RESEARCH ARTICLE

Therapeutic Exploration of Medicinal Plants in Yadgir District, Karnataka, India

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ABSTRACT

Aim: The present study was carried out to explore the availability of medicinal plants at Yadgir district of Karnataka through a medico-ethno-botanical survey and to document their traditional medicinal uses along with indications given in the classical texts of Ayurveda.

Materials and methods: Two medico-ethno-botanical survey tours were conducted during August–December 2017 in Yadgir, Gurumitkal, Yergol, Shorapur, Hunasgi, Narayanpur, and Shapur forest sections of Yadgir district. The belt transect method was adopted during the survey to document the plants. Some of the important medicinal plants available in Yadgir district, which are routinely used in various traditional medicines, were documented and presented in a systematic manner.

Results: Among the 330 plant species documented from Yadgir district during the medico-ethno-botanical survey, about 42 plants were found to be having high medicinal value and demand. In traditional practice, these plants are used in the treatment of diabetes, cancer, asthma, scabies, lactation, rheumatism, infections, dysentery, diarrhea, skin diseases, kidney disorders, urinary problems, etc., in different dosage forms like decoction, juice, powder, paste, and infusion. As a single drug, these plants are indicated in the treatment of wide range of diseases as mentioned in classical texts of Ayurveda. The enlisted plants are also used as ingredients of various classical Ayurvedic formulations.

Conclusion: Findings of this study act as basic data to understand the biodiversity of Yadgir district of Karnataka along with the significance of available medicinal plants in traditional as well as classical practice.

Clinical significance: The documented data provide single-hand information on important medicinal plants along with their potential uses, which can be effectively used in clinical practice.

Keywords: Ayurveda, Medicinal plants, Traditional medicine, Yadgir district.

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INTRODUCTION

Plants have traditionally played a major role in the treatment of human diseases across the world, throughout the ages.¹ Use of different plants and plant products as an add-on or substitute to conventional medicine is also becoming increasingly popular all over the world. Over the past decade, there has been a dramatic increase in the demand for medicinal plants for use in traditional medicine, contemporary and alternative medicine in both developing and developed countries.²

India has a rich tradition of plant-based knowledge on health care and vast ethnobotanical knowledge since ancient time. According to an All India Ethnobiological Survey carried out by the Ministry of Environment and Forests, Government of India, there are over 8,000 species of plants being used by the people in the country. India has often been referred as Medicinal Garden of the world because of its enormous wealth of medicinal plants. The clinical use of plants for curing different diseases has been delineated in the Vedic literature. India has a unique position in the world with a number of recognized traditional systems of medicine, i.e., Ayurveda, Siddha, Unani, homeopathy, yoga, and naturopathy.³ The traditional system of medicine prevalent in the country is widely accepted today and practiced by people worldwide.⁴

Karnataka state is known for its rich biological diversity, although the natural ecosystems experience threat from recurrent natural calamities. In Karnataka, according to the study of the BSI there are 3,924 species belonging to 1,323 genera and 199 families in the forests, of which 1,493 species are of medicinal value.⁵ Yadgir district is situated in the northern plains of Karnataka between 16°.79′ N latitude and 77°.14′ E longitudes. The dry tract forests distributed in Yadgir, Shorapur, and Shahpur taluks of Yadgir district possess scrub-type plants with low diversity of medicinal plants. To some extent, taxonomists documented the plant wealth of Yadgir district before its separation from Kalaburagi (Gulbarga) district in 2009.⁶,⁷ Recently, Rajasamarsen and Pratima have explored medicinal plants of a Gavisiddalingeswara sacred grove and rare and threatened plants of Yadgir district.⁸,⁹ Several studies related to documentation of ethnobotanical knowledge and use of medicinal plants and rare and threatened plants of Yadgir district.⁸,⁹ Several studies related to documentation of ethnobotanical knowledge and use of medicinal plants.

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medicinal plants in various human and veterinary diseases in north Karnataka region have been published. Documentation of folk medicinal plants of Gulbarga district,10·11 ethnomedicinal plants of Hyderabad Karnataka region,12·14 and Vijayapur (Bijapur) and Bidar districts15·18 are few studies. The plant resources of Yadgir district could be a potential source of herbal medicine to treat various ailments of local inhabitants. Hence, an attempt has been made to document important medicinal plants available in Yadgir district along with their known traditional medicinal uses and important Ayurvedic indications.

