaceae	W	T	P	Leaves	Boils & wounds	Topical	Leaf paste applied over affected area	0.15	0.05
191	Kaadu uddhu	<i>Teramnus labialis</i> (L.f.) Spreng.	Fabaceae	W	C	P	Leaves	Paralysis	Topical	Leaf paste with coconut oil is applied over affected area	0.16	0.02
192	Tare mara	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Combretaceae	W	T	P	Fruit	Hepatitis & jaundice	Oral	Fruit powder is taken orally with milk	0.32	0.17
193	Alale	<i>Terminalia chebula</i> Retz.	Combretaceae	W	T	P	Fruit	Loose & bleeding gums & mouth ulcers	Oral	Fruit powder is chewed with beetle leaf	0.19	0.09
							Fruit	Dementia & Diabetes	Oral	Powdered fruit is taken orally with milk		
194	Buduri mara	<i>Thespesia populnea</i> (L.) Sol. ex Corrêa	Malvaceae	W	T	P	Leaves	Skin infections	Topical	Leaf paste is applied over affected area	0.12	0.01
195	Chakranike	<i>Thottea siliquosa</i> (Lam.) Ding Hou	Aristolochiaceae	W	S	P	Roots	Vomiting & dysentery	Oral	Roots grinded and taken orally with lemon juice, twice daily for 2 days	0.40	0.12
196	Amruthaballi	<i>Tinospora cordifolia</i> (Thunb.) Miers	Menispermaceae	W/C	H	P	Leaves	Diabetes	Oral	Fresh leaves are eaten raw to empty stomach	0.59	0.15
							Leaves	Fever	Oral	Leaves grinded with cumin and eaten		
197	Kaadu menasu	<i>Toddalia asiatica</i> (L.) Lam.	Rutaceae	W	L	P	Root	Wounds & skin infections	Oral	Root paste is applied over affected area	0.62	0.21
							Fruit	Dry cough Asthma	Oral	Dried fruit powder decoction is administered orally		
198	Mullukombu balli	<i>Trapa natans</i> var. <i>bispinosa</i> Roxb	Trapaceae	W	H	A	Fruits	Menorrhagia & gonorrhoea	Oral	Fruits eaten raw	0.12	0.01

