

ISSN 2320-3862 JMPS 2016; 4(1): 91-102 © 2016 JMPS Received: 25-11-2015 Accepted: 23-12-2015

Prashanth Kumar GM

Research Scholar, Survey of Medicinal Plants Unit, National Ayurveda Dietetics Research Institute, (Unit of C.C.R.A.S, Ministry of Health and Family welfare) G.C.P. Annexe, Ashoka pillar, Jayanagar 1st block, Bangalore-560011

Shiddamallayya N

Assistant Research Officer (Botany), Survey of Medicinal Plants Unit, National Ayurveda Dietetics Research Institute, (Unit of C.C.R.A.S, Ministry of Health and Family welfare) G.C.P. Annexe, Ashoka pillar, Jayanagar 1st block, Bangalore-560011

Correspondence Prashanth Kumar GM

Research Scholar, Survey of Medicinal Plants Unit, National Ayurveda Dietetics Research Institute, (Unit of C.C.R.A.S, Ministry of Health and Family welfare) G.C.P. Annexe, Ashoka pillar, Jayanagar 1st block, Bangalore-560011

Survey of wild medicinal plants of Hassan district, Karnataka

Prashanth Kumar GM, Shiddamallayya N

Abstract

Herbal medicines prepared from wild plants play a significant role in the primary healthcare needs of people living in developing countries. The survey was undertaken during 2012-2014 to document wild medicinal plants used in rural areas of Hassan district. In the present paper 194 wild medicinal plant species belonging to 172 genera and 73 families used in medicine have been documented. The data of enlisted plants has been presented schematically as serial number, botanical name, family name, Kannada name, habit; part used and medicinal uses.

Keywords: Medicinal plants, herbal medicine, wild, Hassan, Karnataka

1. Introduction

Throughout world plants have been in continuous use in treatment of various diseases. This practice is deep rooted in India and the herbal medicine knowledge has been acquired through long tradition and experience. Medicinal plants play a central role, not only as traditional medicines used in many countries, but also as trade commodities which meet the demand of distant market [26]. According to World Health Organization estimate, approximately 80% indigenous populations in developing countries depend on traditional medicine for their primary health care by use of medicinal plants [1]. Nearly 90% of the plant species used in industries, collected from wild habitat, mainly includes forests, waste land, cultivated land and home garden [12, 27-28]. In India several groups of studies reported that traditional healer use 3000-3500 plant species and 100 species serves as regular source of medicine [3, 18, 29]. Documentation of traditional knowledge on medicinal plants is still carried out in many parts of the world; the main reason for such efforts is to continue transmission of the knowledge to younger generation. Furthermore, instance research has been carried out in the field of ethnobotany, in various districts of Karnataka such as, Tumkur [30], Chikmagalur [5, 13, 19], Shimoga [17, 2], Bidar [11, 20], Chitradurga [9] Gadag district [6, 7] and Gulbarga district [4], Bellary [16]. However, in Hassan district, the data of floristic composition had been collected by Saldhana and Nicolson (1973), Kumara et al. (2009) have made a case study on traditional knowledge system (medicine) in Arkalgud taluk of Hassan district and recorded 82 plant species belonging to 44 families. In addition, recently Ravikumar & Theerthavathy (2012) have made ethno-botanical survey of medicinal plants in semi-malnad area of Hassan district and recorded 93 plant species belonging to 48 families. The present paper is an effort to fulfill the gap in the field of medicinal plants availability and to enlist existing wild medicinal plants in Hassan district.

2. Materials and Methods

2.1 Study area

Hassan district is situated in the South Western part of Karnataka State lying between 12° 13′ and 13° 33′ North latitudes and 75° 33′ and 76° 38′ East longitude, Hassan district has a total area of 6826.15 Sq. Kms. The greatest length of the district, from south to north, is about 129 kilometers, and its greatest breadth, from east to west, is about 116 kilometers. It is divided into 8 taluks, 38 hoblies and 2369 villages; the geography is mixed with Malnad or mountainous region to the west and south west called Bisle Ghat and the Maidan or plains region in the north, south and east. There are some areas of degraded forest ranges in central portion of the district. Hassan district lies partly in the Malnad tract and partly in the southern Maidan tract. By considering the physical aspects, climate, rainfall, etc. the district may be divided into three regions, viz., Southern Malnad, Semi-Malnad and southern Maidan.

Western and north-eastern portions of the Belur taluk, western and central parts of Alur taluk and the whole of Sakaleshpura taluk constitute the southern Malnad region, the central parts of the Arkalgud taluk, the western portion of the Hassan taluk, the eastern portion of the Alur taluk, the central and eastern parts of the Belur taluk and the western parts of the Arasikere taluk form the semi-Malnad region. The southern Maidan region includes the whole of Holenarasipura and Channarayapatna taluks, eastern parts of Arasikere and Hassan taluks and the southeastern portions of Arkalgud taluk. The southern Malnad is a forest-clad hilly region with a heavy rainfall. Hassan district is noted for its rich diversity of plant species, apart from wetlands and flood plains serving the habitat requirement of several inhabitant communities. The district has different groups of people who are intimately associated with the study area such as Kannada speaking Hindu and Muslim community. Most of the families of rural areas are having the practice of maintaining their own small back yard home gardens. Traditional home gardens are the closest mimics of natural forests and support diverse wild species besides meet in various social and basic daily life needs. Almost all families of rural areas have such practices. Most of the medicinal plants come from these traditionally managed home gardens and from natural habitat.

2.2. Data collection

A seasonal floristic survey work has been carried out in the Hassan district, during 2012-2014. During survey all plants were enlisted, photographed and collected 10-14 inch plant specimen and pressed in the field with collection number. The collected plant specimens from the field along with digital photography and field notes for further processing for herbarium and taxonomical identification. Processed plant specimens to dry and poisoned with 5% HgCl₂ to mount on herbarium sheets with detailed labelling by following the methods described [10, 14, 15]. Botanical identification of the species were done with the help of floras [23-25] and also collected plant species were cross verified with the help of preserved authentic herbarium specimens of RRCBI, Survey of Medicinal Plants Unit, NADRI, Jayanagar Ist Block, Bangalore. The Nomenclature of each species has been updated as per the Principles and rules of ICBN [2].