**STUDY AREA**

Yadgir district is located in the North Eastern Dry Zone of Karnataka (Fig. 1) with dry weather for most part of the year. Relative humidity varies from 26% in summer to 62% in winter. The soil types in the district are deep black, medium black soil, shallow soil, and lateritic soil. The deep and medium black soil covers practically the entire district’s area, except a small portion toward the northern part of the district. Lateritic soil occurs in small extent toward the northern part of the district. About 75% of the geographical area of the district is under cultivation. The crops cultivated in the district are mainly rain fed. The major rain-fed crops of the district are jowar, tur, bajra, gram, ground nut, sunflower, and sugarcane and the irrigated crops are rice, wheat, and sugarcane.19 About 33,000 hectares of semiarid dry deciduous forests are mainly situated along the district border (Fig. 2). The forests are mainly composed of seasonal herbaceous plants, thorny scrubs, and short- to medium-sized tree species. The hill ranges are fully covered with tree species. Early monsoon rains bring lush green due to the luxuriant growth of seasonal herbaceous plants in the entire range of forest area.

**MATERIALS AND METHODS**

Two medico-ethno-botanical survey tours were conducted in Yadgir, Gurumitkal, Yergol, Shorapur, Hunasgi, Narayanpur, and Shahapur forest sections of Yadgir district during August–December 2017 to identify and document the medicinal plants. Plants were documented by adopting the belt transect method.20 The collected plant species were identified by expert taxonomist with the help of local published floras and published literature pertaining to the study region. After identifying the medicinal plants, the herbarium specimens were collected and herbariums were prepared as per the instructions by Jain and Rao.21 Identified herbarium specimens were cross-verified with the herbarium specimens of Survey of Medicinal Plants Unit, Regional Ayurveda Research Institute for Metabolic Disorders, Uttarahalli Manavarthekaval, Bengaluru. Voucher specimens were also deposited in the herbarium of Survey of Medicinal Plant Unit, RARIMD, Bengaluru. Plants that are used by traditional practitioners in folklore practice were documented from different published articles pertaining to that particular area,8·22·23 text books related to medicinal plants,24·29 and other published articles related to ethnomedicine.13·30·49 Information regarding their classical uses is compiled from text books related to Ayurveda.50·52 The available information is presented systematically with botanical name, family, voucher number, latitude and longitudes, Sanskrit and local names, known traditional uses, and classical indications. Field images of the medicinal plants were documented and preserved at institute.

**RESULTS AND DISCUSSION**

Use of plants as a source of medicine has been an ancient practice and is an important component of the healthcare system in India. It is estimated that about 70% of rural population depends on the traditional system of medicine and medicinal plants available in their natural surroundings for their healthcare needs. In remote areas, most of the traditional healers/practitioners prepare formulations by their own recipes and dispense to the patients. Some common medicinal plants documented during the medico-ethno-botanical survey, which are in traditional practice as well as mentioned in classical texts of Ayurveda, are mentioned in Table 1.

![Fig. 1: Map of Karnataka state showing geographical location of Yadgir district](image-url)
Table 1: Traditional uses and classical indications of medicinal plants of Yadgir district, Karnataka