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199	Neggin mullu	<i>Tribulus terrestris</i> L.	Zygophyllaceae	W	H	A	Root	Male infertility & sensuality	Oral	Root juice taken orally	0.25	0.04
							Fruit & leaves	Cardiac problems	Oral	Dried & powdered mixture is mixed in water & taken orally before meals twice a day		
200	Kagemari kayi	<i>Trichosanthes tricuspidata</i> Lour.	Cucurbitaceae	W	C	P	Fruit	Migraine & ozaena	Oral	Fruit is crushed and used as nasal drop	0.16	0.03
							Root	Arthritis	Topical	Root paste is applied over affected area		
201	Kadu bende	<i>Triumfetta rhomboidea</i> Jacq.	Malvaceae	W	S	P	Leaves & fruits	Skin infections	Topical	Fruit & leaf paste grinded with salt applied over affected area	0.10	0.01
							Leaves	Intestinal ulcers	Topical	Leaf juice is taken orally		
202	Aadu mut- tada balli	<i>Tylophora indica</i> (Burm.f.) Merr.	Apocynaceae	W	C	P	Leaves	Asthma & rhinitis	Oral	Leaves crushed and sap is used as nasal drops	0.35	0.07
203	Anejondu	<i>Typha angustifolia</i> L.	Typhaceae	W	H	P	Rhizome	Kidney stones &menstruation problems	Oral	Fresh rhizome is eaten raw to empty stomach	0.08	0.01
204	Gullegida	<i>Utricularia stellaris</i> L.f.	Lentibulariaceae	W	A	A	Whole plant	Kidney stone	Oral	Plant decoction taken orally	0.06	0.01
205	Kariballi	<i>Uvaria narum</i> Wall.	Annonacea	W	S	P	Bark	Jaundice	Oral	Bark decoction in with sugar is taken orally	0.12	0.02
206	Kari jaali	<i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb.	Fabaceae	W	T	P	Fruits	Ulcer	Oral	Dried fruit powder taken orally along with honey or milk.	0.70	0.28
							Bark	Piles	Oral	Bark decoction is taken orally		
							Twig	Dental problems	Topical	Twig used as tooth brush. Small pieces are chewed for decay & loose gums		
207	Bandanike	<i>Vanda tessellata</i> (Roxb.) Hook. ex G.Don	Orchidaceae	W	H	P	Leaves	Indigestion & piles	Oral	Leaf juice is taken orally	0.06	0.01
208	Haruge	<i>Ventilago maderaspatana</i> Gaertn	Rhamnaceae	W	T	P	Bark	Leprosy & scabies	Topical	Bark paste is applied over affected area.	0.45	0.15
							Seeds	Diabetes	Oral	A teaspoon of seed powdered taken on empty stomach with a cup of milk.		
209	Kaadujeera	<i>Vernonia anthelmintica</i> (L.) Willd.	Asteraceae	W	S	P	Seeds	Leprosy	Topical	Seed paste applied over affected area	0.11	0.01
210	Hasiru bandu	<i>Viscum orientale</i> Willd.	Loranthaceae	W	P	P	Leaves	Migraine	Topical	Leaf paste is applied over forehead	0.08	0.02
211	Lakki	<i>Vitex negundo</i> L.	Verbenaceae	W	S	P	Leaves	Snake bite	Oral	Leaf juice taken orally	0.60	0.21
							Leaves	Asthma	Inhalation	Leaves burned and fumes inhaled		
212	Hegalu balli	<i>Wattakaka volubilis</i> Stapf.	Apocynaceae	W	C	P	Leaves	Snake bite	Topical	Leaf paste is packed over the bitten area	0.20	0.03
213	Ashwagandha	<i>Withania somnifera</i> (L.) Dunal	Solanaceae	W	S	P	Root	Stress & neural problems	Oral	Root decoction is taken orally	0.59	0.17
							Leaves & flowers	Infertility & kidney problems	Oral	Juice along with cow milk taken orally		

	Local name	Scientific name	Family	Life habit and habitat/ forms			Part used	Disease treated	Application mode	Formulation or mode of preparation	UV	RFC
214	Beppale mara	<i>Wrightia tinctoria</i> R.Br.	Apocynaceae	W	T	P	Latex & leaves	Toothache & decay	Topical	Leaves crushed in stem latex is made into a pill and kept over affected teeth	0.39	0.17
215	Beetadhavarike	<i>Xylia xylocarpa</i> Roxb. Taub.	Fabaceae	W	T	P	Bark	Vermifuge & dysentery	Oral	Decoction of bark is given orally	0.16	0.02
216	Kadu shunti	<i>Zingiber montanum</i> (J.König) Link ex A.Dietr.	Zingerberaceae	W	H	A	Rhizome	Indigestion & stomach bloating	Topical & oral	Rhizome with pinch of salt is chewed	0.42	0.12
							Rhizome	Arthritis & gout	Topical & oral	Juice taken orally & Paste is applied over affected area		
217	Shunti	<i>Zingiber officinale</i> Roscoe	Zingiberaceae	C	H	B	Rhizome	Cold & cough	Oral	Crushed rhizome is boiled in water with salt & pepper. Drink the Decoction.	0.61	0.21
218	Bore hannu	<i>Ziziphus jujuba</i> Mill.	Rhamnaceae	W	S	P	Fruit	Weight loss, bad cholesterol & hypertension	Oral	Fruit pulp kept overnight, crushed in table salt solution and taken orally.	0.26	0.12
219	Choori mullu	<i>Ziziphus oenopolia</i> (L.) Mill.	Rhamnaceae	W	S	P	Leaves	Wound healing	Topical	Leaf paste is used in dressing of wounds	0.19	0.07
							Fruit	Sore throats, dysentery & uterus inflammation	Oral	Fruits are juice is taken orally		
220	Jollu soppu	<i>Zornia gibbosa</i> Span.	Fabaceae	W	H	A	Leaves	Diabetes	Oral	Leaves are chewed and swallow to empty stomach	0.12	0.02

Habit: H—Herb | S—Shrub | C—Climber | T—Tree | Habitat: W—Wild | C—cultivated | Longevity: A—Annual | P—Perennial.

