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Ethnobotanical study of medicinal plants for Various Skin Diseases in Parinche Valley, Pune District (Maharashtra), India

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Abstract

The present paper gives information regarding the plants or plant parts used for the different types of skin diseases by various tribal communities in Parinche Valley. The local inhabitant especially tribal communities are inherited rich traditional knowledge of the use of many plant crude drugs. One hundred eighty two plants used by tribes and natives for different ailments were documented; of which 29 flowering plant species were used for curative / preventive for skin diseases. The plant parts commonly used are leaves, fruit / stem latex and stem bark while very few rhizome or root of the plant or complete plant parts were used. It is easily available and non-destructive in nature and it also shows the conservative nature of the tribal. The tribal communities of the area depend on the herbal drug for their primary health care; which attributed partly to their socioeconomic and cultural conditions.

Keywords: Ethnobotanical use, Skin diseases, Tribal communities, Parinche valley.

Introduction:

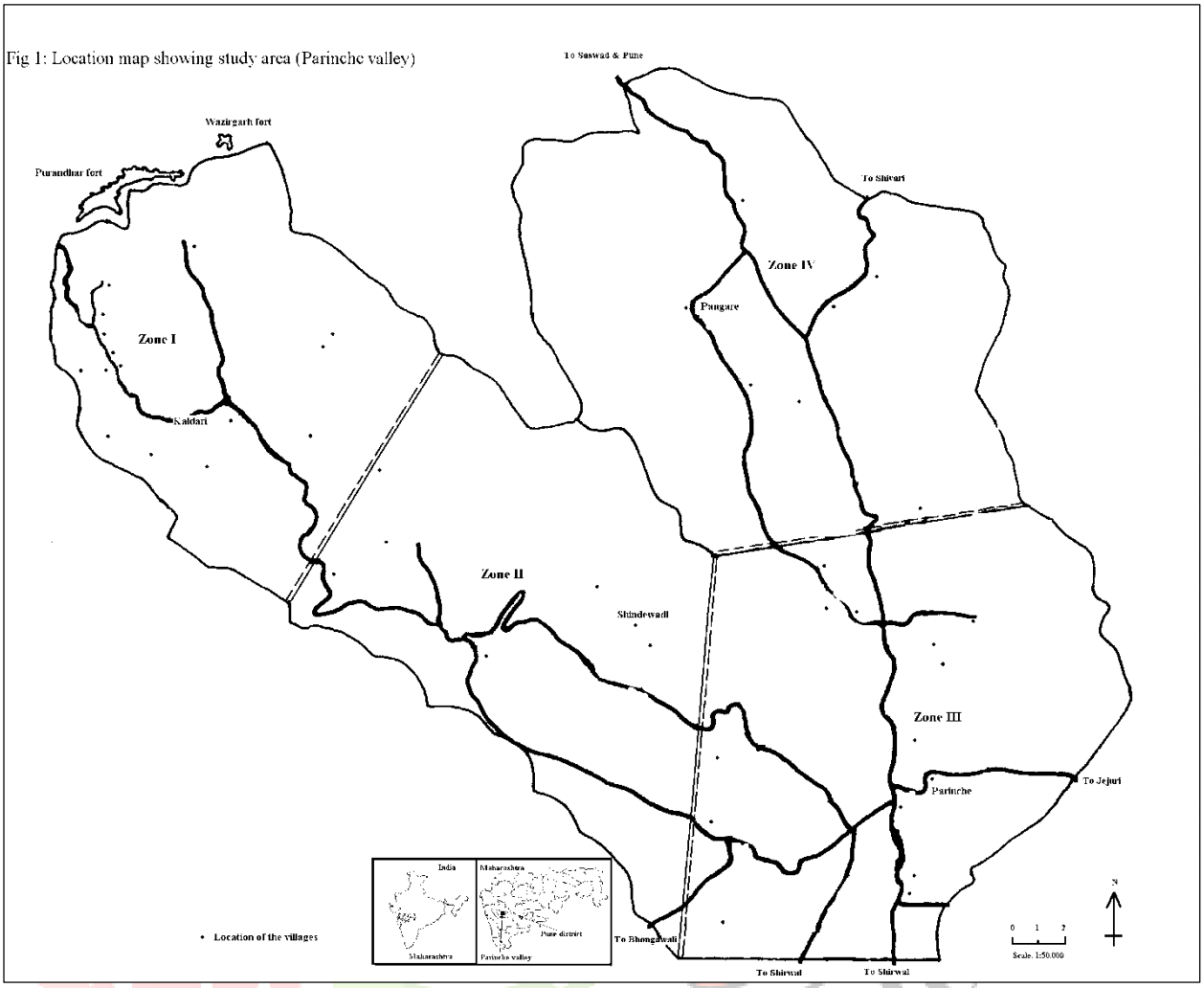
During last 65-70 years, high amount of traditional / ethno-botanical information gathered by various research papers / conferences / seminars etc. Indigenous therapy of medicine and pharmacopoeias has a strong knowledge base and wide acceptance throughout the world; mostly comprises on traditional medicine / folk medicine / tribal knowledge / orally transmitted with households, communities or ethnic groups or with strong spiritual belief that can only applied by the specialist practitioners i.e. who treat all type of diseases and ailments. Plants are an important source of drugs and play an important role in the survival of the tribal and ethnic group (Korkmaz M *etal*, 2016).