| Sl. no. | Botanical name            | Family          | Voucher number | GPS coordinates       | Vernacular names (Sanskrit Kannada) | Traditional uses                                                                                           | Classical indications\textsuperscript{30–32} with modern terminology |
|---------|---------------------------|-----------------|----------------|------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| 1       | Abrus precatorius L.      | Leguminosae     | RRCBI-19525    | 16° 27′ 05.81″ N 76° 32′ 53.12″ E | Sans: Gunja K kann: Gulaganji | The roots, seeds, and leaves are used to treat stiffness in the arm, dental caries, baldness, dandruff, defects of vision, and skin diseases.\textsuperscript{8} Root is chewed as a snakebite remedy.\textsuperscript{30} | Indralupta (alopecia), Kushtha (intestinal disease), Krimi (Worm infestation), Kandu (pruritis), Shula (colicky pain/abdominal colic), Mukhapaka (mouth ulcers), Netraroga (ophthalmic diseases) |
| 2       | Aerva lanata (L.) Juss. ex Schultes. | Amaranthaceae  | RRCBI-19513    | 16° 17′ 92.05″ N 76° 22′ 80.70″ E | Sans: Gorakshaganja K kann: Bili hindee soppu | Whole plant is ground with water and taken twice daily with water to treat spermatorrhea.\textsuperscript{24} | Ashmari (urolithiasis), Mutrakricchra (dysuria) |
| Sl. no. | Botanical name          | Family            | Voucher number | GPS coordinates   | Vernacular names (Sanskrit Kannada) | Traditional uses                                                                 |
|--------|------------------------|-------------------|----------------|-------------------|-------------------------------------|----------------------------------------------------------------------------------|
| 3      | Alternanthera sessilis (L.) R.Br. ex DC. | Amaranthaceae      | RRCBI-19667    | 16° 54' 05.46" N 77° 11' 04.25" E | Sans: Matsyakshi<br>Kann: Honagonne soppu | Fresh leaf paste is applied externally to treat skin disease. Internally, the leaf juice is used to treat stomachache. |
| 4      | Andrographis paniculata (N. Burman) Wall. ex Nees. | Acanthaceae        | RRCBI-19668    | 16° 54' 05.46" N 77° 11' 04.25" E | Sans: Bhunimba<br>Kann: Nelabevu | The whole plant is used for purifying breast milk, intrinsinc hemorrhage, vomiting. Whole plant is ground with water and administered internally to cure all skin diseases. |
| 5      | Aristolochia indica L. | Aristolochi-aceae  | RRCBI-19604    | 16° 41' 43.20" N 76° 49' 42.59" E | Sans: Ishwari<br>Kann: Ishvari balli | Leaves used as antidote for poisonous stings. Leaves and the roots are used for treatment of fever and insect bites. |
| 6      | Asparagus racemosus Willd. | Asparagaceae      | RRCBI-19595    | 16° 31' 38.41" N 76° 43' 52.95" E | Sans: Shatavari<br>Kann: Halavu makkala taayi beru | The root is boiled in milk and the milk is administered to treat dyspepsia and diarrhea. |
| 7      | Barleria prionitis L. | Acanthaceae        | RRCBI-19601    | 16° 31' 38.41" N 76° 43' 52.95" E | Sans: Sahachara<br>Kann: Mullugoranti | Decoction of root is prescribed with chilli powder to cure fever after delivery. |
| 8      | Bauhinia racemosa Lam. | Leguminosae        | RRCBI-19560    | 16° 27' 05.81" N 76° 32' 53.12" E | Sans: Shvetakanchanara<br>Kann: Aralu | The stem bark of the plant is used in the treatment of headache, fever, skin diseases, tumors, blood diseases, and dysentery. |
| 9      | Boerhavia diffusa L. | Nyctaginaceae      | RRCBI-19937    | 16° 40' 38.8" N 76° 47' 05.7" E | Sans: Punarnava<br>Kann: Komme gida | Plant is used for various diseases especially frequent urination. |

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| Sl. no. | Botanical name            | Family      | Voucher number | GPS coordinates     | Vernacular names (Sanskrit Kannada) | Traditional uses                                                                 |
|---------|---------------------------|-------------|----------------|---------------------|-------------------------------------|-----------------------------------------------------------------------------------|
| 10      | *Capparis zeylanica* L.   | Capparaceae | RRCBI-19719    | 16° 52' 10.21" N 77° 06' 25.32" E | Sans: Vyahghanakhi Kann: Aathundi kaayi | About 5 mL of leaf juice mixed with equal quantity of coconut oil is applied times a day for 3–5 days to cure wounds.23 |
|         |                           |             |                |                     |                                     | The juice of fresh fruit is dropped into the ear to kill worms.30                |
| 11      | *Cassia auriculata* L.    | Leguminosae | RRCBI-19503    | 16° 17' 92.05" N 76° 22' 80.70" E | Sans: Avartaki Kann: Honnaavare      | About 5 g flowers are boiled in 100 mL of water and reduced to 50 mL to use as tea for cough. About 5 g of ash prepared from dried flowers is mixed with 5 mL of coconut oil and applied twice daily for 7 days for wound healing.23 |
|         |                           |             |                |                     |                                     | Agnimandya (impaired digestion), Shotha (edema/inflammation), Granthi (cyst). |
| 12      | *Cassia fistula* L.       | Leguminosae | RRCBI-19525    | 16° 27' 05.81" N 76° 32' 53.12" E | Sans: Aragvadha Kann: Kakke mara    | Fresh leaves placed on the affected area, tied with cotton cloth, and kept wet by adding clean water. Same procedure should be repeated once daily till desired effect in eczema.23 |
|         |                           |             |                |                     |                                     | Ash from burnt pods mixed with little salt is given with honey, three–four times a day to relieve cough.32 |
| 13      | *Catunaragam spinosa* (Thunb.) Tirveng. | Rubiaceae  | RRCBI-19586    | 16° 31' 38.41" N 76° 43' 52.95" E | Sans: Madanaphala Kann: Maggaare  | Seeds are tonic and induce appetite. Seed decoction is taken for relief from headache. Bark is used to diarrhea and dysentery.23 |
|         |                           |             |                |                     |                                     | Vidradhi (abscess), Kushita (integumentary disease), Pratishyaya (rhinitis), Shotha (edema/inflammation), Vrana (wounds), Anaha (distention of abdomen), Gulma (lump) |

