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Ethnobotanical Study of Folk Medicinal Plants used by Villagers in Nanded District of Maharashtra (India)

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Abstract

Medicinal plants are the basis of traditional medication system of India and other part of the world. The present investigational survey was carried out to report traditional uses of medicinal plants for the treatment of various ailments in different remote villages of Nanded district (Maharashtra). In this survey 74 different plant species of 70 genera belonging to 41 families are reported which are used by these people traditionally in their routine life. Among these species *Adhatoda zeylanica, Allium cepa, Allium sativum, Phyllanthus emblica, Ricinus communis, Mentha spicata, Momordica carantia, Ocimum sanctum, Azadirachta indica, Moringa oleifera, Eucalyptus globules, Piper betle, Punica granatum, Citrus aurantifolia, Withania somnifera, Curcuma longa,* and *Zingiber officinale* are commonly cultivated and used as medicine. In addition there are some medicinal plants which are wild and found in the forest region. Thus the present investigation provides an idea for the discovery and development of new drugs.

Keywords: Ethanobotany, Medicinal plants, Traditional knowledge, Nanded.

Introduction

From time immemorial, man has been dependent on nature for survival. This dependency led the aboriginal people living in harmony with nature to evolve a unique system of knowledge about plant wealth by trial and error methods. Traditionally, this treasure of knowledge has been passed on orally from generation to generation without any written document (Perumal Samy and Ignacimuthu 1998, 2000), and is

still retained by various indigenous groups around the world. In India, there are about 54 million indigenous people of different ethnic groups inhabiting various terrains and possess their own distinct culture, religious rites, food habit and a rich knowledge of traditional medicine (Pushpangadan and Atal 1984, Anuradha *et al.* 1986, Harsha *et al*. 2002).

Ethnobotany and ethnopharmacology has been variously seen as a tool for drug discovery (Schultes 1962), a mode of ascertaining conservation (Cox 1997), as threat to the integrity to indigenous cultures or as a field of research which will require the development of novel forms of partnership between indigenous people and researchers (Laird 2002). While these approaches are highly diverse, they are united by a relatively static view of local and traditional plant use. It is quite surprising that little attention has been paid to the historical development of orally transmitted, indigenous knowledge systems. It is often apparent and argued that they are under the threat of disappearing, but continuity and change in traditional, orally transmitted knowledge systems about medicinal plants has only rarely been at the focus of research projects. Studies exploring pharmacopoeia of unrelated cultures for plants treating specific medical conditions presents one way of validating anecdotal field reports, corroborating and selecting promising lead plants. Ethnobotanical exploration of the Nanded region has remained unprogressive as compared to the rest of Marathwada. The exploration of traditional knowledge of Nanded provides excellent opportunity to familiarize the explorer with the plant wealth and natural resources of this region. Such attempts may suggest alternative medicines to the local community of this region. The aim of this study was to interact with local traditional healers, treating various ailments, document their knowledge on medicinal plants and their usage from the ethnic groups of Nanded district of Marathwada region, Maharashtra.

Methodology

The study area of ethnobotanical survey

The Nanded district lies between 180.15 ' to 190.55' North latitude and 770 to 780.25' East longitudes. It covers area of above 10,332 Sq. Kms. It is located in the South eastern part of the state. The area presents undulating topography with uneven hills, plateau, and gentle slopes and valley plane. Physiographically, the district can be divided in two major parts, the hilly region on the North and North

East and low lying area on the banks of the rivers Godawari, Manjra, Manyad, Penganga etc. Nanded is situated on the bank of river Godavari. At present the area of this district is 10,502 Sq. Km. the district Nanded comprises sixteen talukas. The study area is shown in Fig. 1.

