

Documentation of folk knowledge on medicinal plants of Gulbarga district, Karnataka

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An ethnobotanical survey was undertaken to collect information from traditional healers on the use of medicinal plants in Gulbarga district of Karnataka. The indigenous knowledge of local traditional healers and the native plants used for medicinal purposes were collected through questionnaire and personal interviews. In the region, 52 plant species belonging to 27 families have been documented and scientifically validated for their therapeutic properties. People of the area depend on traditional medicinal plants for the treatment in primary healthcare. As and when the number of traditional healers dwindles, there is a danger of losing their traditional knowledge. Hence, there is a need for documentation of traditional knowledge as well as plants used for the treatment.

Keywords: Ethnomedicine, Medicinal plants, Karnataka

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The art of herbal healing has very deep root in Indian culture and folklore. In rural areas, people depend on local traditional healing systems for their primary healthcare. According to WHO estimate, about 80% of population in developing countries relies on traditional medicine¹. Millions of rural people use herbal plants as remedy for various diseases. Scientific documentation of indigenous knowledge of medicinal properties of plants, used by traditional healers is necessary. Hence, a survey was undertaken to document folk knowledge of medicinal plants of Gulbarga district in North Karnataka.

Methodology

The study area, Gulbarga district is located between North latitude 17°10' and 17°45' and between East longitude 76°10' and 77°45' in Northeast part of Karnataka. The district is the biggest in the state covering 8.49% of the area and 5.9% of population of the state. The total area of the district is 16,242.4 sq km. The extreme climatic condition is characteristic of the district. The mean minimum temperature vary between 7°-24°C and mean maximum temperature between 24° and 42°C. The dry deciduous forest of the district spreads over an area of 1,137 sq km in Chincholi and Yadagir taluks. Several field trips were

undertaken to different localities of the district. During the survey, information pertaining the plants used for treating various diseases was gathered from local practitioners by way of questionnaire and interviews. The new claims of local healers in using plants to treat various ailments are enumerated.

Enumeration

Abutilon indicum (L) Sweet. (Malvaceae), *Tutti*, *Vibutigida*

Uses: Leaf and root decoction is taken orally as diuretic. Root and leaf paste is applied over herpes infected skin. Fresh tender leaves are eaten to control dysentery.

Acalypha indica L. (Euphorbiaceae), *Kuppigida*

Uses: Leaf decoction is taken at night to cure constipation. Plant paste with little salt is applied externally to cure scabies and eczema. Plant extract taken in the morning expels sputum and cure asthma. Plant extract with buttermilk is taken to treat urinary problems.

Achyranthus aspera L. (Amaranthaceae), *Uttaraanne*

Uses: Roots are used as toothbrush to stop gum bleeding and toothache. Paste made from ash of dried root, limestone, turmeric powder and cow urine is applied externally to treat eczema. Paste of seed and

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root is used as antidote for scorpion bite. To treat infertility in women, inflorescence paste mixed with a cup of buffalo milk is given for three days.

Adathoda vasica Nees. (Acanthaceae), *Adusoge*

Uses: Mixture of leaf extract, ginger paste and honey in equal ratio is taken as expectorant to treat cough. Leaf paste is applied over inflamed parts; also applied over spiny outgrowths of piles to control bleeding. Tender leaf paste with turmeric powder is applied to control skin diseases.

Aloe barbadensis Mill. (Liliaceae), *Loulasara*

Uses: Leaf mucilage boiled in water with sugar is given as liver tonic; leaf mucilage is also given to treat obesity and constipation.

Annona squamosa L. (Annonaceae), *Sitaphala*

Uses: Tablets are prepared using powder of unripe fruits and horse gram powder. Daily, a tablet is taken for 7 successive days and on the 7th day, a teaspoonful castor oil is given orally to expel worms from the intestine. Seed powder paste is applied on head and washed to remove lice.

Argemone mexicana L. (Papaveraceae), *Ummatta*, *Datturigida*

Uses: Root powder is taken as anti-helminthic. Stem latex is applied over affected skin, blister and oral ulcers.

Asperagus racemosus Willd. (Liliaceae), *Halavu makkal balli*, *Shatavari*

Uses: *Shatavari* and *Withania* root powder taken in the morning enhances fertility. Fresh root extract is taken as diuretic.

Balanites roxburghii Planch. (Simarubaceae), *Ingudi*

Uses: To treat jaundice, tender leaves extract mixed with milk is taken. Fruit pulp with jaggery made into small tablets is taken.

