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Original Article

ETHNOMEDICINAL PLANTS USED BY RAJGOND TRIBES OF HALADKERI VILLAGE IN BIDAR DISTRICT, KARNATAKA, INDIA

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ABSTRACT

Objective: Present work deals with the studies on Ethnomedicinal plants used by Rajgond Tribes of Haladkeri village in Bidar District, Karnataka, India

Methods: Field trips were conducted from March to December, 2014 to collect the information on the medicinal plants used in the treatment of different ailments by Rajgond Tribe using the methodology suggested by Jain and Goel.

Results: A total of 12 Vaidyas or healers were interviewed and 60 ethno medicinal plants species belonging to 37 families were recorded along with their scientific names, vernacular names, botanical family, parts used and their ethno medicinal significance.

Conclusion: Rajgond Tribe of Haladkeri Village in Bidar District is far away from modern medicine even in 21st Century and is known for their unique way of life and disease management. As the majority of people in modern days is much conscious about their health and aware of the side effects of modern drugs, such study of ethnic drugs may turn a useful base in finding out new drug molecules.

Keywords: Ethno medicinal plants, Rajgond, Tribe, Haladkeri, Bidar District.

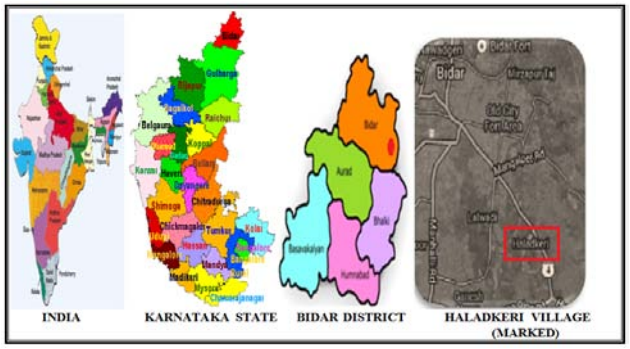
INTRODUCTION

Plants have been used as folk medicine all over the world for centuries [1] and indigenous communities have developed their own specific knowledge on plant resources, uses, management and conservation [2]. Ethno medicinal treatment is not merely a medical system but also part of our culture [3]. Today, approximately 25% of all prescribed medicines in the developing world contain ingredients derived from medicinal plants [4]. It has been estimated that herbal medicines are used by more than 80% of the world's population in developing countries to meet their primary health care needs [5]. The traditional use of plants and plant resources is rapidly increasing due to their minimal side-effects and (affordable) accessibility, and because they sometimes represent the only source of health care available to poorer communities [6]. Medicinal plants provide an efficient local aid for disease free life. The importance of ethno medicine has been realized by various sections of the society and the need to use herbal medicines in health care programmes is being stressed upon [7]. Traditional ethno medicinal studies have in recent years received much attention due to their wide local acceptability and clues for new or lesser-known medicinal plant [8]. In India, about 2,500 plant species are used for medicinal purpose by the traditional healers[9]. There are reports on traditional knowledge of medicinal plants used by tribal people in different regions of the world [10-17].

India consists of about 427 tribal communities with a rich diversity of indigenous tradition. The knowledge base and the practice have been marginalized due to political, social and economic reasons. Of late, interest in traditional medicine has continuously been increasing and there by various ethno botanical studies have been initiated to explore the knowledge base from the various tribal groups [18-19]. The main objective of this study was to assess the diversity of ethno medicinal plant species used by Rajgond tribes in Haladkeri village and also to document their traditional medical practices in healing various ailments.

Study area

Bidar district is located on the Deccan Plateau in the North-Eastern Part of Karnataka covering a total area of 5448 (km)^2 which lies between 17 °35' and 18 °25' N latitudes and 76 °42' and 77 °39' E longitudes. Haladkeri is a small Village/hamlet under Amalapure Panchayath in Bidar District of Karnataka State, India. Haladkeri area lies between the Latitude of 17.9659 and Longitude 77.60116.