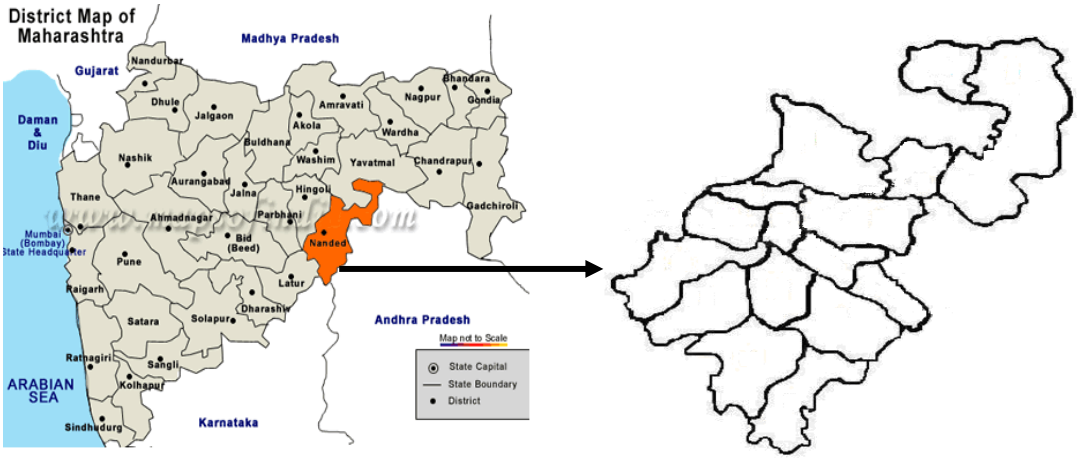

Fig. 1- Map of Nanded District

Local Traditional Healers

Field surveys were undertaken during 2009-2011 to gather data on the traditional use of medicinal plant species across various traditional healers in the district. Traditional healers, called '*Vaidya'*, '*Hakim'*, '*Janata'* or '*Maharaj'* from different indigenous groups were targeted for documentation of the uses of medicinal plants. The PIC has been taken from local traditional healers according to CBD guidelines and regular visit to local traditional healers were arranged. Local traditional healers having practical knowledge of plants in treating the various ailments were interviewed. The ethnomedicinal data was collected through general conversations with the vaidya's. The questionnaires were used to obtain information on medicinal plants with their local names, parts used, mode of preparation and administration. No monetary compensation has been given to the traditional healers for providing the medicinal information.

Plant Collection and Identification

The information recorded was further ascertained or cross checked by consulting the beneficiaries, villagers and other traditional physicians. The traditional healers were asked to come to field and show the plants with local names. The standard method was followed with regard to collection of plant material, drying, mounting, preparation and preservation of plant specimens (Jain and Rao 1976). The identification and nomenclature of the plants were based on the Flora of Marathwada (Naik 1998). The herbarium sheets of collected plant samples are deposited at Department of Botany, School of Life Sciences, SRTM University, Nanded.

Results and Discussion

The above study revealed that Nanded district has a rich tradition of indigenous medicine and healthcare practices. Besides the classical Ayurveda, which is still popular all over India, a number of local healthcare systems are prevalent here. Most of these systems of knowledge are unique and are often known only to a few individuals and communities. These systems of healing make use of many medicinal plants, which are endemic to the region. But this stream of healthcare is on the verge of a major breakdown. The root cause of this crisis is mainly the loss of knowledge base relating to raw drugs. The rate of knowledge erosion is even faster than the rate of resource erosion. Present study is planned by considering of the above fact and need of the hour. It is observed that 74 plant species of 70 genera belonging to 41 families are used traditionally in their day to day life. Among the studied medicinal plant species 43 plant species belongs to herbs, 15 shrubs and 17 are trees. It is observed that *Adhatoda zeylanica, Bauhina recemosa, Cassia fistula, Semicarpus anacardium, Dolichondrone falcate, Soymida fembrifuga, Azadirachta indica (Fig.7), Tinospora cordifolia (Fig.1), Moringa oleifera, Morinda citrifolia, Witania somnifera (Fig.3), Ruta graveolens, Vitex negundo, Enicostema axillare, Lavendula bipinnata (Fig.3), Mangifera indica (Fig.4), Phyllanthus emblica (Fig.5), Mentha spicata (Fig.6), Calotropis procera (Fig.8), Diplocyclos palmatus (Fig.9)* are found to be more effective in their respective diseases. Most of the species are taken orally combination of 2-3 species. The results are summarized in Table 1.

There are over 400 different tribal and other ethnic groups present in India (Jain 1991) constituting about 7.5% of India's population. During the last few decades there has been an increasing interest in the

study of medicinal plants and their traditional use in different parts of India, however there are many reports on the use of plants in traditional healing by either tribal people or indigenous communities of India (Chhetri *et al*. 2005, Natarajan *et al*, 2005, Kala 2005, Hebbar *et al*. 2004). Apart from the tribal groups, many other forest dwellers and rural people also possess unique knowledge about plants.