Table 2. Informant consensus factor (ICF) & fidelity level (FL).

Category of diseases	Number of use-report	Number of taxa used	ICF	Plants with the highest Fidelity (%)
Gastrointestinal diseases	102	62	0.40	<i>Cymbopogon citratus</i> (0.68), <i>Aegle marmelos</i> (0.62), <i>Momordica dioica</i> (0.59), <i>Garcinia gummi-gutta</i> (0.58)
Respiratory diseases	38	28	0.27	<i>Solanum virginianum</i> (82.0), <i>Euphorbia hirta</i> (71.6)
Muscles & Bone disorders	40	32	0.20	<i>Plumbago zeylanica</i> (61.5), <i>Grewia tiliifolia</i> (54.1)
Urinary disorders	23	20	0.14	<i>Cynodon dactylon</i> (86.7), <i>Boerhavia diffusa</i> (72.4)
Sexual disorders	32	21	0.35	<i>Aristolochia indica</i> (19.6), <i>Diplocyclos palmatus</i> (16.6)
Glandular disorders	41	28	0.32	<i>Tinospora cordifolia</i> (92.3), <i>Cheilocostus speciosus</i> (86.4), <i>Curculigo orchioides</i> (65.4)
Ear, Nose, Eyes and Mouth(ENEM)disease	29	20	0.32	<i>Vachellia nilotica</i> (66.2), <i>Terminalia chebula</i> (45.3), <i>Gardenia latifolia</i> (39.8)
Dermatological	88	42	0.52	<i>Aloe vera</i> (96.0), <i>Rubia cordifolia</i> (85.6), <i>Melia dubia</i> (66.2)
Nervous disorders	16	13	0.20	<i>Withania somnifera</i> (77.6), <i>Strychnos nux-vomica</i> (66.8)
Cardiovascular disorders	12	10	0.18	<i>Centella asiatica</i> (36.3), <i>Citrus medica</i> (35.0)
Snake & scorpion bite	14	13	0.07	<i>Rauvolfia serpentina</i> (96.3), <i>Habenaria roxburghii</i> (65.6)
Infectious	26	18	0.32	<i>Zingiber officinale</i> (62.3), <i>Leucas aspera</i> (61.9)

value was recorded for dermatological diseases (0.52), followed by gastrointestinal disease (0.40) categories, while the lowest ICF value was recorded for snake & scorpion bites (0.07), and urinary disorders (0.14)

categories. These findings reveal that dermatological and gastrointestinal disorders are frequent in the study area. Similar results have been reported in different studies (Ayyanar & Ignacimuthu 2011; Umair et al. 2017)

Table 3. IUCN Red List categories of medicinal plants in Hassan District.