Barleria prionites L. (Acanthaceae), *Mullugoranti*

Uses: Root decoction is used as mouthwash to relieve toothache and to prevent decay. Fresh leaf paste is applied to control scabies.

Boerhaavia diffusa L. (Nyctaginaceae), *Punarnava*, *Kommegida*

Uses: To overcome infertility, root powder and honey is orally taken. To treat cataract, leaf is pounded and filtered; filtrate is used as eye drop.

Bryonopsis laciniosa Naud. (Cucurbitaceae), *Shivalingi*

Uses: Dried seeds fried in ghee grounded into powder and taken along with water or milk enhances fertility.

Cardiospermum helicacabum L. (Sapindaceae), *Bekkina budde gida*, *Agniballi*

Uses: Root and leaf extract is taken as diuretic.

Cassia auriculata L (Fabaceae- Caesalpinioidea), *Avarike*

Uses: Stem bark is eaten early in the morning to control abdominal pain. Shade dried flowers, roasted, mixed with coconut oil is applied to cure wounds.

Cassia senna L. (Fabaceae-Caesalpinioideae), *Nelavarike*

Uses: Plant powder of *Phyllanthus officinalis* is given to treat gastric troubles; powder of whole plant and *Vitex negundo* is given to control rheumatic pain.

Cissus quadrangularis L. (Vitaceae), *Mangaravalli*, *Mangorali*

Uses: Plant mucilage applied over fractured bone acts as bonesetter. Stem extract, honey and ginger extract are dropped in nostril to control bleeding. Tender stem and leaf extract with ghee is taken orally for stomachic.

Coleus aromaticus Benth. (Lamiaceae), *Doddapatrii*

Uses: Leaf is eaten to treat tonsillitis. To treat cough and fever, leaf juice with *Piper longum* powder and honey is given. Leaf paste is eaten to treat renal calculi. To control vomiting and dysentery, leaf extract is given.

Cyprus rotundus L. (Cyperaceae), *Jekin gadde*

Uses: Rhizome dried powder mixed with vitavera powder in coconut oil; stored, filtered and applied on hair prevents premature hair fall and promotes hair growth.

Datura metal L. (Solanaceae), *Unmatta*

Uses: Leaf or leaf paste is applied externally to treat rheumatism. Leaf and shade dried flower is smoked to treat asthma. Leaf extract and seed powder is applied on hair to control dandruff and lice.

Daucas carota L. (Apiaceae), *Gajjari*

Uses: Carrot juice is given daily to improve digestion, eyesight and to reduce blood cholesterol. Seed paste is applied externally to control eczema.

Dodonaea viscosa (L.) Jacq. (Sapindaceae), *Bandara*, *Bandarike*

Uses: Leaf or leaf paste is externally applied over fractured bone parts (Fig. 1).

Echinops echinatus Roxb (Asteraceae), *Brahmadande*

Uses: Mixture of leaf powder or root extract and honey is taken in the morning to expel round worms. To control leucorrhoea, flower head and plant are burnt in an earthen pot; ash (*bhasmas*) is taken along with ghee or butter. Shade dried root powdered and *kadi* sugar has spermogenic effect (Fig. 2).

Eclipta alba L. (Asteraceae), *Kadagegarga*

Uses: Leaf extract is applied externally as an antidote for scorpion bite. Paste of plant is applied over the hair to blacken and strengthen.

Feronia elephantum Corr. (Rutaceae), *Belaval*, *Bellannu*

Uses: Leaf extract is taken along with cow milk to relieve acidity. Fruit pulp mixed with jaggery kept overnight is taken in the early morning as liver tonic. Warm fruit pulp with sugar is taken for treating constipation.

Ficus religiosa L. (Moraceae), *Arali*, *Ashwatha*

Uses: To control leucorrhoea and menorrhagia, filtrate of tender leaves boiled in water, is taken. Extract of inner part of stem bark is taken to treat fever. To overcome infertility, equal parts of dried fruit and *Lotus* seed powder are taken along with milk from 4th-14th day of menstrual cycle.

Gloriosa superba L. (Liliaceae), *Akkatangi balli*

Uses: Leaf extract is applied to hairs to kill the lice. Root paste is applied to relieve pain from scorpion bite.

Gymnema sylvestre (Retz.) R.Br.ex Schult. (Asclepiadaceae), *Kodapatri*

Uses: To control diabetes, tablets made from leaves of *Gymnema sylvestre*, *Eugenia jambolana* seeds, *Momordica charantia* fruit and old jaggery are taken.