3. Result and Discussion

Hassan district in Karnataka state is rich in medicinal plant wealth and have a great potential to be used in drug and pharmaceutical industries. These medicinal plants have been used by local people, tribal communities, vendors, vaidyas and experts of Ayurvedic fields since a long time in herbal and folk remedies. The present survey encompasses 194 wild medicinal plant species belonging to 172 genera and 73 families, of which, 66 herbs, 51 shrubs, 30 climbers and 45 trees and 02

epiphytes. The enlisted plants has been presented schematically as serial number, botanical name, family, Kannada name, habit; part used and medicinal uses (Table 1& Plate 1-3). The most signified families are Euphorbiaceae (13 species) and Papilionaceae (11 species) followed by Asclepiadaceae (9 species), Mimosaceae, Rubiaceae (8 species each), Acanthaceae (7 species) Lamiaceae, Caesalpiniaceae, Malvaceae, Asteraceae, Verbenaceae (6 species each), Convolvulaceae (5 species) and Amaranthaceae, Solanaceae and Orchidaceae were represented with four species each. Other family members of medicinal plants availability is three or two or one species each. All medicinal plants were collected from the wild or semi-cultivated fields. The most dominant wild species are Euphorbia hirta, Calotropis procera, Pergularia daemia, Xanthium strumarium, Argemone mexicana, Cleome viscosa, Cassia occidentalis, Heliotropium indicum, Synadenium grantii, Urena lobata. Besides, the rare and endangered plants available were; Mucuna pruriens, Gloriosa superba, Urginea indica, Lobelia nicotianifolia. The wild medicinal plant species reported in the present study was cross referred with available literature. From the listed plants viz. Abrus precatorius, Abutilon indicum, Aerva lanata, Ageratum conyzoides, Argemone mexicana, Aristolochia indica, Cardiospermum halicacabum, Clitoria ternatea, Cochlospermum religiosum, Dalbergia sissoides, Desmodium triflorum, Eclipta prostrata, Evolvulus alsinoides, Ficus benghalensis, Gloriosa superba, Maytenus emarginata, Pergularia daemia, Schleichera oleosa, Sida cordifolia, Strychnos potatorum, Tinospora cordifolia, Toddalia asiatica, Trichodesma zeylanicum, Vitex negundo are identified as demanding plants for the preparations of herbal and Ayurvedic system of medicine are considered as high traded medicinal plants for the pharmaceutical industry in India.

4. Conclusion

Documentation of wild medicinal plants information of Hassan district used in different types of Indian systems of medicine and is base for on medicinal plant research in western part of Karnataka. It shows that the area of this region is very potential for the medicinal plant resources for sustainable use for the herbal pharmaceuticals for the management of various health disorders of the local people and surroundings. It also provides a good platform for herbal medicinal plant researchers for the identification of new bio-molecules for the management and treatment of lethal diseases of modern era. Most of the formulations are prepared by using plants available in the surrounding and in nearest forest. This knowledge can also be used for the growth of small scale industry for the benefit mankind. pharmaceutical Ethanobotanical studies have great significance in the collection of traditional knowledge, preparation of recorded data and in conservation of wild medicinal plant species.





Plate 1: Wild Medicinal plants of Hassan district, Karnataka





Plate 2: Wild Medicinal plants of Hassan district, Karnataka



Plate 3: Wild Medicinal plants of Hassan district, Karnataka

Table 1: List of wild medicinal plants in Hassan District, Karnataka

SL No	Botanical Name	Family	Kannada name	Habit	Part used	Medicinal uses
1.	Abrus precatorius	Papilionaceae	Gulagangi	Climbing	Root, leaf, seed	Roots diuretic, tonic and emetic, Leaf, Root,
2.	L. Abutilon indicum (L.) Sweet	Malvaceae	Pettige gida	shrub Under shrub	Whole Plant	Seed are used in leprosy Whole plant used as a anthelmintic and anti- inflammatory, also in urinary troubles, Bark is astringent and diuretic
3.	Acacia farnesiana (L.) Willd	Mimosaceae	Kasthuri jaali	Small thorny tree	Bark, fruit, gum	Leprosy, pruritus, wounds, bronchial asthma, stomatitis
4.	Acacia ferruginea DC	Mimosaceae	Banni	Armed tree	Bark, Fruit	Diarrhoea, dysentery, piles, worm infestation, haemorrhage, cough
5.	Acacia leucophloea (Roxb.)Willd	Mimosaceae	Bili jaali	Deciduous tree	Bark, seed, Gum	Bark used in bronchitis and, rheumatic fever, arthritis
6.	Acacia nilotica (L.) Willd	Mimosaceae	Karee gobli	Medium- sized thorny tree	Bark, seed, gum,	Decoction of bark used in urino-genital diseases, dental diseases,
7.	Acacia sinuata (Lour.) Merr.	Mimosaceae	Seege kayi	Prickly scandent shrub	Pod, leaf	Decoction of pods purgative, relieves biliousness, and leaf for constipation, jaundice, ulcers, emetic
8.	Achyranthes bidentata BI.	Amaranthaceae	Kaadu Uttaraani	Under shrub	Whole plant	Decoction of whole plant used for diuretic leucorrhoea, anaemia, dropsy
9.	Adenia hondala (Gaertn.)de Wilde	Passifloraceae	Vidari	Woody climbing shrub	Leaves, root	Juice of leaves and roots used in skin troubles, root tuber for urinary disorders.
10.	Adathoda zeylanica Medic.	Acanthaceae	Aadusouge	Shrub	Whole plant	Fresh or dried leaves used in curing bronchial troubles, leaf juice used in, dysentery
11.	Aerva monsoniae (L.f.) Mart.	Amaranthaceae	Dodda hindee Gida	Herb	Whole plant	Diuretic and demulcent, purgative and emetic
12.	Aerva lanata (L.) Juss	Amaranthaceae	Bili hindee soppu	Erect herb	Whole plant	Abdominal disorders, cardiac diseases and uterine diseases. decoction is diuretic
13.	Aeschynomene aspera L.	Papilionaceae	Kare bendu	Aquatic herb	Leaves	Pain, swelling
14.	Agave americana L.	Agavaceae	Kaththale	Bushy herb	Leaves, rhizome	Leaves used as laxative and emmenagogue, and rhizome for swelling, retention of urine, laxative.
15.	Agave sisalana Perr	Agavaceae	Boodu kathale	Herb	Leaves	Juice of leaves used for ecobolic
16.	Ageratum conyzoides L.	Asteraceae	Oorala gida	Herb	Whole plant	Whole plant used as nervine tonic. Gastro- intestinal ailments. Leaves styptic and vulnerary
17.	Albizia lebbeck (L.) Willd	Mimosaceae	Baage	Large Tree	Leaves, seed, bark,	leprosy, erysipelas, wounds, cough, antidote for snake-bite, stomatitis, thirst, leucorrhoea, dental diseases
18.	Allophylus cobbe (L.) Raeusch.	Sapindaceae	Kasaballi	Large shrub	Fruit, bark, leaves	Fruits used against tapeworm. Bark and leaves in elephantiasis. Decoction of leaves in colic.
19.	Alpinia malaccensis (Burm.f.) Roscoe	Zingiberaceae	Sugandhivacha	Rhizomatic herb	Rhizome	Diseases of cardiac, throat, nervous system cold, rheumatoid arthritis,
20.	Alstonia scholaris (L.)R. Br.	Apocynaceae	Doddapala	Medium tree	Whole plant	Bark used for febrifuge, anthelmintic Leaves used in beri-beri, dropsy and congested liver. Root and bark used for pyrexia, dysentery, earache, skin eruption and abdominal disorders. Latex applied to sores, ulcers, tumours and rheumatic swellings.
21.	Alternanthera pungens Kunth	Amaranthaceae	Mullu Hona gonne	Herb	Whole plant	plant diuretic, decoction given in gonorrhea
22.	Ampelocissus tomentosa (Heyne ex Roth) Planch.	Vitaceae	Kadu drakshi balli	Climber	Root, Bark	Root and bark used for hemorrhoids, and in application for swellings.
23.	Anisochilus carnosus (L.f.) Wall	Lamiaceae	Karpoorada gida	Herb	Whole plant	Plant stimulant, expectorant and diaphoretic. leaf used for cough, digestive disorders
24.	Anisomeles indica (L.) O. Ktze	Lamiaceae	Hennu karee thumbe	Shrub	Whole plant	Astringent and carminative
25.	Anogeissus latifolia (Roxb.ex DC.) Wall	Combretaceae	Dinduga	Deciduous tree	Bark	Polyuria, anemia, piles, leprosy
26.	Argemone mexicana L.	Papaveraceae	Dhatturi	Herb	Whole plant	Yellow juice of the plant used in scabies and in ophthalmia. Scorpion-sting poisoning, eczema, leucorrhoea, dental diseases, eye diseases
27.	Argyreia cuneata (Willd.) Ker.	Convolvulaceae	Kallana hambu	Shrub	Leaves	Diabetes
28.	Aristolochia indica L.	Aristolochiaceae	Eeshwari balli	Climbers	Whole plant	Roots and rhizome used as gastric stimulant and bitter tonic. Juice of leaves used in cough and seeds in inflammation and biliousness. Snake-bite poisoning, spider poisoning
29.	Aristolochia tagala Cham.	Aristolochiaceae	Gattada Eeshwari	Climbing shrub	Root	Carminative and emmenagogue
	iuguiu Challi.		Læsnwall	SHIUU	1	