	Scientific name	Family	IUCN status
1	<i>Hygrophila auriculata</i> Schumach.	Acanthaceae	Least Concern
2	<i>Crinum viviparum</i> (Lam.) R.Ansari & V.J.Nair	Amaryllidaceae	Least Concern
3	<i>Centella asiatica</i> (L.) Urban	Apiaceae	Least Concern
4	<i>Hydrocotyle sibthorpioides</i> Lam.	Apiaceae	Least Concern
5	<i>Calotropis procera</i> (Aiton) W.T.Aiton	Apocynaceae	Least Concern
6	<i>Carissa spinarum</i> L.	Apocynaceae	Least Concern
7	<i>Decalepis hamiltonii</i> Wight & Arn.	Apocynaceae	Endangered
8	<i>Holarhena pubescens</i> Wall. ex G.Don	Apocynaceae	Least Concern
9	<i>Pergularia daemia</i> (Forssk.) Chiov.	Apocynaceae	Least Concern
10	<i>Colocasia esculenta</i> (L.) Schott.	Araceae	Least Concern
11	<i>Caryota urens</i> L.	Arecaceae	Least Concern
12	<i>Eclipta prostrata</i> L.	Asteraceae	Least Concern
13	<i>Sphaeranthus indicus</i> L.	Asteraceae	Least Concern
14	<i>Garcinia gummi-gutta</i> (L.) N.Robson	Clusiaceae	Least Concern
15	<i>Gloriosa superba</i> L.	Colchicaceae	Least Concern
16	<i>Cuscuta reflexa</i> Roxb.	Convolvulaceae	Least Concern
17	<i>Alangium salvifolium</i> (L.f.) Wangerin	Cornaceae	Least Concern
18	<i>Cheilocostus speciosus</i> (J.Konig) C.Specht	Costaceae	Least Concern
19	<i>Cyperus rotundus</i> L.	Cyperaceae	Least Concern
20	<i>Drosera indica</i> L.	Droseraceae	Least Concern
21	<i>Euphorbia tirucalli</i> L.	Euphorbiaceae	Least Concern
22	<i>Mallotus philippensis</i> (Lam.) Müll.Arg.	Euphorbiaceae	Least Concern
23	<i>Biancaea decapetala</i> (Roth) O. Deg.	Fabaceae	Least Concern
24	<i>Butea monosperma</i> (Lam.) Taub.	Fabaceae	Least Concern
25	<i>Cassia fistula</i> L.	Fabaceae	Least Concern
26	<i>Dalbergia latifolia</i> Roxb.	Fabaceae	Vulnerable
27	<i>Derris scandens</i> (Roxb.) Benth.	Fabaceae	Least Concern
28	<i>Mimosa pudica</i> L.	Fabaceae	Least Concern

	Scientific name	Family	IUCN status
29	<i>Saraca asoca</i> (Roxb.) Willd.	Fabaceae	Vulnerable
30	<i>Senegalia caesia</i> (L.) Maslin, Seigler & Ebinger	Fabaceae	Least Concern
31	<i>Tamarindus indica</i> L.	Fabaceae	Least Concern
32	<i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb	Fabaceae	Least Concern
33	<i>Barringtonia racemosa</i> (L.) Spreng.	Lecythidaceae	Least Concern
34	<i>Iphigenia indica</i> (L.) A.Gray ex Kunth	Liliaceae	Least Concern
35	<i>Magnolia champaca</i> (L.) Baill. ex Pierre	Magnoliaceae	Least Concern
36	<i>Aglaia lawii</i> (Wight) C.J.Saldanha	Meliaceae	Least Concern
37	<i>Azadirachta indica</i> A.Juss.	Meliaceae	Least Concern
38	<i>Nelumbo nucifera</i> Gaertner.	Nelumbonaceae	Least Concern
39	<i>Vanda tessellata</i> (Roxb.) Hook. ex G.Don	Orchidaceae	Least Concern
40	<i>Aeginetia indica</i> L.	Orobanchaceae	Least Concern
41	<i>Pandanus odorifer</i> (Forssk.) Kuntze	Pandanaceae	Least Concern
42	<i>Phyllanthus emblica</i> L.	Phyllanthaceae	Least Concern
43	<i>Bacopa monnieri</i> (L.) Pennell	Plantaginaceae	Least Concern
44	<i>Carallia brachiata</i> (Lour.) Merr.	Rhizophoraceae	Least Concern
45	<i>Ochreinauclea missionis</i> (Wall. ex G. Don) Ridsd.	Rubiaceae	Vulnerable
46	<i>Aegle marmelos</i> (L.) Corrêa	Rutaceae	Near Threatened
47	<i>Chloroxylon swietenia</i> DC.	Rutaceae	Least Concern
48	<i>Citrus medica</i> L.	Rutaceae	Least Concern
49	<i>Glycosmis pentaphylla</i> (Retz.) DC.	Rutaceae	Least Concern
50	<i>Azima tetracantha</i> Lam.	Salvadoraceae	Least Concern
51	<i>Santalum album</i> L.	Santalaceae	Vulnerable
52	<i>Mimusops elengi</i> L.	Sapotaceae	Least Concern
53	<i>Capsicum frutescens</i> L.	Solanaceae	Least Concern
54	<i>Typha angustifolia</i> L.	Typhaceae	Least Concern
55	<i>Callicarpa tomentosa</i> (L.) L.	Verbenaceae	Least Concern
56	<i>Balanites aegyptiaca</i> (L.) Delile	Zygophyllaceae	Least Concern