The Parinche valley region comprises of the inaccessible rear part of the Purandhar fort and its surrounding valley region and is situated about 53 kms to the South East of Pune city and 18 kms from Saswad town. The total area of the valley region is about 132 sq. km. Parinche is the biggest village and a nodal place in the valley. In the study area three tribal communities are – Mahadeo Koli, Ramoshi and Dhanagar are residing and dominant. In the valley region, total 43 villages and hamlets are distributed, administered by Group – Grampanchayat. Tribal hamlets are concentrated mostly near Purandhar fort which is popularly known as Ghera Purandhar. Because of worst environmental conditions and remoteness of Ghera Purandhar region the local people mostly depend on the herbal / plant medicines.

Many of these villages are inaccessible during the rainy season and lacks basic amenities. The knowledge on plant / herbal medicine possessed by the tribal and practices followed; have been inherited from generation to generation. The life style of tribal communities appears to be eroding owing to the gradual changes. Thus, the traditional knowledge may be lost due to change in socio-economic pattern.

For the purpose of study, the entire area is divided into four zones depending upon the rainfall and vegetation. They are Kaldari zone (Zone-1), Shindewadi zone (Zone-II), Parinche zone (Zone-III) and Pangare zone (Zone-IV). The valley region comprises mainly three forest types. They are a) Moist deciduous, b) Dry deciduous and c) Thorn forest. The rocks are mostly basalt, flows with enormous thickness (Waghchaure C. K., 2011) (Fig. 1: Location map).

Figure 1: Location Map – Parinche Valley



Methodology:

Keeping in view the rich ethno-botanical wealth of Parinche valley, Pune district, Maharashtra; for the collection / gathering traditional information regarding the medicinal use of plants frequent filed visits was arranged with tribal / local people to Parinche valley - study area / forest area. Tribal are shy and secretive in nature, they do not communicate openly with strangers. Hence, frequent visits were made to tribal villages / localities / study area to make friendly rapport with them. The information was cross checked or verified by cross – questioning with other villagers and knowledgeable persons and regular field visits were arranged. While noting down ethno-botanical information, every care was taken to record the local names of the plants and photographs, parts of the plants used, method of drug preparation, if any precautions or toxic effect and application / dosage.

The collected voucher plant specimens were critically identified with the help of standard floras[3-8] and Herbaria, BSI, Pune. A set of voucher herbarium was deposited in herbaria of Naoroji Godrej Centre for Plant Research, Shidewadi, Shirwal and Department of Botany, Savitribai Phule Pune University, Pune.