Gymnosporia montana (Roth) Benth. (Celastraceae), *Tonasi gida*

Uses: Root paste with lime juice is taken to control menorrhoea. Tender leaf extract along with curd is taken to control dysentery.

Gynandropsis pentaphylla DC. Prodr. (Capparidaceae), *Nyaballi*

Uses: Leaf extract applied externally acts as an antiseptic, prevents pus formation. Leaf extract is put in the ear of opposite side of tooth pain to relieve

pain. Leaf extract dropped into the nostrils to treat epilepsy.

Jatropha gossypifolia L (Euphorbiaceae), *Chikka kaduheralu*

Uses: Latex from leaf and cut stem is applied externally over infected parts to treat eczema and scabies. Seed oil is applied over joints to treat rheumatic pain.

Lawsonia inermis L. (Lythraceae), *Madarangi*, *Goranti*

Uses: Filtrate of fresh leaves kept overnight in water is taken in the morning to treat jaundice. Stem bark decoction is given to treat renal calculi.

Leucas aspera Link (Lamiaceae), *Tumbe*

Uses: Mixture of fresh leaf juice and onion juice is used as nasal drops for nasal block and headache. To treat jaundice, fresh leaf juice is taken orally. Whole plant decoction is given to treat fever.

Mentha arvensis L (Lamiaceae), *Pudina*

Uses: To treat cold, cough and fever, leaves boiled in a cup of water with a pinch of salt is taken. Leaf juice along with equal part of lime juice is given to control vomiting.

Mirabilis jalapa L. (Nyctaginaceae), *Sanjemallige*

Uses: Warmed leaf used as poultice over abscesses; promotes wound healing. Root paste is applied over inflamed parts.

Momordica cymbalaria Fenzl,ex Naudin (Cucurbitaceae), *Karchikayi*

Uses: Root tuber grounded into paste, with pinch of pepper powder taken in the morning (during early period of pregnancy) acts as abortifacients.

Ocimum basilicum L. (Lamiaceae), *Kamakasturi*

Uses: To treat cough, cold and fever, leaf decoction with honey is given. To treat bleeding piles and constipation, seeds soaked in water over night are given orally along with *kadi* sugar (*misri*).

Pergularia daemia (Forssk.) Chiov. (Asclepiadaceae), *Kurudiganaballi*

Uses: Stem paste in the milk is taken to treat paralysis. To promote fertility in female, dried leaves, cloves, pepper, and handful red jowar powder is made into three parts. Each part is taken for three days after menses stage for successive three months.

Phyllanthus fraternus Webster. (Euphorbiaceae), *Nelanelli*

Uses: Plant parts pounded and mixed with buttermilk is taken to treat jaundice. Mixture of plant extract, turmeric, onion (white) and jaggary each in equal parts is taken in empty stomach to treat liver disorders.

Plumbago zeylanica L. (Plumbaginaceae), *Bilichitramula*

Uses: To treat pile and elephantiasis, fresh root paste is applied externally. Root and leaf paste is applied to overcome rheumatic pain.

Pongamia pinnata (L.) Pierre. (Fabaceae-Papilionoideae), *Hongemara*

Uses: Tender leaf and *saindav lavan* pounded in water orally taken, dilutes sputum and controls cough. Paste of *Pongamia* and *Vitex negundo* leaf in rice washed water is applied over swellings to relieve pain. Seed paste in honey applied over the tongue to control whooping cough. To treat eczema and skin diseases, equal quantity of *Pongamia* seed powder, turmeric, *Terminalia bellirica* bark powder, *Brassica juncea* (mustard) seed powder mixed with *Pongamia* seed oil is applied externally. To relieve migraine pain, a few drops of seed oil rubbed in jaggary solution are put into the nostril for a week.

Ruta graveolens L. (Rutaceae), *Nagadali, Sadabu*

Uses: To relieve stomach pain and helminthic infestation, leaf extract is given orally to children. To cure cold, cough and fever, leaf extract along with milk or water is given to children.

Saraca asoca (Roxb) De Wilde (Fabaceae-Caesalpinioideae), *Ashoka*

Uses: Stem bark is boiled in water and cow milk; water is evaporated, preparation is divided into three parts is given from the day of menstrual cycle to

control menorrhagia. Dried flower paste in water is administered orally to cure amoebic dysentery. Seed powder and honey taken orally has diuretic effect and dissolves renal calculi (kidney stones).