30.	Asclepias curassavica L.	Asclepiadaceae	Kakatundi	Herb	Whole plant	Whole plant for hair falling, epilepsy, cough, leprosy, mental disorders. Roots emetic, and cathartic, used in piles, leaf juice anthelmintic, antidysenteric. Latex used to remove warts and corn.
31.	Asystasia gangetica (L.) T. Anders.	Acanthaceae	Mudde soppu	Herb	Whole plant	Juice is used swelling and rheumatism.
32.	Barleria buxifolia L.	Acanthaceae	Gandikottimullu	Erect under shrub	Leaves, root	Cough, inflammation
33.	Bauhinia racemosa Lam.	Caesalpinaceae	Aarasile	Deciduous tree	Bark, leaves	Bark astringent, used in dysentery. Leaves given with onions in diarrhoea and as an anthelmintic. Decoction of leaves in malaria.
34.	Biophytum sensitivum (L.) DC. var. sensitivum	Oxalidaceae	Jala pushpaka	Errect herb	Whole plant	Used in chest complaints, convulsions, cramps and inflammatory tumours. Decoction of leaves given in diabetes, asthma. Powered seeds applied to abscesses to promote suppuration.
35.	Bixa orellana L.	Bixaceae	Kunkuma	Woody shrub	Flower	Alleviating kapha and vata.
36.	Blepharis maderaspatensis (L.) Roth	Acanthaceae	Kodali soppu	Herb	Seed	Dysuria, diseases of nervous system, diuretic, aphrodisiacs
37.	Breynia retusa (Dennst.) Aist.	Euphorbiaceae	Komboje	Herb	Leaves, bark	Leaves employed as poultice to hasten suppuration, Bark for diseases of nervous system, oedema, disorders of blood.
38.	Breynia vitis- idaea (Burm.f.) Fisch.	Euphorbiaceae	Karesuli	Shrub	Leaves	Leaves applied as a poultice to hasten suppuration. Leaf juice given after parturition to prevent haemorrhage
39.	Bridelia scandes (Roxb.) Willd.	Euphorbiaceae	Bisila balli	Shrub	Whole plant	Roots for wounds, piles, abdominal disorders, cardiac diseases and uterine diseases. decoction is diuretic
40.	Cadaba fruticosa (L.) Druce	Capparidaceae	Maragadegida	Shrub	Leaf, fruit	Worm infestation, swellings, eczema,
41.	Caesalpinia bonduc (L.) Roxb.	Caesalpiniaceae	Gajjage Kayi	Shrub	Leaves, bark, fruit, seed	constipation Leaves and bark febrifuge, anthelmintic. Fruits tonic and antipyretic. Seed oil used in discharges from the ear. urinary calculi, abdominal diseases
42.	Caesalpinia pulcherrima (L.) Sw.	Caesalpiniaceae	Kenjige mara	Shrub	Bark, leaves,	Bark used as abortifacient. Leaves purgative, tonic and emmenagogue.
43.	Calotropis gigantea (L.) R. Br.	Asclepiadaceae	Ekka	Tall stout shrub	Whole plant	Diseases of nervous system, leprosy, spleenic disorders, abdominal disorders, piles, worm infestation, cough, snake bite, convulsions, swelling in joints, skin diseases
44.	Canscora diffusa (Vahl) R.Br.	Gentianaceae	Shank huli	Tall errect herb	Whole plant	Piles, abdominal disorders, sterility in female, haematemesis skin diseases, carminative, rejuvenator.
45.	Canthium dicoccum (Gaertn.) Teys. & Binn.	Rubiaceae	Hadderanike	Unarmed tree	Bark	Febrifuge and applied externally in fractures
46.	Capparis zeylanica L.	Capparidaceae	Muthu kallari	Scandent shrub	Whole plant	The root bark, fruit and leaves are used to treat burning sensation, stomache, irritation, boils, swelling, piles and cholera.
47.	Cardiospermum halicacabum L.	Sapindaceae	Erumballi	Climbing shrub	Root, leaf	The root is used in the form of powder to treat abdominal disorders, snake-poisoning, cough.
48.	Careya arborea Roxb.	Lecythidaceae	Hennu mathi	Medium sized tree	Root, bark	The bark is used in the form of decoction to treat sinus.
49.	Cassia fistula L.	Caesalpiniaceae	Kakke	Small tree	Root, bark, leaf,	Leprosy, fever, cardiac diseases, jaundice, polyuria, constipation, skin diseases, Worm infestation, diabetes,
50.	Cassia occidentalis L.	Caesalpiniaceae	Eelehuri gids	Under shrub	Root, leaf, seed	Constipation, diseases of vatam, rejuvenator
51.	Ceropegia candelabrum L.	Asclepiadaceae	Jatili	Twining tuberous herb	Stem	Dyspnea, cardiac diseases, fever, cold, oedema, mental disorders, rejuvenator.
52.	Chenopodium ambrosioides L.	Chenopodiaceae	Kadu oma	Herb	Root	Anthelmintic, intestinal parasites include round worms, hook worms and intestinal amoebae.
53.	Chloroxylon swietenia DC.	Rutaceae	Huragalu	Tree	Leaves	Rheumatism
54.	Cissus adanta Roxb.	Vitaceae	Guda Metake	Scandent shrub	Tuber, root	Diuretic, depurative, Powdered and heated roots applied to cuts and fractures.
55.	Clematis gouriana Roxb.	Ranunculaceae	Baari jwarada balli	Climbing shrub	Leaves	Plant is used in remedy for leprosy and fevers.
56.	Cleome viscosa L.	Cleomaceae	Nayi sasive	Herb	Whole plant	Skin eruptions, fever, worm infestation, abdominal disorders.
57.	Clerodendron inerme (L.) Gaertn.	Verbenaceae	Hole madarangi	Straggling shrub	Root, leaf	Swellings, snake-bite poisoning.
58.	Clerodendron viscosum Vent.	Verbenaceae	Parale	Shrub	Leaves, roots,	Bitter tonic, vermifuge, laxative,