MATERIALS AND METHODS

Ethnobotanical survey

Field surveys were conducted in the Haladkeri village from March to December 2014. Ethno botanical data were collected according to the methodology suggested by Jain and Goel[20]. The ethno botanical data were collected using a standard questionnaire through interviews and discussions with the Vaidyas. Plant species were identified with the help of Flora of the Presidency of Madras, Flora of Gulbarga district and the Flora of Karnataka [21-23]. Medicinal plants were used by Rajgond tribes to treat various diseases are listed in table 1. The plant species are arranged in alphabetical order of their botanical names, followed by their family, vernacular name, habit, parts used and a brief note on their ethno medicinal uses.

RESULTS AND DISCUSSION

A total of 60 ethno medicinal plants belonging to 37 families were recorded during the survey. The leaves were mostly used parts, followed by fruit, root, bark, flower, stem and latex as shown in fig. 2. Herbs (25) were dominant medicinal plants followed by trees (21), shrubs (9) and climbers (5) as shown in fig. 3. The dominant families

of ethno botanical importance were Fabaceae with 7 species followed by Euphorbiaceae, Lamiaceae, Solanaceae, Asclepiadaceae, Verbinaceae, Liliaceae, Lamiaceae with 3 species each, and Combretaceae, Mimosaceae, Rutaceae and Myrtaceae with 2 species each and the family Apocynaceae was represented with single species only as shown in fig. 4. These plants are being used to treat various ailments such as injuries, wounds, mouth ulcers, fever, diarrhoea, ulcers, swelling, snake bite, skin care, toothache, asthma, cough and cold diabetes and cancer. Many plant species were used to treat the same disease as shown in fig. 5. For example *Aegle marmelos and Caesalpinia bonduc* are used to treat diabetes. The medicinal plant species used for treating most commonly occurring diseases are as follows; Skin diseases are treated by 13 plant species; diabetes is cured by 13 plant species, followed by 5 plant species for snakebite, and 4 plant species are used for treating white discharge. Ethno medicines have received renewed global attention of scientists in India and elsewhere in recent past because of their local acceptability. Plant extracts used in ethanol medical treatment are enjoying great popularity, but many of them lack scientific validation[24]. Nevertheless, Ethnopharmacological studies are expected to provide sources for the discovery of new drugs of plant origin [25] the plant species reported in the present study were cross checked with the available literature. Some of these plant species were already identified for the same purpose, but the parts used, method of drug preparation and dosage was different. The medicinal plants cited in the present study have different kinds of curative properties in other regions as well. For example *Caesalpinia bonducella* is used in Dysmenorrhoea, *Ziziphus maruitiana* Lam. In diabetes, the fruit juice is given for constipation, in Bellary District, Karnataka [26], *and Aloe Vera* Linn. used in wound healing, *Citrus medica* L. The fruit used for nail infection and as a refresher in Dharmapuri Tamilnadu [12] and *Allium cepa* L. is used in the treatment of ulcer in Gadag district of Karnataka [27].

Table 1: Ethnomedicinal knowledge of plants used by the Rajgond Tribes Haladkeri village