The above study concludes that the traditional medicine is a set of practices handed over from one generation to the next, most of which are unwritten or not codified. Mostly the traditional Vaidya's were marginal farmers and they provided their services free of cost. The survey indicated that, the study area has plenty of medicinal plants to treat various ailments. Earlier efforts in this direction to know the traditional wealth was not done in this area. It is evident from the interview conducted in different villages; knowledge of medicinal plants is limited to very few traditional healers who are living in rural areas. This study concluded that the accessibility of traditional medicine for treatment of various diseases is available and many people in the studied parts of Nanded district are still continue to depend on medicinal plants.

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Table 1. Medicinal plants used by villagers of Nanded district of Maharashtra.

Sr. No.	Plant name &Family	Local Name (Marathi)	Traditional uses
1	*Adhatoda zeylanica* Medic. Hist. Acanthaceae	*Adulsa*	The decoction of total parts of plants is used in asthma. Juice of leaves is also used in cough.
2	*Blepharis repens* (Vahl) Roth Acanthaceae	*Hadsan*	The decoction of Leaves is used in treatment of old persistent fever. The paste is also used for fractured bones.
3	*Lepidagathis croustade* Willd. Acanthaceae	*Bhuigend*	The dried inflorescence is burnt with jute cloth and the ash is mixed with coconut oil which is used to grow hairs on burn

			skin.
4	*Allium cepa* L. Alliaceae	*Kanda*	The daily uptakes of onions in meals help in maintenance of body temperature.
5	*Allium sativum* L. Alliaceae	*Lasun*	The bulb is boiled in coconut oil and is used in treatment of ear pain.
6	*Achyranthes aspera* L. Amaranthaceae	*Aghada*	The paste of leaf juice and ginger is used externally for curing eye injuries. The leaves are taken with the petiole of betal nut to cure pneumonia.
7	*Celosia cristata* L. Amaranthaceae	*Kurdu*	The root extract is useful in kidney stone.
8	*Mangifera indica* L. Anacardiaceae	*Amba*	Young branch of mango tree is levigated and apply it on place of scorpion bite for quick pain relief.
9	*Semicarpus anacardium* L. Anacardiaceae	*Biba*	A thin layer of edible oil with pinch of lime is applied on baby's stomach. Then spread 1-2 drops of its fruit oil It gives the relief from stomach pain.
10	*Cuminum cyminum* L. Apiaceae	*Jire*	Taking overnight water soaked seeds along with loaf sugar early in the morning is useful against body heat.
11	*Daucas carota* L. Apiaceae	*Gajar*	The boiled roots or juice of its seeds used in treatment of diphtheria.
12	*Trachyspermum ammi* L. Apiaceae	*Onwa*	Seeds are used to cure cough.
13	*Holarrhena pubescens* (Buch.Ham.)Wall. Apocynaceae	*Pandhar kuda / Indrajaw*	The decoction of root bark and seeds are used in treatment of stomach disorders.
14	*Calotropis procera* (Ait.)R.Br. Asclepiadaceae	*Ruchki*	The flower bud with betal nut is used for menstrual problems in women.
15	*Gymnema sylvestre* (Retz.)R.Br. Asclepiadaceae	*Pandhari Aphumari*	The leaf powder is used in treatment of diabetes and stomach problems.
16	*Tylophora indica* (Burm.f.)Merr. Asclepiadaceae	*Khadki Rasna*	Leaf extract is used to cure asthma.
17	*Balanites aegyptica* L. Balanitaceae	*Hinganbet*	The fruits are used as substitute for soap and paste of seeds is used in healing of cuts and wounds.
18	*Dolichandrone falcate* (Wall.ex DC) Seem.	*Medh-shingi*	The leaves are boiled in water and used for bath which gives relief from