59.	Clitoria ternatea L.	Papilionaceae	Shanka pushpi	Slender twiner	Whole plant	Anorexia, stomatitis, piles, abdominal disorders, skin diseases, constipation, retention of urine.
60.	Cochlospermum religiosum (L.) Alst.	Cochlospermacea e	Kadu buruga	Shrub	Flower, gum	Cough, gonorrhea, cooling, sedative, and stimulant
61.	Coleus caninus (Roth) Vatke	Lamiaceae	Kadu patre	Herb	Whole plant	Urinary disorders, vaginal discharges, colic, dyspepsia, carminative.
62.	Commelina paludosa BI.	Commelinaceae	Kaadu benne soppu	Herb	Whole plant	Laxative, bilious infection
63.	Coscinium fenestratum (Gaertn.) Clebr.	Menispermaceae	Dodda Maradaarisina	Large woody climber	Root, stem, fruit	Stomachic, wounds, stomach disorders, febrifuge, ulcers, jaundice, polyuria, chronic fever
64.	Crinum asiaticum L.	Amaryllidaceae	Visha munguli	Bulbous herb	Leaf, bulbs	Diaphoretic, emollient, burns
65.	Cryptolepis buchanani R. and S.	Asclepiadaceae	Metaguli hambu	Twining herb	Root	Polyuria, haemorrhage, leprosy, disorders of blood
66.	Cuscuta reflexa Roxb.	Cuscutaceae	Shavige balli	Twiner	Whole plant	Purgative, flatulence, liver complaints, externally for itching, diaphoretic, demulcent and tonic.
67.	Cyclea peltata (Lam.) Hk.f.and Thoms	Menispermaceae	Paduvala balli	Herb	Root	Diuretic, purgative, dyspepsia, dropsy, urinary troubles
68.	Dalbergia sissoides Grah. Ex Wt. and Arn.	Papilionaceae	Karemuthhala	Tree	Root, bark, leaf	Urinary bladder disorders, burning sensation, brain tonic
69.	Datura stramonium L.	Solanaceae	Bili datturi	Under shrub	Leaves	Narcotic, antispasmodic, scorpion-sting poisoning, burning sensation, dog-bite poisoning
70.	Delonix regia (L.) Gamble	Caesalpiniaceae	Katti kayi mara	Medium tree	Leaf	Constipation, inflammation, arthritis, hemiplegia
71.	Dendrophthoe falcata (L.f.) etting	Loranthaceae	Badanike	Medium tree	Whole plant	Narcotic, astringent, menstrual troubles, asthma, urinary calculi, worm infestation
72.	Desmodium trifolium (L.) DC.	Papilionaceae	Kaadu pullam purasi	Herb	Leaves	Dysentery, diarrhoea, convulsions
73.	Diospyros melanoxylon Roxb.	Ebenaceae	Thoopra	Tree	Leaves, dried flower	Diuretic, laxative, carminative, styptic, urinary and skin troubles, abdominal disorders, ascites, worm infestation
74.	Dodonea viscosa Jacq.	Sapindaceae	Bandarike	Bushy shrub or small tree	Leaves, bark	Febrifuge, burns, swelling, wounds, inflammatory conditions, rheumatism, snake bite
75.	Drosera indica L.	Droseraceae	Krimi nashini	Herb	Maceration of plant	External application on corns
76.	Echinops echinatus Roxb.	Asteraceae	Brahma dande	Herb	Root	Diuretic, destroy maggots and lice, facilitates easy delivery, diseases of kapha and vata
77.	Eclipta prostrata (L.) L.	Asteraceae	Garugada soppu	Herb	Whole plant	Emetic, purgative, eye diseases, hair falling, cold, diseases of head, dental diseases, wasting diseases, bronchial asthma, leprosy, worm infestation
78.	Embelia ribes Burm.f.	Myrsinaceae	Vayu vidanga	Seandend shrub	Fruits, seed	Worm infestation, oedema, fever, anorexia, urinary calculi, polyuria, rigidity in lower limbs, fistula, pain, vomiting, abdominal disorders
79.	Embelia tsjeriam- cottam A.DC.	Myrsinaceae	Mara harive	Deciduous Shrub	Fruit	Carminative, antispasmodic
80.	Erythrina subumbrans (Hask) Mast.	Papilionaceae	Hemmuruku	Small tree	Bark, flower	Biliousness, itches, rheumatism, asthma, leprosy, epilepsy, antidote to poisoning
81.	Eulophia nuda Lindl.	Orchidaceae	Havina mooti gedde	Herb	Tubers	Tumours, scrofulous glands of the neck and bronchitis, vermifuge
82.	Euphorbia hirta L.	Euphorbiaceae	Kempu nenehakki soppu	Herb	Whole plant	Urinary disorders, worm infestation, sterility, purgative, aphrodisiac, leucorrhoea, constipation, polyuria, genitourinary tract diseases
83.	Euphorbia thymifolia L.	Euphorbiaceae	Bilee chitraphala	Herb	Whole plant	Stimulant, astringent, anthelmintic, laxative, bowel complaints, ring worms, urinary disorders, worm infestation
84.	Euphorbia tirucalli L.	Euphorbiaceae	Kolukalli	Shrub or small tree	Latex	Used externally to remove warts, also applied in neuralgia and toothache, skin diseases, leprosy, glandular swellings, intestinal worms
85.	Evolvulus alsinoides (L.) L.	Convolvulaceae	Vishnu kranti soppu	Shrub	Whole plant	Anorexia, stomatitis, piles, abdominal disorders, sterility in female, epilepsy, psychosis skin diseases, carminative, rejuvenator, fever, cough
86.	Exacum bicolor Roxb.	Gentianaceae	Chirayuta	Herb	Whole plant	Tonic and stomachic
87.	Ficus amplissima J.e.Sm.	Moraceae	Bili basari mara	Large tree	Bark	Colic