for the highest values recorded for said categories. High ICF values suggest effective treatments and could help identify promising plant taxa for novel phytocompounds (Giday et al. 2009).

Fidelity level (FL)

The fidelity level (FL) of the most significant plant species employed for various disease categories was

determined (Table 2). Higher FL of a species shows the extensive use of a plant species to treat a specific disease in the study area. The highest FL of 96.3% by *Rauvolfia serpentina* for snakebite and 96% by *Aloe vera* for dermatological diseases was recorded. Species like *Cymbopogon citratus* (0.68%), *Solanum virginianum* (82.0%), *Cynodon dactylon* (86.7%), *Cheilocostus speciosus* (86.4%), *Withania somnifera* (77.6%), and

Vachellia nilotica (66.2%) recorded the highest FL for gastrointestinal diseases, respiratory diseases, urinary disorders, diabetes, nervous disorders, and dental problems, respectively. *Aristolochia indica* (19.6%) and *Diplocyclos palmatus* (16.6%) exhibited lower FL for sexual disorders, indicating the less common usage of those plants in the study area.

Higher FL% for widely used species indicated that many people used them frequently, whereas lower FL% indicated that the informants did not agree on the same species. Prior researchers analysed ethnobotanical data using FL% as a quantitative measure (Ayyanar & Ignacimuthu 2011). Higher preference species can be used for pharmaceutical research to confirm their utility because they are frequently biologically active and have potent therapeutic qualities (Trotter & Logan 1986). Low FL% plants should not be disregarded either, as doing so might risk traditional knowledge, and despite their rarity, they may still have a number of medicinal applications (Chaudhary et al. 2006).

Relative frequency of citation (RFC) and use value (UV)

The RFC index verifies the frequency of citations for a medicinal plant species used to treat various diseases. Maximum RFC was calculated for *Cassia fistula* (0.31), *Senna auriculata* (0.30), *Rubia cordifolia* (0.30), *Plumbago zeylanica* (0.30), *Leucas aspera* (0.29), and *Centella asiatica* (0.29), indicating that they were reported by the highest number of informants, resulting in a high FC.

It can be correlated that high RFC values indicate widespread use and strong traditional knowledge of a plant, often due to its availability, and therapeutic benefits (Faruque et al. 2018). These species should be prioritised for phytochemical and pharmacognostic studies for drug discovery, as they are culturally significant, and locally effective (Ahmad et al. 2017).

Use value results ranged from 0.05–0.71 (Table 1). The maximum UV was reported for *Cassia fistula* (0.71), followed by *Senna auriculata* (0.69), *Achyranthes aspera* (0.66), *Aristolochia indica* (0.66), and *Leucas aspera* (0.65). These findings demonstrate the widespread usage of these species in the treatment of numerous diseases by local healers, as well as indigenous peoples' awareness, making medicinal plants the first choice for disease therapy. The lowest UV was recorded for *Nelumbo nucifera* (0.05), *Vanda tessellata* (0.06), *Rosa multiflora* (0.06), and *Mesua ferrea* (0.06), indicating less usage or minimal consciousness of healers about those plants.

The present study results on use value corroborate

with earlier reports on ethnomedicinal plants, which showed similar conclusions (Vendruscolo & Mentz 2006; Siram et al. 2023; Tamang et al. 2023). The UV index measures the relative importance of plant species in a population (Uniyal et al. 2006). Higher UV indicated widespread availability and familiarity among locals (Haq et al. 2023), often making these plants the first choice for treatment (Rahman et al. 2016).