Discussion:

The dosages prescribed by these medicine men are usually in unmeasured quantities, it is by practice and trial – error method; only that they are preparing formulations with fixed quantities. Most of them illiterate, few have had primary education. With the intention to give them the credit of their knowledge, a list of medicine men or vaidus is given below with their age (approximate) in years. 1. Baban Kokare - 63, 2. Sulochana Mahurkar – 58, 3. Ashok Sukal - 45, 4. Sayali Shinde – 45, 5. Anandrao Chavan – 42, 6. Ramchandra Humbhe – 45, 7. Wishwas Takawale – 77, 8. Rohidas Dhagare – 79, 9. Dhondiba Kumbhar - 60, 10. Bapurao Amarale - 55, 11. Ramdas Boravkar – 78, 12. Babasaheb Jagtap - 71, 13. Bhaguji Kokare – 82, 14. Eknath Mahangare - 63, 15. Jayvant Jagtap - 59, 16. Prahlad Jadhav - 31, and 17. Mahadeo Misal - 71.

The traditional knowledge of tribal communities of Parinche valley has high ethno-botanical importance. They utilize numerous plants and their various parts viz., roots, leaves, stems, flowers, and fruits in various ways. It is evident form the study that the tribal are dependent on a variety of plants to meet their health requirement.

Enumeration:

This information was collected during the ethno-botanical survey in the study area - Parinche valley, Pune district (Maharashtra) India. The plants were arranged according to alphabetical order providing the correct botanical name, local name, name of the family following ethno-botanical information regarding name of skin disease, the plant part used, mode of preparation, dosage, if any precautions / toxicity and reference quote (Table 1).

Table 1 – Plants used by tribal communities for treatment of various types of skin diseases.

Botanical name / local name	Type of skin disease	Plant part used	Mode of preparation and Dosage	Precautions	Reference quote
Acacia catechu (L.f.) Willd., Mimosaceae.	Leprosy	All plant parts	All plant parts (i.e. root, stem, leaves, flower and fruit) in equal proportion (total weight 250gm) are crushed in the water and boiled. Take a bath in the morning, for one month or till it cures.	NM	1
Amaranthus spinosus L., Kate math, Amaranthaceae.	Facial oedema / Impetigo	Leaves	Crush mature and fresh leaves on the stone. Applied on the face in morning, for eight days.	Do not take spicy products and tea	1
Annona squamosa L., Sitaphal, Annonaceae.	Wounds	Fresh leaves	Fresh leaves paste is applied on wounds / cuts.	Insecticidal and pesticide.	
Artocarpus hetrophyllus Lam., Phanas, Moraceae.	Wounds	Stem bark	The stem bark powder is applied on wounds.	NM	1
Calotropis gigantea (L.) R. Br., Rui, Asclepiadaceae.	Skin disease	Latex	Apply fresh latex on the infected area three times a day for seven to eight days.	NM	1
Calotropis procera (Aiton) W. T. Aiton, Rui, Asclepiadacee.	Skin disease	Latex	Apply fresh latex on the infected area, three times a day for seven to eight days.	May irritate to skin and harmful to eyes.	2
Carica papaya L., Papai, Caricaceae.	Skin disease	Latex of unripe fruit	Latex of an unripe fruit is applied on the infected area, for 15 days.	Abortive	2
Carissa congesta Wight. var. *congesta*, Karvand, Apocynaceae.	Furuncle	Milky latex	Apply fresh milky latex of leaves on infected area / part for four times a day for two days.	NM	2
Celosia angentea L., Kurdu,	Haematuria	Seed	Dried seed powder 10 gm. is mixed in 100 ml curd and allowed to	NM	3