88.	Ficus benghalensis L.	Moraceae	Alada mara	Large tree	Latex, bark, leaves	Burning sensation, uterine diseases, fainting, vomiting, polyuria, diarrhoea, leucorrhoea, dental and gum disorders, poisoning, ulcers, aphrodisiac
89.	Ficus religiosa L.	Moraceae	Ashwatha	Large tree	Root, bark, leaf	Oedema, uterine disorders, thirst, burning sensation, polyuria, ulcers, constipation, cough
90.	Fimbristylis falcata (Vahl) Kunth	Cyperaceae	Neeru sabsige	Tufted herb	Roots	Dysentery
91.	Garcinia morella Desr.	Clusiaceae	Revana huli	Medium sized tree	Resin	Dropsical infections, obstinate constipation, cerebral congestion, oedema, pain, spleenic disorders, abdominal disorders
92.	Garuga pinnata Roxb.	Burseraceae	Kadam bate	Decidous tree	Bark, flowers, fruits	Diseases of kapha, rabies
93.	Girardinia diversifolia (Link) Fris.	Urticaceae	Thurike	Stinging herb	Root	Hydrocele, oedema
94.	Glochidion zeylanicum (Gaertn.) A. Juss.	Euphorbiaceae	Kumbala mara	Small tree	Bark, fruits	stomachic, refrigerant, restorative
95.	Gloriosa superba L.	Liliaceae	Koli kutumana gedde	Climbing shrub	Tubers	Tonic, stomachic, anthelmintic, abortifacient, neuralgic pains, skin troubles, gout, rheumatism, leprosy, piles, oedema, pain, worm infestations, wounds
96.	Gmelina arborea Roxb.	Verbenaceae	Shivani	Decidous tree unarmed tree	Leaves, root, bark, fruit	Cardiac diseases, pain, dysuria, piles, poisoning, burning sensation, rejuvenator,
97.	Gnetum ula Brongn.	Gnetaceae	Kadu kamballi	Woody	Fruit, oil	Rheumatism, stimulant
98.	Grangea maderaspatana (L.) Poir.	Asteraceae	Dodda gadari	Herb	Leaves	Stomachic, antispasmodic, deobstruent
99.	Gymnema sylvestre (Retz.) R. Br. Ex Schult	Asclepiadaceae	Madhu nashini	Large climbing shrub	Leaves, root	Cardiac stimulant, diuretic, headache, hydrocele, polyuria, leprosy, poisoning, wounds, bronchial asthma
100.	Habenaria roxburghii (Pers.) R.Br.	Orchidaceae	Nela tavare	Tuberous herb	Tuber	Wasting diseases, fever, disorders of blood, haemorrhage, fainting
101.	Hedychium coronarium Koun.	Zingerberaceae	Gandasati	Rhizomatous herb	Rhizome	Febrifuge, tonic, excitant, anti-rheumatism
102.	Helicteres isora L.	Sterculiaceae	Edamuri	Large shrub	Root, bark, fruit	Blood disorders, diarrhoea, dysentery, pain, polyuria, worm infestation, eye and ear diseases
103.	Heliotropium indicum L.	Heliotropiaceae	Chelu balada gida	Herb	Whole plant	Emollient, diuretic, ulcers, sores, throat, wounds, boils, skin infection
104.	Holarrhena antidysenterica (Roxb.ex Flem.) A.DC.	Apocynaceae	Kodasige	Shrub	Bark, seed, root	Astringent, anthelmintic, stomachic, antipyretic, tonic, antidysenteric, diarrhoea, piles, leprosy, worm infestation, thirst, pain, diarrhoea, dysentery,
105.	Hydrocotyle javanica Thunb.	Apiaceae		Creeping herb	Leaves	Diuretic, stimulent, cutaneous diseases, nervousness, dysentery
106.	Hygrophila salicifolia (Vahl)Nees	Acanthaceae	Kolavalike	Unarmed herb	Whole plant	Oedema, wasting diseases, urinary calculi, constipation, piles
107.	Impatiens balsamina L.	Balsaminaceae	Karna kundala	Succulent herb	Flowers	Coolant, lumbago, intestinal neruaglia, improves circulation
108.	Indigofera linifolia (L.f.) Retz.	Papilionaceae	Kinnegilu	Herb	Whole plant	Febrile eruptions, vermifuge.
109.	Indigofera tinctoria L.	Papilionaceae	Niligida	Woody herb	Whole plant	Intoxication, giddiness, fainting, constipation, regurgitation, ascites.
110.	Ipomea alba L.	Convolvulaceae	Chandra kanti	Twining shrub	Root, bark	Purgative.
111.	Ixora arborea Roxb.	Rubiaceae	Goravi	Shrub	Leaves	Headache
112.	Jasminum rottlerianum Wall.ex DC.	Oleaceae	Vaaramallige	Shrub	Leaf, flower	Eczema
113.	Jatropha curcas L.	Euphorbiaceae	Hawtala kayi	Large Shrub	Root, leaf, seed, latex	Sciatica, dropsy, paralysis, externally for skin troubles and rheumatism, abortifacient, scabies, eczema, ringworm,
114.	Justicia betonica L.	Acanthaceae	Sanna adusoge	Shrub	Herb	Boils, swelling, diarrhoea
115.	Kalanchoe pinnata (Lam.) Pers.	Crassulaceae	Patrajeeva	Tall herb	Leaf	Dysentery, wounds, leprosy
116.	Kirganelia reticulata (Poir.) Baill.	Euphorbiaceae	Sanna Kaake soppu	Large straggling shrub	Fruit, bark	Syphilitic sores, purgative, rheumatism, dysentery, venereal diseases
117.	Leea crispa L.	Leeaceae	Kaadu mari drakshi	Under shrub	Root	Guinea worms, cardiac diseases, leprosy, poisoning, Erysipelas.