CONSERVATION STATUS

Ethnomedicinal plant species are classified according to the IUCN Red List. Only 56 of the 220 species recognised at the species level are on the IUCN Red List (Table 2). In the study region, 51 species were considered least concerned (LC), *Dalbergia latifolia* Roxb., *Ochreinauclea missionis* Wall. ex G.Don Ridsd., *Santalum album* L., *Saraca asoca* Roxb. Willd. (four species) were found to be 'Vulnerable' and *Aegle marmelos* (L.) Correa (one taxon) was found to be 'Near Threatened', and *Decalepis hamiltonii* Wight & Arn. (one taxon) as 'Endangered'. Listing of *Decalepis hamiltonii* in the endangered category can be correlated with its distribution in the forests of hotter areas of India, which is an example of the effect of large-scale and indiscriminate collection of wild populations, which results in a rare, and threatened status of medicinal plants (Ali et al. 2016). Conservation efforts should be directed towards saving these species before they become rare in the region.

CONCLUSION

The survey revealed that many medicinal plant species are used by local traditional healers to treat various diseases. Most traditional medicinal practices are restricted to rural areas of the surveyed region. They still depend upon the traditional and tribal medicinal system to manage their health care needs. Medicinal plants are the main ingredient in their medicines; apart from these, herbal resources, minerals, and animal resources are also utilised for the preparation of medicines. They inherit the traditional medicinal plants knowledge either vertically from their forefathers (passed down through generations) or horizontally by acquiring knowledge from other practitioners in their vicinity, as apprentices, or through observation.

A tribal community, Hakki Pikki from the study area, has manufactured hair oil under the brand name 'Adhivaasi' and sells it as a remedy for hair fall as well as topical massage oil for muscle, joint, and minor diseases. Various plants that are recorded in the study area, like

*Abrus precatorius* L.*Adenia hondala* (Gaertn.) W.J.de Wilde*Aerva lanata* (L.) Juss. ex Schult.*Andrographis paniculata* (Burm.f.) Nees*Arisaema tortuosum* (Wall.) Schott*Aristolochia indica* L.*Asparagus racemosus* Willd.*Atalantia monophylla* (Roxb.) A.DC.*Bacopa monnieri* (L.) Pennell*Boerhavia diffusa* L. nom. cons.*Boswellia serrata* Roxb.*Butea monosperma* (Lam.) Taub.*Capparis zeylanica* L.*Centella asiatica* (L.) Urban*Cheilocostus speciosus* (J.Konig) C.Specht

Image 2. Important medicinal plants of Hassan District. © Authors.

*Chloroxylon swietenia* DC.*Clerodendrum serratum* (L.) Moon.*Cocculus hirsutus* (L.) W.Theob.*Cyclea peltata* Hook.f. & Thoms*Decalepis hamiltonii* Wight & Arn.*Diplocyclos palmatus* (L.) C.Jeffrey*Drimia indica* (Roxb.) Jessop*Eclipta prostrata* (L.) L.*Eryngium foetidum* L.*Gardenia latifolia* Ait.*Gloriosa superba* L.*Gymnema sylvestre* R. Br.*Hemidesmus indicus* (L.) R.Br.*Iphigenia indica* (L.) A.Gray ex Kunth*Kalanchoe bhidei* T.Cooke

Image 3. Important medicinal plants of Hassan District. © Authors.



Memecylon umbellatum
Burm.f.



Mucuna pruriens (L.) DC.



Nothapodytes nimmoniana
(Grah.) Mabb.



Plumbago zeylanica L.



Rubia cordifolia L.



Ruta graveolens L.



Sapindus laurifolius Vahl



Smilax zeylanica L.



Solanum virginianum L.



Tarenna asiatica (L.) Kuntze ex
K.Schum



Terminalia bellirica L.



Tribulus terrestris L.



Tylophora indica (Burm f.)
Merill.