Solanum xanthocarpum Schrad and Wendl (Solanaceae), *Kantakeri, Nelagulla*

Uses: Powder of shade dried root, *Tinospora cordifolia* leaf and bark, *Eclipta alba* plant, *Coriandrum sativum* seeds, is taken to treat malaria. Fruit or seeds boiled in water are used for gargling to cure toothache.

Tagetes erecta L. (Asteraceae), *Chendu*

Uses: Crushed leaf is held over the affected tooth to relieve toothache.

Tephrosia purpurea (L.) Pears. (Fabaceae-Papilionoideae), *Vajaranili*

Uses: Plant paste in mustard oil is taken to relieve abdominal pain during menstrual cycle (Fig.3).

Tinospora cordifolia (Willd.) Miers ex. (Menispermaceae), *Amrutaballi*

Uses: To treat jaundice, stem and leaf juice with honey is taken. Powder of *Tinospora cordifolia* stem, *Tribulus terrestris* fruit and *Phyllanthus imbilica* in equal quantity is taken to treat renal calculi.

Tridax procumbens L. (Asteraceae), *Tikkikasa*

Uses: Leaf extract is externally applied to the cuts, bruises, and wounds as antiseptic. Leaf extract taken orally, dissolves kidney stones; leaf extract is put in the ear to relieve pain of scorpion bite.

Tylophora indica (Brum.f.) Merrill (Asclepiadaceae), *Adumuttadagida*

Uses: Leaf extract with cold water is taken to induce vomiting as antidote for snakebite. To cure asthma, fresh leaves are eaten daily. Leaf extract with ghee is applied over forehead to relieve migraine.



Fig. 1—*Dodonaea viscosa*



Fig. 2—*Echinops echinatus*



Fig. 3—*Tephrosia purpurea*

Vinca rosea L. (Apocynaceae), *Sadamallige*

Uses: Dried leaves powder boiled in water is taken to control blood pressure. Tender leaves are eaten daily to control diabetes. To control leucorrhoea, flowers crushed with ghee are taken. Plant decoction is taken to control blood cancer.

Vitex nigundo L. (Verbenaceae), *Lakki gida*, *Nirgundi*

Uses: Leaf paste in goat milk is applied over fractured bones. Rheumatism and sprains are treated by applying leaf or root paste over inflamed parts. Root powder in water is taken in empty stomach to treat renal calculi.

Withania somnifera (L.) Dunal (Solanaceae), *Hiremaddinagida*, *Ashwagandhi*

Uses: Mixture of equal parts of root powder, *Echinops echinatus* root powder, mustard and turmeric is taken as aphrodisiac. Root and leaf paste is applied over ulcers, carbuncles, scabies and swellings.

Xanthium stromarium L. (Asteraceae), *Vatvati*

Uses: Leaf juice is taken orally to cure dog bite. It has aphrodisiac effect, when roots are chewed.

Discussion

In Karnataka, ethnobotanical studies on medicinal plants were conducted in different districts²⁻⁷. The traditional knowledge on the use of plants as medicine was well documented. But the extensive reports on medicinal plants are limited^{8,9}. Earlier, folk knowledge on wild food plants was reported from Gulbarga¹⁰. There are several medicinal plants in Gulbarga district, which are used extensively by the tribal and local traditional practitioners. The use of plants in the treatment of some of the ailments was not reported elsewhere. Some of the claims of the traditional healers interviewed in the study are very interesting. The pregnant women use *Momordica cymbalaria* fruits as an iron rich source but the root tubers are used as abortifacient. *Withania somnifera* leaves are used to control obesity. Gulbarga district is known for its hot climate and drinking water has high calcium and one of the causes of kidney stones. To treat this problem, people are using *Tridax*

procumbens, *Saraca indica*, *Coleus aromaticus*, *Lawsonia inermis*, and *Vitex negundo*. Different plants are used to cure yellow jaundice, viz. *Phyllanthus fraternus*, *Tephrosia purpurea*, *Leucas aspera*, *Lawsonia inermis*, *Tinospora cordifolia* and *Balanites roxburghii*. Further studies are however required in the direction of phytochemistry, biological activities and their clinical studies to bring them into mainstream of medicine. Conservation of plants used in traditional medicine is another major requirement along with documentation of traditional knowledge. Unless it is done, whole traditional healing system will disappear and humanity will be deprived of the benefits of the knowledge.

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