118.	Leea indica (Burm.f.) Merr.	Leeaceae	Andilu	Shrub	Root	Sudorific, diarrhoea, dysentery, colic.
119.	Leucas ciliata Benth.	Lamiaceae	Deva thumbe	Herb	Leaf	Sedative, stomachache, vermifuge, sores, dermatitis
120.	Lobelia nicotianifolia Roth ex R & S.	Lobelliaceae	Kaadu hoge soppu	Under shrub	Whole plant.	Antiseptic
121.	Ludwigia perennis L.	Onagraceae	Kere bendu gida	Herb	Leaf	Dropsy, pain, swelling, deobstruent
122.	Mallotus philippensis (Lam.) Muell. Var. philippensis	Euphorbiaceae	Kunkumada mara	Small tree	Fruit	Anthelmintic, cutaneous infection, abdominal disorders, worm infestation, polyuria, poisoning, urinary calculi, purgative, skin diseases
123.	Maytenus emarginata (Willd.)D.Hou	Celastraceae	Tandrasi,	Shrub	Paste of bark.	Colic dysentery, diarrhoea.
124.	Memecylon angustifolium Wt.	Melastomataceae	Mundi mara	Small tree	Bark tonic.	Refrigerant.
125.	Merremia gangetica (L.) Cufod.	Convolvulaceae	Ilikivi soppu	Herb	Whole plant	Neuralgia, leprosy, fever, pain, polyuria, diarrhoea, stomach disorders, anemia, pyrexia, worms, fistula.
126.	Meyna laxiflora Robyns	Rubiaceae	Gonda kare	Small tree	Dry fruit, leaves.	Narcotic, dysentery, boils, abdominal disorders, urinary bladder diseases, leprosy, wounds, fever, and purgative.
127.	Mimosa pudica L.	Mimosaceae	Muttidare muni	Prickly woody herb	Whole plant	Diarrhoea, leprosy, uterine disorders, haemorrhage, wounds, oedema, burning sensation, diabetes, sinus, eye diseases, diseases of urinary calculi
128.	Mirabilis jalapa L.	Nyctaginaceae	Nalku gante hoovu	Herb	Leaves, root, stem.	Tonic, boils, abscess, wounds, itching in urticaria, piles, ulcers.
129.	Mitragyna parvifolia (Roxb.) Korth.	Rubiaceae	Naykadamba	Deciduous tree	Bark, fruit, stem	Colic, burning sensation, poisoning, wounds, gynaecological disorders, cough, oedema, eye diseases, dropsy, urticaria.
130.	Mollugo pentaphylla L.	Molluginaceae	Kedarasi	Herb	Whole plant.	Stomachache, antiseptic, rheumatism, emmenagogue, poultice for sore legs, skin diseases, earache, fever.
131.	Morinda tomentosa Roth	Rubiaceae	Haladi pavate	Small sized tree	Root, fruit, bark.	Eczema, fever, ulcers, glandular swelling, digestive disorders
132.	Mucuna monosperma DC.	Papilionaceae	Kunni ganape	Woody climber	Seed.	Restorative, expectorant, asthma, cough, tongue infection.
133.	Mucuna pruriens (L.) DC.	Papilionaceae	Nasugunni	Climbing shrub	Root, seed	Tonic, stimulant, diuretic, purgative, emmenagogue, nervous disorders, elephantiasis, dropsy, aphrodisiac, wasting disease, wounds, worms
134.	Murraya paniculata (L.) Jack	Rutaceae	Kadu karibevu	small tree	Leaves	Diarrhoea, dysentery, cuts, coughs, rheumatism, hysteria, dropsy
135.	Mussaenda laxa (Hk) Gamble	Rubiaceae	Bellolti gida	Shrub	Dried shoots	Cough, demulcent, leprosy, eye troubles, intestinal worms
136.	<i>Nicandra physalodes</i> (L.) Gaertn.	Solanaceae	Bodde gida	Herb	Whole plant.	Diuretic, insecticidal and anthelmintic.
137.	Nothapodytes foetida (Wt) Sleumer	Icacinaceae	Durvaasane mara	Small tree	Whole plant.	Anticancer, Anti-Viral
138.	Nymphaea pubescens Willd.	Nymphaeaceae	Naidile	Aquatic stoloniferous herb	Flower, seed.	Demulcent, dysentery, dyspepsia, cardiotonic, cutaneous diseases, burning sensation, thirst, erysipelas, diarrhoea
139.	Ocimum americanum L.	Lamiaceae	Naayi Tulasi	Herb	Leaf	Cough, digestive disorders, fever, skin diseases,
140.	Pandanus fascicularis Lam.	Pandanaceae	Kedige	Small tree	Root, flower, leaf	Rheumatism, headache, anorexia, indigestion, constipation, polyuria, eye diseases, leprosy, amenorrhoea, dropsy, headache, earache.
141.	Pavonia odorata Willd.	Malvaceae	Shivana kadle	Woody herb	Whole plant.	Antipyretic, stomachache, refrigerant, dysentery, intestinal haemorrhage, rheumatic fever, indigestion
142.	Pergularia daemia (Forsk.) Chiov.	Asclepiadaceae	Huguru suttina balli	Hispid climber	Whole plant, latex.	Expectorant, anthelmintic, asthma, infantile diarrhoea, rheumatic swelling, uterine and menstrual troubles, mental disorders, anaemia, leprosy, convolutions, poisoning, digestive disorders
143.	Peristrophe bicalyculata (Retz.) Nees.	Acanthaceae	Kagekalu beru	Herb	Root	Filariasis, skin diseases, worms, wounds, indigestion, intermittent fever
144.	Phyllanthus maderaspatensis L.	Euphorbiaceae	Aadanelli	Decumbent herb	Seed, infusion of leaves.	Laxative, diuretic, carminative, headache.
145.	Pinanga dicksonii (Roxb.) BI.	Arecaceae	Kadu adike	Slender palms	Dried husk.	Flatulence, obstructive diseases of stomach and dropsy.