Amaranthaceae.			remain for one and half hours. Medicine can be administered only once in a month.		
Cuminum cyminum L., Jire, Apiaceae.	Wounds	Seed	Paste of seeds is applied to the wounds, thrice a day for three days.	NM	1
Datura inoxia Mill., Dhotara, Solanaceae	Herpaszoster	Seed	Seeds pounded with rice gains in equal proportion in 50 ml of water. The paste is applied every morning for three days on the infected area.	Do not take internally, may be toxic / fatal.	2
Euphorbia lingularia Roxb., Nivdung, Euphorbiaceae.	Blunt trauma	Milky latex	Collect milky latex from the stem by rupturing by the knife or pointed material. Add the soil in it and apply on the swollen area. Once a day for three days.	NM	2
Ficus bengalensis L., Wad, Moraceae	Diptheria	Young aerial roots	Young aerial roots are chewed and administered juice internally twice a day for two days.	NM	2
Ficus religiosa L., Pimpal, Moraceae.	Wounds	Stem bark	Burn the stem bark, crush it. The powder is mixed in coconut oil and applied on wounds daily for a week.	NM	1
Gloriosa superba L., Kal lavi / Bachhanag, Liliaceae.	Herpeszoster	Rhizome	Paste of dried rhizome is applied externally on the infected area (4-inch strip) three times a day for a week.	Paste not taken internally.	1
Heterophragma quadricularae (Roxb.) K. Schum., Waras, Bignonaceae	Skin disease	Leaves	Mature and fresh leaves are burnt and mix in coconut oil. Apply on the infected area for 15 days.	NM	3
Indigofera linifolia (L.) Retz., Pandharphali, Fabaceae.	Wounds	Stem bark	The stem bark with *Artocarpus integrifoila* is crushed together in equal proportion and mixed in coconut oil. Paste is applied to wounds once in a day for three days.	NM	2
Lavendulla bipinnata O. Ketz. var. bipinnata, Dudhani, Lamiaceae.	Wounds	Leaves	Crushed the fresh leaves and applied on the wounds thrice a day.	NM	2
Lepidagathis cuspidata Nees., Gavatiganda, Acanthaceae	Seborrhic-dermatities	Complete plant	Powder of plant is mixed in coconut oil and applied once in a day for a week.	NM	1
Maytenus senegalensis (Lam.) L., Heklan, Celastraceae.	Blunt trauma	Fresh wood	Lavigate fresh wood on the stone. Apply the paste on the area two to three times a day for three days.	NM	1
Ocimum tenuiflorum L., Tulas, Lamiaceae.	Scabies	Leaves	Crushed 5 gm leaves in the 5 ml of water, applies paste on infected area thrice a day for seven days.	NM	5
Ougeinia oojenensis (Roxb.) Hochr, Tiwas, Fabaceae.	Wounds / swellings	Inner bark	Crush the inner bark with seeds of *Phaseolus mungo* in 2:1 proportion. Boil the paste in 150ml of water till it becomes 1/3rd of its original volume. Apply the mixture on the wounds or swellings two times a day for three to seven days.	NM	2