Vachellia nilotica (L.)
P.J.H.Hurter & Mabb.



Wrightia antidysenterica (L.) R.Br.

Image 4. Important medicinal plants of Hassan District. © Authors.



Image 5. Field study, interaction with local people, and collection of plant material. © Authors.

Habenaria roxburghii and *Ochreinauclea missionis* are still scientifically not evaluated for potential pharmacological activity, and drug discovery. The findings of the present study highlight the importance of preserving traditional knowledge, exploring the potential of medicinal plants for drug discovery and conservation of medicinal plants listed under the IUCN Red List threatened categories.

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Articles

Inventory of traditional medicinal plants and ethnobotanical knowledge from Hassan District, Karnataka, India

– Kushavara Venkatesh Amara, Gotravalli Manjunatha Prashanth Kumar & Rajkumar Hanumanthrao Garampalli, Pp. 27035–27063

An annotated checklist of lianas in Manipur, India

– Longjam Malemnganbee Chanu & Debjyoti Bhattacharyya, Pp. 27064–27074

New records and typification in family Poaceae from western Himalaya, India

– Smita Tiwari, Dileshwar Prasad, Sangam Sharma, Supriya Tiwari & Priyanka Agnihotri, Pp. 27075–27086

Collection and lipid analysis of marine unicellular cyanobacteria: a case study from the southeastern coast of India

– Selvam Selvapriya & Sundaram Rajakumar, Pp. 27087–27097

Range expansion of Indian Grey Hornbill population: a case study based on land use, land cover, and vegetation changes in Vadodara, Gujarat, India

– Parikshit Dhaduk & Geeta Padate, Pp. 27098–27109

Communications

A pioneer study of orchids on Nusa Barung Island of Indonesia

– Toni Artaka, Bina Swasta Sitepu, Fajar Dwi Nur Aji, Suryadi & Tri Atmoko, Pp. 27110–27115

A bibliometric visualization of trends in Philippine sharks studies published in Scopus-indexed journals over the past five decades

– Merfat Ampong Sali, Najeeb Razul Ampong Sali, Araniza M. Diansuy, Anina Haslee A. Julkanain-Ong & Richard Nami Muallil, Pp. 27116–27124

First camera-trap evidence of Dhole *Cuon alpinus* Pallas, 1811 (Carnivora: Canidae) from the Kaziranga-Karbi Anglong landscape, Assam, India

– Mujahid Ahamad, Jyotish Ranjan Deka, Priyanka Borah, Umar Saeed, Ruchi Badola & Syed Ainul Hussain, Pp. 27125–27130

Distribution, habitat use and conservation status of Smooth-coated Otter *Lutrogale perspicillata* along the Cauvery and Kabini rivers, Karnataka, India

– Allison Amavisca, Raghunath Belur & Sugandhi Gadadhar, Pp. 27131–27140

Review

An annotated checklist of the genus *Amorphophallus* Blume ex Decne. (Araceae): an update on the distribution and conservation status of its species

– Norilyn Fontarum-Bulawin, Michael A. Calaramo & Grecebio Jonathan D. Alejandro, Pp. 27141–27158

Short Communications

***Embelia ribes* Burm.f. (Primulaceae) – an ayurvedic plant with ethnobotanical notes from Manipur, India**

– Robert Panmei, Soyala Kashung, Lanrilu Dangmei, Akojam Surviya & Ungpemmi Ningshen, Pp. 27159–27162

First record of marine isopod *Synidotea variegata* (Collinge, 1917), (Crustacea: Isopoda: Valvifera) from the Gulf of Kutch, Gujarat, northwestern coast of India

– Deep D. Dudiya, Mansi S. Goswami & Pranav J. Pandya, Pp. 27163–27166

Lesser Blue-wing *Rhyothemis triangularis* Kirby, 1889 (Insecta: Libellulidae), a new addition to the dragonfly diversity of Rajasthan, India

– Anil Sarsavan, Manohar Pawar, Satish Kumar Sharma & Vinod Paliwal, Pp. 27167–27170

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