Contd…
| Sl. no. | Botanical name            | Family               | Voucher number | GPS coordinates          | Vernacular names (Sanskrit Kannada) | Classical indications with modern terminology |
|--------|---------------------------|----------------------|----------------|--------------------------|------------------------------------|------------------------------------------------|
| 14     | Citrullus colocynthis (L.) Schrad. | Cucurbitaceae        | RRCBI-19602    | 16° 31' 38.41" N 76° 43' 52.95" E | Sans: Indra-vanuni Kann: Tumtikayi | Different parts of the plant are used to treat jaundice, joint pain, cancer, toothache, wound, gastrointestinal disorders such as indigestion, constipation, dysentery, colic pain.34 |
| 15     | Curculigo orchioides Gaertn. | Hypoxidaceae         | RRCBI-19696    | 16° 52’ 41.05” N 77° 14’ 12.10” E | Sans: Musali Kann: Nelathaale gadde | Powder of tuber is mixed with equal amount of sugar and one glass of milk. This mixture is used to treat asthma, jaundice, and diarrhea.30 |
| 16     | Desmodium gangeticum (L.) DC. | Leguminosae          | RRCBI-19694    | 16° 52’ 41.05” N 77° 14’ 12.10” E | Sans: Saliparni | Root powder is mixed with honey and applied to treat mouth ulcer.35 |
| 17     | Dichrostachys cinerea L.   | Leguminosae          | RRCBI-19639    | 16° 54'05.46” N 77° 11' 04.25” E | Sans: Veerataru Kann: Vadavaarada gida | Used for the treatment of wounds, rheumatism, and renal troubles.36 |
| 18     | Eclipta prostrata (L.) L.  | Compositae           | RRCBI-19571    | 16° 27’ 05.81” N76° 32’ 53.12” E | Sans: Bringaraj Kann: Garugada soppu | Whole plant is made into paste with black pepper and used to treat fever and jaundice.37 |
| 19     | Euphorbia hirta L.         | Euphorbiaceae        | RRCBI-19519    | 16° 17’ 92.05” N 76° 22’ 80.70” E | Sans: Dugdhika Kann: Kempu nenayakki | The latex of the plant is applied over warts and cuts to prevent pathogen infection. It is also effective in treating ulcers.36 |
| Sl. no. | Botanical name                  | Family             | Voucher number | GPS coordinates       | Vernacular names (Sanskrit Kannada) | Traditional uses                                                                 |
|--------|--------------------------------|--------------------|----------------|-----------------------|------------------------------------|-----------------------------------------------------------------------------------|
| 20     | *Ficus religiosa* L.           | Moraceae           | RRCBI-19623    | 16° 41’ 43.20” N 76° 49’ 42.59” E | Sans: **Avatha** Kann: **Arali mara** | Bark, leaf, and fruits are used as a laxative, coolant, and for treating skin diseases. Bark is used in the treatment of diarrhoea, dysentery, gonorrhoea, burns. |
| 21     | *Gloriosa superba* L.          | Colchicaceae       | RRCBI-19653    | 16° 54’ 05.46” N 77° 11’ 04.25” E | Sans: **Langali** Kann: **Gowri gadde** | The sap from the leaf tip is used for pimples and skin eruptions. Krimi (worm infestation), Kusha (integumentary diseases), Shotha (edema/inflammation), Arsha (hemorrhoids), Vrana (wounds), Shula (abdominal colic) |
| 22     | *Helicteres isora* L.           | Sterculiaceae      | RRCBI-19663    | 16° 54’ 05.46” N 77° 11’ 04.25” E | Sans: **Avartani** Kann: **Yedamuri** | Leaf paste is claimed to be effective against various skin ailments such as eczema and scabies. Atisara (diarrhea), Krimi (worm infestation), Udara (ascites), Shula (abdominal pain) |
| 23     | *Hemidesmus indicus* (L.) R.Br. | Apocynaceae        | RRCBI-19624    | 16° 41’ 43.20” N 76° 49’ 42.59” E | Sans: **Saariva** Kann: **Sogade beru** | The roots are used to cure gonorrhoea, leukaedema, bleeding piles, jaundice, and dysentery. Kushta (integumentary disease), Kandu (pruritis), Agnimandya (impaired digestion), Aruchi (anorexia), Shvasa (dyspnea), Kasa (cough/tussis), Prameha (diabetes mellitus), Pradara (leukorrhoea), Jvara (fever), Atisara (diarrhea) |
| 24     | *Leptadenia reticulata* (Retz.) Wight. and Arn. | Apocynaceae | RRCBI-19603    | 16° 31’ 38.41” N 76° 43’ 52.95” E | Sans: **Jivanti** Kann: **Paalathhee balli** | Hematopoiesis, emaciation, cough, dyspea, fever, burning sensation, night blindness, and dysentery. Grahani (disorder of lower GIT), Atisara (diarrhea), Pandu (anemia), Raktapitta (epistaxis/bleeding disorder) |
| 25     | *Lippia nodiflora* (L.) Michaux. | Verbenaceae        | RRCBI-19613    | 16° 41’ 43.20” N 76° 49’ 42.59” E | Sans: **Jala pipali** Kann: **Nela hippali** | Infusion of leaves and tender stalks is given to children in indigestion and to women after delivery. Kusha (integumentary disease), Prameha (diabetes mellitus) |
### Therapeutic Exploration of Medicinal Plants in Yadgir District, Karnataka