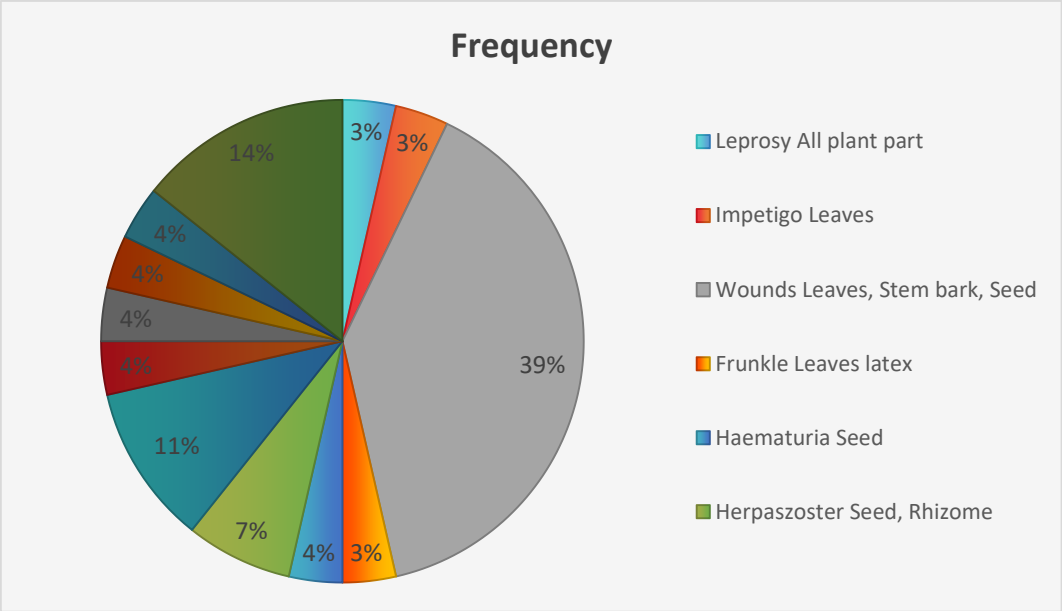
Perrgularia daemia (Forssk.) Chiov., Utarani, Asclepiadaceae.	Wounds	Leaves	Leaf paste is applied on wounds.	NM	2
Plumbago zeylanica L., Chitrak, Plumbaginaceae.	Skin disease	Root	Root paste is applied to the skin for three times a day for eight days.	Eyes may get irritation.	3
Pterocarpus marsupium Roxb., Bibla, Fabaceae.	Swelling	Stem bark	Decoction of fresh stem bark with *Ougenia oojenensis* in equal proportion, used as an ointment.	NM	1
Terminalia cuneata Roth., Arjun-sadada, Combretaceae.	Wounds	Stem bark	Powder of dried bark applied to the wounds or Powder of dried bark with *Lantana camara* in 1:1 proportion, applied to wounds two times a day for five days.	NM	5
Terminalia elliptica Willd., Ain. Combretaceae	Wounds	Stem bark	Powder of dried bark applied to the wounds.	NM	2
Tridax procumbens L., Kurmudi / Dagadi – phul, Asteraceae.	Wounds	Leaf juice	The juice is applied to the cuts / wounds two to three times a day for three days.	NM	3
Vitex negundo L. var. *incisor* (Lam.) C.B.Cl., Katri nirgudi, Verbinaceae.	Blunt Trauma	Leaves	Crush 15-20 fresh leaves with the help of stone. The extract kept on low flame for few seconds and applied on the swelling.	NM	2

*NM-Not Mentioned

Conclusion

The present paper deals with 29 plants species belonging to 26 genera and 20 families used to cure or prevent the various skin diseases. Three plant species from families Moraceae, Fabaceae & Asclepiadaceae while Plumbaginaceae, Combrataceae & Amaranthaceae having 2 plant species used for making preparations. Other families represent single species used for making preparations. The 11 plant species are used for making preparation for wounds. Five plant species are used for curing various unspecified skin diseases. For blunt-trauma 3 plant species, Herpaszoster and swelling 2 plant species while 1 plant species for leprosy, Facial oedema, Furuncle, Hematuria, Diphtheria, Scabies and Seborrhic-dermatitis. From this it can be concluded that wounds are common in the study area. The plant parts commonly used are leaves, fruit / stem latex and stem bark. It is easily available and non-destructive in nature. It shows the conservative nature of the tribal. The rhizome or roots of the plant or complete plant parts used are minimal. The plant species used *Gloriosa*, *Lepidagatihis* and *Plumbago* is seasonal while *Acacia* is perennial. The author themselves have to collected this information during extensive survey of the study area. The comparison of the data so gathered with the relevant information obtained from elsewhere shows very interesting results (Fig. 2).

Fig. 2 - Frequency chart



During the study it was concluded that tribal people are secretive, shy and conservative and do not want to share their age-old traditional knowledge with other people. Generally, people try to use those plants which are available in their surrounding areas. However, they also carry these plants form one place to another. Though the practice of traditional health care system is effective, safe and with a few side effects, the application of such wisdom on herbal drugs is declining at a faster rate due to developed urban culture or migration form tribal areas to the urban area, negligence of tribal / rural community, forest habitat destruction and the tendency to use allopathic.

Now days due to modernization and easy availability of needed items in the nearest market the dependence on wild resources is decreasing rapidly in the civilized areas. But in the *Ghera Purandhar* region i.e. in remote areas where no communication facilities are available, so the tribal people still dependent very much on the wild plant resources for daily needs and medicine.

Although some of the species reported in the present paper are also used in the other part of the country, many other species listed in the present paper are either less known or unknown for uses. These claims may also offer scope for potential herbal drugs species for their intensive phytochemical screening and pharmacological action to ensure their sustainable utilization.

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