Botanical name	Family	Local name	Habit	Part used	Medicinal uses
Abrus precatorius	Fabaceae	Lal gunj	Climber	Seeds and Leaf	Leaf directly chewed early in the morning for tonsils up to 2-3 days. Applied Seed paste against snake bite
Abutilon indicum (L.) Sw.	Malvaceae	Kopa sari	Herb	Leaf Seed root	Leaf act as laxative, seed used for fever, and root to treat dental problems.
Acacia catechu L.	Mimosaceae	Kaatha	Tree	Bark	To cure mouth ulcers
Acacia farnasiana	Mimosaceae	Vadadatha mara	Tree	Fruit	To cure cough
Achyranthus aspera L.	Amaranthaceae	Agala	Herb	Leaf	Paste of leaf with garlic, cloves and pepper taken with water twice a day for remedies of ear pain and toothache
Aegle marmelos (L.)	Rutaceae	Bel	Tree	Fruit	To cure diabetes & to make bones stronger.
Alove vera L.	Liliaceae	Keke tal chidur	Shrub	Leaf	Apply pulp on hair and wash with cold water after 30 min for smooth and silky hair. Pulp is also effective to cure diabetes
Albizia lebbeck (L.)	Fabaceae	Siras	Tree	Leaf	Grind 10–15 leaves to make a paste and apply to the rash to
Allium cepa L.	Liliaceae	Piyaz	Herb	Stem and Leaf	treat eye conjunctivitis A glass of boiled *A. cepa* leaf extract mixed with salt and turmeric given 2-3 days for fever Paste of stem mixed with mercury applied on snake bite area
Annona reticulata	Annonaceae	Sitafal	Shrub	Leaf Fruits	The leaf used for alcohol detoxification and aphid's control. Fruits used for blood purification
Andrographis paniculata (Burm. f.) Nees	Acanthaceae	Kalmegh	Herb	Leaf	Decoction of leaves cures jaundice
Argemone Mexicana L.	Papaveraceae	Pili dhaturi	Herb	Latex and Root	Applied Latex directly on ulcers in 3-4 days Two spoonful of root powder mixed with papaya decoction is administered daily, twice for a month to cure women's white discharge
Aspergus recemosa	Lilliaceae	Shatamuli	Herb	Root	Root powder of *A. racemosa* and *W. sominefers* mixed with cow milk and taken 2-3 times daily to stimulate lactation
Azadirachta indica A. Juss	Meliaceae	Neem	Tree	Leaf	Taking Leaf juice twice a day continuously for 2 to 3 months cure diabetes, piles and skin diseases
Boerhavia diffusa Linn.	Nyctaginaceae	Punarnava	Herb	Root and Leaf	Taking powder of root and leaf material with honey at morning and evening before food for 21 days cures jaundice and abdomen pain
Butea monosperma (Lam.)Taub.	Fabaceae	Pittith mara	Tree	Leaf and Flower	One teaspoonful leaf powder with Cuminum cyminum mixed in water is taken orally one time in a day for 4-5 days to kill stomach worms & its flowers used for discussion of malaria and fever
Caesalpinia bonduc L.	Caesalpinaceae	Gajga	Shrub	Seeds	Crushed seeds soaked in aluminium, glass containing water for overnight and read in the early morning to cure diabetes and white discharge in women
Calotropis gigantia R. Br.	Asclepiadacea	Aakada	Shrub	Latex Flower	Applied latex directly on infected area for curing dermatitis. Juice extracted from boiled flowers taken orally for cough & cold
Cassia tora	*Caesalpiniaceae*	Tarwat	Herb	Leaf and Seed	Leaf used as laxative. seeds to cure ring-worm & diabetes
Catharanthus roseus L.	*Apocynaceae*	Sadabahar	Herb	Leaf and Root	Leaf extract mixed with fruit extract of *M. charantia* given one cup daily to the diabetic patient. Root used to treat cancer
Citrus medica L.	Rutaceae	Nimbu	Tree	Fruit	To treat cancer and cholera, to improve digestion system and also to cure pimples
Centella asiatica L.	Apiaceae	Brahmi	Herb	Leaf	Used for brain related problems and to improve hair growth