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| Sl. no. | Botanical name                          | Family        | Voucher number | GPS coordinates | Vernacular names (Sanskrit Kannada)       | Traditional uses                                                                                                                                       | Classical indications with modern terminology |
|--------|----------------------------------------|---------------|----------------|----------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| 26     | *Momordica charantia* L.               | Cucurbitaceae | RRCBI-19629    | 16° 54' 05.46" N 77° 11' 04.25" E | Sans: Karavel-laka Kann: Haagalakai | Fruits are used in asthma, burning sensation, constipation, colic, diabetes, cough, fever (malaria), gout, helminthiases, leprosy, inflammation, skin diseases, ulcer, and wound. | Jvara (fever), Pandu (anemia), Prameha (diabetes mellitus), Krimi (worm infestation) |
| 27     | *Momordica dioica* Roxb. ex Willd.     | Cucurbitaceae | RRCBI-19700    | 16° 52' 41.05" N 77° 14' 12.10" E | Sans: Karkotaki Kann: Giddha hagala | Tuber powder applied in the form of paste to ulcers caused by snake-bite. | Prameha (diabetes mellitus), Kushta (integumentary disease), Atisara (diarrhea), Jvara (fever), Ajirna (indigestion), Visha (poisoning) |
| 28     | *Nelumbo nucifera* Gaertn.             | Nelumbonaceae  | RRCBI-19626    | 16° 41' 43.20" N 76° 49' 42.59" E | Sans: Kamala Kann: Tavare | In diabetes, four to five fresh seeds are taken daily with water. Seeds are used in inflammation, cancer, skin diseases, leprosy, poison antidote, and prescribed to children as diuretic. | Daha (burning sensation), Trishna (polydipsia), Mutrakrichra (dysuria), Arsha (hemorrhoids), Raktaapitta (epistaxis/bleeding disorder) |
| 29     | *Ocimum tenuiflorum* L.                | Lamiaceae     | RRCBI-19505    | 16° 17' 92.05" N 76° 22' 80.70" E | Sans: Tulasi Kann: Shritulasi | Extract of leaves is used to reduce acne, pimples, and scars. Leaf paste is applied daily on ringworm affected area till it cures. | Shvasa (dyspnea), Kushta (integumentary disorder), Parshvavshula (abdominal colic), Kasa (cough/tussis), Mutrakrichra (dysuria), Hikka (hiccup) |
| 30     | *Pentatropis capensis* (L.f.) Bullock  | Apocynaceae   | RRCBI-19574    | 16° 31' 38.41" N 76° 43' 52.95" E | Sans: Kakanas Kann: Uppili balli | Leaves are used in the treatment of constipation, colic, and diarrhea. | Shula (abdominal colic), Jvara (fever), Prameha (diabetes mellitus) |
Contd…