	Bignoniaceae		muscular pain.
19	*Opuntia elatior* Mill. Cactaceae	*Phadya nivdung*	Leaf paste along with turmeric is useful for rheumatism.
20	*Carica papaya* L. Caricaceae	*Papai*	The pulp of ripened fruit is used in beauty care.
21	*Bauhinia recemosa* Lamk. Cesalpinaceae	*Apta*	Leaf juice is used to cure dysentery. The decoction of stem bark is used for menstrual problem.
22	*Casssia fistula* L. Cesalpinaceae	*Amaltas*	Fruit pulp is used as excellent purgative. The root powder is used for treating anemia and jaundice.
23	*Tamarindus indica* L. Cesalpinaceae	*Chinch*	Paste of fruit pulp and lime is applied on inflammatory part which gives relief from pain.
24	*Terminalia catappa* L. Combretaceae	*Badam*	Leaf paste is used for rheumatism.
25	*Ipomoea nil* L. Convolvulaceae	*Kala dana*	Seeds are used as purgative.
26	*Operculina terpethum* L. Convolvulaceae	*Nishottar*	Decoction of Roots is used as purgative.
27	*Corallocarpus epigaeus* (Rottl.& Willd.)Hook. Cucurbitaceae	*Mirchikand*	The powdered tubers along with betal nut, clover leaf, cashew nut and lime are used for stomach-ache. It is also used against veneral complaints and rheumatism.
28	*Diplocyclos palmatus* L. Cucurbitaceae	*Shivlingi*	Seeds along with betal nut are used for tonsils.
29	*Momordica carantia* L. Cucurbitaceae	*Karala*	Leaf juice is taken orally for relief of stomach ache in baby.
30	*Cyperus rotundus* L. Cyperaceae	*Nagarmotha*	The roots juice is used for treatment of ulcers and urinary complaints.
31	*Chrozophora rottleri* (Geis.)Juss. Euphorbiaceae	*Patthar phod*	The ash of root is used in treatment of cough in children.
32	*Phyllanthus emblica* L. Euphorbiaceae	*Awla*	The unripe fruit is used for digestion. It is rich source of vit-a, vit-b and vit-c.
33	*Arachis hypogaea* L. Fabaceae	*Bhuimoog*	Seeds are eaten with jaggery for treatment of anemia. The immature seeds are good source of vit-a and vit-b. Seeds are also used for increase lactation in women.
34	*Butea monosperma* (Lamk.)Taub. Fabaceae	*Palas*	The young leaves are used for tooth ache.
35	*Indigofera glandulosa* Wendl. Fabaceae	*Barbada*	Seeds are used as nutritive tonic.
36	*Enicostema axillare* (Lam.)Raynal Gentianaceae	*Nai*	Leaf extract is used against fever.

37	*Curculago orchioides* Gaertn. Hypoxidaceae	*Kali musali*	The juice of bulbs is used to control hairfall in women
38	*Anisochilus carnosus* (L.f.) Lamiaceae	*Kapurli*	The leaf extract is used to treat cough in children.
39	*Anisomeles malabarica* R.Br. Lamiaceae	*Kapuri, madhuri*	Leaf extract is used in indigestion and stomach ache.
40	*Lavendula bipinnata* L. Lamiaceae	*Asmani galgota*	Leaf extract is used against snake bite.
41	*Mentha spicata* L. Lamiaceae	*Pudina*	Leaves are used to cure cough.
42	*Oscimum americanum* Mar. Lamiaceae	*Rantulas*	Seeds are soaked overnight in curd and is taken orally early in the morning with empty stomach for treatment of sunstroke.
43	*Oscimum sanctum* L. Lamiaceae	*Tulas*	The leaf juice is rubbed all over the body to lower body temperature.
44	*Gloriosa superba* L. Liliaceae	*Kal lawi*	Root extract is used for easy delivery.
45	*Scilla hyacinthine* Roth. Liliaceae	*Rankanda*	The decoction of bulbs is used for cardiac problems.
46	*Sida actual* Burm. Malvaceae	*Bala*	The decoction of Roots is taken orally which is useful in nerve and urinary disorders.
47	*Sida alba* L. Malvaceae	*Kate bala*	The decoction of stem bark and roots is used in gonorrhea and fever.
48	*Azadirachta indica* A.Juss. Meliaceae	*Kadulimb*	Stem bark is grind well along with seeds of peagen pea and used as antiseptic. The leaf extract is used as insecticide.
49	*Soymida fembrifuga* (Roxb.)A.Juss. Meliaceae	*Rohan*	A paste of stem bark is applied on inflammatory part for quick pain relief.
50	*Tinospora cordifolia* (Willd) Miers. Minispermaceae	*Gulwel*	Roots are used for decrease body heat. The decoction of stem is used for increase in lactation for both human and cow.
51	*Acacia nilotica* (L.)Del. Mimocaceae	*Babhul*	The powder of pods mixed with curd and taken orally for treatment of dog bite.
52	*Ficus hispida* L. Moraceae	*Bhui umber*	Root extract is used for treatment of jaundice. It is also used to cure fever.
53	*Moringa oleifera* Lamk. Moringaceae	*Shevaga*	The pods or flowers are crushed well along with ginger and the extract is used for the asthama .The regular diet of pods help in blood purification. The shed dried flower is useful in increase the sperm count.
54	*Syzygium cumini* (L.) Skeels. Myrtaceae	*Jambhul*	The juice of seeds is used to cure diabetes.