						Sprue, leprosy, worms, oedema, piles,
146.	Plumbago zeylanica L.	Plumbaginaceae	chitramula	Under shrub	Root	bronchial asthma, hemiplegia, jaundice, inguinal bubo, glandular swelling, carbuncle, carcinoma, arthritis, abdominal diseases.
147.	Plumeria rubra L.	Apocynaceae	Ganigile	Small tree	Bark, seeds, latex,	Ulcer, Stimulant, purgative, febrifuge, emmenagogue, dropsical and venereal infection, anti herpetic, rubefacient, rheumatism, pectoral syrups.
148.	Polygala arvensis Willd.	Polygalaceae	Belesoppu	Herb	Whole plant	Snake-bite poisoning
149.	Polygonum barbatum L.	Polygalaceae	Konde malle	Large herb	Whole plant	Ulcers, stomachache, diarrhoea, cooling, carminative
150.	Portulaca pilosa L.	Portulacaceae	Gadde gonisoppu	Herb	Whole plant	Cooling,laxative,aphrodisiac,febrifuge,aperient ,diuretic,poultices for boils
151.	Pothos scandens L.	Araceae	Adike beeluballi	Climbing shrub	Stem, root, leaves.	Asthma, small pox, pustules, application to abscess.
152.	Prosopis cineraria (L.) Druce	Mimosaceae	Perumbe	Armed tree	Bark, fruit, pods.	Astringent, demulcent, pectoral, giddiness, diarrhoea, dysentery, piles, worms, haemorrhage, cough, skin diseases, poisoning
153.	Rhynchostylis retusa (L.) Bl.	Orchidaceae	Seeta dande	Epiphyte	Whole plant	Emollient.
154.	Rivea hypocrateriformis (Derr.) Choisy.	Convolvulaceae	Nerbodde	Climbing shrub	Root.	Parturition.
155.	Rosa multiflora Thumb.	Rosaceae	Kadu gulabi	Scandent shrub	Fruits.	Cathartic, applications for foul ulcer.
156.	Rotula aquatica Lour.	Broaginaceae	Pashana bedi	Woody shrub	Root decoction.	Diuretic, laxative, piles, bladder stone, venereal diseases.
157.	Rubia cordifolia L.	Rubiaceae	Kaikuyakna balli	Scabrid climber	Root.	Oedema, disorders of blood, gout, diarrhoea, leprosy, erysipelas, polyuria, gynaecological disorders, dysuria, eye diseases
158.	Rungia repens (L.) Nees	Acanthaceae	Kodagasale	Decumbent herb	Whole plant	Cough, fever, vermifuge, diuretic, applied to scalp, scaly fungal infection.
159.	Salix tetrasperma Roxb	Salicaceae	Nergange mara	Medium- sized tree	Dried leaves, bark	Rheumatism, stone in the bladder, piles, swelling, febrifuge, dog bite and other poisoning
160.	Sansevieria roxburghiana schult. & schult.f.	Liliaceae	Goddu mumbe	Herb	Root, leaves, rhizome	Constipation, piles, cough, asthma, tuberculosis, dysuria, fever, earache, skin eruption, oedema, ascites
161.	Sarcostemma intermedium Decne	Asclepiadaceae	Konanatale	climbing shrub	Fruit bark	Rheumatism, leprosy, hysteria
162.	Schleichera oleosa (Lour.) Oken	Sapindaceae	Chagade	Medium- sized tree	Bark, seed, oil	Boils, leprosy, skin diseases, ulcers, pain in the joints, blood disorders, uterine bleeding, intermittent fever, snake bite, poisoning
163.	Scilla hyacinthina (Roth.) Macbride	Liliaceae	Kadu bellulli	Bulbous herb	Corm, bulb	Expectorant, cardiac stimulant, diuretic, worms, leprosy, poisoning
164.	Securinega leucopyrus (Willd.) Muell.	Euphorbiaceae	Bilisuli	Shrub	Paste of leaves	Worms, sores, dysentery, digestive disorders
165.	Sida cordata (Burm.f.) Borss.	Malvaceae	Bekkinathale gida	Herb	Root, leaves	Pain, nervous disorders, cardiac diseases, piles, urinary trouble, cystitis, haematuria, paralysis,
166.	Sida rhombifolia L.	Malvaceae	Baralukaddi	Woody herb	Root, leaves	Rheumatism, tuberculosis, emollient, Pain, nervous disorders, cardiac diseases, piles, abscess, urinary trouble, cystitis
167.	Solanum erianthum D. Don	Solanaceae	Kadu sundai	Shrub	Decoction of root	Body pain, vertigo, urinary troubles, vaginal discharges
168.	Solanum seaforthianum Andr.	Solanaceae	Ballisunde	Unarmed shrub	Fruit, root	Diseases of vata, pitta, kapha, tonic, cough, stimulant, ulcers in the nose, liver complaints
169.	Spathodea campanulata P. Beauv.	Bignoniaceae	Ucche kayi mara	Tall tree	Bark, infusion of leaves.	Skin diseases, dysentery, renal and gastrointestinal troubles, urethral inflammation.
170.	Sphaeranthus indicus L.	Asteraceae	Bodu kadale soppu	Herb	Whole plant.	Anorexia, pain, jaundice, piles, worms, blood disorder, oedema, scrofula, Filariasis, dysuria, fever, diuretic, aphrodisiac, rejuvenator, skin diseases.
171.	Spilanthes paniculata Wall.ex DC.	Asteraceae	Vana muguli	Herb	Flower root.	Throat infection, paralysis of tongue, inflammation of jaw bones, dysentery, diuretic, scabies, psoriasis, purgative.
172.	Stachytarpheta mutabilis (Jacq.) Vahl.	Verbenaceae	Kadu dodda kempu	Under shrub	Decoction of leaves.	Menstruation, abortifacient.
173.	Strychnos potatorum L.	Loganiaceae	Chillda mara	Medium- sized tree	Seed, fruit.	Tonic, stomachache, demulcent, cutaneous troubles, eye diseases, leprosy, abdominal disorders, piles, cardiac diseases, dropsy.
174.	Synadenium grantii Hk.f.	Euphorbiaceae	Eelegalli	Shrub or small tree	Whole plant.	Considered to a stimulant of central nervous system, irritant.
175.	Tarenna asiatica (L.) O. Ktze.	Rubiaceae	Pavatike	small tree	Fruits, leaves	Boils.

				Large	l	
176.	Terminalia paniculata Roth	Combretaceae	Hunalu	deciduous tree	Bark.	Cardiotonic, diuretic.
177.	Thespesia populnea (L.)Sol.	Malvaceae	Bugari mara	Small tree	Bark, leaf	Cutaneous infection, skin troubles, astringent, dysentery, purgative.
178.	Tinospora cordifolia (Willd.) Hk.f. & Th.	Menispermaceae	Amruta balli	Large climbing shrub	Leaves, root	Fever, jaundice, leprosy, worms, polyuria, poisoning, burning sensation, gout, delirium, vomiting, fever, digestive disorder, diarrhoea, snakebite poisoning, urinary disorders, emetic, general debility, dyspepsia, leprosy, tonic.
179.	Toddalia asiatica (L.) Lam.var. floribunda Gamb.	Rutaceae	Kadu menashi	Shrub	Root, bark, leaf.	Diaphoretic, stomach ache, antipyretic, carminative, pain in bowels, diseases of kapha and vata, cough, intermittent fever, tuberculosis, bronchial asthma.
180.	Trichodesma zeylanicum (Burm.f.) R. Br.	Boraginaceae	Ettena naligegida	Herb	Leaves, flowers, fruit.	Emollient, demulcent, diuretic, pectoral, analgesic.
181.	Trichosanthes tricuspidata Lour.	Cucurbitaceae	Kagemari kayi	Woody climbing shrub	Fruit, root	Sores, carbuncles, hemicrania, ozoena
182.	Triumfetta rhomboides Jacq.	Tiliaceae	Punta purale	Woody herb	Bark, leaves, root	Diarrhoea, dysentery, intestinal ulcers, leprosy, aphrodisiac, tonic
183.	Tylophora indica (Burm.f.) Merr.	Asclepiadaceae	Aanta moola	Under shrub	Whole plant	Stimulant, expectorant, stomachic, diaphoretic, asthma, bronchitis, whooping cough
184.	Urena lobata L.ssp. lobata	Malvaceae	Baralu kaddi	Woody herb	Root, leaf, root	Piles, abscess, wounds, vomiting, cough, aphrodisiac, pains,
185.	Urginea indica (Roxb.) Kunth.	Liliaceae	Kadubili Eurulli	Herb	Bulb	Worms, Leprosy, cardiac diseases, diuretic, poisoning, snake-bite poisoning, chronic cough, asthma
186.	Vanda roxburghii R. Br.	Orchidaceae	Bandanike	Epiphyte	Juice of leaves, root.	Dyspepsia, bronchitis, rheumatism, fevers, swellings, nervous troubles, diseases of nervous system, sciatica, fistula, ear diseases, poisoning
187.	Ventilago maderaspatana Gaertn.	Rhamnaceae	Kobbilu	Large woody climbing shrub	Whole plant	Anorexia, bronchial asthma, jaundice, abdominal disorders, piles, spleenic disorders, worm infestation, skin diseases, aphrodisiac
188.	Vitex altissima L.f.	Verbenaceae	Navuladi mara	Large tree	Fruit	Stomatitis, cardiac diseases, anorexia, blindness, leprosy, worm infestation, digestive, carminative
189.	Vitex negundo L.	Verbenaceae	Karilakki	Large shrub	leaves, root, fruit	Diseases of nervous and ear diseases, pain, arthritis, leprosy, wounds, oedema, cold, bronchial asthma, abdominal disorders, distaste, worm infestation
190.	Wattakaka volubilis (L.f.) Stapf	Asclepiadaceae	Kaduhale balli	climbing shrub	Whole plant	Emetic, purgative, boils, abscesses
191.	Xanthium indicum Koen.	Asteraceae	Maralu matti	Unarmed herb	Whole plant	Anaemia, jaundice, venereal diseases, cooling, demulcent, tonic, diuretic, sedative, inflammatory swellings, erysipelas, urino- genital diseases, astringent, anti-syphilitic
192.	Xylia xylocarpa (Roxb.) Taub.	Mimosaceae	Jambe mara	Large deciduous tree	Decoction of bark	Gonorrhoea, diarrhoea, vomiting, vermifuge
193.	Zizyphus xylopyrus (Retz.) Willd.	Rhamnaceae	Kotte mullu	Armed shrub or small tree	Root bark, fruit.	Diarrhoea, menorrhagia, thirst, bronchial asthma, aphrodisiac, emetic, carminative, digestive.
194.	Zornia gibbosa Span.	Papilionaceae	Nellu jollu soppu	Diffuse herb	Whole plant.	Dysentery, soporific.