| Sl. no. | Botanical name                  | Family            | Voucher number | GPS coordinates       | Vernacular names (Sanskrit Kannada) | Traditional uses                                                                 | Classical indications with modern terminology                                      |
|--------|---------------------------------|-------------------|----------------|-----------------------|-------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 31     | *Plumbago zeylanica* L.         | Plumbaginaceae    | RRCBI-19721    | 16° 52’ 10.21” N 77° 06’ 25.32” E | Sans: Chitrika Kann: Bili chitra moola | Paste prepared from roots of the plant is applied to the skin to treat abscesses, other skin diseases, ulcers, and scabies.45 | Grahanī (disorder of lower GIT), Kushta (intestinal disorder), Shothā (edema/inflammation), Arsha (hemorrhoids), Krimī (worm infestation), Kasa (cough/tussis), Shūla (abdominal colic), Udāra (ascites), Pandu (anemia) |
| 32     | *Portulaca oleracea* L.         | Portulacaceae     | RRCBI-19535    | 16° 27’ 05.81” N 76° 32’ 53.12” E | Sans: Lonika Kann: Dodagaonī soppu | Leaf paste is applied externally to cure skin diseases. Leaves are used as a poultice for abscesses and swellings.30 | Prameha (diabetes mellitus), Mutravikara (urinary disease), Agnimandya (stomach disorder), Shūla (abdominal colic) |
| 33     | *Prosopis cineraria* (L.) Druce.| Leguminosae       | RRCBI-19559    | 16° 27’ 05.81” N 76° 32’ 53.12” E | Sans: Shami Kann: Banni mara        | The bark is prescribed for scorpion stings. Smoke of the leaves is good for eye troubles.46 | Kasa (cough/tussis), Shwasā (dyspnea), Bhrama (giddiness), Arsha (hemorrhoids), Kushta (intestinal disorder), Krimī (worm infestation), Rakṣatīsara (diarrhea due to vitiated raktā), Bhrama (giddiness) |
| 34     | *Santalum album* L.             | Santalaceae       | RRCBI-19635    | 16° 54’ 05.46” N 77° 11’ 04.25” E | Sans: Chandana Kann: Shrigandha      | Bark, leaf paste is applied on allergic affected area daily once for 4–5 days.13 Bark, leaf paste is applied externally for skin allergy daily once for 4–5 days.22 | Trīshana (Polydipsia), Rakṣatītā (epistaxis/bleeding disorder), Prameha (diabetes mellitus), Rakṣatīshā (hemorrhoids), Rakṣatīsā (diarrhea), Daha (burning sensation), Rakṣatīpradāra (menorrhagia) |
| 35     | *Sesamum indicum* L.            | Pedaliaceae       | RRCBI-19633    | 16° 54’ 05.46” N 77° 11’ 04.25” E | Sans: Tīla Kann: Ellu               | Oil is used in the treatment of dry cough, asthma, lung diseases, inflammation, ulcers, urinary diseases, migraine, and vertigo.47 | Vrana (wounds), Vataroga (rheumatism), Agnimandya (indigestion), Grahanī (disorder of lower GIT) |
| 36     | *Sida cordifolia* L.            | Malvaceae         | RRCBI-19640    | 16° 54’ 05.46” N 77° 11’ 04.25” E | Sans: Bala Kann: Hetthuthi          | Bark is useful in blood, throat, urinary system-related troubles, piles, phthisis, insanity, etc.48 | Mutratisāra (polyuria), Prameha (diabetes mellitus), Rakṣatītā (epistaxis/bleeding disorder), Kshayā (depletion) |