Chlorophytum borivillanum	Lilliacaea	Safed mosali	Herb	Root	One tea spoon of roots powder taken orally with honey for Snake bite
Curcuma longa L.	Zinzibaraceae	Kamka	Herb	Rhizome	Used as antiseptic, rhizome powder mixed with cheese applied on face and washed with rose water to improve skin glow & remedy for pimples
Dalbergia sissoo DC.	Papilionaceae	Sheesham	Tree	Leaf	Powder of dried leaves mixed with sugar beads soaked in water overnight and taken early in the morning to cure stomach disorders, white discharges and to release excess body heat
Datura stramonium L	Solanaceae	Dhatura	Herb	Root and Seeds	Root used to cure asthma, cough, male fertility disorders. Seeds used to treat mental disorders & respiratory problems
Eucalyptus globulus Labill.	Myrtaceae	Nelegri	Tree	Leaf	Leaf for relieving body ache and also as body a re-freshener
Euphorbia hirta L	Euphorbiaceae	Dudhi	Herb	Leaf	Used in the treatment of cancer & ring worm
Eugenia jambolana Lam	Myrtaceae	Kala jamun	Tree	Fruit Seeds	Fruits used to cure stomach problems & seeds as anti-diabetic
Ficus bengalensis L	Moraceae	Peppal	Tree	Bark, Leaves	Bark used for diarrhoea, whereas leaves for stomach problems, burn & wounds healing
Gymnema sylvestre R. Br.	Asclepiadaceae	Madhunasini	Climber	Leaves, Root	Leaf powder mixed with cow milk taken orally to treat diabetes
Hemidesmus indicus (L.) R. Br.	Asclepiadaceae	Karsodhari	Climber	Root	Used to cure asthma and as a blood purifier
Ipomia staphylinaI Roemer.	Convolvulaceae	Besharam	Tree	Leaf	Used for joint pain. It also has antimicrobial property
Lawsonia inermis L.	Lythraceae	Henna Mehandi	Herb	Leaf	Applying a paste of young leaf over the heel cracks in the night time Leaf powder mixed with tea decoction applied to hair as anti-dandruff agent
Lantana camara L	Verbenaceae	Kikiri	Shurb	Leaf and fruit	Leaf decoction given for tetanus & malaria. Eat seeds as raw for rheumatism
Mentha piperita L.	Lamiaceae	Podina	Herb	Leaf	Leaf act as carminative, used for cough and cold
Mangifera indica L.	Anacardiaceae	Markata mara	Tree	Leaf	Leaf juice taken with honey for white discharge and dysentery
Momordica charantia L.	Cucurbitaceae	Karela	Shrub	Leaves and fruit	Useful for diabetes and hepatitis
Moringa oleifera Lam.	Moringaceae	Pera shenga mara	Tree	Leaf and fruits	Boiling leaves in water till it becomes greasy used for kidney-stone. Fruit powder improves haemoglobin and reduce blood pressure
Ocimum basilicum L.	Lamiaceae	Kali tulsi	Herb	Leaf	Used as mouth freshener for dry cough
Ocimum sanctum L	Lamiaceae	Thulasi	Herb	Leaf	For stomach disorders and eye burning
Opuntia dillenii (Ker-Gawl.) Haw.	Cactaceae	Panje	Shrub	Stem and fruits	Stem vertically split, warmed & applied over the infected area of skin. Fruits are directly eaten to increase the blood level and for blood purification
Piper nigrum L.	Piperaceae	Kali Mirch	Climber	Seeds	To cure throat infection, cold, and cough
Punica granatum L.	Punicaceae	Anaar	Shurb	Fruit	For gastrointestinal problems and whitening of tooth.
Phyllanthus emblica L.	Euphorbiaceae	Aamla	Tree	Fruit	Eating dried fruits applied with salt after meals for 3 months reduces acidity. Fruit powder mixed with henna applied to hair to remove dandruff
Plumbago zeylanica L.	Plumbaginaceae	Chitrak	Herb	Leaf Flower	Taking 2 spoonfuls of leaf powder with glass of water for 2-3 days in week cure diabetes and white patches. Flower mixed with turmeric powder protect face from the sun
Raphanus sativus L	Brassicaceae	Muli	Herb	Stem	It cures piles, calculi and acidity
Ricinus cummunis L.	Euphorbiaceae	Arandi	Shurb	Leaf & Root	Leaf powder given with banana and honey to cure jaundice Root powder to cure joint pain
Santalum album	Santalaceae	Chandan	Tree	Bark	Bark powder mixed with turmeric used for skin glow and snake bite
Saraca asoca	Ceacalpinaceae	Ashoka	Tree	Bark	Paste of 10 g of fresh bark powder mixed with a little sugar given with cow milk thrice a day for one week to cure piles, skin discoloration and cardiac problems
Seseli indicum	Apiaceae	Wowa	Herb	Leaf	Used for stomach disorders & also improves digestion
Sapindus laurifolia L.	Sapandaceae	Reetya	Tree	Fruit	Used for snake bite and hair bath
Tectona grandis L.	Verbenaceae	Saagvan	Tree	Root	Juice extracted from its root & *O. sanctum* leaf taken weekly once for diabetes
Terminalia arjuna	Combritaceae	Arjuna	Tree	Bark	Mixture of *T. arjuna* bark, *W. sominefera* root and *A. recemos* in equal quantity taken for cardiac problems, jaundices and asthma for 30 days with goat milk at early in the morning
Terminalia bellrica	Combretaceae;	Bahera	Tree	Fruit	Pulp of fruit is helpful in curing leprosy and Diarrhoea & have antibiotic properties.
Tribulus terrestris L.	Zygophyllaceae	Birbavoti	Herb	Fruit and	Seed/fruit powder mixed in water and orally taken twice a