Acknowledgment

Authors are grateful to local people and Forest officials of Forest Department of Hassan district for the support and encouragement provided during survey of wild medicinal plants, Survey of Medicinal Plant Unit, In-charge; Research Officer(S-3), In-charge, National Ayurveda Dietetics Research Institute, Bangalore; Director General, CCRAS, New Delhi, and University of Mysore for their encouragement and facilities.

References

- Bennerman R, Burton J, Chen WC. Traditional medicine and health care coverage, (WHO, Geneva, Switzerland), 1983.
- 2. Bennet SSR. Name Changes in Flowering Plants of India and Adjacent Regions, Triseas Publications, 1987, 1-772.
- 3. Ganeshan S, Venkatesh G and Bhanumathy N. Medicinal

- plants used by ethnic group Thottainaickans of Semmalai hills, Tiruchirapalli district, Tamilnadu, Indian Journal of Traditional Knowledge. 2006; 5(2):243-252.
- Ghatapanadi SR, Nicky Johnson, Rajasab AH. Documentation of folk knowledge on medicinal plants of Gulbarga district, Karnataka. Indian Journal of Traditional Knowledge. 2011; 10(2):349-353.
- Gopakumar K, Vijayalaxmi B, Shanta TR, Yoganarasimhan SN. Plants used in Ayurveda from Chikamagalur district, Karnataka. Journal of Economic and Taxonomic. Botany. 1991; 15(2):379-389.
- Harihar NS, Kotresha K. Wild Medicinal Plants of Kappat Hills, Gadag District, Karnataka. Res. Rev. Biomed. Biotech 2010; 1(2):111-118.
- Harihar NS, Kotresha K. Wild medicinal plants of Kappat hills, Gadag district, Karnataka. Part-II. Life Sciences Leaflets 2012; 5:37-42.

- 8. Harish Kumara BK, Lenin Babu K. Traditional knowledge system (medicine): A case study of Arkalgud taluk, Karnataka, India. Institute for Social and Economic Change (ISEC). Bangalore, Karnataka, 2009.
- Hiremath VT, Vijaykumar MMJ, Taranath TC. Survey on Ethno Medicinal Plants of Jogimatti Forest, Chitradurga District, Karnataka, India. Environment and We Ann International Journal of Science and Technology. 2010; 5:223-233.
- Jain SK, Rao RR. A hand book of field and herbarium methods. Today and tomorrow Printers and Publishers, New Delhi, 1977.
- Kalmath SV, Patil MS, Kritika SK, Mahantesh SP, Patil CS. Existancy and Survey of Medicinal Plants of Bidar district, Karnataka (India). World Research Journal of Medicinal and Aromatic Plants. 2012; 1(1):14-21.
- 12. Kamboj VP. Herbal medicine, Current Science 2000; 78(1):35-51.
- 13. Kumar YRG, Krishnaswamy K, Santhosh NR. Documentation of ethno-medicinal plants utilized by traditional herbal healers of Tarikere taluk of Chikmangalore district, Karnataka. Journal of Science. 2014; 4(2):80-84.
- Lawrence GHM. Taxonomy of Vascular Plants. Second Indian Reprint, Oxford and IBH Publishing Co, Calcutta, 1969.
- Meril ED. On the control of destructive insects in the herbarium. Journal of Arnold Arboretum. 1948; 29:103-110
- 16. Murthy SSM, Vidyasagar GM. Medicinal plants used in the treatment of gastrointestinal disorders in Bellary district, Karnataka, India. Indian Journal of Traditional Knowledge. 2013; 12(2):321-325.
- 17. Parinitha M, Srinivasa BH, Shivanna MB. Medicinal plant wealth of local communities in some villages in Shimoga District of Karnataka, India. Journal of Ethno pharmacology. 2005; 98(3):307-312.
- Pei JS. Ethanobotanical approaches of traditional medicinal studies: some experience from Asia. Pharmaceutical Biology 2001; 39:74-79.
- 19. Prakash HM, Krishnappa M, Krishnamurthy YL, Poornima SV. Folk medicine of NR Pura taluk in Chickmagalur district of Karnataka, Indian Journal of Traditional Knowledge 2010; 9(1):55-60.
- Prashanth kumar P, Vidyasagar GM. Traditional knowledge on medicinal plants used for the treatment of skin diseases in Bidar district, Karnataka. Indian Journal of Traditional Knowledge. 2008; 7(2):273-276.
- Rajakumar N, Shivanna MB. Traditional Herbal medicinal knowledge in Sagar taluk of Shimoga district, Karnataka, Indian Journal of Natural Products and Resource. 2010; 1(1):102-108.
- Ravikumar B, Theerthavathy BS. Ethno-botanical survey of medicinal plants in semi-malnad area of Hassan district, Karnataka, Journal of Pharmacognosy. 2012; 3(2):75-78.
- Saldhana CJ, Nicolson DH. Flora of Hassan District, Karnataka, India Amerind Publishing Co Pvt. Ltd, New Delhi, 1978.
- Saldhana CJ. Flora of Karnataka, Oxford publishing Co., New Delhi, 1984, 1.
- Saldhana CJ. Flora of Karnataka, Oxford publishing Co., New Delhi, 1996, 2.
- Schippmann V, Leaman D, Cunninghum ABA. Comparison of cultivation and wild collection of medicinal and aromatic plants under sustainability

- aspects, In RJ Rogers, LE Crackers, D Lange (Eds): Medicinal and Aromatic plants, Netherland, Springer, 2006, 75-95.
- Srivastava R. Studying the information needs of medicinal plants stake holder in Europe. Traffic Dispatches 2000; 15:5
- 28. Ved DK, Goraya GS. Demand and supply of medicinal plants in India (NMPB, New Delhi and FRLHT, Bangalore), 2007, 18.
- Vidhyarthy A, Gupta HS. Ethanomedicinal study of some important plants of Jharkhand and their conservation, Indian Forester 2004; 130(2):144-156.
- Yoganarasimhan SN, Togunashi VS, Murthy KRK, Govindaiah. Medico-Botany of Tumkur district, Karnataka. Journal of Economic and Taxonomic Botany. 1982; 3:391-406.