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| Sl. no. | Botanical name            | Family       | Voucher number | GPS coordinates | Vernacular names (Sanskrit Kannada) | Traditional uses                                                                                   | Classical indications with modern terminology                                                                |
|---------|---------------------------|--------------|----------------|-----------------|-----------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| 37      | Strychnos potatorum L.f.  | Loganiaceae  | RRCBI-19568    | 16° 27’ 05.81” N 76° 32’ 53.12” E | Sans: Kataka Kann: Nirmali         | The seed is used in the form of powder to treat eye diseases, calculi, and diabetes. 5–7 Epicarp of fruit ground into paste and applied in toothache. 24 | Kamala (jaundice), Pandu (anemia), Prameha (diabetes mellitus), Kushta (integumentary disorder), Ashmari (urinary calculi), Neteroga (ophthalmic disease) |
| 38      | Tephrosia purpurea (L.) Pers. | Leguminosae  | RRCBI-19605    | 16° 41’ 43.20” N 76° 49’ 42.59” E | Sans: Shara-punkha Kann: Koggi     | Root is grounded with curd and given internally to cure stomach pain. 24 Fresh leaf paste is applied on itching-affected area daily once till it cures. 24 | Gulma (lump), Vrana (wounds), Kasa (cough/tussis), Shwasa (dyspnea), Raktavikara (blood disorder), Jvara (fever), Shula (abdominal colic), Krimi (worm infestation) |
| 39      | Terminalia arjuna Wt. and Arn. | Combretaceae | RRCBI-19660    | 16° 54’ 05.46” N 77° 11’ 04.25” E | Sans: Arjuna Kann: Matti           | The bark powder and decoction are used to treat heart diseases, consumption, spermatuera, skin diseases, fracture, wound, piles, and skin diseases. 8 Leaf juice is used as nasal drop to cure headache. 24 | Pandu (anemia), Medoroga (obesity), Prameha (diabetes mellitus), Vrana (wounds), Raktapitta (bleeding disorder), Kshaya (depletion), Mutraghata (urinary retention), Bhagna (fracture), Grahani (disorder of lower GIT) |
| 40      | Tribulus terrestris L.     | Zygophyllaceae | RRCBI-19491    | 16° 17’ 92.05” N 76° 22’ 80.70” E | Sans: Gokshura Kann: Neggilumullu  | About 60 mL of seed infusion is given internally in arthritis. 24 Juice of whole plant is applied externally to cure psoriasis. 24 | Ashmari (urinary calculi), Prameha (diabetes mellitus), Shwasa (dyspnea), Arsha (hemorrhoids), Muttaghata (urinary retention), Kasa (cough/tussis), Pandu (anemia) |
| 41      | Vernonia cinerea (L.) Less. | Compositae   | RRCBI-19652    | 16° 54’ 05.46” N 77° 11’ 04.25” E | Sans: Sahadevi Kann: Kaare hindi    | The roots and leaves of this plant are used in fever, hiccups, kidney disease, and stomach discomfort. 24 | Jvara (fever), Sidhmam (psoriasis), Visphota (vesicles), Anidra (insomnia), Vidradhi (abscess) |
| 42      | Vitex negundo L.           | Lamiaceae    | RRCBI-19596    | 16° 31’ 38.41” N 76° 43’ 52.95” E | Sans: Nirgundi Kann: Lakki soppu    | Decoction of leaves is mixed with Piper nigrum and honey is used to cure headache. 24 | Shula (abdominal colic), Shotha (edema/inflammation), Ama-vata (rheumatism due to ama), Krimi (worm infestation), Kushta (integumentary disorder), Jvara (fever), Aruchi (anorexia) |
Total of 330 plant species belonging to 240 genera and 85 families were reported during the medico-ethno-botanical survey tours in Yadgir district. Among these, 42 species belonging to 27 families were used frequently in traditional practice and Ayurvedic system of medicine. Out of 42 species enumerated, 19 are prostrate/erect herbs, 11 climbers, 10 trees, and 2 are erect shrubs. Details of these medicinal plants are tabulated in Table 1 along with their botanical name, family, voucher number, GPS coordinates, Sanskrit and local names, traditional uses, and classical indications with nearest modern terminology and field photographs (Fig. 3, I–XLII).

Documented literature indicates that these plants are used traditionally in the treatment of various disease conditions. Different types of preparations like decoction, juice, powder, paste, etc., were made from these medicinally important plants. Majority of the documented plants are known to treat diabetes, skin diseases, inflammation, cough, asthma, wounds, diarrhea, urinary problems,
XVI- *Desmodium gangeticum* (L.) DC.

XVII- *Dichrostaechys cinerea* L.

XVIII- *Eclipta prostrata* (L.) L.

XIX- *Euphorbia hirta* L.

XX- *Ficus religiosa* L.

XXI- *Gloriosa superb* L.

XXII- *Helicteres isora* L.

XXIII- *Hemidesmus indicus* (L.) R.Br.

XXIV- *Leptadenia reticulata* (Retz.) Wight. & Arn.

XXV- *Lippia nodiflora* (L.) Michaux.

XXVI- *Momordica charantia* L.

XXVII- *Momordica dioica* Roxb. ex Willd.

XXVIII- *Nelumbo nucifera* Gaerth.

XXIX- *Ocimum tenuiflorum* L.

XXX- *Pentatropis capensis* (L.f.) Bullock

Contd…
Fig. 3: I–XLII photographs of plants used in traditional medicine in Yadgir district, Karnataka state

e.g., in traditional practices. A detailed review of these medicinal plants also reveals that these plants have been indicated for the treatment of various diseases in classical texts of Ayurveda. Plants like Andrographis paniculata (N. Burman) Wall. ex Nees, Asparagus racemosus Willd., Bauhinia racemosa Lam., Boerhavia diffusa L., Hemidesmus indicus (L.) R.Br., Leptadenia reticulata (Retz.) Wight. and Arn., Plumbago zeylanica L., Sida cordifolia L., Terminalia arjuna Wt. and Arn., Tribulus terrestris L., and Vitex negundo L. are some of the important plants having similar traditional uses as mentioned in classical texts of Ayurveda.

A detailed literature survey reveals that though some ethnobotanical studies on medicinal plants were conducted in different parts of the Karnataka, a detailed study on medicinal plant diversity of Yadgir district along with their uses is still lacking. This study also represents a contribution to the existing knowledge of local health traditions that are in current practice for different disease conditions. As there is a little published information available regarding the ethnomedicinal uses of medicinal plants from Yadgir district of Karnataka, their reported uses from other places are compiled and presented in the study so that people in the other regions can also make use of it.