				Seed	day for one month for urinary trouble, kidney stones, and gonorrhoea
Tridex procumbens L.	Asteraceae	Bramadandi	Herb	Leaf and Stem	Stem powder is mainly used against: Kidney stones, boils and dysentery. Leaf paste is applied topically On cuts and wounds
Vitex negundo L.	Verbenaceae	Nirgundi	Herb	Leaf	2 spoonfuls of leaf powder with water taken orally 3 times a day for 3 days as a tonic for rheumatism, ulcer and paralysis
Withania somnifera Dun.	Solanaceae	Ashwgandi	Herb	Leaf and Root	Root powder mixed with honey and goat milk used to cure asthma, diabetes and to make immune strong
Zizipus mauritiana lamk.	Rhamnaceae	Rengad mara	Tree	Leaf and Fruit	The leaf used for scorpion bite, whereas fruit used for intestinal problems and also as a blood purifier

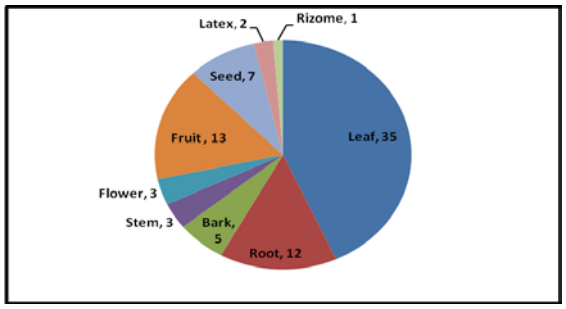


Fig. 2: Number of plant parts used in the preparation of drugs

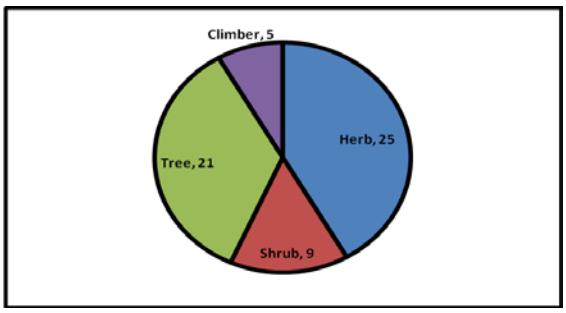


Fig. 3: Habitat wise distribution of Medicinal plants used by Rajgond tribes

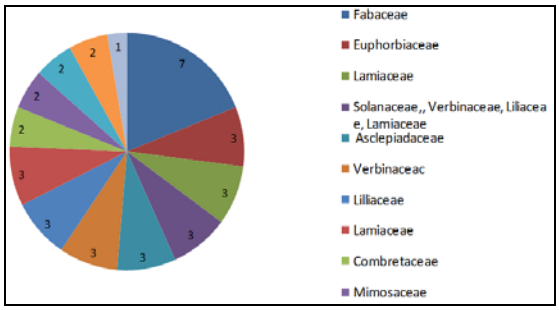


Fig. 4: Number of plant species from different families used in drug preparation

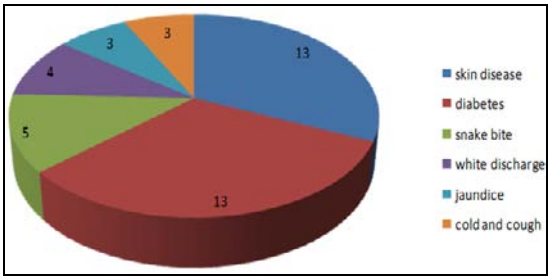


Fig. 5: Number of plant species used to treat same diseases

CONCLUSION

In the present investigation, 60 ethnomedicinal plant species used for the treatment of various diseases were reported. *Achyranthus aspera* L, *Aspergus recemosa, Boerhavia diffusa* L, *citrus medica, Dalbergia sissoo* DC. & *Withania somnifera* Dun where the important species as prescribed by 12 traditional healers. The traditional knowledge of these medicinal plants needs scientific validation for further applications in the development of modern medicine.

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CONFLICT OF INTERESTS

Declared None.

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