55	*Ochna obtusata* DC. Ochnaceae	*Kanak champa*	The decoction of root is useful in menstrual complaints and asthma.
56	*Piper betle* L. Piperaceae	*Nagwel, Paan*	The leaves are used for digestion.
57	*Plumbago zylanica* L. Plumbaginaceae	*Chitrak*	The root extract is used for dyspepsia, piles and skin diseases.
58	*Cynadon dyctylon* L. Poaceae	*Harali*	The mixture of Harali and *Opuntia elatior* (Nivdung) leaves in curd is used for the treatment of Nag-veda (Herpes)
59	*Sorghum dochna* (Forssk) Snowden Poaceae	*Dagadi Jawari*	The unripened grains are fried and boiled in water; this extract is used in treatment of typhoid.
60	*Punica granatum* L. Punicaceae	*Dalimb*	The extract of leaf and pericarp of fruit is used for treatment of cough.
61	*Morinda citrifolia* L. Rubiaceae	*Bartondi*	The fruits are used in treatment of diabetes. The popular tonic 'Noni' is prepared from it.
62	*Agle marmelos* (L.) Carr. Rutaceae	*Bel*	The leaf juice of Bel and 'wood apple' is taken early morning to cure fever.
63	*Citrus aurantifolia* (Christem.) SW. Rutaceae	*Limbu*	The decoction of fruit is used against vomiting.
64	*Citrus sinensis* (L.) Osbeck. Rutaceae	*Mosambi*	Fruit juice is used in high fever.
65	*Ruta graveolens* L. Rutaceae	*Satap*	The leaf extract is used for indigestion in infants.
66	*Santalum album* L. Santalaceae	*Chandan*	The powder prepared from the heart wood is used for beauty care.
67	*Cardiospermum helicacabum* L. Santalaceae	*Kapalphuti*	The leaf extract is used in rheumatism.
68	*Dodonaea angustifolia* L. Sapindaceae	*Baad*	The application of fresh leaves on swollen part of the body give relieves from pain.
69	*Bacopa monieri* (L.) Wettst. Scrophulariaceae	*Neer brahmi*	Leaf extract is used for hair fall control. It is also used as brain tonic.
70	*Withania somnifera* (L.) Dund Solanaceae	*Dhorgunj, Askand*	The leaf extract along with boiled milk is used to cure cough. The dried root powder is taken orally to increase sperm count also it is used to increase body vigor.
71	*Clerodendrum multiflorum* (Burm.f.) O.Ktze. Verbinaceae	*Taklan*	The root extract is taken orally along with cow milk for the treatment of rheumatism.
72	*Vitex nigundo* L. Verbinaceae	*Nirgudi*	The leaf extract is used for the treatment of inflammation and joint pain.
73	*Curcuma longa* L.	*Halad*	The dried rhizome powder is used in

	Zingibaraceae		beauty care.
74	*Zingiber officinale* Rosc. Zingiberaceae	*Adrak*	The decoction of rhizome, piper and *Ocimum* leaves is used for the treatment of cough and cold.

Fig 1.*Tinospora cordifolia*

Fig 2. *Lavendula bipinnata*

Fig 3.*Withania somnifera*

Fig 4.*Mangifera indica*

Fig 5.*Phyllanthus emblica*

Fig 6. *Mentha spicata*

Fig 7. *Azadirachta indica*

Fig 8.*Calotropis procera*

Fig 9.*Diplocyclos palmatus*

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