The study will also provide a single-hand information on plant species distribution and diversity in Yadgir district. During the survey, some of the rare and threatened plants were also found in the study area. As per the report of previous published studies from this area, 38 plant species are enumerated as rare, endangered, and threatened plants. During the survey, plants like Tribulus terrestris L., Sida cordifolia L., Terminalia arjuna Wt., and Plumbago zeylanica L., are observed, which are in the list. Such list could play an important role for the local and regional authorities interested to conserve...
and sustainable use of medicinal plants in the area. More attention can be given toward protecting such plants available in the forest by means of in situ conservation.

**Conclusion**

The present study reports the important medicinal plants from Yadgir district that are well used in traditional medicine. Out of the 330 species documented from the district, 42 are found used in the traditional system of medicine. These plants may offer potential lead in the management of diabetes, asthma, cancer, rheumatism, kidney problems, chronic skin diseases, ulcers, wounds, inflammation, cough, dysentery, and diarrhea. The study of classical literature suggests that traditional and classical indications have some common grounds. A detailed knowledge of the mode of action of these documented plants action is needed in order to understand their potential influence fully.

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हिंदी सारांश

यादगिर जिला, कर्नाटक में औषधीय पादपों का चिकित्सीय अन्वेषण

उद्देश्य: वर्तमान अध्ययन का उद्देश्य चिकित्स-प्रजाति वानस्पतिक सर्वेक्षण के माध्यम से कर्नाटक के यादगिर जिले के औषधीय पादपों की उपलब्धता का अन्वेषण करना और आयुर्वेद के शास्त्रीय प्रथ्यों में वर्णित चिकित्सीय प्रयोगों के साथ-साथ उनके पारंपरिक औषधीय प्रयोगों का प्रलेखन करना भी था।

सामग्री और विधियां: अगस्त-डिसेंबर 2017 के दौरान यादगिर, गुमलटक, पेघाल, शीरपुर, होंगी, नारायणपुर और यादगिर जिले के शापुर वन खंड में दो चिकित्स-प्रजाति वानस्पतिक सर्वेक्षण किए गए। पादपों के प्रलेखन आयुर्वेद के दौरान बेल्ट ट्रॉसेक्ट पद्धति अपनाई गई। यादगिर जिले में उपलब्ध शास्त्रीय औषधियों में दैनिक रूप से प्रयोग होने वाले कुछ महत्वपूर्ण औषधियों पादपों का प्रलेखन किया गया और उन्हें व्यवस्थित रूप से प्रदर्शित किया गया।

परिणाम: चिकित्स-प्रजाति वानस्पतिक सर्वेक्षण के दौरान यादगिर जिले में प्रलेखित 330 पादप प्रजातियों में से, लगभग 42 पादप उच्च औषधीय महत्त और मौंग वाले पाए गए। परिपूर्ता के अनुसार, इन पादपों का प्रयोग मधुकेश, केसर, अख्त्या, केकौज, लेटेशन, रितुमेटिजम, संक्रमण, पेबिशा, अतिसारा, तलक रोगी, तूफ़क विकार, मृत संबंधी समस्या आदि में विभिन्न मात्रा रूपों यथा काड़ा, बूँस, पाउडर, पेस्ट और इन्फ़्लेंज के रूप में किया जाता है। एकल औषधि के रूप में, ये पादप आयुर्वेद के शास्त्रीय प्रथ्यों में वर्णित रोगों के उपचार की विस्तृत श्रुतिकला की ओर संकर करते हैं। सुविश्वास पादपों का प्रयोग विभिन्न शास्त्रीय आयुर्वेदिक औषधियों में सामग्री के रूप में भी किया जाता है।

निष्कर्ष: इस अध्ययन का निष्कर्ष कर्नाटक के यादगिर जिले की जैवविविधता के साथ-साथ पारंपरिक या शास्त्रीय प्रथा में उपलब्ध चिकित्सीय पादपों की प्रासंगिकता को समझने हेतु मूल आकड़े के रूप में कार्य करता है।

नैदानिक महत्ता: प्रलेखित आकड़ा महत्वपूर्ण औषधीय पादपों पर एकत्रीकृत सूचना के साथ-साथ उनके संबंधित उपयोग की जानकारी प्रदान करता है जिनका उपयोग चिकित्सीय कार्य में प्रभावी रूप से किया जा सकता है।

मुख्य शब्द: आयुर्वेद, औषधीय पादप, पारंपरिक औषधि, यादगिर जिला.